HSIP

MAINE

HIGHWAY SAFETY
IMPROVEMENT PROGRAM
2018 ANNUAL REPORT

U.S. Department of Transportation
Federal Highway Administration

Photo source: Federal Highway Administration

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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."

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 are opportunities for enhancement and for improved alignment for the state's SHSP. Programmatic reviews have been completed and published for 1. centerline rumble strips and 2. median cable barrier and wrong way initiatives. Crash performance results have been positive.

Spot improvement project selection has been more driven by HSM methodology this year, with help from Maine's IT staff to set up a screening process for intersection assessment. In addition to any spot improvements projects are often systemic in nature, like centerline rumble strips and median cable barrier being also funded. Systemic approach was used in selecting centerline rumble strips during project years of 2016-2020. There are about 415 miles of rumble strips now installed. Due to continuing noise concerns expressed by residents, Maine's rumble strip program will consist entirely of sinusoidal style installations in 2018.

Maine is looking to expand it's systemic approach to further impact lane departure crash reduction - Maine's 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 continue to address speed management, pedestrian safety and interstate wrong way ramp entries.

Pedestrian Safety emphasis has a solidified strategy that continues in 2018 where targeted outreach to communities is underway which includes safety reviews of locations where public expressed priority needs. Program is multi-agency involved and emphasis includes improved pedestrian visibility at night with sponsorship of materials from 3M/Scotchlite.

MaineDOT's Safety office is being enhanced in 2018 with lead staff being at a Director position and a high level second staff member will also be in place. The office will now include the crash records unit.

A new SHSP was released in late 2017, had a media event just after its release in January 2018.

Fatalities did rise for a third year in the state to 172 after reaching a 70 year low in 2014. Pedestrian fatalities remain high for a third year, helping continue to drive the pedestrian outreach effort noted above.

Maine's CRASH/Roadway data is migrating from Maine's TIDE system to an Oracle-based Dashboard. Various individuals are working though side-by-side data query scenarios to validate data outputs.

2018 Safety Performance Targets were successfully coordinated internally, with Maine's Highway Safety Office (Bureau of Highway Safety) and MPO partners. The 2019 Statewide performance targets have also been developed.

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 Reporting Guidance dated December 29, 2016 and consists of five sections: program structure, progress in implementing highway safety improvement projects, progress in achieving safety outcomes and performance targets, effectiveness of the improvements and compliance assessment.

Program Structure

Program Administration

Describe the general structure of the HSIP in the State.

Maine's HSIP structure has several facets that together build a comprehensive safety strategy, and that structure is being enhanced in 2018:

- There will be a director level position and a high level engineering support person in place. In addition, there is one person whose focus is identifying specific locations of need, primarily intersections, and as noted above, the primary tool being used this year for initial system-wide screening is the Highway Safety Manual.
- A wide variety of resources within MaineDOT are contacted to generate safety project needs including Regional Operations, Local Roads, Bike/Ped, Traffic Engineering
- There is a Highway Safety Group within MaineDOT that has a cross representation of DOT functional areas that meets regularly and one of the tasks is to drive toward identifying work projects that fit leading areas of concern.
- Strategic Highway Safety Plan (SHSP) stakeholders meet every 4 months, bringing together a variety of safety stakeholders .
- MaineDOT's Safety Office is the coordinating point of all of this activity.
- MaineDOT holds regional planning meetings to finalize Departmental needs, including safety and makes sure that related work projects are synchronized.

Where is HSIP staff located within the State DOT?

Other-Planning and Safety Office

Enter additional comments here to clarify your response for this question or add supporting information.

The Safety Office is being restructured to strengthen it's efforts both internally and externally. Crash records will be joining the unit.

How are HSIP funds allocated in a State?

Enter additional comments here to clarify your response for this question or add supporting information.

Describe how local and tribal roads are addressed as part of HSIP.

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 and benefit/cost performance comparisons. Local requests are also receieved based on crash concerns and are reviewed as part of the candidate screening process.

Maine does now have an on-line crash data access system available to them to help with local analysis - and MPOs/RPOs have utilized this tool and praise its capabilities.

Identify which internal partners (e.g., State departments of transportation (DOTs) Bureaus, Divisions) are involved with HSIP planning.

Traffic Engineering/Safety
Design
Planning
Maintenance
Operations
Districts/Regions
Local Aid Programs Office/Division
Other-MPO/RPO; Bike/Pedestrian are being better integrated
Other-Environmental

Enter additional comments here to clarify your response for this question or add supporting information.

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. Broadly distributed solicitations to internal contacts are sent out several times during the planning process and generate safety improvement opportunities.

Traffic Engineering is actively using changeable message signs for creative messaging to the traveling public. A statewide public contest was held that invited the public to submit their message suggestions that was well received.

2018 Maine Highway Safety Improvement Program
A Highway Safety Group has been established that includes a wide operational representation and FHWA presence to look at overall state 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.

A strong partnership between Bike/Ped Coordinator and Safety Office is established to kick off the state's Pedestrian outreach program.

MaineDOT's Office of Communications has been another close ally in preparing quality publications and using our social media platforms to get the safety word out.

Identify which external partners are involved with HSIP planning.

Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
Governors Highway Safety Office
Local Technical Assistance Program
Local Government Agency
Law Enforcement Agency
FHWA

Enter additional comments here to clarify your response for this question or add supporting information.

Describe coordination with external partners.

MaineDOT Safety Office has continuing communications and good relationships with all State, local and Federal partners. In addition to standard state partners, we do also coordinate with Bureau of Motor Vehicles and DHS for alcohol/drug-related issues. In addition, we regularly work with AAA, Maine Motor Transport Association, Maine Turnpike, Bicycle Coalition of Maine, United Bikers of Maine (motorcycles) and others. We look for input from all and communicate out to them when needed.

Have any program administration practices used to implement the HSIP changed since the last reporting period?

Yes

Describe HSIP program administration practices that have changed since the last reporting period.

-
    HSIP documentation has been updated to reflect current practices.
- We continue to work on systemic identifying of curves with best opportunity for safety improvement, with hoped for including selected projects for upcoming work plan.

- Improved accurate documentation of centerline rumble-strip inventory to be coordinated with work plan opportunities. Synergy is determined through GIS layering of various DOT project types - especially paving work.

Are there any other aspects of HSIP Administration on which the State would like to elaborate?

Yes

Describe other aspects of HSIP Administration on which the State 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 opportunities related to Lane Departure mitigations and other core safety target areas. An ongoing challenge, as one example, is creating an equitable allocation for Bike/Ped needs.

We also look to diversify Lane Departure strategies to better identify and engineer horizontal curves of most safety opportunity.

Maine is also currently updating the structure and staffing of the Safety Office to make it more effective.

Program Methodology

Does the State have an HSIP manual or similar that clearly describes HSIP planning, implementation and evaluation processes?

Yes

To upload a copy of the State processes, attach files below.

File Name:
HSIP Project Selection Process Final 1-27-18.docx

Select the programs that are administered under the HSIP.

Median Barrier
Intersection
Horizontal Curve
Bicycle Safety
Rural State Highways
Skid Hazard
Roadway Departure
Low-Cost Spot Improvements
Sign Replacement And Improvement
Local Safety
Pedestrian Safety
Right Angle Crash
Left Turn Crash

2018 Maine Highway Safety Improvement Program
Shoulder Improvement
Segments
Wrong Way Driving
Other-Median Cable Barrier -install completed in 2014
Other-Speed management
Other-Guard rail/end treatment upgrades

Enter additional comments here to clarify your response for this question or add supporting information.

Speed management includes coordinated installation with towns of portable speed feedback signs.

Program:	Bicycle Safety

Date of Program Methodology:	8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Other-As speci

What data types were used in the program methodology? [Check all that apply]

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

What project identification methodology was used for this program? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Horizontal Curve

Date of Program Methodology: 4/1/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Other-Being evaluated as a systemic need

What data types were used in the program methodology? [Check all that apply]

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

What project identification methodology was used for this program? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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 :   2
Available funding :   1

Program: Intersection

Date of Program Methodology: 4/1/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

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? [Check all that apply]

Crash frequency
Crash rate
Critical rate
Excess proportions of specific crash types
Other-HSM-based screenings

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

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Left Turn Crash

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Part of instresection strategy along with center left turn lane considerations.

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

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? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Local Safety

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

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

What project identification methodology was used for this program? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

2018 Maine Highway Safety Improvement Program

Program: Low-Cost Spot Improvements

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

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? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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
Cost Effectiveness :   1

Program: Median Barrier

Date of Program Methodology: 7/1/2010

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Other-Systemic need

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes	Other-limited access highway	Median width

What project identification methodology was used for this program? [Check all that apply]

Probability of specific crash types
Other-Risk factors noted above.

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

No

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Pedestrian Safety

Date of Program Methodology: 1/1/2018

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-increasing number of pedestrian fatalities

What is the funding approach for this program? [Check one]

Other-Allocations will be determined through Departmental discussions

What data types were used in the program methodology? [Check all that apply]

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

What project identification methodology was used for this program? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Right Angle Crash

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Part of Intersection strategies

What is the funding approach for this program? [Check one]

What data types were used in the program methodology? [Check all that apply]

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? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Roadway Departure

Date of Program Methodology: 4/1/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Other-Systemic funding - such as for centerline rumble strips

What data types were used in the program methodology? [Check all that apply]

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

What project identification methodology was used for this program? [Check all that apply]

Crash frequency
Crash rate

2018 Maine Highway Safety Improvement Program
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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Rural State Highways

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Largely lane departure issues.

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

Crashes   **Exposure**   **Roadway**

All crashes
Fatal and serious injury crashes only

Traffic
Volume

Horizontal curvature
Functional classification
Roadside features

What project identification methodology was used for this program? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Segments

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Often lane departure issues

2018 Maine Highway Safety Improvement Program

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

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? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Shoulder Improvement

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Often associated with lane departure, but could also relate to bike and pedestrian needs

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

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

What project identification methodology was used for this program? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

2018 Maine Highway Safety Improvement Program

Ranking based on B/C :   1
Available funding :   2

Program: Sign Replacement And Improvement

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

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? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Skid Hazard

Date of Program Methodology: 8/1/2014

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-Lane departure related

What is the funding approach for this program? [Check one]

Competes with all projects

What data types were used in the program methodology? [Check all that apply]

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? [Check all that apply]

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Wrong Way Driving

Date of Program Methodology: 12/31/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes Fatal crashes only Fatal and serious injury crashes only	Other-Laregely driven by ramp design components	

What project identification methodology was used for this program? [Check all that apply]

Probability of specific crash types
Other-ramp design
Other-Maine State Police input

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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).

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

Date of Program Methodology: 7/1/2016

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Other-Department saw this as a systemic need.

