MAINE

HIGHWAY SAFETY
IMPROVEMENT PROGRAM
2020 ANNUAL REPORT

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. 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 identify High Crash Locations each year as an additional consideration in prioritizing our spot improvement project candidates.

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. To date we have leveraged our ARAN 9000 pavement condition data collection vehicle's data streams to extract horizontal curves and cross slopes on one side of all MaineDOT Highway Corridor Priority 1-4 roadways in the state highway and state aid systems. We are currently working towards obtaining cross slope information for the other lane by driving these roadways in the opposite direction as time and weather allows. We are currently developing custom GIS road segment screening tools that will assess the safety our highway network using excess crashes with EB adjustment in accordance with the HSM.

In addition to spot improvements projects, Maine has used lane departure crash data to systemically evaluate our highway network for potential center line 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 starting in 2018 and continuing in 2019. We have also conducted a systemic crash data study to identify horizontal curves that could benefit from the installation of edge line rumble strips to mitigate went-off-road crashes on these curves. The first installations of these curve enhancements will occur in the 2020 statewide rumble strip contract.

Pedestrian Safety emphasis has a solidified strategy that continues in 2019 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 recently-created new Office of Safety consisting of a highway safety engineering section and a crash records section is now in place and staffed. The Office of Safety provides 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 HSIP program is managed within the Office of Safety.

While Maine's overall crash rates have increased steadily since 2012, fatalities have varied quite widely from a recent high of 172 in 2017 to a recent low of 137 in 2018. In 2019, Maine's fatality count rose to 157 which is in the vicinity of recent 5-year averages. Serious injury counts and rates have continued to decrease steadily despite the increase in overall crashes statewide.

2020 Safety Performance Targets were successfully coordinated internally, with Maine's Highway Safety Office (Bureau of Highway Safety) and MPO partners. The 2021 Statewide performance targets have also been developed. The 2020 Safety Performance Targets previously established did not account for the significant drop in VMT we have experienced in 2020 due to the Covid-19 pandemic restrictions on interstate travel, increased teleworking, and other social distancing measures. Despite an approximately 20% decrease in VMT,

we have not seen a corresponding decrease in the total fatalities and serious injuries. For Maine, this will most likely impact our 2020 fatality and serious injury rate targets which are expected to be much higher than originally predicted.

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.

MaineDOT's HSIP program is managed by the Office of Safety which is led by a director level position that reports directly to the Chief Engineer. The Office of Safety consists of a highway safety engineering section, crash records section, and ADA Coordinator 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.

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's Safety/Mobility Committee was created within MaineDOT and is comprised of a cross representation of MaineDOT functional areas that meets quarterly 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

The Director of the Office of Safety reports directly to the Chief Engineer at MaineDOT.

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 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
- Maintenance
- Planning
- Traffic Engineering/Safety

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, and active transportation planner. 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)
- 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.

Program Methodology

Does the State have an HSIP manual or similar that clearly describes HSIP planning, implementation and evaluation processes?
No
MaineDOT has an HSIP selection process document which details that specific portion of our HSIP processes, but we are currently in the process of expanding and updating our documentation to reflect recent changes to organizational and business process changes within the Department, specifically the creation of the Office of Safety and the Safety/Mobility Committee.

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 • Fatal and serious injury crashes only	• Traffic • Volume • Population	• Roadside features

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
- All crashes
- Fatal and serious injury crashes only

Exposure
- Traffic
- Volume
- Other-Highway Corridor Priority

Roadway
- Horizontal curvature
- 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

- All crashes
- Fatal and serious injury crashes only

Exposure

- Traffic
- Volume

Roadway

- Functional classification
- Roadside features
- Other-MaineDOT's Highway Corridor Priority classifications

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Critical rate
- Excess proportions of specific crash types
- 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 • Fatal and serious injury crashes only	• Traffic • Volume	• Horizontal curvature • 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

- All crashes
- Fatal and serious injury crashes only

Exposure

- Traffic
- Volume

Roadway

- Horizontal curvature
- 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
- All crashes

Exposure
- Other-limited access highway

Roadway
- 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

- All crashes
- Fatal and serious injury crashes only

Exposure

- Traffic
- Volume

Roadway

- Horizontal curvature
- 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?

- 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

- All crashes
- Fatal and serious injury crashes only

Exposure

- Traffic
- Volume
- Lane miles

Roadway

- 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: 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

- All crashes
- Fatal and serious injury crashes only

Exposure

- Traffic
- Volume
- Lane miles

Roadway

- 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

- All crashes
- Fatal and serious injury crashes only

Exposure

- Traffic
- Volume

Roadway

- Horizontal curvature
- 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
- All crashes
- Fatal crashes only
- Fatal and serious injury crashes only

Exposure
- Other-Laregely driven by ramp design components

Roadway

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
- All crashes

Exposure

Roadway
- 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?

50

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

- Add/Upgrade/Modify/Remove Traffic Signal
- Cable Median Barriers
- Clear Zone Improvements
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Rumble Strips
- Upgrade Guard Rails
- Wrong way driving treatments

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, and the Director of the Office of Safety participates on the ITS Steering 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)	$12,267,591	$10,893,174	88.8%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$4,118,613	$4,118,613	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	$1,779,612	164.78%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$0	$0	0%
Totals	$17,466,204	$16,791,399	96.14%

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%

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.

2019 construction costs in Maine were much higher than expected for most all types of projects, not just safety projects. This has made it necessary to adjust our 3-year work plan by adjusting project estimates and adjusting schedules of some projects to stay within our fiscal restraints.

Maine's leading crash exposure continues to be Lane Departure, experiencing 70% of state-wide fatalities in this category. Additional systemic safety opportunities are being evaluated to achieve a better funding mix that is reflective of SHSP priorities and to address these lane departure crashes. 2016 was the first year where we fielded calls on public noise-related concerns. MaineDOT's 2018 and 2019 statewide rumble strip contracts specified that only sinusoidal center line rumble strips would be installed. This has substantially reduced the number of noise complaints we have received from the public.

MaineDOT used data-driven analysis to screen for horizontal curves with significant crash experience and identified specific areas where edge line/center line 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 2020.

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.

Pedestrian traffic fatalities are still a concern and a focused outreach program continues to be delivered throughout the state in 2019. 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.

