# MAINE

# HIGHWAY SAFETY IMPROVEMENT PROGRAM

## 2024 ANNUAL REPORT


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# Disclaimer

## *Protection of Data from Discovery Admission into Evidence*

23 U.S.C. 148(h)(4) states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section[HSIP], shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data.”

23 U.S.C. 407 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 continues to use 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 driven by HSM methodology this year, using our custom GIS intersection network screening process which computes excess crashes with EB adjustment for urban and rural stop and signal-controlled 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 also continue to work on collecting the necessary MIRE Fundamental Data Elements. MaineDOT now has the capability to perform segment-based highway network safety screening to enhance our data-driven safety analysis capabilities using a GIS-based application developed by Office of Safety and Mobility staff members. As with the intersection-based screening tool, our segment screening tool uses the HSM excess crash method with EB adjustment. We continue to collect cross slope information for the second lane of 2-lane rural highways using our ARAN 9000 by driving these roadways in the opposite direction of our normal pavement condition network collection activities as time and weather allows.

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. Maine's rumble strip program for non-interstate roadways installations now installs sinusoidal or “mumble strips” and we have been installing that design exclusively since 2018.

MaineDOT continues to convert a prioritized list of two-way stop-controlled intersections identified through our data-driven network screening tools to all-way stops. These have proven to be a very cost-effective countermeasure by combining the innovative procurement of hardware such as solar-powered LED flashing stop signs using HSIP funds with the installation labor performed by state or local forces. Most importantly, MaineDOT has observed a substantial reduction in both the crash and severe injury rates at locations where these conversions have occurred.

Maine’s 2023 VMT has nearly returned to 2019 levels from a 12% deficit during 2020 during the COVID pandemic. These unanticipated low-volume years continue to impact our safety performance target setting and assessments

In 2023, Maine experienced 135 fatalities which was the lowest annual count since 2014 and has helped to mitigate last year’s higher than anticipated fatality count of 182 in 2022. As a result, our 5YAA fatality trend line has levelled off slightly.

Unlike the trend observed with fatalities, Maine continues to experience a slight increase in the five-year annual average for the number of serious injuries each year and the corresponding serious injury rate.

The FHWA assessment of Maine’s Safety Performance Targets resulted in the determination that Maine met or made significant progress towards our safety goals so an HSIP implementation plan is not required of our state. Maine did, however, trigger the High-Risk Rural Roads special rule in this latest assessment. In accordance with recent previous assessments where the HRRR special rule applies, MaineDOT has obligated the required $900,000 HRRR funding for both federal FY 2023 and FY 2024 as described in this report.

# 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 and Mobility which is led by a director level position that reports directly to the Chief Engineer. The Office of Safety and Mobility consists of a highway safety engineering section, mobility engineering section, travel analysis specialist, crash records section, and ADA Coordinator providing a single unit within the Department with the resources needed to perform data-driven safety and mobility 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 and Mobility 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 and Mobility

The Director of the Office of Safety & Mobility reports directly to MaineDOT's Chief Engineer.

### 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 and Mobility has also made crash data available to the public through the Department's Map Viewer application for their use, and provides 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 and Mobility 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 Traffic Engineering Group in the Bureau of Maintenance and Operations (M&O.) Appropriate countermeasures are evaluated by the Safety Engineering section 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 merged our Transportation Analysis unit, formerly in the Bureau of Planning, into the Office of Safety forming a new Office of Safety & Mobility. MaineDOT also has a standing Safety/Mobility Committee charged with functioning as a formal vehicle for communication and coordination of all work being performed in both areas. This Committee is co-chaired by the Director of the Office of Safety & Mobility and the State Traffic Engineer, and permanent members of this committee come from the following units within the Department:

- Office of Safety & Mobility (Safety Engineering)
- Office of Safety & Mobility (Mobility Engineering)
- Office of Safety & Mobility (Crash Records)
- Maintenance & Operations (Traffic Engineering)
- Maintenance & Operations (Region Traffic Engineer)
- Maintenance & Operations (ITS Manager)
- Planning (Regional Planner)
- Planning (Active Transportation Planner)
- Project Development (Multimodal Program Director)
- Project Development (Assistant Bureau 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. Projects selected for inclusion in the Department's work plan are then transferred to the Bureau of Project Development (BPD) through a handoff process during which all preliminary documentation, presentations, and alternative analysis are provided to the design team. BPD staff also review the Office of Safety's programming estimates to ensure adequate funding is being programmed for the project to be delivered.

### 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?

Yes

MaineDOT's current HSIP Manual is under revision to reflect recent changes in policies, procedures, and available tools.

### Select the programs that are administered under the HSIP.

- Bicycle Safety
- HRRR
- Low-Cost Spot Improvements
- Pedestrian Safety
- Roadway Departure
- Sign Replacement And Improvement
- Wrong Way Driving

- Other-Safety Spot Improvements
- Other-Large Animal

## Program: Bicycle Safety

### *Date of Program Methodology:7/17/2023*

### *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**

- All crashes

**Exposure**

- Traffic

**Roadway**

- Functional classification
- Roadside features

### *What project identification methodology was used for this program?*

- Crash frequency

### *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**

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

## Program: HRRR

### *Date of Program Methodology:7/27/2023*

### *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 |
|---|---|---|
| • Fatal and serious injury crashes only | • Lane miles | • Functional classification |

### *What project identification methodology was used for this program?*

- Crash frequency
- Crash rate

### *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?*

- Other-Systemic set-aside.

### *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

While rural local roads are identified during our network screening process and eligible for HRRR funding, MaineDOT allocates 100% of HRRR funding to improve our rural collector highways.

