MAINE

HIGHWAY SAFETY
IMPROVEMENT PROGRAM
2019 ANNUAL REPORT

HSIP

U.S. Department of Transportation
Federal Highway Administration

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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.

Spot improvement project selection, particularly with regard to intersection safety, has been more driven by HSM methodology this year, with the deployment of a custom GIS intersection network screening process which computes excess crashes with EB adjustment for all intersections on public highways in Maine regardless of jurisdiction. We continue to work on collecting the necessary MIRE data elements such as horizontal curvature to expand our network screening capabilities to include roadway segment geometry in addition to measured crash experience. In addition to spot improvements projects, Maine has used lane departure crash data to systemically evaluate our highway network for potential centerline rumble strip locations as well as median cable barrier locations and has funded safety projects for both countermeasures. Due to continuing noise concerns expressed by residents, Maine's rumble strip program consisted entirely of sinusoidal style installations in 2018.

Maine is looking to expand its 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 horizontal 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 executives created a new Office of Safety led by a director level position that reports directly to the Chief Engineer. The new Office of Safety consists of a highway safety engineering section and a crash records section providing a single unit within the Department with the resources needed to perform data-driven safety analysis and coordinate safety candidate identification and evaluation efforts. The primary responsibility of HSIP development and management was moved from our Bureau of Planning to the new Office of Safety.

While Maine's overall crash rates have increased steadily since 2012, fatalities dropped this year from 172 in 2017 to 137 in 2018. This reduction was in large part to significantly lower pedestrian fatalities for the year. Serious injury counts and rates have continued to decrease steadily despite the increase in overall crashes statewide.

The Department has also changed its' oversight committee structure slightly. A Safety/Mobility Committee was created within MaineDOT comprised of a cross representation of MaineDOT functional areas that meets monthly to review and coordinate work on potential safety and mobility projects, and to provide input on prioritization of HSIP projects for inclusion in the work plan.

2019 Safety Performance Targets were successfully coordinated internally, with Maine's Highway Safety Office (Bureau of Highway Safety) and MPO partners. The 2020 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.

After the submission of our 2018 HSIP report, MaineDOT executives created a new Office of Safety led by a director level position that reports directly to the Chief Engineer. The new Office of Safety consists of a highway safety engineering section and a crash records section providing a single unit within the Department with the resources needed to perform data-driven safety analysis and coordinate safety candidate identification and evaluation efforts. The primary responsibility of HSIP development and management was moved from our Bureau of Planning to the new Office of Safety.

In addition to identification of safety candidates through data driven analysis and network screening, the Office of Safety coordinates regularly with a wide variety of resources within MaineDOT including Regional Operations, Local Roads, our Active Transportation Planner, Traffic Engineering, and Regional Planners to identify additional areas of concern and potential safety and spot improvement candidates and to ensure that HSIP funding is being used for projects that support the initiatives and strategies identified in Maine's Strategic Highway Safety Plan.

The Department has also changed its' oversight committee structure slightly. A Safety/Mobility Committee was created within MaineDOT comprised of a cross representation of MaineDOT functional areas that meets monthly to review and coordinate work on potential safety and mobility projects, and to provide input on prioritization of HSIP projects for inclusion in the work plan. This committee is co-chaired by the Safety Office Director and the State Traffic Engineer.

Where is HSIP staff located within the State DOT?
  Other-Office of Safety

How are HSIP funds allocated in a State?

- SHSP Emphasis Area Data
- Other-Use Benefit Cost Criteria

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

Local roads are included with the state-wide project candidates. Maine captures crash and roadway data for all

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public roads and can evaluate all locations within the state based on similar crash and benefit/cost performance comparisons. Local safety project requests based on crash concerns are reviewed and evaluated as part of the candidate screening process using our network safety screening tools and methods.

Maine has an on-line public crash data query tool available to them to help with local analysis - and MPOs/RPOs have utilized this tool and praise its capabilities. The Office of Safety is also available to provide data and technical assistance to MPOs and municipalities that would like help evaluating their safety areas of concern.

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

- Design
- Districts/Regions
- Local Aid Programs Office/Division
- Maintenance
- Operations
- Planning
- Traffic Engineering/Safety
- Other-Environmental

Describe coordination with internal partners.

Though the Office of Safety is the primary unit responsible for the development of HSIP project candidates, we coordinate with other units throughout the organization daily. Candidates generated from data-driven safety analysis or identified through other means are field reviewed through road safety audits or assessments that generally involve our region traffic engineers, regional planners, active transportation planner, and ADA coordinator. We also include other subject matter experts throughout the Department as warranted based on the type of safety issues we are investigating. Other systemic and spot improvement HSIP candidates are generated by our Transportation Analysis Unit in the Bureau of Planning and Traffic Engineering Group in the Bureau of Maintenance and Operations. Appropriate countermeasures are evaluated by the Office of Safety for each candidate using the Highway Safety Manual and checked to make sure the proposed candidate is an HSIP eligible activity in support of the Strategic Highway Safety Plan. This results in a vetted list of projects recommended for funding ranked in order of safety benefit/cost.

In our experience, safety and mobility concerns are most often inextricably linked and MaineDOT strives to consider both throughout the project evaluation process. To that end, the Department formed a new Safety/Mobility Committee charged with functioning as a formal vehicle for communication and coordination of all work being performed in both areas. The Safety/Mobility Committee is co-chaired by the Director of the Office of Safety, and State Traffic Engineer and permanent members of this committee come from the following units within the Department:

- Office of Safety (Engineering)
- Office of Safety (Crash Records)
- M&O (Traffic Engineering)
- M&O (Region Traffic Engineer)
- M&O (ITS Manager)
- Planning (Regional Planner)
- Planning (Active Transportation Planner)
- Planning (Transportation Analysis)
- Project Development (Multimodal Program Director)
- Results & Information Office (ADA Coordinator)

- FHWA Maine Division (Safety & Operations Engineer)

The Safety/Mobility committee generates a prioritized list of projects recommended for funding to the Department's Core Executive Team for final approval and inclusion in the work plan.

Identify which external partners are involved with HSIP planning.

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

Describe coordination with external partners.

The MaineDOT Office of Safety has continuing communications and good relationships with all State, local and Federal partners. In addition to standard state partners such as the Bureau of Highway Safety, we 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. One means of communicating and coordinating with these external partners is through the Maine Transportation Safety Coalition (MTSC) which meets quarterly for the purpose of coordination.

Our coordination efforts with our MPO/RPO partners occurs on an ongoing basis as well in addition to the performance target setting activities required each year. We try to include these partners in our road safety audit/assessment efforts and obtain their assistance in reviewing High Crash Locations within their respective areas for further investigation by the Office of Safety. These partners are also included in our annual regional "synergy" meetings as part of the work plan development process to coordinate all project work including safety work.

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

MaineDOT formed a dedicated Office of Safety to manage and coordinate the HSIP program. Reorganization of existing units to move the crash records unit formerly housed in Maintenance and Operations to the new Office of Safety. Creation of a Safety/Mobility Committee to better coordinate all safety and mobility project planning work.

Program Methodology

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

Yes
FileName:
HSIP Project Selection Process Final 1-27-18.docx

Our HSIP documentation will soon be revised to better reflect the organizational and committee structure changes at MaineDOT

Select the programs that are administered under the HSIP.