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
All crashes		Median width Other-Limited access roadway

What project identification methodology was used for this program? [Check all that apply]

Probability of specific crash types

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

No

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Program: Other-Speed management

Date of Program Methodology: 10/1/2017

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
	Traffic Volume	

What project identification methodology was used for this program? [Check all that apply]

Other-Coordinated with towns where speed concerns are expressed

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

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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).

Program:	Other-Guard rail/end treatment upgrades

Date of Program Methodology: 3/1/2018

What is the justification for this program? [Check all that apply]

Addresses SHSP priority or emphasis area
Other-State looking to make sure current standards met, especially in high speed/high volume locations

What is the funding approach for this program? [Check one]

Funding set-aside

What data types were used in the program methodology? [Check all that apply]

Crashes	**Exposure**	**Roadway**
	Volume	
	Other-Posted Speed Limit	

What project identification methodology was used for this program? [Check all that apply]

Other-Evaluation of hardware i

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

Yes

Are local road projects identified using the same methodology as state roads?

Yes

Describe the methodology used to identify local road projects as part of this program.

How are projects under this program 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

Other-Selection of locations of need as noted above :   1

What percentage of HSIP funds address systemic improvements?

50

HSIP funds are used to address which of the following systemic improvements? Please check all that apply.

Cable Median Barriers
Rumble Strips
Install/Improve Signing
Upgrade Guard Rails
Safety Edge
Horizontal curve signs
Wrong way driving treatments

Enter additional comments here to clarify your response for this question or add supporting information.

Percent of spot vs. systemic vs. programmatic varies from year to year, but MaineDOT strives to have a balanced project portfolio.

What process is used to identify potential countermeasures? [Check all that apply]

Engineering Study
Road Safety Assessment
Crash data analysis
SHSP/Local road safety plan
Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)

Stakeholder input
Other-MaineDOT has a Highway Safety Group represented by a variety of disciplines within the Department that helps collectively develop mitigation toolboxes for various safety needs.

Enter additional comments here to clarify your response for this question or add supporting information.

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

Describe how the State HSIP considers connected vehicles and ITS technologies.

This area continues to expand. MaineDOT does have a couple of staff who are the 'go-to' contacts for connected vehicle-related items. When the SHSP was updated, MaineDOT did check if there any connected vehicle items that we would want to address. At that point in time, it was a little too early to fully flesh out any related strategies. There also is a re-energized ITS committee at MaineDOT that considers automated vehicle aspects. The Safety Office does sit in on those meetings.

Does the State use the Highway Safety Manual to support HSIP efforts?

Yes

Please describe how the State uses the HSM to support HSIP efforts.

MaineDOT has focused in on system-wide intersection analysis using the HSM. System-wide, intersections go through several comparative screens to prioritize locations of most need, plus that prioritization methodology goes through one final review/adjustment to make sure there is an improved balance between Urban and Rural locations. With the pure analysis approach, Urban locations significantly dominate the priority location list. MaineDOT does expect the approach developed for intersections will expand to other infrastructure reviews.

Have any program methodology practices used to implement the HSIP changed since the last reporting period?

No

Are there any other aspects of the HSIP methodology on which the State would like to elaborate?

Yes

Describe other aspects of the HSIP methodology on which the State would like to elaborate.

The state has adopted a new Strategic Highway Safety Plan late in 2017 that engaged all focus area champions to update their areas and it also integrated latest aspects of Maine Bureau of Highway Safety's

Highway Safety Plan. MaineDOT's Safety Office and Traffic Engineer together reviewed all areas of the SHSP that could have safety engineering aspects included as strategies and made sure areas covered a broad set of current and upcoming safety opportunities.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

Calendar Year

Enter additional comments here to clarify your response for this question or add supporting information.

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$8,258,349	$9,021,022	109.24%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$4,009,242	$4,009,242	100%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$1,080,000	$483,031	44.73%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$0	$0	0%
Totals	$13,347,591	$13,513,295	101.24%

Enter additional comments here to clarify your response for this question or add supporting information.

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

0%

How much funding is obligated to local or tribal safety projects?

0%

Enter additional comments here to clarify your response for this question or add supporting information.

Tribal projects are eligible, just none submitted during this reporting period.

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

0%

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

0%

Enter additional comments here to clarify your response for this question or add supporting information.

How much funding was transferred in to the HSIP from other core program areas during the reporting period under 23 U.S.C. 126?

0%

How much funding was transferred out of the HSIP to other core program areas during the reporting period under 23 U.S.C. 126?

0%

Enter additional comments here to clarify your response for this question or add supporting information.

Only the $ 4,009,242.39 in Penalty Funds (23 U.S.C. 154) noted in the table summary found in Q23

Discuss impediments to obligating HSIP funds and plans to overcome this challenge in the future.

None. MaineDOT Safety Office continues to work with internal and external partners to coordinate and integrate safety and seek the best opportunities to cost-effectively improve traffic safety. This process continues to be enhanced over time.

Does the State want to elaborate on any other aspects of it's progress in implementing HSIP projects?

Yes

Describe any other aspects of the State's progress in implementing HSIP projects on which the State 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 have stabilized. Systemic opportunities are being evaluated to achieve a better funding mix that is reflective of SHSP priorities. From 2015 on, there has been an increase in installations on centerline rumble strips, with 415 total miles installed through 2017. 2016 was the first year where we faced a number of public noise-related concerns, and those continued to a lesser extent during 2017. MaineDOT pilotted another sinusoidal style rumble strip installation in 2017 and will be installing ONLY sinusoidal rumble strip in 2018.

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 and a cooperative approach on safety performance target setting. MPO's have focused more on high crash location mitigation in 2017.

Pedestrian traffic fatalities are still a concern and a focused outreach program continues to be delivered throughout the state in 2018. Program includes public engagement, road safety audits and seeks to identify project needs that could be funded through HSIP or other fund sources.

A new Strategic Highway Safety Plan was delivered late in 2017 with many new additions reflecting the state's current and anticipated efforts.

General Listing of Projects

List the projects obligated using HSIP funds for the reporting period.

													RELATIONSHIP TO SHSP	
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	EMPHASIS AREA	STRATEGY
018794.00	Roadway	Roadway - other	1	Miles	$204472	$671484	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other	16,187	30	State Highway Agency	Spot	Pedestrians	Identify opportunities for pedestrian infrastructure improvements
018814.00	Roadway	Roadway - other	1	Miles	$3390.47	$119775.48	HSIP (23 U.S.C. 148)	Rural Major Collector	700	50	State Highway Agency	Exposure - lack of approach rail	Lane Departure	Upgrade GR installations as needed
018874.00	Roadway delineation	Roadway delineation - other	1	Miles	$55800	$62000	HSIP (23 U.S.C. 148)	Urban Major Collector	2,527	50	State Aid	Spot	Bicyclists	Identify key locations for…high visibility pavement markings to identify bike lanes
019006.00	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Intersections	$1106796.66	$1229774.07	HSIP (23 U.S.C. 148)	Rural Minor Arterial	8,303	40	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
020204.00	Roadway	Roadway - other	1	Roundabout	$2133775.23	$2581257.44	HSIP (23 U.S.C. 148)	Rural Major Collector	8,017	30	State Aid	Spot	Intersections	Alternative solutions including roundabouts
020205.00	Roadway	Roadway - other	1	Roundabout	$2374876.47	$2638750.42	HSIP (23 U.S.C. 148)	Rural Major Collector	5,095	40	State Highway Agency	Spot	Intersections	Alternative solutions including roundabouts
020581.17	Roadway delineation	Longitudinal pavement markings - remarking	1	Miles	$4394110.82	$5493146.69	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0			Systemic	Lane Departure	Good striping practices are important to enable vehicle lane departure warning technologies
021781.00	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Intersections	$60300.01	$67000.01	HSIP (23 U.S.C. 148)	Rural Minor Collector	2,486	45	State Aid	Spot	Intersections	Develop solutions for reviewed locations.
021848.00	Roadway	Rumble strips - center	1	Miles	$602415.1	$669350.11	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	0		State Highway Agency	Systemic	Lane Departure	Identify where centerline rumble strips should be installed to reduce lane departure crashes.
022674.00	Roadway	Roadway - other	1	Ramps	$688950.01	$809500	HSIP (23 U.S.C. 148)	Urban Principal Arterial (UPA) - Other Freeways and Expressways	15,694	35	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
022681.00	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Intersections	$62902.76	$69891.96	HSIP (23 U.S.C. 148)	Urban Major Collector	6,279	35	State Aid	Spot	Intersections	Develop solutions for reviewed locations.
022692.00	Roadway	Roadway - other	1	Roundabout	$3001175.43	$3801325.2	HSIP (23 U.S.C. 148)	Urban Minor Arterial	14,930	30	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	RELATIONSHIP TO SHSP	
													EMPHASIS AREA	STRATEGY
022996.01	Speed management	Speed management - other	1	Locations	$22500	$25000	HSIP (23 U.S.C. 148)	Rural Principal Arterial (RPA) - Other	10,140	55	State Highway Agency		Illegal/Unsafe Speed	Enhance Speed enforcement efforts by targetting high incident areas
022996.04	Speed management	Speed management - other	1	Locations	$48688.77	$54098.64	HSIP (23 U.S.C. 148)	Rural Major Collector	2,118	55	State Highway Agency		Illegal/Unsafe Speed	Enhance Speed enforcement efforts by targetting high incident areas
023004.00	Speed management	Radar speed signs	1	Signs	$180000	$200000	HSIP (23 U.S.C. 148)	Rural Minor Arterial	0			Programmatic working with interested communities	Illegal/Unsafe Speed	Utilize portable and post-mounteddynamic speed feedback signs
023122.00	Roadway signs and traffic control	Roadway signs (including post) - new or updated	1	Signs	$180000	$200000	HSIP (23 U.S.C. 148)	Urban Minor Collector	0			Programmatic, identifying locations of need andworking with interested communities	Pedestrians	Continue a pedestrian safety signage and visible crossing program using RRFB's at select locations

Enter additional comments here to clarify your response for this question or add supporting information.