General Listing of Projects

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
015683.00 - WATERVILLE, 1ST RANGE,CHASE AV	Intersection geometry	Intersection geometry - other	1	Intersections	$195022.14	$216691.04	Penalty Funds (23 U.S.C. 154)	Urban	Major Collector	3,443	25	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
017511.04 - LANE DEP MITIGATION STRATEGIES	Roadway	Roadway - other	0.38	Miles	$15844.94	$40000	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,971	50	State Highway Agency	Systemic	Lane Departure	Identify priority areas where edge line and center line rumble strips should be installed to reduce went-off-road and head-on crashes
017512.01 - LEDGE REMOVAL	Roadside	Removal of roadside objects (trees, poles, etc.)	17.42	Miles	$69502.58	$177066.19	HSIP (23 U.S.C. 148)	Rural	Minor Collector	1,900	45	State Highway Agency	Systemic	Lane Departure	Improve clear zones
019002.00 - ARUNDEL,INT OF ALFRED & NEW RD	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	1	Intersections	$1281209.31	$2047091.33	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	16,380	40	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
019017.00 - WILTON, INT RTE 2 & RTE 156	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1	Intersections	$94108.73	$981157.97	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,674	40	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
019197.00 - BAR HARBOR, ROUTE 3	Roadway	Roadway - other	9.5	Miles	$2379973.62	$25543630.45	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	11,035	30	State Highway Agency	Spot	Lane Departure, Pedestrians, Bicycles	Multiple Emphasis Areas and Strategies
019256.00 - BANGOR, I-95 EXIT 184	Interchange design	Acceleration / deceleration / merge lane	0.12	Miles	$827990.53	$926632.73	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	19,340	60	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
020204.00 - FALMOUTH, RTE 9/WOODS ROAD	Intersection traffic control	Modify control - traffic signal to roundabout	1	Intersections	$2188932.07	$2642542.78	HSIP (23 U.S.C. 148)	Urban	Major Collector	5,660	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	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
020207.00 - MECHANIC FALLS-POLAND, RTE 26	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	1	Intersections	$1422087.16	$1610371.89	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	8,111	35		Spot	Intersections	Develop solutions for reviewed locations.
020210.00 - STANDISH, RT 25/MANCHESTER/SAC	Intersection traffic control	Modify control - traffic signal to roundabout	1	Intersections	$2134831.14	$2667595.79	Penalty Funds (23 U.S.C. 154)	Rural	Minor Arterial	4,730	40	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
020213.00 - WINTHROP, ROUTE 202/MAIN ST	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	1	Intersections	$1133403.6	$1283110.15	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	4,098	55	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
020581.19 - STATEWIDE, STRIPING 2019	Roadway delineation	Improve retroreflectivity		Locations	$4719849.6	$5981074.01	Penalty Funds (23 U.S.C. 154)	Multiple/Varies	Multiple/Varies	0			Systemic	Lane Departure	Explore pavement markings and sign enhancement opportunities
020587.00 - DYNAMIC WRONG WAY SIGNS	Advanced technology and ITS	Dynamic message signs		Locations	$212430.6	$243907.2	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0			Spot	Lane Departure	Wrong way crash mitgation
020811.00 - BANGOR,I-95 SB EXIT 185 RAMP	Interchange design	Acceleration / deceleration / merge lane	1	Locations	$455697.22	$556995.78	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	25,530	60	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
021781.00 - DURHAM, ROUTE 125	Intersection traffic control	Modify control - two-way stop to all-way stop	1	Locations	$61065.48	$70423.29	HSIP (23 U.S.C. 148)	Rural	Minor Collector	3,410	45	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
021783.00 - EDGECOMB, ROUTE 1	Intersection traffic control	Intersection traffic control - other	1	Intersections	$228082.72	$2685000	Penalty Funds (23 U.S.C. 154)	Rural	Principal Arterial-Other	12,846	50	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
021817.00 - RAPID FLASHING BEACONS-CROSSWK	Pedestrians and bicyclists	Pedestrian signal - install new at non-intersection location		Locations	$187732.6	$208591.78	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0			Spot	Pedestrians	Identify opportunities for pedestrian infrastructure improvements, including sidewalks and crossing improvements.

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
021841.00 - WINDSOR, ROUTE 17	Intersection geometry	Auxiliary lanes - miscellaneous/other/unspecified	1	Locations	$162000	$180000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	7,669	35	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
021849.00 - STATEWIDE, RUMBLE STRIPS 2018	Roadway	Rumble strips - center	198.324	Miles	$536467.14	$787629	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	Identify priority areas where edge line and center line rumble strips should be installed to reduce went-off-road and head-on crashes
022506.00 - OXFORD, ROUTE 26/ROUTE 121	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1	Locations	$448930.91	$743302.31	Penalty Funds (23 U.S.C. 154)	Rural	Principal Arterial-Other	13,325	40	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
022672.00 - FALMOUTH,I295 NB RAMP/BUCKNAM	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	1	Locations	$94500	$767000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	12,480	35	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
022673.00 - WELLS, RT1/CHAPEL RD	Intersection geometry	Intersection geometrics - miscellaneous/other/unspecified	1	Locations	$295100.77	$327889.74	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	16,740	35	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
022680.00 - SCARBOROUGH, HOLMES/BEECHRIDGE	Intersection traffic control	Intersection flashers - modify existing	1	Intersections	$43102.35	$47891.5	HSIP (23 U.S.C. 148)	Rural	Minor Collector	7,060	35	State Highway Agency	Spot	Intersections	Provide flashing beacons at selected stop signs
022681.00 - AUBURN, HOTEL/STEVENS MILL RDS	Intersection traffic control	Modify traffic signal - modernization/replacement		Intersections	$61050.92	$69891.96	HSIP (23 U.S.C. 148)	Urban	Major Collector	6,412	35	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
022682.00 - PORTLAND, ROUTE 22/WESTBROOK	Intersection traffic control	Intersection traffic control - other	1	Intersections	$214209.64	$242894.22	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	22,180	30	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
022683.00 - BELFAST RT 1/RT 7 SB RAMP	Roadway	Roadway - other	1	Locations	$407928.69	$548608.24	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	8,478	45	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
022692.00 - ORONO, ROUTE 2/RANGELEY RD	Intersection traffic control	Modify control - traffic signal to roundabout	1	Intersections	$3161496.7	$3979459.94	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	15,230	30	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
022704.00 - KENNEBUNK - WELLS	Intersection traffic control	Intersection flashers - add overhead (continuous)	1	Intersections	$57044.55	$153064.81	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	9,883	40	State Highway Agency	Spot	Intersections	Provide flashing beacons at selected stop signs
022829.00 - BENTON, SIGNAL	Intersection traffic control	Intersection traffic control - other	1	Intersections	$36000	$235000	HSIP (23 U.S.C. 148)	Urban	Major Collector	11,487	25	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
022855.00 - FAIRFIELD/GUARDRAIL I95	Roadside	Barrier- metal	0.72	Miles	$212720.77	$238503.35	Penalty Funds (23 U.S.C. 154)	Rural	Principal Arterial-Interstate	12,570	65	State Highway Agency	Systemic	Lane Departure	Reduce interstate head-on crashes by installing median guardrail
022873.00 - GORHAM, ROUTE 25	Intersection traffic control	Intersection traffic control - other	1	Intersections	$80100	$514000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	11,584	35	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
022881.00 - HOLDEN, ROUTE 1A	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	2.02	Miles	$695195.01	$1571602.58	Penalty Funds (23 U.S.C. 154)	Rural	Principal Arterial-Other	20,707	45	State Highway Agency	Systemic	Lane Departure	Identify and evaluate key corridors that experience the highest incidence of lane departure crashes.
022883.00 - HOLDEN, ROUTE 1A	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	1.48	Miles	$800067.94	$955998.7	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	21,748	45	State Highway Agency	Systemic	Lane Departure	Identify and evaluate key corridors that experience the highest incidence of lane departure crashes.
022887.00 - JAY, ROUTE 133	Intersection traffic control	Intersection traffic control - other	1	Intersections	$112500	$296100	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,527	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
022895.00 - LYMAN, ROUTE 35	Intersection traffic control	Intersection flashers - add overhead (continuous)	1	Intersections	$22500	$184750	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,800	25	State Highway Agency	Spot	Intersections	Provide flashing beacons at selected stop signs
022926.00 - MERCER, ROUTE 2	Intersection traffic control	Intersection flashers - add overhead (continuous)	1	Intersections	$16380	$84905.26	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,434	55	State Highway Agency	Spot	Intersections	Provide flashing beacons at selected stop signs
022952.00 - OXFORD, ROUTE 26	Intersection traffic control	Intersection traffic control - other	1	Intersections	$59000	$778000	Penalty Funds (23 U.S.C. 154)	Rural	Principal Arterial-Other	13,489	55	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
022962.00 - POWNAL, ROUTE 9	Intersection traffic control	Intersection flashers - add overhead (continuous)	1	Intersections	$27000	$220353	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,880	35	State Highway Agency	Spot	Intersections	Provide flashing beacons at selected stop signs
022976.00 - SCARBOR-S.PRTLAND GUARD RAIL	Roadside	Barrier - cable	2.7	Miles	$9000	$525000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	9,980	60	State Highway Agency	Systemic	Lane Departure	Reduce interstate head-on crashes by installing median guardrail
022986.00 - STATEWIDE, RUMBLE STRIP 2019	Roadway	Rumble strips - center	79.6	Miles	$22500	$533544.07	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0			Systemic	Lane Departure	Identify priority areas where edge line and center line rumble strips should be installed to reduce went-off-road and head-on crashes
022996.06 - WARREN, ROUTE 90	Roadway	Roadway - other	0.14	Miles	$58777.26	$65852.63	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	5,978	55	State Highway Agency	Spot	Lane Departure	Pursue targeted enforcement efforts that will lead to educational opportunities