- Bicycle Safety
- Horizontal Curve
- Intersection
- Left Turn Crash
- Local Safety
- Low-Cost Spot Improvements
- Median Barrier
- Pedestrian Safety
- Right Angle Crash
- Roadway Departure
- Rural State Highways
- Segments
- Shoulder Improvement
- Sign Replacement And Improvement
- Skid Hazard
- Wrong Way Driving
- Other-Median Cable Barrier -install completed in 2014
- Other-Speed management
- Other-Guard rail/end treatment upgrades

Program: Bicycle Safety

Date of Program Methodology:8/1/2014

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?
Other-As speci

What data types were used in the program methodology?

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?

- Crash frequency
- Crash rate
- Critical rate
- Excess proportions of specific crash types
- Probability of specific crash types
- Relative severity index

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

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?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Other-Being evaluated as a systemic need

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

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

How are projects under this program advanced for implementation?

- Other-Benefit to Cost ranking
- 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

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?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

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

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?

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

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway

All   crashes
Fatal and serious injury crashes only

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Critical rate
- Excess proportions of specific crash types
- Relative severity index

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

How are projects under this program advanced for implementation?

- Other-Benefit/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?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

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?

- Crash frequency
- Crash rate
- Critical rate
- Excess proportions of specific crash types
- Relative severity index

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

How are projects under this program advanced for implementation?

- Other-Usually work with MaineDOT's Local Roads unit
- 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: Low-Cost Spot Improvements

Date of Program Methodology:8/1/2014

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

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

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

Yes

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

Yes

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?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Other-Systemic need

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

- Other-Risk factors noted above.
- 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?

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?

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

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

- Crash frequency
- 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

How are projects under this program advanced for implementation?

- Other-These projects are normally coordinated through MaineDOT's Bike/Ped coordinator
- 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: Right Angle Crash

Date of Program Methodology:8/1/2014

What is the justification for this program?

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

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway

All   crashes
Fatal and serious injury crashes only

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Critical rate
- Excess proportions of specific crash types
- Relative severity index

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

How are projects under this program advanced for implementation?

- Other-Benefit/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: Roadway Departure

Date of Program Methodology:4/1/2017

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?
Other-Systemic funding - such as for centerline rumble strips

What data types were used in the program methodology?

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?

- Crash frequency
- Crash rate
- Critical rate
- Excess proportions of specific crash types
- Level of service of safety (LOSS)
- 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

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?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
	Traffic Volume	

What project identification methodology was used for this program?

- Other-Coordinated with towns where speed concerns are expressed

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

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: Segments

Date of Program Methodology:4/1/2017

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Other-Systemic funding - such as for centerline rumble strips

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Critical rate
- Excess proportions of specific crash types
- Level of service of safety (LOSS)
- 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

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: Shoulder Improvement

Date of Program Methodology:8/1/2014

What is the justification for this program?

- Addresses SHSP priority or emphasis area
- Other-Lane Departure, Bicycles, Pedestrians

What is the funding approach for this program?

What data types were used in the program methodology?

Crashes	Exposure	Roadway

All crashes
Fatal and serious injury crashes only

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Critical rate
- Excess proportions of specific crash types
- Relative severity index

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

How are projects under this program advanced for implementation?

- Other-Benefit/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: Sign Replacement And Improvement

Date of Program Methodology:8/1/2014

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

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

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

Yes

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

Yes

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?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway

All   crashes
Fatal and serious injury crashes only

What project identification methodology was used for this program?

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

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

Yes

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

Yes

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

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

Program: Wrong Way Driving

Date of Program Methodology:12/31/2017

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

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?

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

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?

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?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Other-Department saw this as a systemic need

What data types were used in the program methodology?

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

What project identification methodology was used for this program?

- Probability of specific crash types

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

No

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

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?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?
Funding set-aside

What data types were used in the program methodology?

Crashes	Exposure	Roadway
	Traffic Volume	

What project identification methodology was used for this program?

- 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?

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:10/1/2017

What is the justification for this program?

- 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?
Funding set-aside

What data types were used in the program methodology?

Crashes   **Exposure**   **Roadway**

Traffic
Volume
Other-posted speed limit

What project identification methodology was used for this program?

- Other-Evaluation of hardware

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

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?
40

HSIP funds are used to address which of the following systemic improvements?

- Cable Median Barriers
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Rumble Strips
- Upgrade Guard Rails

What process is used to identify potential countermeasures?

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

- SHSP/Local road safety plan
- Stakeholder input

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

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

MaineDOT continues to expand the use of ITS technologies and has assigned an ITS manager position within the Traffic Engineering section in the Bureau of Maintenance and Operations. The Department is in the process of creating our Transportation Management Center (TMC) and evaluating the deployment of additional technologies. The ITS Manager has a permanent/formal seat on the Department's newly-formed Safety/Mobility Committee.

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 created and deployed a web-based GIS application to perform network safety screening of intersection assets in accordance with the HSM. Specifically, we have chosen to screen using excess expected average crash frequency with EB adjustment as our methodology. We have extended this method further by computing excess crash costs to provide weight and focus to those facilities that are experiencing the most severe injuries and fatalities in our efforts to lessen the number and severity of these events. We are continuing to acquire the necessary MIRE data elements to perform similar screening on roadway segments but that is a work in progress. The Department also uses HSM methods to perform alternative countermeasure analysis for individual locations and and prioritization of projects recommended for funding.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

Calendar Year

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$8,152,420	$10,333,254	126.75%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$4,115,171	$4,115,171	100%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$0	$0	0%
Totals	$12,267,591	$14,448,425	117.78%

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%

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%

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%

Only the $4,115,171 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.

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 and pedestrian fatalities in 2018 were significantly lower than Maine's 2017 level.

Systemic safety 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 456 total miles installed through 2018. 2016 was the first year where we fielded calls on public noise-related concerns, and those continued to a lesser extent during 2018. MaineDOT's 2018 statewide rumble strip contract specified that only sinusoidal centerline rumble strips would be installed. That is likely to be the case moving forward.

MaineDOT used data-driven analysis to screen for horizontal curves with significant crash experience and identified specific areas where edge line/centerline rumble strips could be installed in the vicinity of the curve to decrease the likelihood of went-off-road crashes. These are programmed for installation in 2019.

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 2018.

Pedestrian traffic fatalities are still a concern and a focused outreach program continues to be delivered throughout the state in 2018. This program includes public engagement and road safety audits and seeks to identify potential bike/pedestrian hazard mitigation that could be funded through HSIP or other fund sources. MaineDOT is also in the process of developing a pedestrian safety toolbox to identify appropriate safety countermeasures for locations with demonstrated vehicle/pedestrian crash exposure.

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

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
022178.00	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	2	Locations	$37288.64	$41431.83	HSIP (23 U.S.C. 148)	Urban	Major Collector	4,767	25	State Highway Agency	Spot	Pedestrians	Identify opportunities for pedestrian infrastructure improvements including sidewalks and crossing improvements
020527.00	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	3	Locations	$459919.82	$574899.78	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0	25	State Highway Agency	Spot	Pedestrians	Identify opportunities for pedestrian infrastructure improvements including sidewalks and crossing improvements
019280.00	Roadway	Roadway - other	1	Locations	$4685734.27	$6407962.12	HSIP (23 U.S.C. 148)	Rural	Minor Collector	4,100	30	State Highway Agency	Spot	Pedestrians	Identify opportunities for pedestrian infrastructure improvements including sidewalks and crossing improvements
021910.00	Roadway	Roadway widening - add lane(s) along segment	1	Intersections	$159000	$1350000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	24,456	35	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
018822.00	Roadway	Roadway - other	1	Miles	$344000.78	$382223.09	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Roadway Departure	continue review of guardrail and end treatment safety performance.
022837.00	Roadway	Roadway - other	1	Intersections	$101000	$210000	HSIP (23 U.S.C. 148)	Rural	Major Collector	8,960	30	State Highway Agency	Spot	Intersections	Alternative solutions
022885.00	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	1	Intersections	$241200	$333000	HSIP (23 U.S.C. 148)	Urban	Major Collector	11,590	25	State Highway Agency	Spot	Intersections	develop solutions for