Safety Performance

General Highway Safety Trends

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

PERFORMANCE MEASURES	2009	2010	2011	2012	2013	2014	2015	2016	2017
Fatalities	159	161	136	164	145	131	156	160	172
Serious Injuries	732	782	895	982	865	815	754	746	728
Fatality rate (per HMVMT)	1.100	1.110	0.951	1.140	1.010	0.913	1.050	1.070	1.140
Serious injury rate (per HMVMT)	5.050	5.370	6.260	6.830	6.010	5.680	5.080	4.980	4.810
Number non-motorized fatalities	13	13	11	10	15	11	19	21	23
Number of non-motorized serious injuries	61	52	81	101	59	88	64	72	75

Annual Fatalities
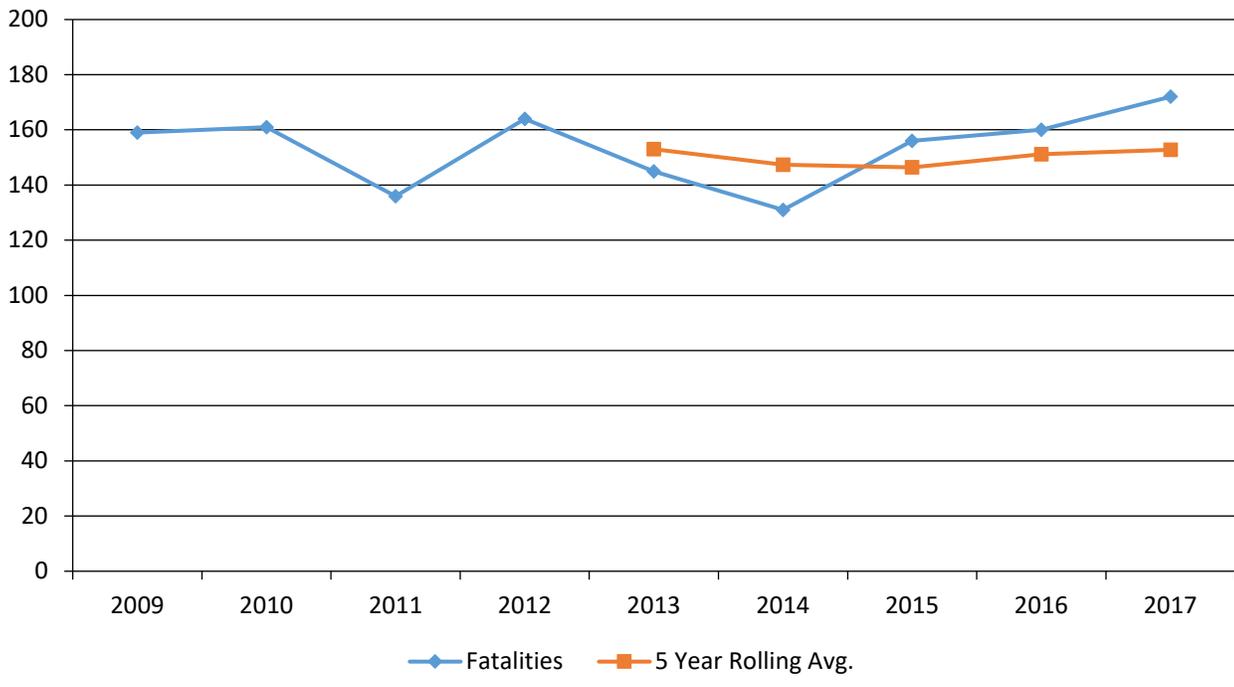
Annual Serious Injuries
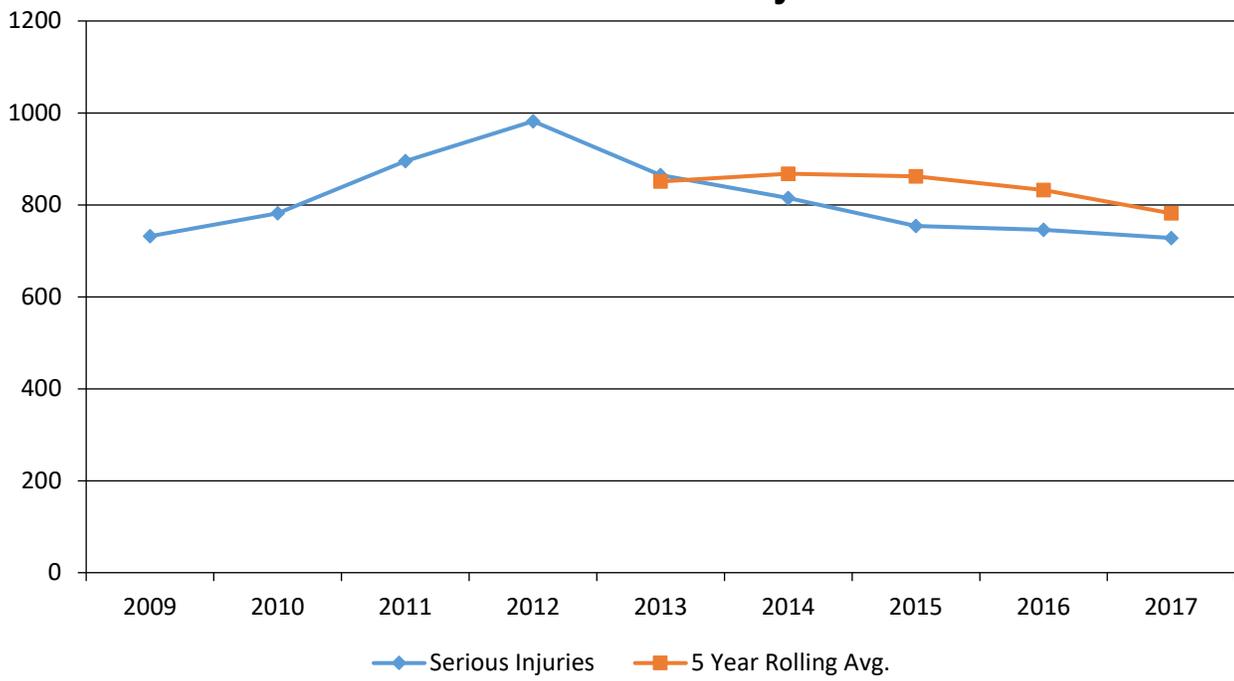
Fatality rate (per HMVMT)
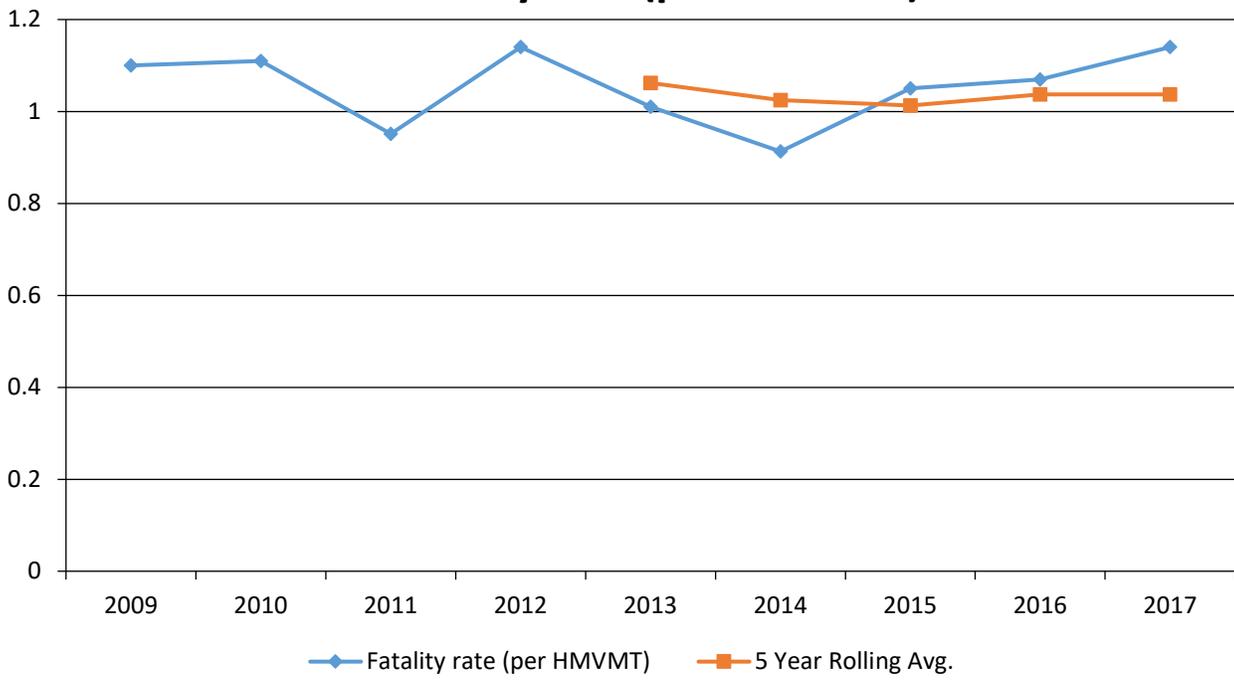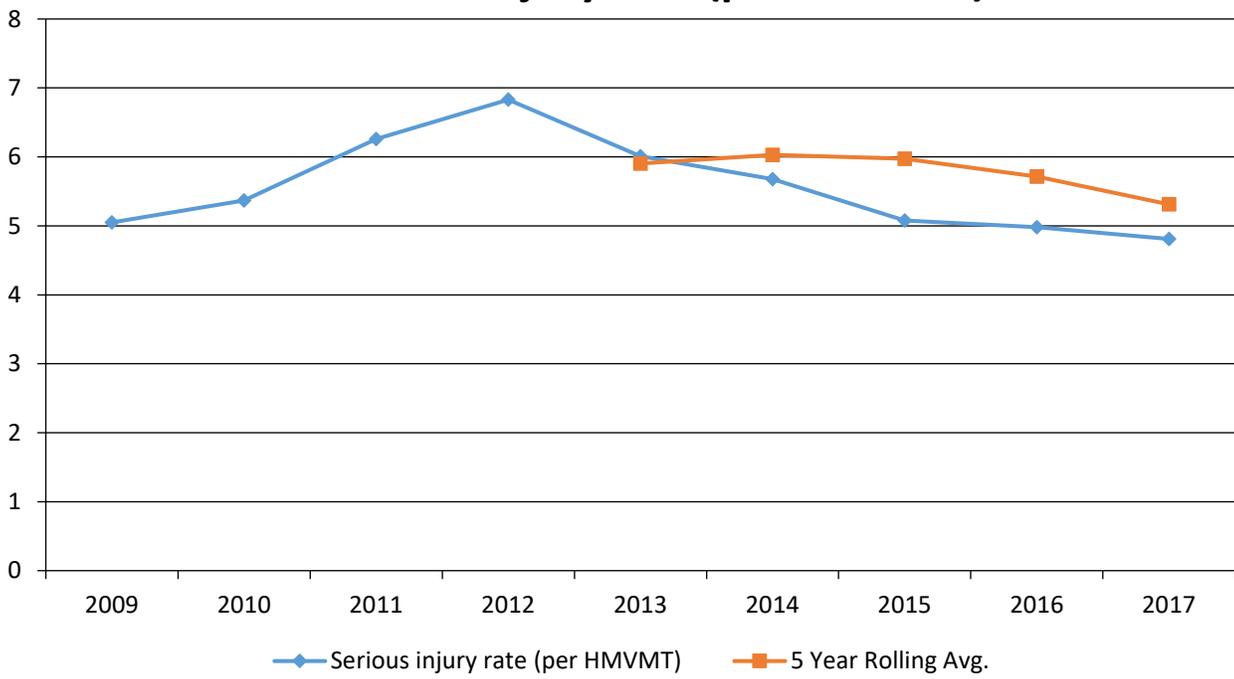
Legend: Fatality rate (per HMVMT) — 5 Year Rolling Avg.