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
023010.00 - STATEWIDE, WRONG WAY MITIG	Interchange design	Interchange design - other		Ramps	$260243.16	$289159.08	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0			Systemic	Lane Departure	Wrong way crash mitgation
023026.00 - TURNER, ROUTE 4	Roadside	Roadside - other	0.078	Miles	$93750	$175000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	11,958	55	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
023030.00 - WEST BATH, STATE ROAD	Intersection traffic control	Intersection traffic control - other	1	Intersections	$103500	$985000	HSIP (23 U.S.C. 148)	Rural	Major Collector	9,290	45	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
023346.00 - SANFORD, OLD MILL ROAD	Intersection traffic control	Intersection traffic control - other	1	Intersections	$144450	$199024.94	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	18,000	35	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
023673.00 - MACHIAS, ROUTE 1	Roadway	Roadway widening - add lane(s) along segment	0.76	Miles	$20000	$60000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	8,618	35	State Highway Agency	Spot	Pedestrians	Identify opportunities for pedestrian infrastructure improvements, including sidewalks and crossing improvements.
023689.00 - NEWPORT, ROUTE 2	Intersection traffic control	Modify control - two-way stop to roundabout	0.44	Miles	$159000	$250000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	11,904	35	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
023691.00 - NORRIDGEWOCK, ROUTE 2	Intersection traffic control	Modify traffic signal - modernization/replacement		Intersections	$17095.89	$205372.43	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	7,626	25	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
023767.04 - STATEWIDE, MESSAGE SIGNS	Advanced technology and ITS	Advanced technology and ITS - other		Locations	$1216605.01	$1369300	Penalty Funds (23 U.S.C. 154)	Multiple/Varies	Multiple/Varies	0			Systemic	Multiple Emphasis Areas and Strategies	Multiple Emphasis Areas and Strategies
023775.01 - SHIRLEY, ROUTE 6/15	Roadside	Roadside - other	0.12	Miles	$3600	$52000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	2,570	55	State Highway Agency	Spot	Lane Departure	Pursue targeted enforcement efforts that will lead to educational opportunities

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
023775.03 - FORT FAIRFIELD, ROUTE 1A	Roadside	Roadside - other	0.12	Miles	$1800	$59699.56	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	3,950	55	State Highway Agency	Spot	Lane Departure	Improve clear zones
023791.00 - WELLS, ROUTE 109	Roadway	Roadway - other	1	Locations	$32500	$45000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	16,901	40	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
023801.00 - WINDHAM, ROUTE 202	Roadway	Roadway - other	1	Locations	$49500	$400750	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	5,949	50	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
023871.00 - STATEWIDE STRIPING 2018 CONTRA	Roadway delineation	Improve retroreflectivity		Locations	$491264.51	$614080.64	Penalty Funds (23 U.S.C. 154)	Multiple/Varies	Multiple/Varies	0			Systemic	Lane Departure	Explore pavement markings and sign enhancement opportunities
023871.19 - STATEWIDE STRIPING 2019 CONTRA	Roadway delineation	Improve retroreflectivity		Locations	$400000	$418925.99	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0			Systemic	Lane Departure	Explore pavement markings and sign enhancement opportunities
023905.00 - HOLDEN	Advanced technology and ITS	Congestion detection / traffic monitoring system	1	Locations	$135000	$450000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	22,495	35	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
024179.00 - STATEWIDE, SIGNAL HEADS	Intersection traffic control	Modify traffic signal - add backplates with retroreflective borders		Intersections	$9000	$640000	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Intersections	Provide reflective back plates on traffic signals and improve the tethering of signal heads.
024195.00 - SOUTH PORTLAND	Roadside	Barrier end treatments (crash cushions, terminals)	0.008	Miles	$84541.68	$103046.31	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	11,657	35	State Highway Agency	Spot	Lane Departure	Identify priority areas where edge line and center line rumble strips should be installed to reduce went-off-road and

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
															head-on crashes
024199.00 - TURNER, ROUTE 4	Roadway	Roadway - other	1	Locations	$5000	$871750	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	13,703	45	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
024201.00 - TURNER, ROUTE 4	Roadway	Roadway - other	1	Locations	$20000	$220000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	10,977	45	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
024203.00 - WINDHAM, ROUTE 302	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.24	Miles	$129500	$298082.37	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	19,060	35	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
024205.00 - AUGUSTA, ROUTE 3	Roadway	Roadway - other	0.03	Miles	$1000	$187175	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	7,903	30	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
024207.00 - AUGUSTA, ROUTE 3	Roadway	Roadway - other	0.061	Miles	$1000	$247464	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	10,671	30	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
024209.00 - PALMYRA, ROUTE 2	Roadway	Roadway - other	1	Locations	$3000	$697875	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	3,722	45	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
024215.00 - FREEPORT, INTERSTATE 295	Roadside	Barrier - cable	2.19	Miles	$5000	$495000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	28,030	65	State Highway Agency	Systemic	Lane Departure	Reduce interstate head-on crashes
024223.00 - STATEWIDE, ANIMAL WARNING SIGNS	Roadway signs and traffic control	Roadway signs (including post) - new or updated		Locations	$2000	$50000	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Large Animals (Deer and Moose)	Mitigate animal-vehicle collisions at select locations
024261.00 - OLD ORCHARD, ROUTE 98	Intersection traffic control	Modify control - two-way stop to all-way stop	1	Locations	$2000	$111875	HSIP (23 U.S.C. 148)	Urban	Major Collector	5,750	35	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.
024359.00 - BRUNSWICK EXIT 28 LIGHTING	Lighting	Site lighting - interchange	1.44	Miles	$3000	$865625	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	24,840	65	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.