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															reviewed locations
019001.00	Roadway	Roadway - other	1	Intersections	$18450	$21000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	12,469	45	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
019002.00	Intersection traffic control	Intersection traffic control - other	1	Intersections	$1281596.09	$2047091.33	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	17,850	40	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
019006.00	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1	Intersections	$1118152.45	$1242391.61	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	8,361	40	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
020211.00	Intersection traffic control	Intersection traffic control - other	1	Intersections	$458506.78	$509451.75	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	13,068	45	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
020213.00	Intersection geometry	Intersection geometry - other	1	Intersections	$1154799.13	$1283110.15	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,053	55	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
020565.00	Intersection traffic control	Intersection traffic control - other	1	Intersections	$367363.51	$408181.68	HSIP (23 U.S.C. 148)	Urban	Major Collector	7,735	25	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
020568.00	Intersection traffic control	Intersection traffic control - other	1	Intersections	$1177699.14	$1465324.6	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	14,999	35	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
021783.00	Intersection traffic control	Intersection traffic control - other	1	Intersections	$2052000	$2280000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	10,997	50	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
022506.00	Intersection traffic control	Intersection traffic control - other	1	Intersections	$452013.87	$743302.31	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	13,051	40	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
022879.00	Intersection traffic control	Intersection traffic control - other	1	Intersections	$425000	$500000	HSIP (23 U.S.C. 148)	Rural	Major Collector	7,102	45	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
022887.00	Intersection traffic control	Intersection traffic control - other	1	Intersections	$182110.46	$283344.96	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,454	35	State Highway Agency	Spot	Intersections	develop solutions for

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															reviewed locations
023030.00	Intersection traffic control	Intersection traffic control - other	1	Intersections	$873000	$985000	HSIP (23 U.S.C. 148)	Rural	Major Collector	2,667	35	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
022871.00	Lighting	Lighting - other	1	Locations	$917919.44	$1084938.44	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	26,760	65	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
023014.00	Lighting	Intersection lighting	1	Intersections	$901219	$1031910	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	2,300		State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
020811.00	Interchange design	Extend existing lane on ramp	1	Ramps	$455697.22	$556995.78	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	25,240	60	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
023775.02	Roadway	Roadway - other	1	Locations	$1800	$40000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	9,011	50	State Highway Agency	Spot	Commercial Trucks and Buses	Large trucks are a safety concern due to the size and load differential between heavy trucks and passenger vehicles
020205.00	Intersection geometry	Intersection geometry - other	1	Intersections	$2374876.47	$2638750.42	HSIP (23 U.S.C. 148)	Rural	Major Collector	5,600	45	State Highway Agency	Spot	Intersections	Alternative solutions
020210.00	Intersection geometry	Intersection geometry - other	1	Intersections	$1378000.66	$2577345	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	8,295	50	State Highway Agency	Spot	Intersections	Alternative solutions
022692.00	Intersection geometry	Intersection geometry - other	1	Intersections	$3002700.68	$3803019.93	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	14,990	30	State Highway Agency	Spot	Intersections	Alternative solutions
022674.00	Interchange design	Installation of new lane on ramp	1	Locations	$681450.01	$809500	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	15,851	35	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
022675.00	Roadway	Roadway - other	0.23	Miles	$411944.06	$457715.6	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	7,968	55	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	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
022679.00	Roadway	Roadway - other	1	Locations	$162006.2	$186840.23	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	16,177	35	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
022683.00	Interchange design	Interchange design - other	1	Locations	$407928.69	$548608.24	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	8,512	45	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
022694.00	Interchange design	Interchange design - other	1	Locations	$617220.08	$685800.09	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	19,460	60	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
022695.00	Intersection traffic control	Intersection signing - miscellaneous/other/unspecified	1	Intersections	$22818.38	$25353.76	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,928	45	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
022996.01	Roadway	Roadway - other	1	Locations	$22500	$25000	HSIP (23 U.S.C. 148)			10,181	55	State Highway Agency	Spot		
022996.02	Roadway	Roadway - other	1	Locations	$5400	$28000	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot		
022996.04	Roadway	Roadway - other	1	Locations	$48688.77	$54098.64	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot		
022996.05	Roadway	Roadway - other	1	Locations	$5850.06	$44000	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot		
022996.06	Roadway	Roadway - other	1	Locations	$42246.18	$86940.1	HSIP (23 U.S.C. 148)			0		State Highway Agency	Spot		
016336.17	Roadway	Roadway - other	1	RSMS Signs Software Upgrade	$25110.19	$38867.59	HSIP (23 U.S.C. 148)			0			Systemic	Data	Inventory of Roadway Warning Signage for Safety
023004.00	Speed management	Radar speed signs	50	Signs	$180000	$200000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0		State Highway Agency	Programmatic, identifying locations of need and working with interested communities	Illegal/Unsafe Speed	Utilize portable and post-mounted dynamic speed feedback signs

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
020581.18	Roadway delineation	Improve retroreflectivity	1	Miles	$4480000	$5626522.78	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	explore pavement markings and sign enhancement opportunities
017518.00	Roadway signs and traffic control	Roadway signs and traffic control - other	1	Locations	$44965.49	$49961.65	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Intersections	explore pavement markings and sign enhancement opportunities
017515.00	Pedestrians and bicyclists	Miscellaneous pedestrians and bicyclists	1	Locations	$67500.03	$75000	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Pedestrians and Bicycles	Conduct focused statewide outreach
019404.00	Pedestrians and bicyclists	Install sidewalk	1	Locations	$34265.28	$559865.28	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	890		Town or Township Highway Agency	Spot	Pedestrians	Identify opportunities for pedestrian infrastructure improvements including sidewalks and crossing improvements
020204.00	Intersection traffic control	Modify control - two-way stop to roundabout	1	Intersections	$1226978.33	$1226978.33	HSIP (23 U.S.C. 148)	Urban	Major Collector	8,000	30	State Highway Agency	Spot	Intersections	Alternative solutions
020587.00	Roadway signs and traffic control	Roadway signs and traffic control - other	2	Ramps	$45000.00	$45000.00	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial- Interstate	0		State Highway Agency	Spot	Lane Departure	Wrong Way Mitigation
021664.00	Interchange design	Interchange design - other	1	Ramps	$128899.23	$138600.00	HSIP (23 U.S.C. 148)	Urban	Principal Arterial- Other Freeways & Expressways	12,660	35	State Highway Agency	Spot	Intersections	Alternative solutions
022700.00	Intersection traffic control	Intersection traffic control - other	2	Intersections	$521276.92	$513517.68	HSIP (23 U.S.C. 148)	Urban	Major Collector	6,380	25	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
022829.00	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	1	Intersections	$27000.00	$189000.00	HSIP (23 U.S.C. 148)	Rural	Major Collector	11,332	25	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
022873.00	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	1	Intersections	$64800.00	$325800.00	HSIP (23 U.S.C. 148)	Urban	Principal Arterial- Other	11,369	35	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	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
022881.00	Roadway	Roadway - other	1	Miles	$49000.00	$674500.00	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	20,381	50	State Highway Agency	Spot	Lane Departure	develop solutions for reviewed locations
022883.00	Roadway	Roadway - other	1	Miles	$49000.00	$386500.00	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	21,405	50	State Highway Agency	Spot	Lane Departure	develop solutions for reviewed locations
023010.00	Roadway	Roadway - other	1	Ramps	$18000.00	$18000.00	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	0		State Highway Agency	Spot	Intersections	Wrong Way Mitigation
023346.00	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	1	Intersections	$37949.26	$55949.26	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	19,162	25	State Highway Agency	Spot	Intersections	develop solutions for reviewed locations
023871.00	Roadway delineation	Improve retroreflectivity			$400000.00	$489910.70	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	explore pavement markings and sign enhancement opportunities
21849	Roadway	Rumble strips - center		Miles	$1450.65	$116588.55	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	identify priority areas where edge line and centerline rumble strips should be installed