Serious injury rate (per HMVMT)

Legend: Serious injury rate (per HMVMT) — 5 Year Rolling Avg.

Non Motorized Fatalities and Serious Injuries

Legend: Fatalities and Serious Injuries — 5 Year Rolling Avg.
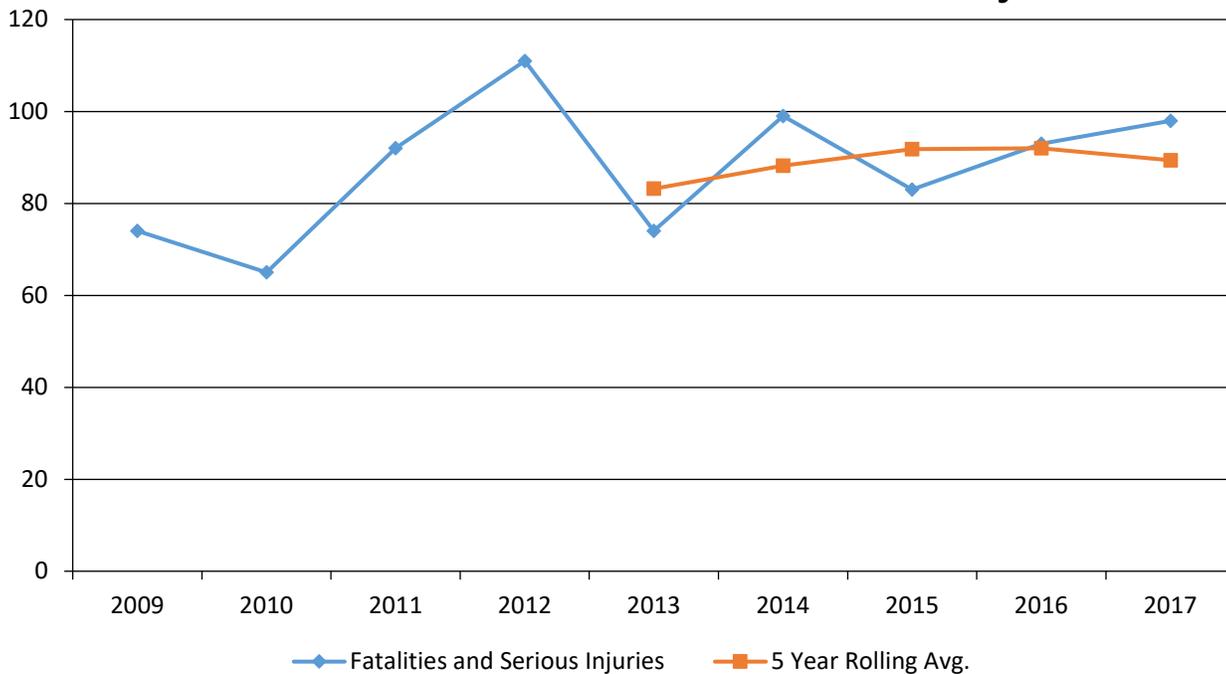
Enter additional comments here to clarify your response for this question or add supporting information.

Describe fatality data source.

FARS

Enter additional comments here to clarify your response for this question or add supporting information.

There is regular communication between MaineDOT's Safety Office and Maine Bureau of Highway Safety to make sure we are consistently reporting on state fatality levels and jointly making sure information is accurate and up to date.

For some of the data displays, MaineDOT's data warehouse numbers are used, when FARS data not available in desired split criteria, like by FFC or Rural/Urb. In these cases, FATAL data totals will vary slightly - like for URB/RUR by BY FFC, MAINEDOT data totals are 166 compared to the actual statewide FARS total of 172.

To the maximum extent possible, present this data by functional classification and ownership.

Year 2017

Functional 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 (RPA) - Interstate	6.2	39	0.28	1.74

| Functional 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 (RPA) - Other Freeways and Expressways	0	0		
Rural Principal Arterial (RPA) - Other	26	89.4	1.41	4.85
Rural Minor Arterial	24.4	101.4	1.42	5.89
Rural Minor Collector	10.6	56.6	1.29	6.87
Rural Major Collector	30.2	149.4	1.36	6.71
Rural Local Road or Street	21.2	101.4	1.47	7.02
Urban Principal Arterial (UPA) - Interstate	4	24.6	0.36	2.24
Urban Principal Arterial (UPA) - Other Freeways and Expressways	0.4	6	0.24	3.57
Urban Principal Arterial (UPA) - Other	6.8	55.4	0.95	7.76
Urban Minor Arterial	7.4	71.8	0.73	7.13
Urban Minor Collector	1	4.8	2.54	12.2
Urban Major Collector	6.4	55.2	0.66	5.71
Urban Local Road or Street	0.6	4.4	0.13	3.61

Year 2017

Roadways	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)
State Highway Agency	86.2	450.2	1	5.24
County Highway Agency				
Town or Township Highway Agency	24.2	125	1.33	6.85
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	3.4	16.4	0.24	1.15
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				
State Aid	33.8	187	1.2	6.62

Number of Fatalities by Functional Classification
5 Year Average

Legend: 2009-2013, 2010-2014, 2011-2015, 2012-2016, 2013-2017
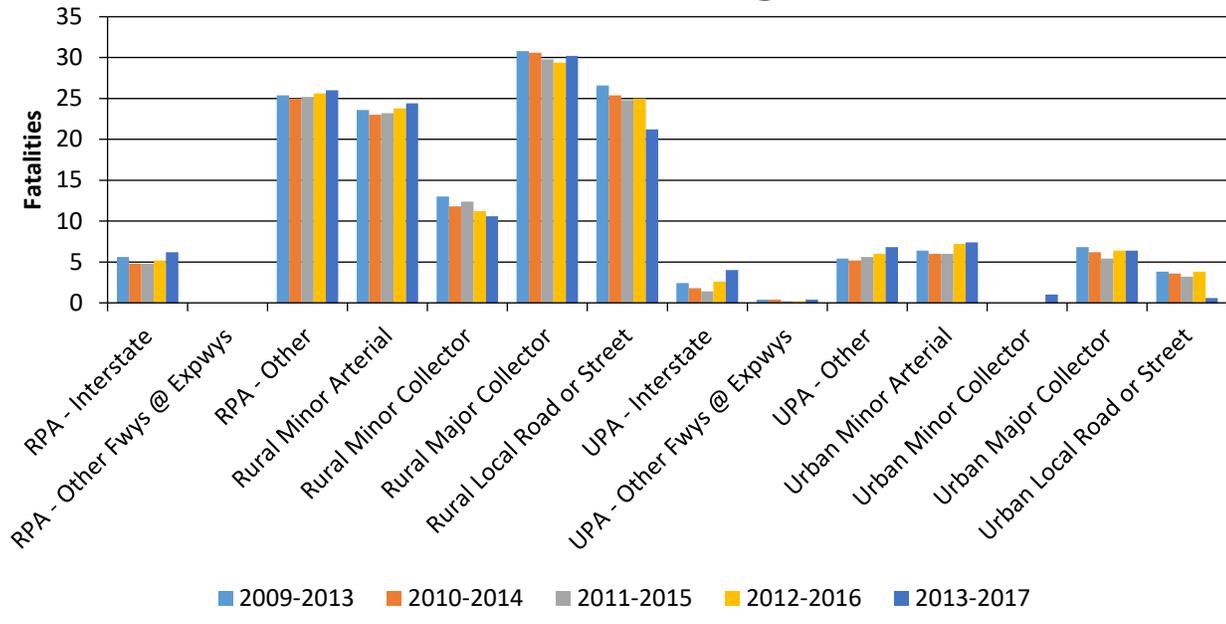
Number of Serious Injuries by Functional Classification
5 Year Average
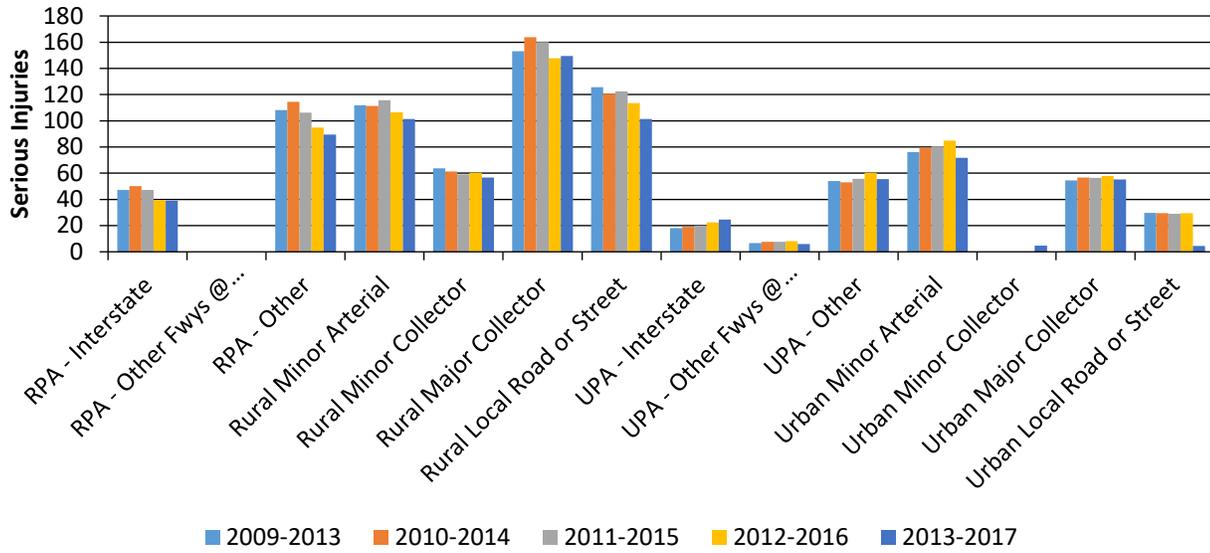
Legend: 2009-2013, 2010-2014, 2011-2015, 2012-2016, 2013-2017