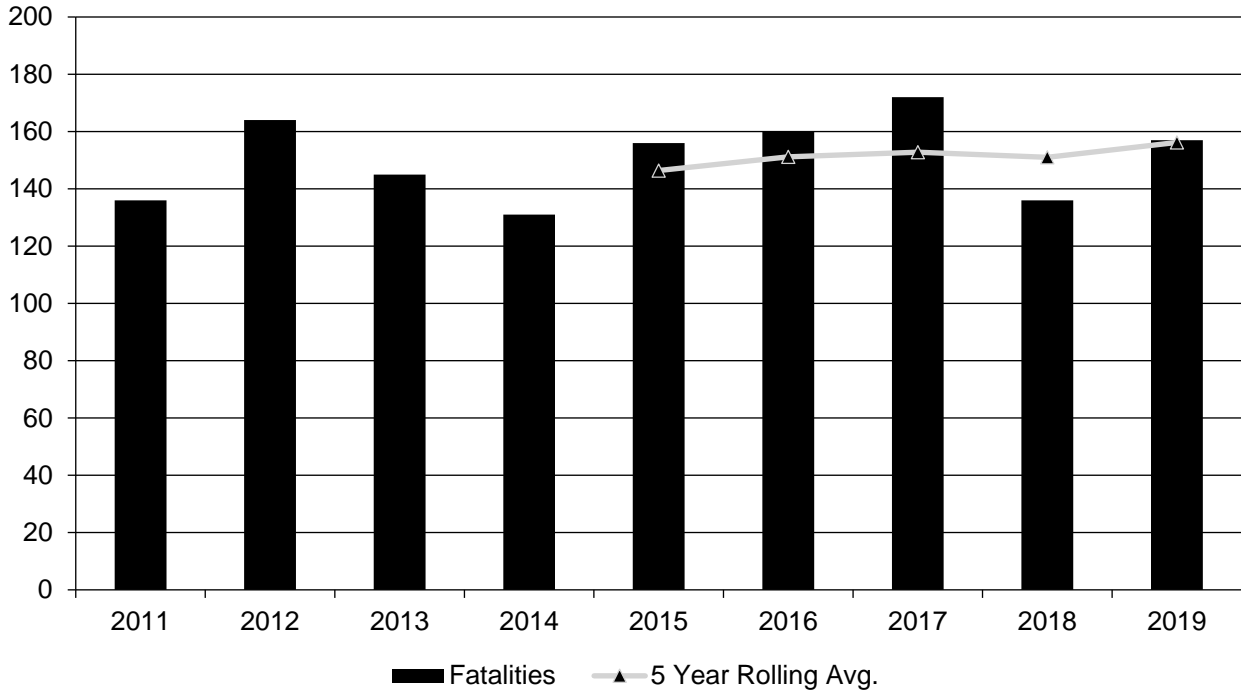| PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
024363.00 - SOUTH PORTLAND, I-295 EXIT 4	Lighting	Site lighting - interchange	0.01	Miles	$3000	$850625	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	33,260	55	State Highway Agency	Spot	Intersections	Develop solutions for reviewed locations.

Safety Performance
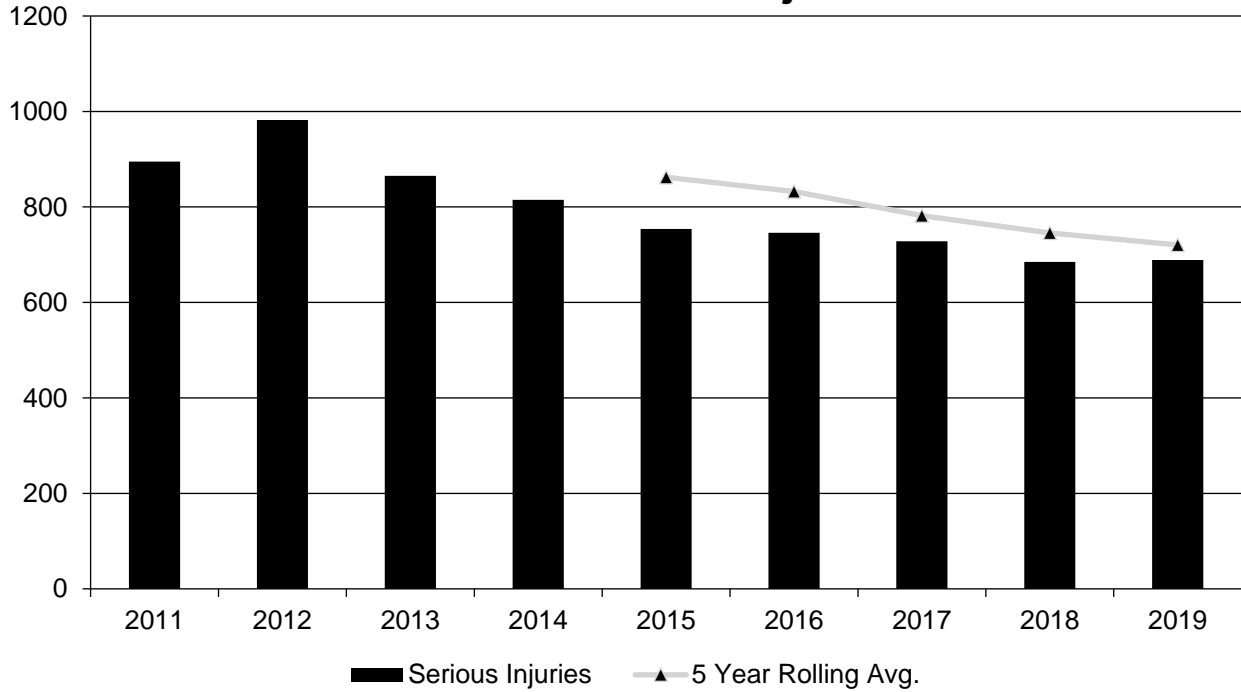
General Highway Safety Trends

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

PERFORMANCE MEASURES	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fatalities	136	164	145	131	156	160	172	136	157
Serious Injuries	895	982	865	815	754	746	728	685	689
Fatality rate (per HMVMT)	0.951	1.140	1.010	0.913	1.050	1.070	1.140	0.910	1.040
Serious injury rate (per HMVMT)	6.260	6.830	6.010	5.680	5.080	4.980	4.810	4.560	4.560
Number non-motorized fatalities	11	10	15	11	19	21	23	8	19
Number of non-motorized serious injuries	81	101	59	88	64	72	75	72	61

Annual Fatalities

Bar chart titled "Annual Fatalities" showing Fatalities (bars) and 5 Year Rolling Avg. (line) from 2011 to 2019. Y-axis ranges from 0 to 200.