Safety Performance

General Highway 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	2015	2016	2017	2018
Fatalities	161	136	164	145	131	156	160	172	137
Serious Injuries	782	895	982	865	815	754	746	728	685
Fatality rate (per HMVMT)	1.110	0.951	1.140	1.010	0.913	1.050	1.070	1.140	0.910
Serious injury rate (per HMVMT)	5.370	6.260	6.830	6.010	5.680	5.080	4.980	4.810	4.560
Number non-motorized fatalities	13	11	10	15	11	19	21	23	9
Number of non-motorized serious injuries	52	81	101	59	88	64	72	75	72

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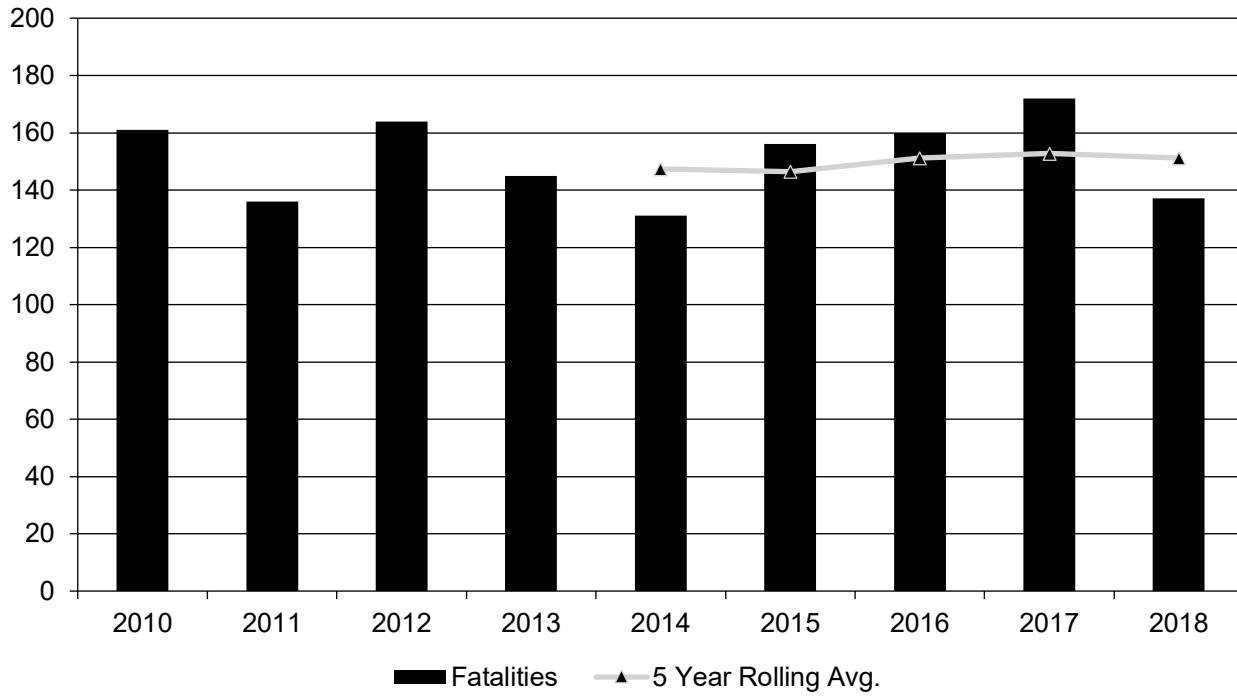
Annual Serious Injuries
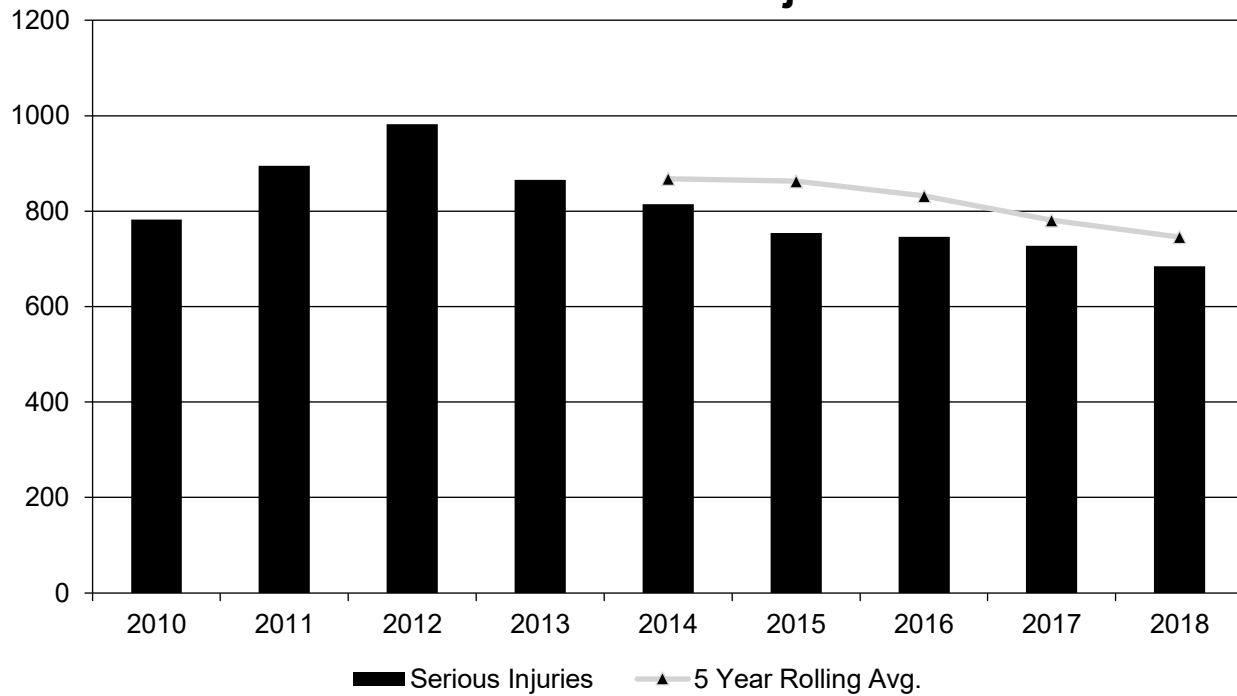
Fatality rate (per HMVMT)
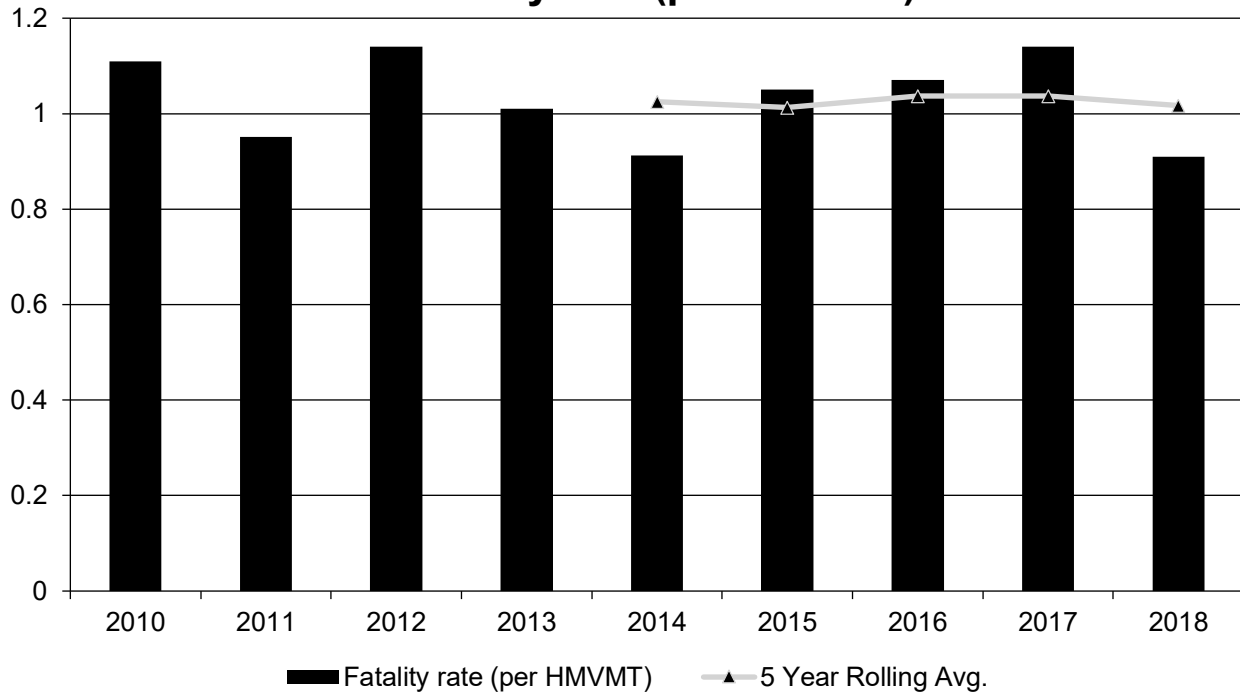
Legend: Fatality rate (per HMVMT) ▲ 5 Year Rolling Avg.