Fatality Rate (per HMVMT) by Functional Classification
5 Year Average

Legend: 2009-2013, 2010-2014, 2011-2015, 2012-2016, 2013-2017

Serious Injury Rate (per HMVMT) by Functional Classification
## 5 Year Average

Number of Fatalities by Roadway Ownership
5 Year Average
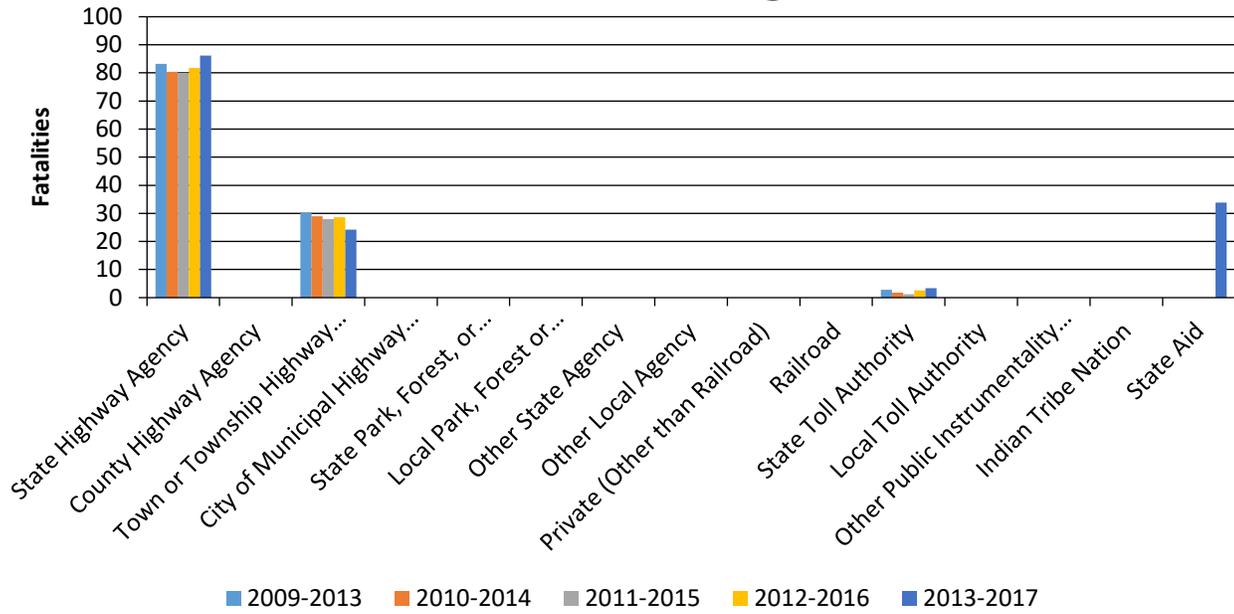
# Number of Serious Injuries by Roadway Ownership
5 Year Average
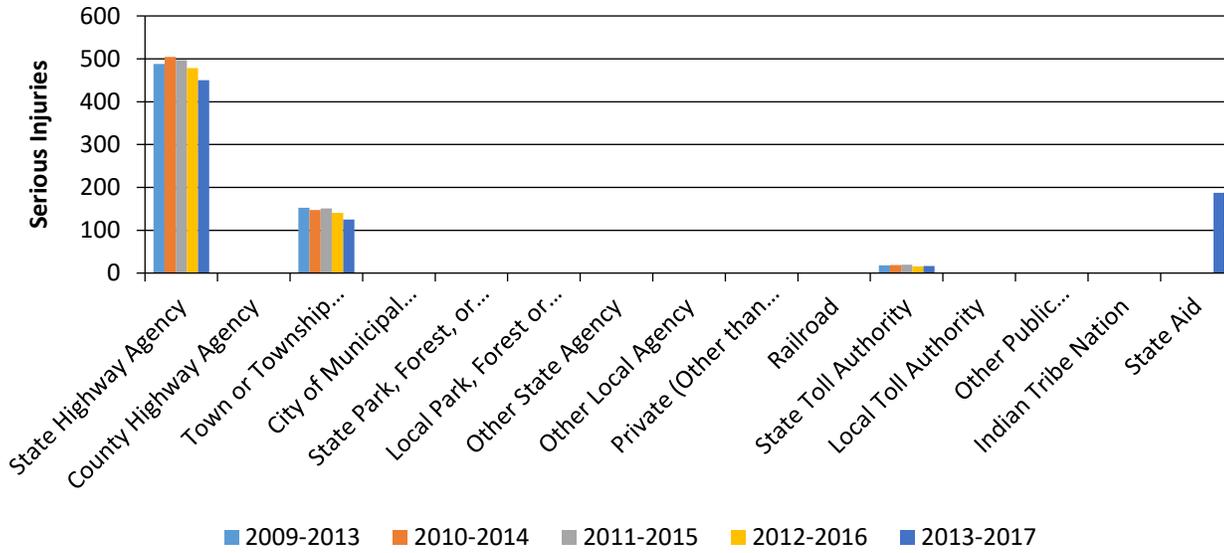
Fatality Rate (per HMVMT) by Roadway Ownership
5 Year Average
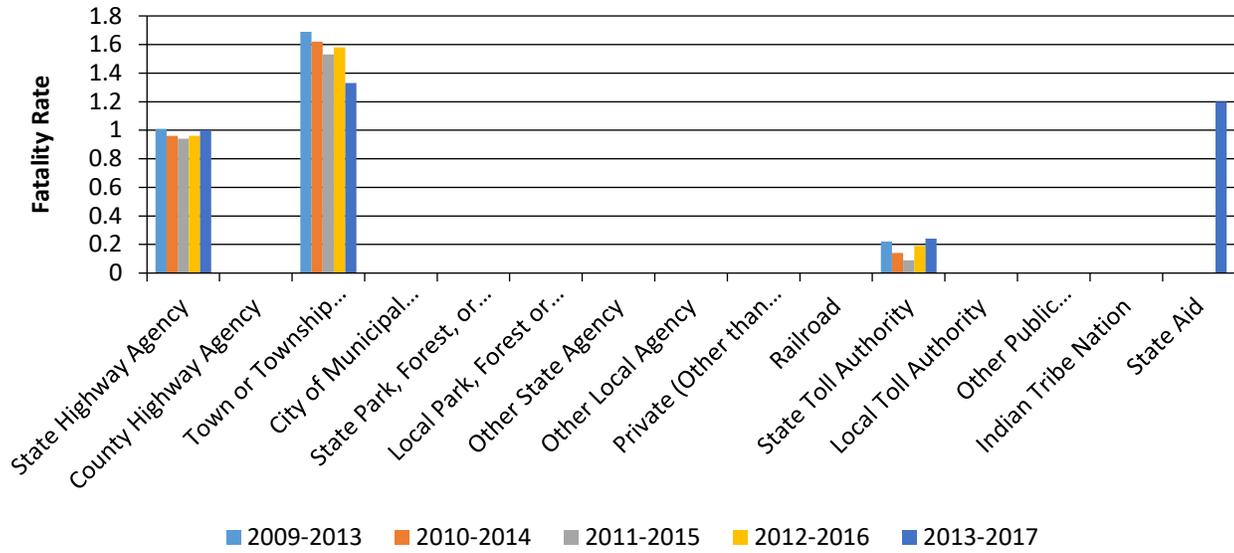
Legend: 2009-2013 2010-2014 2011-2015 2012-2016 2013-2017

Serious Injury Rate (per HMVMT) by Roadway Ownership
5 Year Average

Legend: 2009-2013, 2010-2014, 2011-2015, 2012-2016, 2013-2017
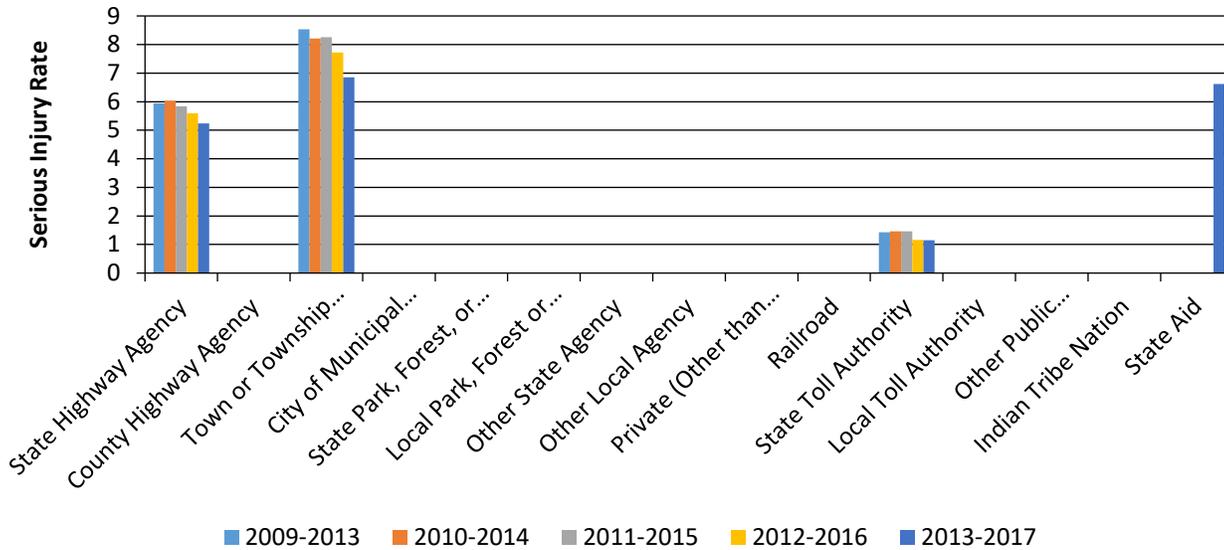
Enter additional comments here to clarify your response for this question or add supporting information.

Are there any other aspects of the general highway safety trends on which the State would like to elaborate?

Yes

Provide additional discussion related to general highway safety trends.

Key areas for Maine are Lane Departure (both head on and went off road) and pedestrians. Motorcycle fatalities which had increased sharply in 2015, moderated in 2016, but increased again in 2017.

Safety Performance Targets
Safety Performance Targets

Calendar Year 2019 Targets *

Number of Fatalities   165.0

Describe the basis for established target, including how it supports SHSP goals.

There are some positive and negative influencers along with assumptions at play in the near future that will limit what improvement can be expected - Maine's first goal is to stabilize the increasing trends that are being experienced, and then return to an improving trend. • Economy will remain fairly stable and fuel prices will stay at moderate levels that will not significantly impact travel. • Multi-agency safety efforts will continue to be refined and focused on primary serious crash trends such as lane departure and pedestrians. • Law enforcement agencies will continue to experience enforcement and staffing challenges, with increasing demands beyond traffic safety reducing the effective crash-reducing impact that their on-road presence has. • Impaired driving is a growing concern both due to legalization of marijuana and increased illicit drug use like opiates, etc. That growing impairment problem translates to serious crash exposures. • Maine's VMT will at the least remain stable at the current high levels or show slight increase based on the economic factors cited earlier. Some regional increases in traffic exposure may occur and decrease the level of service on select high volume roads. Maine's Safety Performance Targets support the goals of the SHSP. A new SHSP was released in late 2017 and included many strategic updates. Fatalities increased again in 2017, largely impacted by Maine's higher Pedestrian and Motorcycle deaths. We hope Maine's increases over the past three years have hit their peak. Fatality Performance target looks to slightly decrease this number in 2018 and slightly more decrease for 2019. This target will continue to be conservative while we monitor both local and national trends – our first step is to take continued strategic actions to stabilize results and then strive for effective improvements that will move the trend back downward.