Legend: ■ Fatalities ▲ 5 Year Rolling Avg.

Annual Serious Injuries

Bar chart titled "Annual Serious Injuries" showing Serious Injuries (bars) and 5 Year Rolling Avg. (line) from 2011 to 2019. Y-axis ranges from 0 to 1200.

Legend: ■ Serious Injuries ▲ 5 Year Rolling Avg.

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
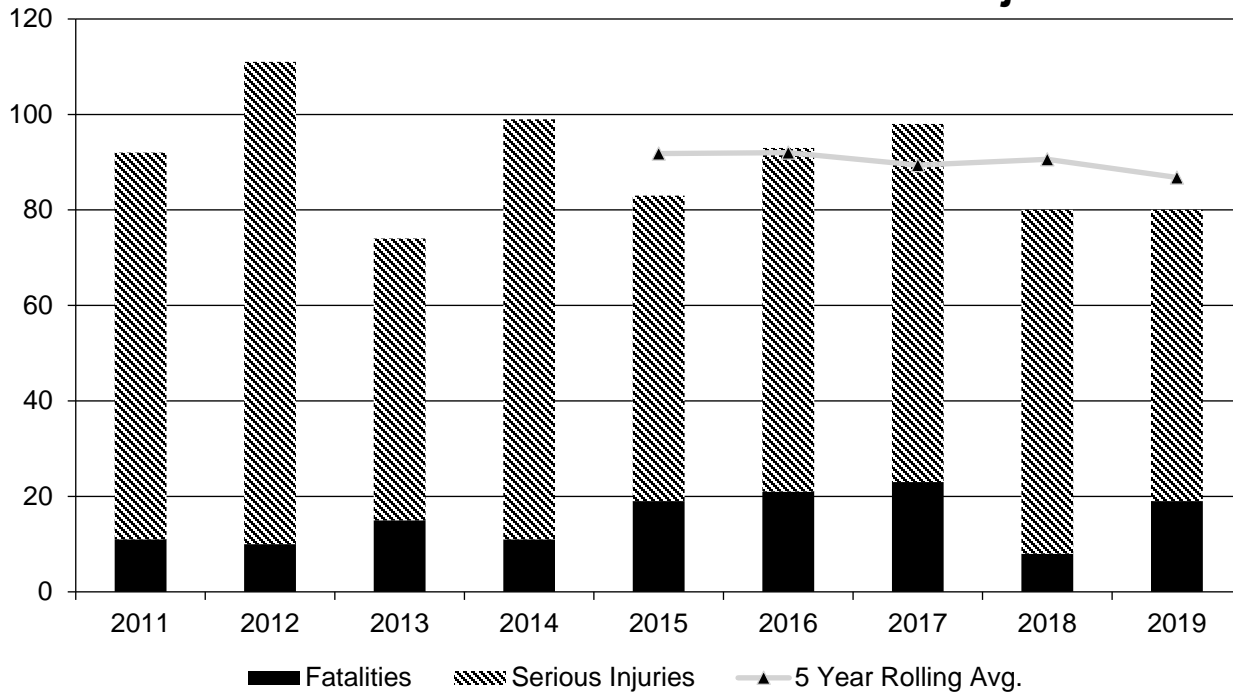
Fatality data source for Question 30 - FARS except for the number of non-motorized fatalities which were obtained from MaineDOT's Dashboard.

Describe fatality data source.
Other
If Other Please describe

FARS and MaineDOT Dashboard

- Question 30 – General Highway Performance Trends – FARS for overall Fatalities – MaineDOT Dashboard for "non-motorized" fatalities and serious injuries.
- Question 32 – Functional Classification and Ownership –MaineDOT Dashboard
- Question 39 – Older Drivers and Pedestrian Special Rules – FARS
- Question 44 – Annual Emphasis Area Performance – MaineDOT Dashboard

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

Year 2019				
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	8.2	30.6	0.37	1.38

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	0.6	0	12.27
Rural Principal Arterial (RPA) - Other	26.8	85.8	1.46	4.68
Rural Minor Arterial	18.6	84.2	1.09	4.94
Rural Minor Collector	10.4	48.6	1.27	5.93
Rural Major Collector	35	124.8	1.56	5.56
Rural Local Road or Street	18.8	87.6	1.3	6.07
Urban Principal Arterial (UPA) - Interstate	5	27.8	0.39	2.15
Urban Principal Arterial (UPA) - Other Freeways and Expressways	0.2	6	0.12	3.52
Urban Principal Arterial (UPA) - Other	6.6	53	0.91	7.31
Urban Minor Arterial	11.8	72.2	1.15	7.04
Urban Minor Collector	0.4	7.2	0.55	9.87
Urban Major Collector	7.6	60.6	0.78	6.24
Urban Local Road or Street	6.2	32.2	1.33	6.91

Year 2019

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	93.2	416.8	1.07	4.8
County Highway Agency				
Town or Township Highway Agency	24.6	119	1.32	6.4
City or Municipal Highway Agency				
State Park, Forest, or Reservation Agency	0	1	0	19.64
Local Park, Forest or Reservation Agency				
Other State Agency				
Other Local Agency				
Private (Other than Railroad)				
Railroad				
State Toll Authority	3.6	15	0.23	0.97
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)	0.2	0	1.48	0
Indian Tribe Nation				
State Aid	33.6	169.4	1.18	5.94

Fatality Data Source for Question 32: MaineDOT Dashboard

Safety Performance Targets

Safety Performance Targets

Calendar Year 2021 Targets *

Number of Fatalities:158.0

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 annual VMT in 2020 is projected to be approximately 20% lower than originally estimated due to the social distancing and stay-home orders during the Covid-19 pandemic period which saw sharp decreases in VMT beginning in March and continuing through the middle of May. There is significant uncertainty surrounding the time it will take to "return to normal", however, particularly with respect to tourist traffic as visitors cancel plans for vacationing in Maine in the summer of 2020. Based on Maine's experience with recovery from the economic downturn of 2009, we will also set the projected 2021 VMT at 10% lower than 2019 actual VMT.• Maine's economy and fuel prices have been and will continue to be affected by Covid-19 economic impacts on both businesses and citizens' household finances. The tourism industry will be heavily impacted for the rest of 2020 and likely into early 2021.• 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 constraints, 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 Fatality data has varied widely during the 2019 Benchmark Performance (2015-2019) period ranging from 139 in 2018 to 172 in 2017. The 5-year average was 156.4 through the period. Despite the lower VMT experienced this year during the Covid-19 stay-at-home period, Maine's 5-year fatality rate continues to trend slightly upward for the period with 2020 fatal numbers as of April 30, 2020 being near Maine's 2019 fatal numbers at the same point in time. • MaineDOT suggests setting the 2021 fatalities target assuming a slight decrease from the 2020 target, but an increase in 2021 fatal rate target because this metric will be impacted by the expected 20% reduction in traffic in 2020 and 10% reduction in traffic in 2021.