Serious injury rate (per HMVMT)

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

Non Motorized Fatalities and Serious Injuries

Legend: Fatalities | Serious Injuries | 5 Year Rolling Avg.
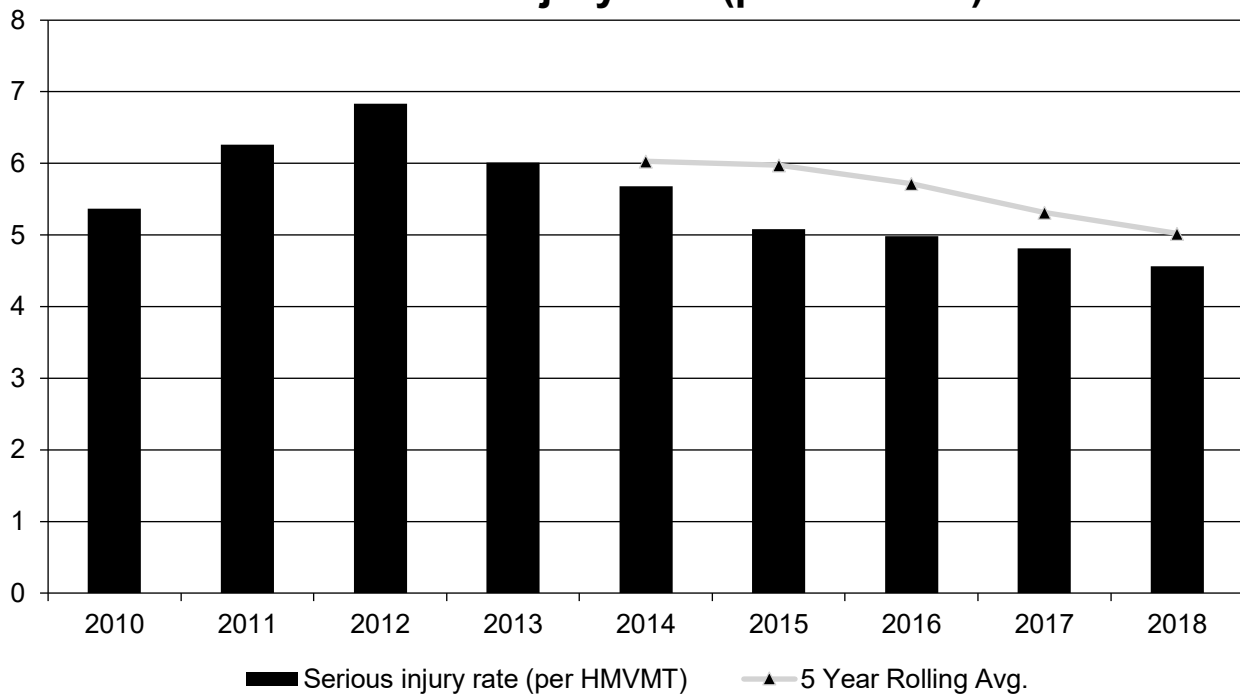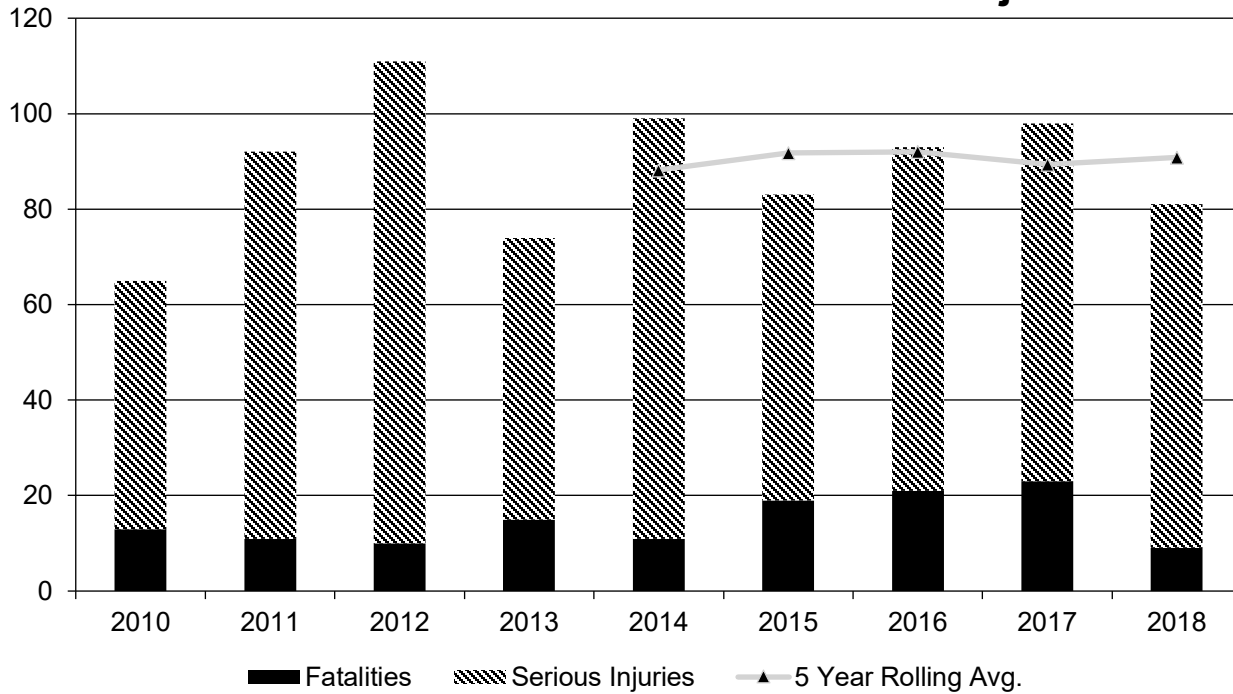
Describe fatality data source.