Number of Serious Injuries   737.6

Describe the basis for established target, including how it supports SHSP goals.

Serious Injuries is one of Maine's Safety Performance Areas that have shown fairly steady improvement over the years, but it too, has erratic performance periods. Maine's target: • Leaves 2018/2019 flat for the next two years, in line with the average recent lows of 2015/2016. These numbers will still realize an improvement in 5 year numbers, from 781.6 benchmark in 2017 to 737.6 in 2019 (a 5.6% improvement over the baseline). • All other influencing factors would remain the same as stated in the earlier Fatalities target discussion.

Fatality Rate   1.100

Describe the basis for established target, including how it supports SHSP goals.

The mileage exposure used in the rate development anticipates some increase in traffic volume, but does anticipate some flattening of the increasing trend we've experienced in recent years. There are some positive and negative influencers along with assumptions at play in the near future that will limit what improvement can be expected - Maine's first goal is to stabilize the increasing trends that are being experienced, and then return to an improving trend. • Economy will remain fairly stable and fuel prices will stay at moderate levels that will not significantly impact travel. • Multi-agency safety efforts will continue to be refined and focused on primary serious crash trends such as lane departure and pedestrians. • Law enforcement

agencies will continue to experience enforcement and staffing challenges, with increasing demands beyond traffic safety reducing the effective crash-reducing impact that their on-road presence has. • Impaired driving is a growing concern both due to legalization of marijuana and increased illicit drug use like opiates, etc. That growing impairment problem translates to serious crash exposures. • Maine's VMT will at the least remain stable at the current high levels or show slight increase based on the economic factors cited earlier. Some regional increases in traffic exposure may occur and decrease the level of service on select high volume roads. Maine's Safety Performance Targets support the goals of the SHSP. A new SHSP was released in late 2017 and included many strategic updates. Fatalities increased again in 2017, largely impacted by Maine's higher Pedestrian and Motorcycle deaths. We hope Maine's increases over the past three years have hit their peak. Fatality Performance target looks to slightly decrease this number in 2018 and slightly more decrease for 2019. This target will continue to be conservative while we monitor both local and national trends – our first step is to take continued strategic actions to stabilize results and then strive for effective improvements that will move the trend back downward.

Serious Injury Rate   4.900

Describe the basis for established target, including how it supports SHSP goals.

The mileage exposure used in the rate development anticipates some increase in traffic volume, but does anticipate some flattening of the increasing trend we've experienced in recent years. Serious Injuries is one of Maine's Safety Performance Areas that have shown fairly steady improvement over the years, but it too, has erratic performance periods. Maine's target: • Leaves 2018/2019 flat for the next two years, in line with the average recent lows of 2015/2016. These numbers will still realize an improvement in 5 year numbers, from 781.6 benchmark in 2017 to 737.6 in 2019 (a 5.6% improvement over the baseline). • All other influencing factors would remain the same as stated in the earlier Fatalities target discussion.

Total Number of Non-Motorized Fatalities and Serious Injuries   91.0

Describe the basis for established target, including how it supports SHSP goals.

NON-MOTORIZED FATAL AND SERIOUS INJURY is a complex category that includes both Bike and Pedestrian data AND both Fatal and Serious Injury outcomes. Pedestrian Fatalities have sharply spiked in 2015 through 2017, but serious injuries (the larger proportion of this performance area) have been more stable. Overall, small number exposures are being evaluated here, so year-to-year variances are expected. • Overall plan is to first stabilize the experience and look for small incremental improvements in 2018-2019. • In addition to the general influencers mentioned in the Fatalities target, a focused pedestrian outreach program has been developed and launched in May 2017 and continues into 2018. The hope is that will moderate the number of pedestrian fatalities currently experienced.

Enter additional comments here to clarify your response for this question or add supporting information.

Describe efforts to coordinate with other stakeholders (e.g. MPOs, SHSO) to establish safety performance targets.

ALL stakeholders (MPOs, Maine Bureau of Highway Safety (BHS), NHTSA, FHWA, MaineDOT) attended a safety performance targets setting work shops in 2016/17. From there, Maine Bureau of Highway Safety, NHTSA, FHWA, MaineDOT - all communicated together to arrive at agreed upon goals. BHS have reported identical targets in their 2017 submitted HSP and again in 2018. MaineDOT internally reviews proposed targets to make sure they are in context with latest influencing factors.

MaineDOT has earlier discussed its target setting philosophy with MPOs and how it would translate to MPO performance targets. MPO 2019 expectations essentially will mirror the incremental improvements of the state-wide targets based on 20 17 benchmarks for each MPO (same approach as used for 2018, that seemed to be well. MPO targets are sent out to each MPO along with their 2017 benchmarks, and an opportunity to further discuss and adjust are provided to the MPOs.

Does the State want to report additional optional targets?

No

Enter additional comments here to clarify your response for this question or add supporting information.

None

Applicability of Special Rules

Does the HRRR special rule apply to the State for this reporting period?

No

Enter additional comments here to clarify your response for this question or add supporting information.

Provide the number of older driver and pedestrian fatalities and serious injuries 65 years of age and older for the past seven years.

PERFORMANCE MEASURES	2011	2012	2013	2014	2015	2016	2017
Number of Older Driver and Pedestrian Fatalities	27	19	25	29	25	26	23
Number of Older Driver and Pedestrian Serious Injuries	69	79	94	89	74	70	75
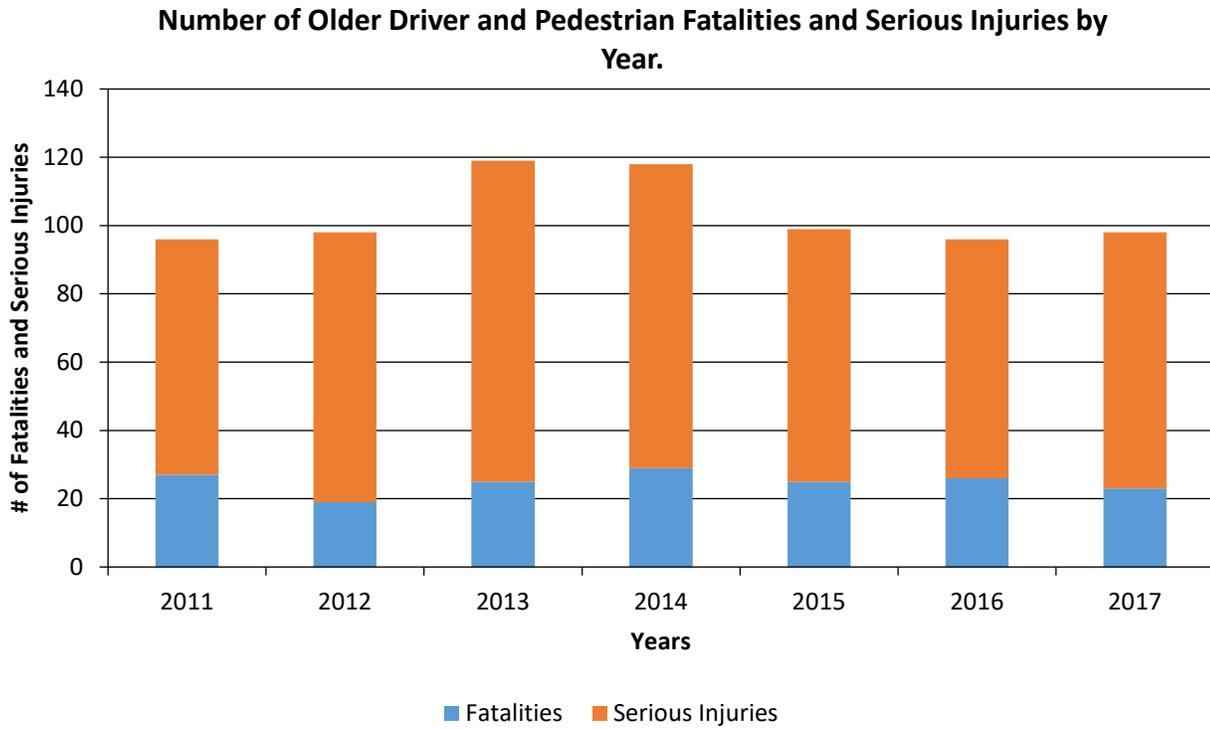
Number of Older Driver and Pedestrian Fatalities and Serious Injuries by Year.

Enter additional comments here to clarify your response for this question or add supporting information.

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

Change in fatalities and serious injuries
Benefit/Cost Ratio

Enter additional comments here to clarify your response for this question or add supporting information.

Infrastructure projects are evaluated each year with results included with HSIP (before/after injuries and B/C). Systemic improvements like rumble strips and median cable barriers are periodically reviewed for collective performance where installed.

Based on the measures of effectiveness selected previously, describe the results of the State's program level evaluations.

Maine's fatalities have increased in the last three years after reaching a 70-year low in 2014. Performance there is not good.

Serious injury rate however has been steadily decreasing..

Overall Benefit-Cost performance on mitigations has been good. Systemic Installations also have showed positive performance, and are leading the state to evaluate extending the risk factors to expand installations to additional locations where safety performance would likely have significant benefit.

What other indicators of success does the State use to demonstrate effectiveness and success of the Highway Safety Improvement Program?

miles improved by HSIP
More systemic programs
Policy change
Increased awareness of safety and data-driven process
Increased focus on local road safety
Other-Pedestrian Strategic Focus Outcomes

Enter additional comments here to clarify your response for this question or add supporting information.

Are there any significant programmatic changes that have occurred since the last reporting period?

Yes

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

A new SHSP was developed and released in late 2017.

Safety Manager has retired and MaineDOT will be fortifying this role with 2 higher classification staff people (one at a Director role) to improve a variety of aspects of the operation. Crash Records will be integrated into the Safety Office (previously with Traffic Engineering)

Effectiveness of Groupings or Similar Types of Improvements

Present and describe trends in SHSP emphasis area performance measures.