Number of Serious Injuries:725.0

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

• Serious Injuries (A) 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. • Unlike 2020 fatalities, Maine has seen a slight reduction in the number of serious injuries during the Covid-19 pandemic measures. Uncertainty remains, however, as to the remainder of 2020 as motorists once again take to the state's highways on a more frequent basis.• Recommended 2021 target is about equal with the 2019 Benchmark Performance (2015-2019) for this measure. As with fatal rates, we also are anticipating a slightly higher rate of serious injuries due to lower project VMT for 2020 and 2021.

Fatality Rate:1.120

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 annual VMT in 2020 is projected to be approximately 20% lower than originally estimated due to the social distancing and stay-home orders during the Covid-19 pandemic period which saw sharp decreases in VMT beginning in March and continuing through the middle of May. There is significant uncertainty surrounding the time it will take to "return to normal", however, particularly with respect to tourist traffic as visitors cancel plans for vacationing in Maine in the summer of 2020. Based on Maine's experience with recovery from the economic downturn of 2009, we will also set the projected 2021 VMT at 10% lower than 2019 actual VMT.• Maine's economy and fuel prices have been and will continue to be affected by Covid-19 economic impacts on both businesses and citizens' household finances. The tourism industry will be heavily impacted for the rest of 2020 and likely into early 2021.• 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 constraints, 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 Fatality data has varied widely during the 2019 Benchmark Performance (2015-2019) period ranging from 139 in 2018 to 172 in 2017. The 5-year average was 156.4 through the period. Despite the lower VMT experienced this year during the Covid-19 stay-at-home period, Maine's 5-year fatality rate continues to trend slightly upward for the period with 2020 fatal numbers as of April 30, 2020 being near Maine's 2019 fatal numbers at the same point in time. • MaineDOT suggests setting the 2021 fatalities target assuming a slight decrease from the 2020 target, but an increase in 2021 fatal rate target because this metric will be impacted by the expected 20% reduction in traffic in 2020 and 10% reduction in traffic in 2021.

Serious Injury Rate:5.020

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

• Serious Injuries (A) 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. • Unlike 2020 fatalities, Maine has seen a slight reduction in the number of serious injuries during the Covid-19 pandemic measures. Uncertainty remains, however, as to the remainder of 2020 as motorists once again take to the state's highways on a more frequent basis.• Recommended 2021 target is about equal with the 2019 Benchmark Performance (2015-2019) for this measure. As with fatal rates, we also are anticipating a slightly higher rate of serious injuries due to lower project VMT for 2020 and 2021.

Total Number of Non-Motorized Fatalities and Serious Injuries:89.0

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 2020 indicate a slight move downward from our recent low in 2018 towards an average year from a non-motorized K&A perspective. • The 5-year Average for the 2015-2019 Benchmark Period was 86.6. It is hoped that our continued focused pedestrian outreach in 21 communities in Maine through STEP and HeadsUp programs will bring down our bike/ped fatality numbers and recommend setting a slightly lower target for 2021.

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 such as the reduced VMT due to the Covid-19 pandemic.

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 2019 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.

PERFORMANCE MEASURES	TARGETS	ACTUALS
Number of Fatalities	165.0	156.2
Number of Serious Injuries	737.6	720.4
Fatality Rate	1.100	1.042
Serious Injury Rate	4.900	4.798
Non-Motorized Fatalities and Serious Injuries	91.0	86.8

All five of Maine's 2019 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 and will likely continue to do so as long as 2018 is part of our 5-year average fatality computations. Maine's serious injury numbers and rates have been steadily decreasing since 2012 despite increased statewide vehicle miles traveled and continued to do so for this reporting period. Both factors contributed to our meeting the number of non-motorized fatalities and serious injury performance target as well. Our 2019 fatality count overall was closer to the 2010-2016 average counts but we continued to see a steady decrease in serious injury crashes.

Our early 2020 crash reports would indicate we're likely to see average fatality and serious injury counts for 2020, but much higher crash rates due to the unanticipated drop in statewide VMT due to COVID-19 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	2013	2014	2015	2016	2017	2018	2019
Number of Older Driver and Pedestrian Fatalities	28	26	27	32	42	28	31
Number of Older Driver and Pedestrian Serious Injuries	89	74	70	78	92	86	95

Fatality Source for Question 39: FARS, as required, adjusted to include only those crashes located on the public highway system.

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. In 2019, that number increased again returning to a value closer to the previous 5-year average. Our serious injury rate has been steadily decreasing since a peak in 2012. This downward trend continued in 2019.

Our overall benefit-cost performance on mitigation efforts has been good. Systemic installations such as center line rumble strips have continued to prove very effective at a relatively low cost. We plan to expand this program as we continue to explore new systemic safety programs that have proven to be successful in other states.

We recently completed a statewide assessment of our center line rumble strip program for those segments with three years of before/after crash data available which shows an average reduction in fatalities and serious injuries of 62.9% and 48.1% respectively where these are installed.

MaineDOT is also in the preliminary stages of a study quantifying the benefits of converting rural two-way stop controlled intersection to all-stop controlled intersections. Preliminary data shows a significant reduction in both the number and severity of crashes at these facilities after conversion. Overall, we are observing a 70% reduction in crash costs with this countermeasure.

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.

MaineDOT experienced a significant and unexpected increase in construction costs for all projects in 2019, including HSIP-funded improvements. This increase required a broad adjustment of estimates for previously-programmed projects that will undoubtedly affect our anticipated fatality and serious injury improvements in the future as some of these projects had to be moved to future years to match available funding.

Effectiveness of Groupings or Similar Types of Improvements

Present and describe trends in SHSP emphasis area performance measures.

Year 2019

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		105	383	0.7	2.56
Intersections		14	113	0.09	0.75
Pedestrians		15.2	49.6	0.1	0.33
Bicyclists		2	18.4	0.01	0.12
Older Drivers		42	160	0.28	1.07
Motorcyclists		24.4	118.8	0.16	0.79

Number of Fatalities
5 Year Average

Legend: ■ 2011-2015 ▨ 2012-2016 ⬚ 2013-2017 ▨ 2014-2018 ◪ 2015-2019
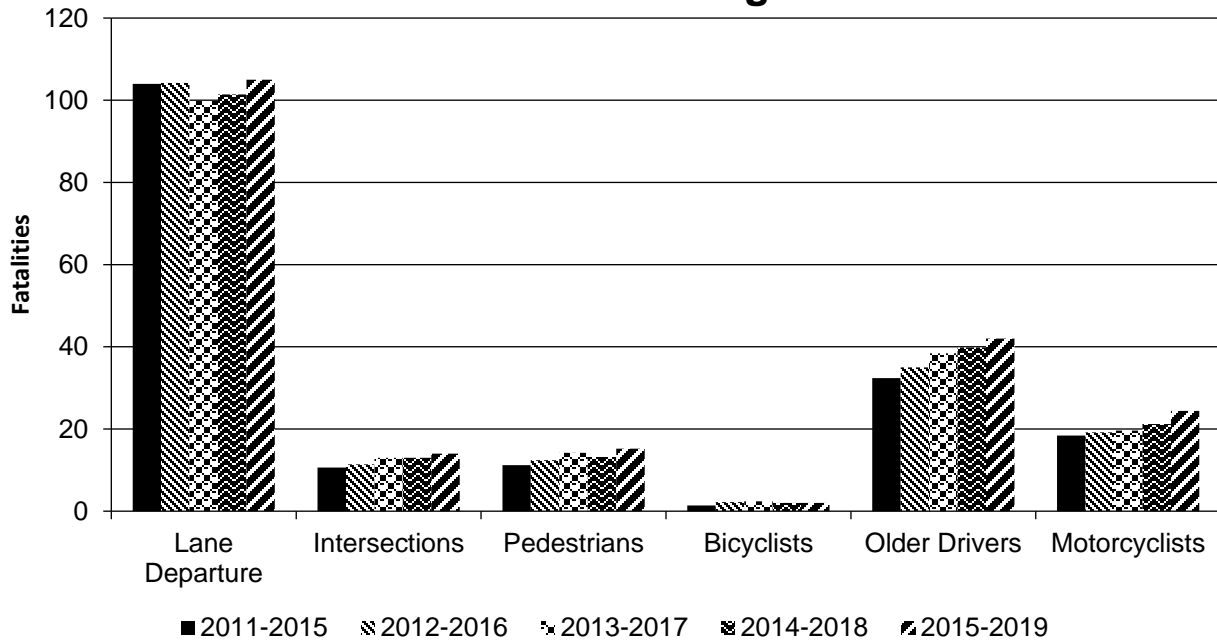
Number of Serious Injuries
5 Year Average