FARS

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 143 compared to the actual statewide FARS total of 137.

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

Year 2018

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	6.4	37.6	0.29	1.69
Rural Principal Arterial (RPA) - Other Freeways and Expressways				

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	27.4	84.6	1.49	4.59
Rural Minor Arterial	22.4	96.8	1.31	5.64
Rural Minor Collector	11.2	54.6	1.36	6.63
Rural Major Collector	33.4	139.6	1.49	6.22
Rural Local Road or Street	19.4	91.6	1.34	6.33
Urban Principal Arterial (UPA) - Interstate	3.6	25.6	0.31	2.18
Urban Principal Arterial (UPA) - Other Freeways and Expressways	0.2	6.4	0.12	3.85
Urban Principal Arterial (UPA) - Other	6.2	56.6	0.86	7.86
Urban Minor Arterial	7.8	67	0.77	6.58
Urban Minor Collector	0.4	4.6	0.71	8.16
Urban Major Collector	4.8	54.4	0.49	5.6
Urban Local Road or Street	4	26.4	0.87	5.68

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 or 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

Provide additional discussion related to general highway safety trends.

Maine's 2018 crash experience saw a significant drop in Pedestrian fatalities as well as fatalities involving Commercial Vehicles from previous years. Our primary areas of concern remain Lane Departure Crashes (both head-on and went-off-road) and motorcycle crashes which are trending upward in 2018.

Safety Performance Targets

Calendar Year 2020 Targets *

Number of Fatalities:161.0

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

The following factors are likely to influence the ability of Maine to meet previous safety performance targets and need to be considered for future projections: • Maine's economy and fuel prices remain stable at current levels. • Multi-agency safety efforts will continue to be refined and focused on primary serious crash trends such as lane departure and pedestrians • Based on recruitment difficulties along with state and local budgetary restraints, law enforcement agencies will continue to experience staffing challenges, 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 usage. That growing impairment problems translates to serious crash exposures. • Maine's VMT is projected to increase due to population growth and economic factors by about 0.51% per year moving forward from 2018. This increased traffic exposure increases our safety risk and may decrease the level of service on high volume roads. Maine Fatality data has varied widely during the 2018 Benchmark Performance (2014-2018) period ranging from 139 in 2018 to 172 in 2017. The 5-year average was 151.6 through the period but was trending upward slightly until 2018. MaineDOT decided to set a 2020 fatalities target assuming a slight increase in the 2020 projection from the 2019 target until we see a leveling out in that trend line.

Number of Serious Injuries:737.0

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

Serious Injuries is one of Maine's Safety Performance Areas that continues to show steady improvement over the years, but it too, has had erratic performance in the past. The significant difference between the high and low years in our 2014-2018 benchmark performance period make it prudent to see if we see a continuance in that downward trend. Maine decided to set a 2020 target of 737 which is approximately equal to the 2019 performance target.

Fatality Rate:1.070

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

The following factors are likely to influence the ability of Maine to meet previous safety performance targets and need to be considered for future projections: • Maine's economy and fuel prices remain stable at current levels. • Multi-agency safety efforts will continue to be refined and focused on primary serious crash trends such as lane departure and pedestrians • Based on recruitment difficulties along with state and local budgetary restraints, law enforcement agencies will continue to experience staffing challenges, 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 usage. That growing impairment problems translates to serious crash exposures. • Maine's VMT is projected to increase due to population growth and economic factors by about 0.51% per year moving forward from 2018. This increased traffic exposure increases our safety risk

2019 Maine Highway Safety Improvement Program
and may decrease the level of service on high volume roads. Maine Fatality data has varied widely during the 2018 Benchmark Performance (2014-2018) period ranging from 139 in 2018 to 172 in 2017. The 5-year average was 151.6 through the period but was trending upward slightly until 2018. MaineDOT decided to set a 2020 fatalities target assuming a slight increase in the 2020 projection from the 2019 target until we see a leveling out in that trend line.

Serious Injury Rate:4.900

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

Serious Injuries is one of Maine's Safety Performance Areas that continues to show steady improvement over the years, but it too, has had erratic performance in the past. The significant difference between the high and low years in our 2014-2018 benchmark performance period make it prudent to see if we see a continuance in that downward trend. Maine decided to set a 2020 target of 737 which is approximately equal to the 2019 performance target.

Total Number of Non-Motorized Fatalities and Serious Injuries:90.0

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

• As with statewide crash fatalities, this data has varied widely from year to year through the benchmark performance period, mainly due to the disparity observed from 2017 to 2018. Trends in 2019 indicate a move upward from our recent low in 2018 towards an average year from a fatality perspective. • The 5-year Average for the 2014-2018 Benchmark Period was 89.6. It is hoped that our focused pedestrian outreach in 21 communities in Maine through STEP and HeadsUp programs will bring down our bike/ped fatality numbers moving forward, but until the problem locations identified through these efforts are mitigated we should assume a level target of 90 per year for 2020.

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

Maine Bureau of Highway Safety and MaineDOT reviewed last year's targets and worked collaboratively to arrive at agreed upon goals and to make sure they are in context with the latest influencing factors.

MaineDOT has earlier discussed its target setting philosophy with MPOs and how it would translate to MPO performance targets. The Department prepares suggested performance targets for each MPO as a starting point for discussion and provides the necessary data for them to evaluate their own past performance and to either accept MaineDOT's recommendation or to come up with their own.

Does the State want to report additional optional targets?
No

None

Describe progress toward meeting the State's 2018 Safety Performance Targets (based on data available at the time of reporting). For each target, include a discussion of any reasons for differences in the actual outcomes and targets.

All five of Maine's 2018 Safety Performance Targets were met. This was in large part to the unusual drop in pedestrian fatalities in 2018 which brought the overall and 5-year average benchmark fatal numbers and rate down. Maine's serious injury numbers and rates have also been steadily decreasing since 2012 despite increased statewide VMT. Both factors contributed to our meeting the number of non-motorized fatalities and serious injury performance target as well. We are, however, concerned that our 2018 crash experience was a bit of a statistical outlier as many of our neighboring states have reported increases in these numbers. Our early 2019 crash reports would indicate we're likely to see higher numbers this year.

Applicability of Special Rules

Does the HRRR special rule apply to the State for this reporting period?
No

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	2012	2013	2014	2015	2016	2017	2018
Number of Older Driver and Pedestrian Fatalities	24	29	25	26	31	40	23
Number of Older Driver and Pedestrian Serious Injuries	94	89	74	70	78	92	86

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Benefit/Cost Ratio
- Change in fatalities and serious injuries

Infrastructure projects are evaluated each year with results included with HSIP (before/after injuries and B/C). Systemic improvements like rumble strips 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 fatality rate increased from 2014 through 2017, but in 2018 we experienced a notable decrease, mainly due to a sharp decrease in the numbers of pedestrian fatalities reported. Our serious injury rate has been steadily decreasing since a peak in 2012. This downward trend continued in 2018.