Year 2017

SHSP Emphasis Area	Targeted 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)
Lane Departure	Head On+Went Off Road	99.8	421.4	0.68	2.87
Intersections	All	21	181.2	0.14	1.23
Pedestrians	All	15.4	52.6	0.1	0.36
Bicyclists	All	2.4	22.6	0.02	0.15
Older Drivers	All	42.6	178.6	0.29	1.21
Motorcyclists	All	20.2	132.2	0.14	0.9

Number of Fatalities
5 Year Average

Legend: 2009-2013, 2010-2014, 2011-2015, 2012-2016, 2013-2017
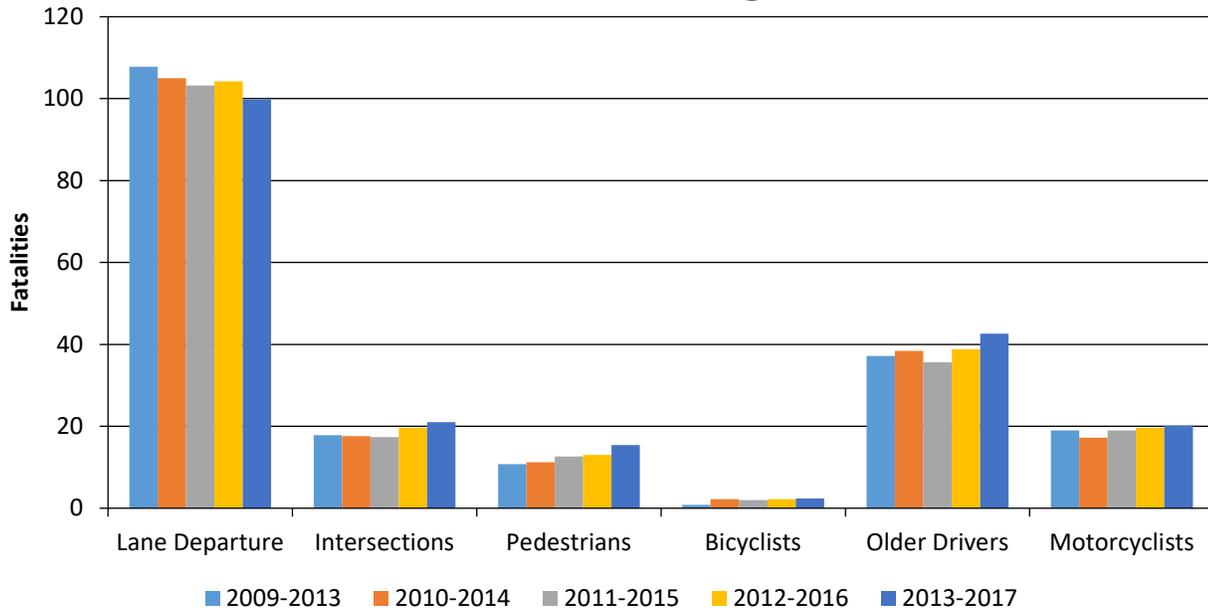
Number of Serious Injuries
5 Year Average

Legend: 2009-2013, 2010-2014, 2011-2015, 2012-2016, 2013-2017
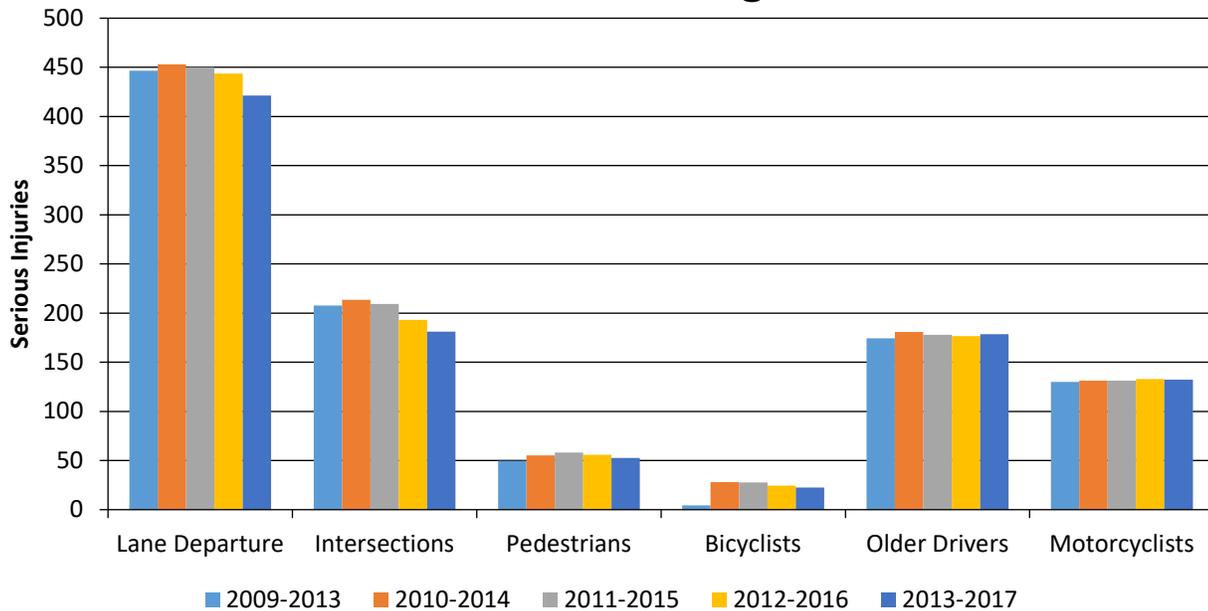
Fatality Rate (per HMVMT)
5 Year Average
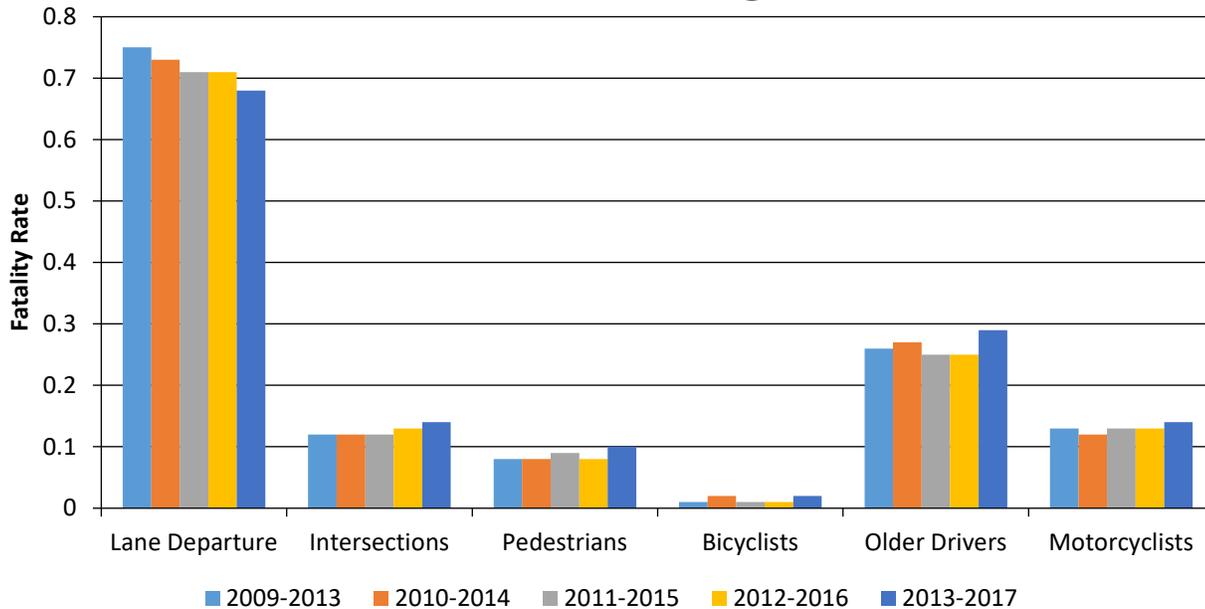
Serious Injury Rate (per HMVMT)
5 Year Average
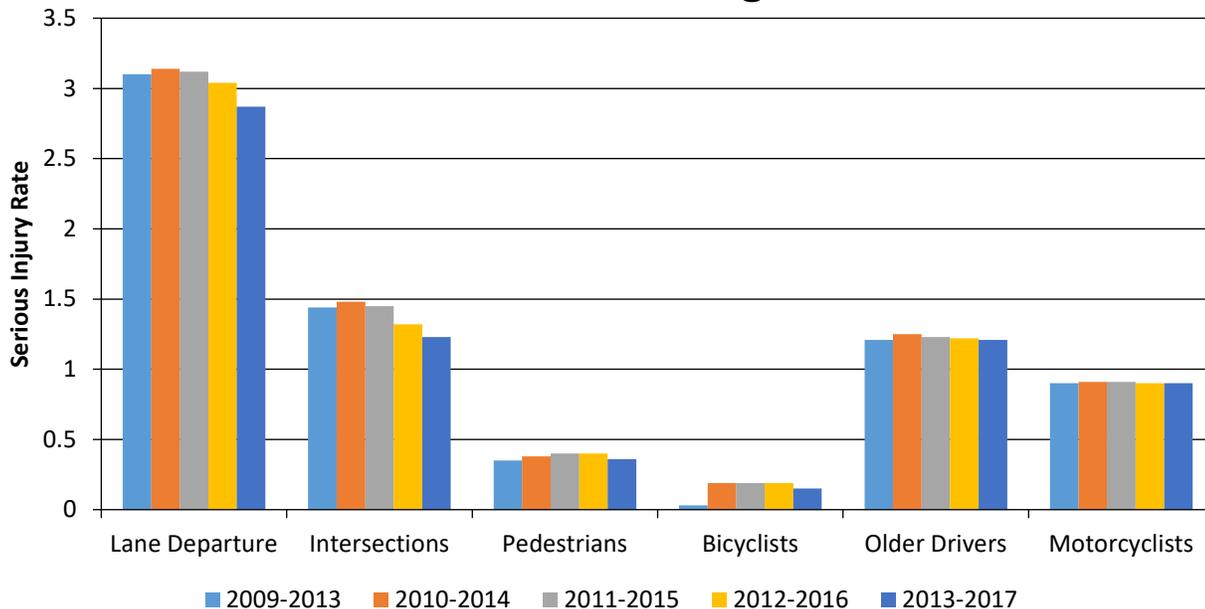
Enter additional comments here to clarify your response for this question or add supporting information.

Data query criteria
For 'Intersections'= 3, 4, or 5 or more legs, but does NOT include roundabouts.
For 'Pedestrians'=Person Type = Pedestrian, Injury level = Incapacitating (similar approach for Bike)

Has the State completed any countermeasure effectiveness evaluations during the reporting period?

Yes

Please provide the following summary information for each countermeasure effectiveness evaluation.

CounterMeasures:	Median Cable Barrier
Description:	Median cable barriers were installed on various sections of interstate and a section of US 1, Brunswick where median widths were 50' or less.
Target Crash Type:	Cross median
Number of Installations:	
Number of Installations:	
Miles Treated:	76
Years Before:	5
Years After:	6
Methodology:	Simple before/after
Results:	4 fatalities occurred prior to installation, none have been reported since. Minor crashes involving vehicles striking the barrier system have increased.
File Name:	InterstateCrossoverANDwrongwayRPT_APR1218.docx

Project Effectiveness

Provide the following information for previously implemented projects that the State evaluated this reporting period.