Legend: ■ 2011-2015 ▨ 2012-2016 ⬚ 2013-2017 ▨ 2014-2018 ◪ 2015-2019
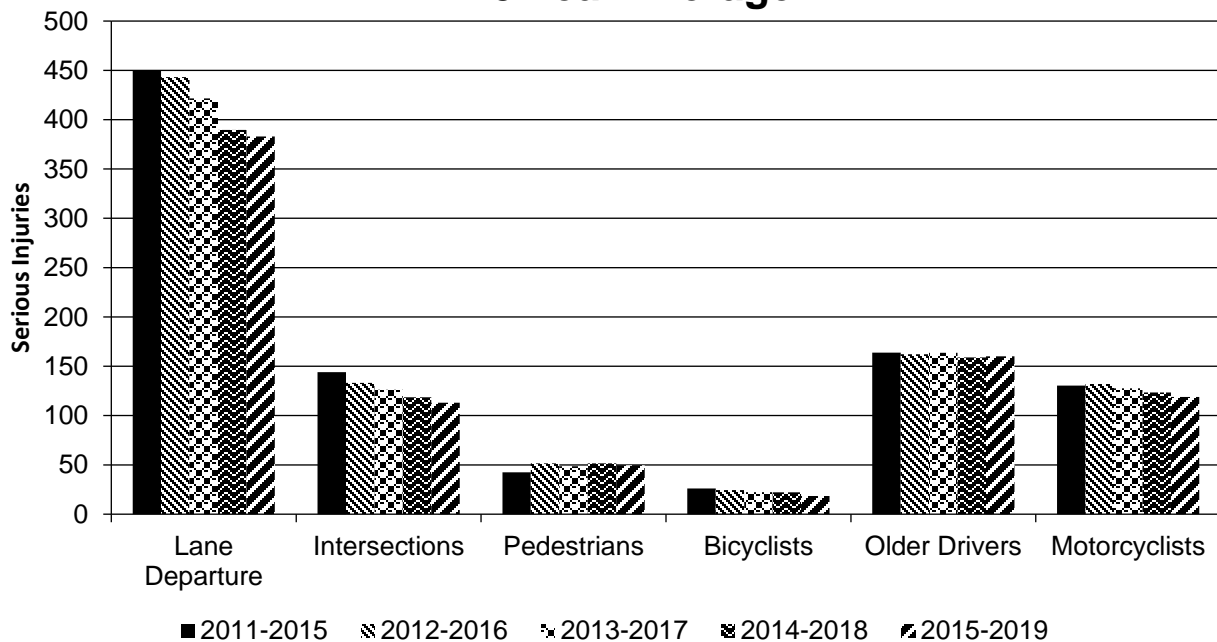
Fatality Rate (per HMVMT)
5 Year Average
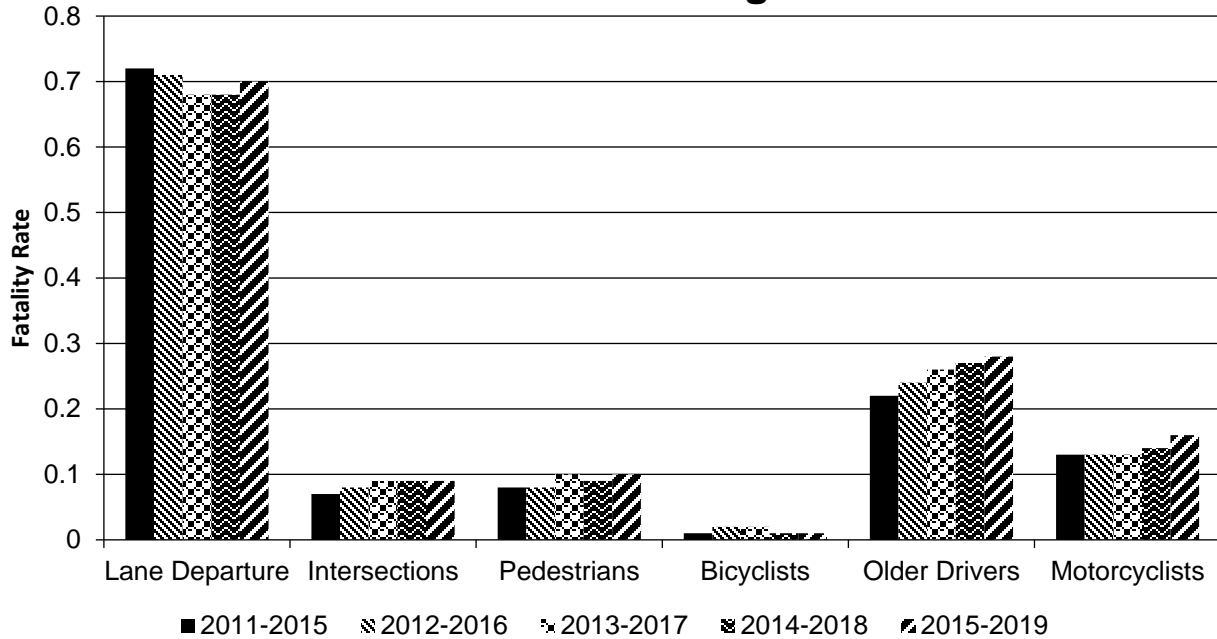
Serious Injury Rate (per HMVMT)
5 Year Average
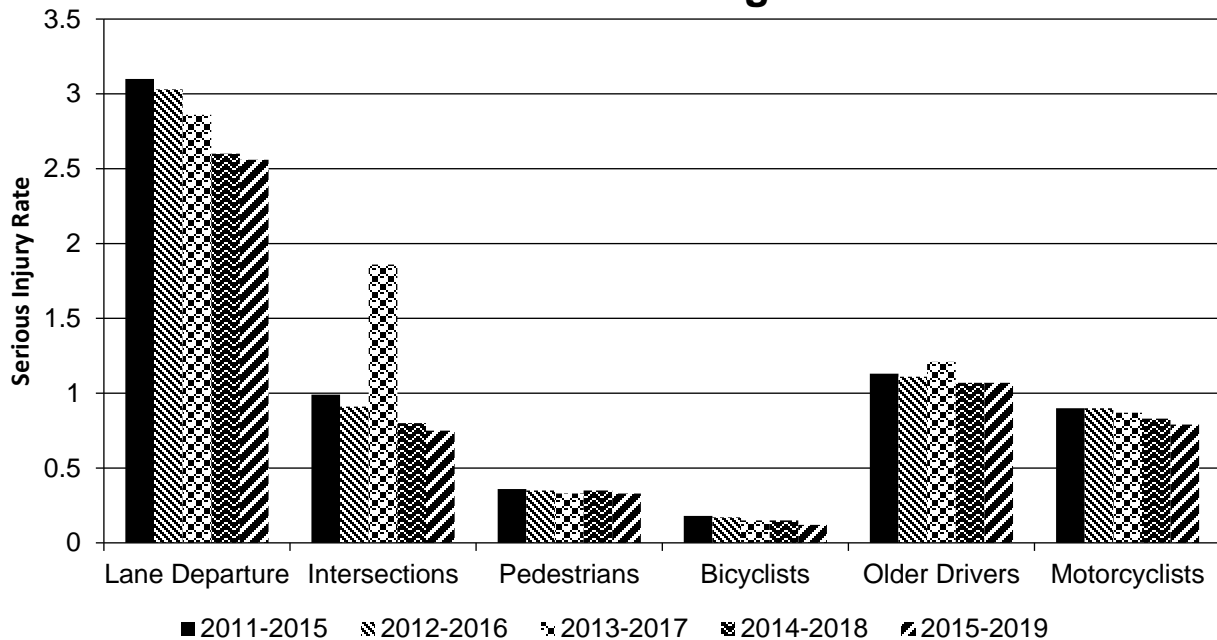
Fatality Data Source for Question 44: MaineDOT Dashboard