Our overall benefit-cost performance on mitigation efforts has been good. Systemic installations have also showed positive performance and we will likely expand these programs as we continue to explore new systemic safety programs that have proven to be successful in other states.

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

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

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

Creation of the new Office of Safety and HSM systemic safety screening tools have allowed significant improvements in identifying potential areas for systemic improvements. We are now focused on increasing our capability to screen for rural horizontal curves with excessive lane departure crash history for curve delineation/safety enhancements.

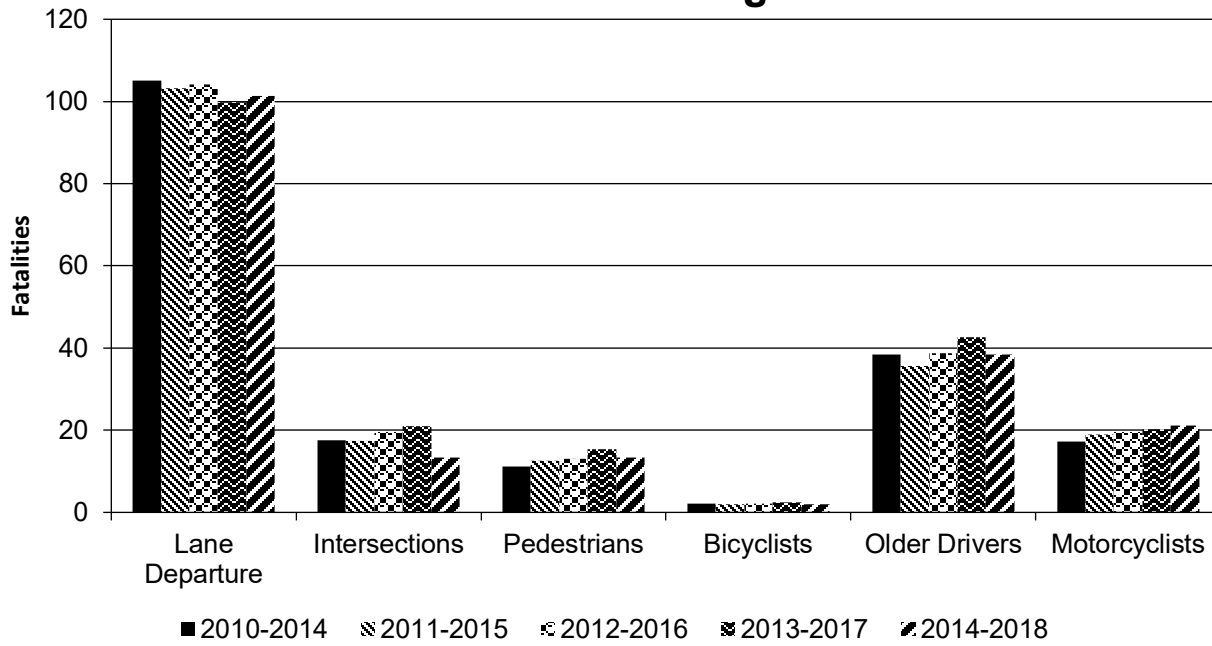## *Effectiveness of Groupings or Similar Types of Improvements*

Present and describe trends in SHSP emphasis area performance measures.
Year 2018

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		101.4	389.4	0.68	2.59
Intersections		13.4	119.4	0.09	0.8
Pedestrians		13.4	51.6	0.09	0.34
Bicyclists		2	22.2	0.01	0.15
Older Drivers		38.4	99.4	0.26	0.14
Motorcyclists		21.2	123.4	0.66	0.82

Number of Fatalities
5 Year Average

Legend: 2010-2014 | 2011-2015 | 2012-2016 | 2013-2017 | 2014-2018

Number of Serious Injuries
5 Year Average
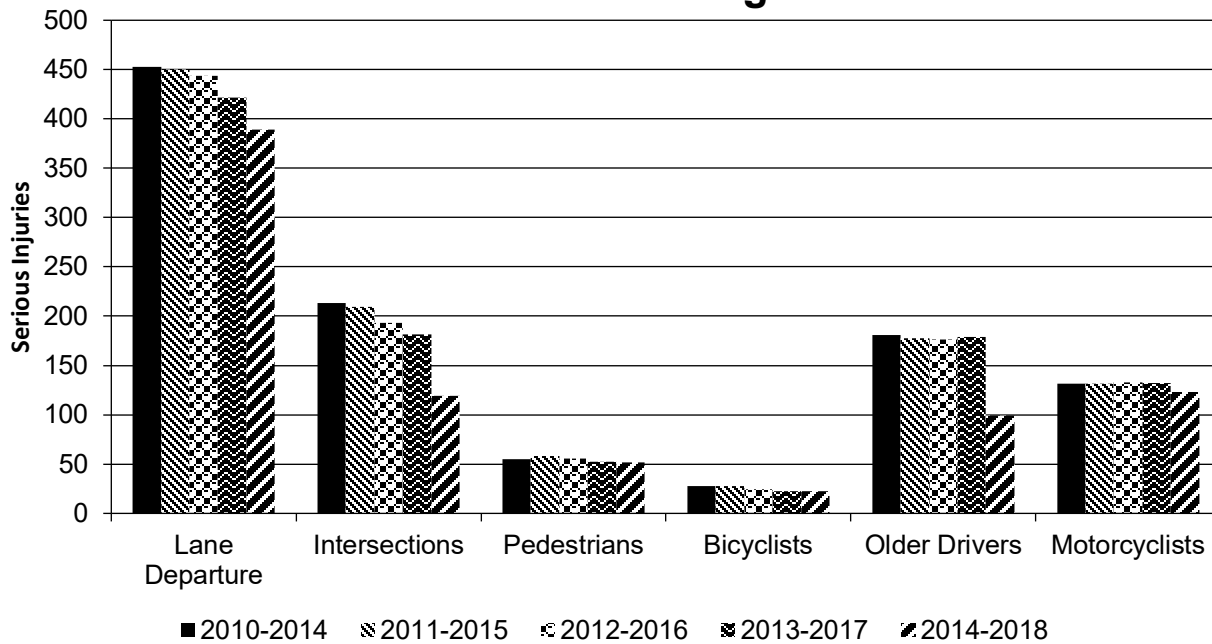
Legend: 2010-2014 | 2011-2015 | 2012-2016 | 2013-2017 | 2014-2018