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
Winthrop	Rural Minor Arterial	Roadway	Roadway - other	85.00	124.00	2.00	1.00	10.00	1.00	42.00	44.00	139.00	170.00	396.924444444444
Sabattus	Urban Principal Arterial (UPA) - Other	Roadway	Roadway widening - add lane(s) along segment	2.00	8.00			1.00	1.00	2.00	1.00	5.00	10.00	0.631566692860677
Jay	Rural Major Collector	Roadway	Roadway - other	6.00	2.00				1.00	2.00	4.00	8.00	7.00	-2.32171355384787
Bangor	Urban Minor Arterial	Roadway signs and traffic control	Roadway signs and traffic control - other	20.00	29.00				1.00	15.00	9.00	35.00	39.00	1.96573207526469
Sanford	Urban Principal Arterial (UPA) - Other	Roadway delineation	Roadway delineation - other	15.00	19.00				2.00	6.00	8.00	23.00	27.00	60.8269023671204
Wells	Rural Minor Arterial	Roadway signs and traffic control	Roadway signs and traffic control - other	9.00	2.00					1.00	2.00	10.00	4.00	-0.53380243244063
Belgrade	Rural Minor Arterial	Roadway signs and traffic control	Roadway signs and traffic control - other	2.00	7.00				1.00	4.00	2.00	7.00	9.00	22.7663454024486
Waldoboro	Rural Principal Arterial (RPA) - Other	Roadway signs and traffic control	Roadway signs and traffic control - other	2.00	1.00							2.00	1.00	0.499531689041524

Enter additional comments here to clarify your response for this question or add supporting information.

Projects above reflect those funded through HSIP that are location specific (signing and line striping projects are examples of what is not included in this list) . Cumulative B/C is 34.3, largely positively influenced by the strong performance of the rumble strip project - shown in the first row of the data above.

Are there any other aspects of the overall HSIP effectiveness on which the State would like to elaborate?

Yes

Describe any other aspects of HSIP effectiveness on which the State would like to elaborate.

Despite increasing fatal trends over the last several years, Maine's HSIP data reflects successful outcomes with particularly good results in its systemic efforts (rumble strips and median cable barriers)

Compliance Assessment

What date was the State's current SHSP approved by the Governor or designated State representative?

11/20/2017

What are the years being covered by the current SHSP?

From: 2017 To: 2022

When does the State anticipate completing it's next SHSP update?

2022

Enter additional comments here to clarify your response for this question or add supporting information.

SHSP has just been fully updated and approved by FHWA using current reporting criteria. A media event was held in January 2018.

Provide the current status (percent complete) of MIRE fundamental data elements collection efforts using the table below.

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT										
Segment Identifier (12)	100	100					100	100	100	100
Route Number (8)	100	100								
Route/Street Name (9)	100	100								
Federal Aid/Route Type (21)	100	100								
Rural/Urban Designation (20)	100	100					100	100		
Surface Type (23)	100	100					100	100		
Begin Point Segment Descriptor (10)	100	100					100	100	100	100
End Point Segment Descriptor (11)	100	100					100	100	100	100
Segment Length (13)	100	100								
Direction of Inventory (18)	100	100								
Functional Class (19)	100	100					100	100	100	100
Median Type (54)	100	100								

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
Access Control (22)	100	100								
One/Two Way Operations (91)	100	100								
Number of Through Lanes (31)	100	100					100	100		
Average Annual Daily Traffic (79)	100	100					100	100		
AADT Year (80)	100	100								
Type of Governmental Ownership (4)	100	100					100	100	100	100
INTERSECTION										
Unique Junction Identifier (120)			0	0						
Location Identifier for Road 1 Crossing Point (122)			0	0						
Location Identifier for Road 2 Crossing Point (123)			0	0						
Intersection/Junction Geometry (126)			0	0						
Intersection/Junction Traffic Control (131)			0	0						
AADT for Each Intersecting Road (79)			100	100						
AADT Year (80)			100	100						
Unique Approach Identifier (139)			0	0						
INTERCHANGE/RAMP										
Unique Interchange Identifier (178)					0	0				
Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	100				
Location Identifier for Roadway at Ending Ramp Terminal (201)					100	100				
Ramp Length (187)					100	100				
Roadway Type at Beginning of Ramp Terminal (195)					100	100				

MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
Roadway Type at End Ramp Terminal (199)					100	100				
Interchange Type (182)					0	0				
Ramp AADT (191)					100	100				
Year of Ramp AADT (192)					100	100				
Functional Class (19)					100	100				
Type of Governmental Ownership (4)					100	100				
Totals (Average Percent Complete):	100.00	100.00	25.00	25.00	81.82	81.82	100.00	100.00	100.00	100.00

*Based on Functional Classification

Enter additional comments here to clarify your response for this question or add supporting information.

Maine is in overall good shape for MIRE.

While there may be zero's entered in some areas above, MaineDOT does, in fact, have the core of the necessary required info in our data, but may have certain characteristics of those MIRE elements that we look to enhance so they fully meet MIRE descriptions. For example, for INTERSECTIONS - the UNIQUE JUNCTION IDENTIFIER... MaineDOT does currently have a NODE/ELEMENT identifier for all roads.

But we know that as we are updating our systems, these elements may be enhanced. Those '0' FDE's, even though they are largely in place, we are showing 0% just as an internal reminder to review.

The one element that needs to be newly developed is Unique Interchange Identifier (178).

MaineDOT needs to develop intersection and interchange assets, including a way of identifying and designating 'approaches' to intersection and interchanges.

Describe actions the State will take moving forward to meet the requirement to have complete access to the MIRE fundamental data elements on all public roads by September 30, 2026.

Maine is fortunate to have very good data for all classes of roads, including local. As a result, MaineDOT has a limited number of outstanding MIRE needs. The additional needs are definitely on MaineDOT's radar and we expect to be meeting the requirements before the 9/30/26 deadline.

Provide the suspected serious injury identifier, definition and attributes used by the State for both the crash report form and the crash database using the table below. Please also indicate whether or not these elements are compliant with the MMUCC 4th edition criteria for data element P5. Injury Status, suspected serious injury.

CRITERIA	SUSPECTED SERIOUS INJURY IDENTIFIER(NAME)	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY DEFINITION	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS)	MMUCC 4TH EDITION COMPLIANT *
Crash Report Form	A Injury - Incapacitating Injury	No	N/A	No	N/A	No
Crash Report Form Instruction Manual	Incapacitating Injury	No	Includes: Severe Laceration, Broken of Distorted Limb, Skull or Chest Injury Abdominal Injury, Unconciousness at or when taken from the crash scene, Unable	No	NA	No

CRITERIA	SUSPECTED SERIOUS INJURY IDENTIFIER(NAME)	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY DEFINITION	MMUCC 4TH EDITION COMPLIANT *	SUSPECTED SERIOUS INJURY ATTRIBUTES(DESCRIPTORS)	MMUCC 4TH EDITION COMPLIANT *
			to leave the crash scene without assistance.			
Crash Database	A Injury - Incapacitating Injury	No	N/A	No	N/A	No
Crash Database Data Dictionary	A injury = Incapacitating Injury	No	(From metadata) A Inj: Person had a bleeding wound, had a distorted member, or had to be carried from the scene.	No	See above	No

Please describe the actions the State is taking to become compliant by April 15, 2019.

Maine crash reporting partners have met on this and to discuss other updates to crash reporting criteria and crash report form content. Those updates should be incorporated shortly. It's about ready to go, and we just need to work out the details for production. Here's more on that process:

State of Maine Crash Report Form MMUCC V5 Update

The meeting attendees agreed to several changes to the State of Maine Crash Report Form with the goal of improving data collection and Model Minimum Uniform Crash Criteria (MMUCC) compliance.

Updated and New Data Elements

The updated and new (denoted by *) data elements are:

- Secondary Crash*
- Injury Degree (see detail below)
- Driver Distracted Action
- Driver Distracted Source
- Trailer VIN
- Trailer Plate Number
- Trailer Plate State
- Law Enforcement Suspects Alcohol Use
- Law Enforcement Suspects Drug Use
- Automated Drivers
- Extricated
- Vehicle Types
- Vehicle Makes

INJURY DEGREE Detail:
Injury Degree Attributes
Description

The injury severity level for a person Involved in a crash. The determination of which attribute to assign should be based on the latest information available at the time the report is completed, except as described below for fatal Injuries.

Fatal Injury (K): A fatal injury is any injury that results in death within 30 days after the motor vehicle crash in which the injury occurred. If the person did not die at the scene but died within 30 days of the motor vehicle crash in which the injury occurred, the injury classification should be changed from the attribute previously assigned to the attribute "Fatal Injury."

Suspected Serious Injury (A): A suspected serious injury is any injury other than fatal that results in one or more of the following:

- Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood

2018 Maine Highway Safety Improvement Program
- Broken or distorted extremity (arm or leg)
- Crush injuries
- Suspected skull, chest or abdominal injury other than bruises or minor lacerations
- Significant burns (second and third degree burns over 10% or more of the body)
- Unconsciousness when taken from the crash scene
- Paralysis

Suspected Minor Injury (B): A minor injury is any injury that is evident at the scene of the crash, other than fatal or serious injuries. Examples include lump on the head, abrasions, bruises, minor lacerations (cuts on the skin surface with minimal bleeding and no exposure of deeper tissue/muscle).

Possible Injury (C): A possible injury is any injury reported or claimed which is not a fatal, suspected serious, or suspected minor injury. Examples include momentary loss of consciousness, claim of injury, limping, or complaint of pain or nausea. Possible injuries are those that are reported by the person or are indicated by his/her behavior, but no wounds or injuries are readily evident.

No Apparent Injury (O): No apparent injury is a situation where there is no reason to believe that the person received any bodily harm from the motor vehicle crash. There is no physical evidence of injury and the person does not report any change in normal function.

Enter additional comments here to clarify your response for this question or add supporting information.

Did the State conduct an HSIP program assessment during the reporting period?
No

When does the State plan to complete it's next HSIP program assessment.

2022

Enter additional comments here to clarify your response for this question or add supporting information.

Most recent review was 5/3/17 and summary of findings were covered in last year's HSIP annual report.

Optional Attachments

Program Structure:

HSIP Project Selection Process Final 1-27-18.docx

Project Implementation:

Safety Performance:

Evaluation:

InterstateCrossoverANDwrongwayRPT_APR1218.docx

Compliance Assessment:

Glossary

5 year rolling average	means the average of five individuals, 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.