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: Centerline Rumble Strip

Description: Safety Performance of Maine Corridors with Center line Rumble Strips Installed Between 2006 and 2016

Target Crash Type: Head on

Number of Installations:

Number of Installations:

Miles Treated: 256.27

Years Before: 3

Years After: 3

Methodology: Simple before/after

Results: Fatality Reduction - 62.86% Serious Injury Reduction - 48.08%

File Name: Hyperlink

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)
015683.00	Urban Major Collector	Intersection traffic control	Intersection traffic control - other	11.00	5.00				1.00	2.00	4.00	13.00	10.00	3.14456933706165
017239.00	Rural Principal Arterial (RPA) - Other	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	12.00	13.00			1.00		4.00	1.00	17.00	14.00	-0.862973237803142
017334.00	Urban Major Collector	Intersection traffic control	Modify traffic signal - miscellaneous/other/unspecified	9.00	6.00						2.00	9.00	8.00	0.261460741018796
019017.00	Rural Principal Arterial (RPA) - Other	Intersection traffic control	Intersection traffic control - other	6.00	9.00	1.00			1.00	3.00	4.00	10.00	14.00	-9.54820761431516
020217.00	Urban Minor Arterial	Intersection traffic control	Intersection flashers - add overhead (continuous)	10.00	5.00					6.00	2.00	16.00	7.00	-7.48918117540178
020555.00	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Intersection traffic control - other	1.00	17.00					3.00	3.00	4.00	20.00	11.2241467398354
022675.00	Rural Principal Arterial (RPA) - Other	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	8.00	5.00			4.00	1.00	3.00	2.00	15.00	8.00	-4.15394667546595
022680.00	Rural Minor Collector	Intersection traffic control	Intersection flashers - add overhead (continuous)	4.00	5.00					1.00	2.00	5.00	7.00	5.42786373383453

A sampling of spot improvement projects constructed in calendar year 2016. 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 exclusively beginning in 2018 has also led to improved public acceptance of their presence on the roadway. We have also begun a pilot installation of edge line rumble strips on select sharp horizontal curves with a history of lane departure crashes in hopes of mitigating fatalities and serious injuries at those locations.

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.

*Based on Functional Classification (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]

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	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT	Segment Identifier (12) [12]	100	100					100	100	100	100
	Route Number (8) [8]	100	100								
	Route/Street Name (9) [9]	100	100								
	Federal Aid/Route Type (21) [21]	100	100								
	Rural/Urban Designation (20) [20]	100	100					100	100		
	Surface Type (23) [24]	100	100					100	100		
	Begin Point Segment Descriptor (10) [10]	100	100					100	100	100	100
	End Point Segment Descriptor (11) [11]	100	100					100	100	100	100
	Segment Length (13) [13]	100	100								
	Direction of Inventory (18) [18]	100	100								
	Functional Class (19) [19]	100	100					100	100	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	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Median Type (54) [55]	100	100								
	Access Control (22) [23]	100	100								
	One/Two Way Operations (91) [93]	100	100								
	Number of Through Lanes (31) [32]	100	100					100	100		
	Average Annual Daily Traffic (79) [81]	100	100					100	100		
	AADT Year (80) [82]	100	100								
	Type of Governmental Ownership (4) [4]	100	100					100	100	100	100
INTERSECTION	Unique Junction Identifier (120) [110]										
	Location Identifier for Road 1 Crossing Point (122) [112]										
	Location Identifier for Road 2 Crossing Point (123) [113]										
	Intersection/Junction Geometry (126) [116]										
	Intersection/Junction Traffic Control (131) [131]										
	AADT for Each Intersecting Road (79) [81]			100	100						
	AADT Year (80) [82]			100	100						
	Unique Approach Identifier (139) [129]										
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]										
	Location Identifier for Roadway at					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	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Beginning of Ramp Terminal (197) [187]										
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					100	100				
	Ramp Length (187) [177]					100	100				
	Roadway Type at Beginning of Ramp Terminal (195) [185]					100	100				
	Roadway Type at End Ramp Terminal (199) [189]					100	100				
	Interchange Type (182) [172]										
	Ramp AADT (191) [181]					100	100				
	Year of Ramp AADT (192) [182]					100	100				
	Functional Class (19) [19]					100	100				
	Type of Governmental Ownership (4) [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 (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]
No changes from 2019 Report

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 ongoing effort involving leveraging the GPS data stream from our ARAN 9000 pavement condition data collection vehicle to extract horizontal curvature of state highways has proven to be a very effective means to obtain this data. We have processed this data for all Highway Corridor Priority 4 and higher in one direction and are now driving those same roadways in the opposite direction as time allows to obtain superelevation data for the other lane on horizontal curves. This new collection effort is being completed at the end of the data collection season after our required regular network pavement data collection is complete. We currently have no plans to perform this collection on local roads using this method but will explore options to obtain this data by some other means in the future.

MaineDOT's Office of Safety will hold internal meetings with our Results and Information Office to discuss the process and resources required and timeline expected to complete the MIRE FDEs by the deadline.

Optional Attachments

Program Structure:

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.