Fatality Rate (per HMVMT)
5 Year Average

■2010-2014 ⬚2011-2015 ⬚2012-2016 ⬚2013-2017 ◪2014-2018

Serious Injury Rate (per HMVMT)
5 Year Average

■2010-2014 ⬚2011-2015 ⬚2012-2016 ⬚2013-2017 ◪2014-2018
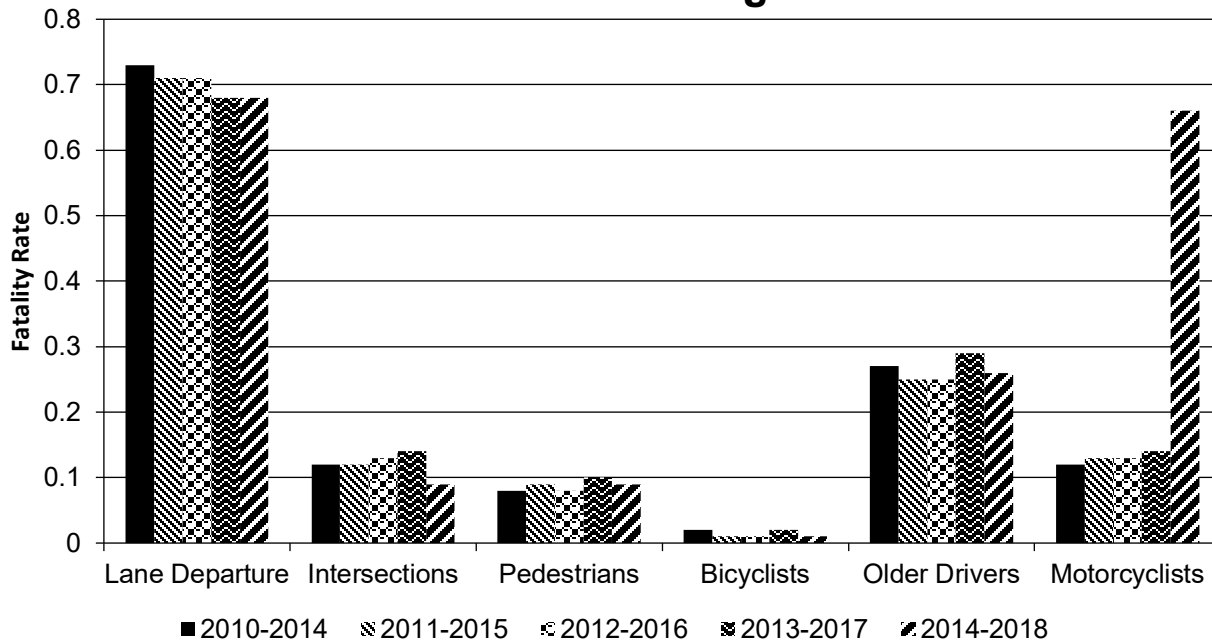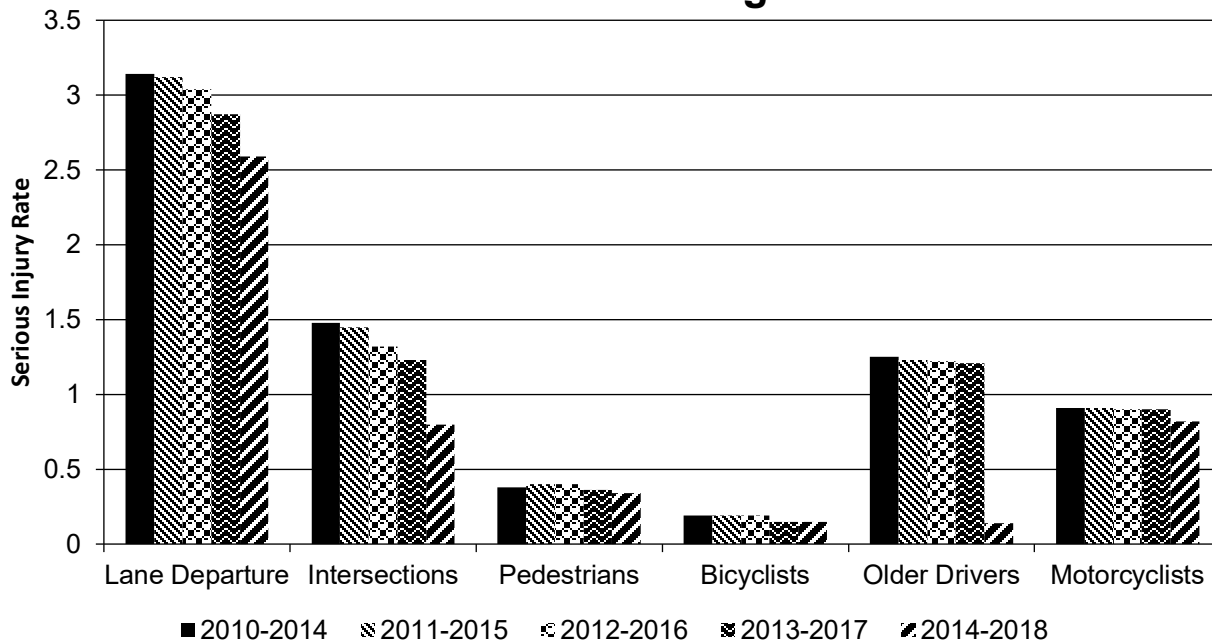
Has the State completed any countermeasure effectiveness evaluations during the reporting period?

No

Changeover in personnel due to the formation of the new Office of Safety and retirement of former safety professionals have required a pause in this effort to get new people up to speed.

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)
Hermon	Rural Major Collector	Intersection traffic control	Intersection traffic control - other	2.00						5.00	1.00	7.00	1.00	0.418207833806198
Portland	Urban Major Collector	Intersection traffic control	Intersection traffic control - other	9.00	5.00			1.00			6.00	10.00	11.00	-0.158749024412723
Scarborough	Urban Minor Arterial	Roadway	Roadway - other	8.00	5.00					4.00	1.00	12.00	6.00	0.95212433736769
West Gardiner	Rural Minor Arterial	Intersection traffic control	Modify control - two-way stop to roundabout	9.00	5.00					4.00		13.00	5.00	0.424787965158584
Palmyra	Rural Principal Arterial (RPA) - Other	Intersection geometry	Intersection geometry - other	13.00	4.00					5.00	1.00	18.00	5.00	2.41072385482414
Trenton	Rural Minor Arterial	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	5.00	6.00					3.00	2.00	8.00	8.00	0.137830198398271
Peru	Rural Minor Arterial	Intersection traffic control	Intersection signing - miscellaneous/other/unspecified	8.00	8.00					3.00	3.00	11.00	11.00	-0.97894237888103
Madison	Rural Major Collector	Intersection traffic control	Intersection signing - miscellaneous/other/unspecified	2.00	1.00	1.00				2.00		5.00	1.00	129.492387514348
Newport	Rural Major Collector	Intersection traffic control	Intersection signing - miscellaneous/other/unspecified	3.00	1.00				1.00	1.00	5.00	5.00	6.00	6.90671292177622

A sampling of spot improvement projects constructed in calendar year 2015. Injury numbers and benefit cost assessment based on crash history 3-years before and after construction complete.

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

Our rumble strip program continues to be an effective mitigation effort for head-on lane departure crashes and their associated injuries. Switching to sinusoidal rumble strips has also begun to improved public acceptance of their presence on the roadway.

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

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

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		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								
	Access Control (22)	100	100								

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
	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)										
	Location Identifier for Road 1 Crossing Point (122)										
	Location Identifier for Road 2 Crossing Point (123)										
	Intersection/Junction Geometry (126)										
	Intersection/Junction Traffic Control (131)										
	AADT for Each Intersecting Road (79)			100	100						
	AADT Year (80)			100	100						
	Unique Approach Identifier (139)										
INTERCHANGE/RAMP	Unique Interchange Identifier (178)										
	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				

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
	Roadway Type at Beginning of Ramp Terminal (195)					100	100				
	Roadway Type at End Ramp Terminal (199)					100	100				
	Interchange Type (182)										
	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

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.

MaineDOT continues to explore and prototype methods for collecting the remaining elements. Our latest effort involved leveraging the GPS data stream from our ARAN 9000 pavement condition data collection vehicle to extract horizontal curvature of state highways and this is showing great promise. We should have this GPS data collection completed by the fall of 2019 as it's being completed concurrently with our regular network pavement data collection. We currently have no plans to perform this collection on local roads.

Did the State conduct an HSIP program assessment during the reporting period?

No

Our last assessment was completed in 2017
When does the State plan to complete its next HSIP program assessment.

2021

Optional Attachments

Program Structure:

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

Safety Performance:

Evaluation:

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.