## Program: Low-Cost Spot Improvements

### *Date of Program Methodology:7/17/2023*

### *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**

- 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?*

- Expected crash frequency with EB adjustment

### *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**

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

## Program: Pedestrian Safety

### *Date of Program Methodology:7/17/2023*

### *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?*

Funding set-aside

### *What data types were used in the program methodology?*

**Crashes**

- All crashes

**Exposure**

- Traffic
- Volume

**Roadway**

- Functional classification
- Roadside features

### *What project identification methodology was used for this program?*

- Crash frequency

### *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**

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

## Program: Roadway Departure

### *Date of Program Methodology:7/17/2023*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Funding set-aside

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes | • Volume | • Horizontal curvature<br>• Functional classification<br>• Roadside features<br>• Other-Posted Speed Limit |

### *What project identification methodology was used for this program?*

- Crash rate
- Other-Systemic

### *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**

Other-Systemic Application:1

## Program: Sign Replacement And Improvement

### *Date of Program Methodology:7/17/2023*

### *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 |
|---|---|---|
| | | • Functional classification |

### *What project identification methodology was used for this program?*

- Other-long term systemic

### *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: Wrong Way Driving

### *Date of Program Methodology:7/17/2023*

### *What is the justification for this program?*

- Addresses SHSP priority or emphasis area

### *What is the funding approach for this program?*

Funding set-aside

### *What data types were used in the program methodology?*

| Crashes | Exposure | Roadway |
|---|---|---|
| • All crashes | • Traffic<br>• Volume | • Median width<br>• Functional classification |

### *What project identification methodology was used for this program?*

- Crash frequency

### *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-Safety Spot Improvements

### *Date of Program Methodology:7/17/2023*

### *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
- Excess expected crash frequency with the EB adjustment

### *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:2
Available funding:1

## Program: Other - Large Animal

### *Date of Program Methodology:7/17/2023*

### *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

**Exposure**

- Volume

**Roadway**

- Median width
- Roadside features

### *What project identification methodology was used for this program?*

- Crash frequency

### *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
Cost Effectiveness:2

### What percentage of HSIP funds address systemic improvements?

40

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

- Cable Median Barriers
- 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 Safety/Mobility Committee, and the Director of the Office of Safety and Mobility 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. The Department also uses HSM methods to perform alternative countermeasure analysis for individual locations and prioritization of projects recommended for funding. This year MaineDOT has developed a prototype safety screening tool for roadway segments which also is based on excess crashes with EB adjustment. This tool is based on ArcGIS Online technology and is in the form of a web-based dashboard. Though serviceable the tool is still being refined.

# 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)** | $45,778,178 | $11,922,618 | 26.04% |
| **HRRR Special Rule (23 U.S.C. 148(g)(1))** | $0 | $1,800,000 | 0% |
| **VRU Safety Special Rule (23 U.S.C. 148(g)(3))** | $0 | $0 | 0% |
| **Penalty Funds (23 U.S.C. 154)** | $16,936,450 | $4,019,657 | 23.73% |
| **Penalty Funds (23 U.S.C. 164)** | $0 | $0 | 0% |
| **RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))** | $0 | $1,104,367 | 0% |
| **Other Federal-aid Funds (i.e. STBG, NHPP)** | $15,683,342 | $0 | 0% |
| **State and Local Funds** | $14,302,467 | $0 | 0% |
| **Totals** | $92,700,437 | $18,846,642 | 20.33% |

### 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%

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

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

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

0%

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

0%

MaineDOT does not allocate HSIP funds for non-infrastructure safety projects.

### 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.

## *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 OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 018658.00-AUBURN, VARIOUS INTERSECTIONS | Intersection traffic control | Modify traffic signal – modernization/replacement | 5 | Intersections | $809744 | $1018690 | Penalty Funds (23 U.S.C. 154) | Urban | Multiple/Varies | 0 | | State Highway Agency | Spot | Intersections | IC-2 |
| 018664.00-PORTLAND, ROUTE 9/22 | Intersection traffic control | Modify traffic signal – modernization/replacement | 4 | Intersections | $449232 | $1486685 | State and Local Funds | Urban | Principal Arterial-Other | 24,000 | 30 | State Highway Agency | Spot | Intersections | IC-2 |
| 018769.23-STATEWIDE, INTERSTATE STRIPING | Roadway delineation | Longitudinal pavement markings - remarking | 41.678 | Miles | $650706 | $650706 | HSIP (23 U.S.C. 148) | Multiple/Varies | Principal Arterial-Interstate | 0 | 75 | State Highway Agency | Spot | Lane Departure | LD-13 |
| 019001.00-SANFORD, ALFRED & SCHOOL ST | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $1674000 | $1860000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 15,020 | 45 | State Highway Agency | Spot | Intersections | IC-2 |
| 020205.00-DAYTON, ROUTES 5 & 35 | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $2402692 | $2673071 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 5,608 | 40 | State Highway Agency | Spot | Intersections | IC-3 |
| 020581.23-STATEWIDE, STRIPING 2023 | Roadway delineation | Longitudinal pavement markings - remarking | 15194 | Paint-Miles | $5310414 | $6638019 | Penalty Funds (23 U.S.C. 154) | Multiple/Varies | Multiple/Varies | 0 | | State Highway Agency | Systemic | Lane Departure | LD-13 |
| 020581.24-STATEWIDE, STRIPING 2024 | Roadway delineation | Longitudinal pavement markings - remarking | 15194 | Paint-Miles | $6160000 | $7700000 | Penalty Funds (23 U.S.C. 154) | Multiple/Varies | Multiple/Varies | 0 | | State Highway Agency | Systemic | Lane Departure | LD-13 |
| 021663.00-BANGOR, ROUTE 15 | Intersection geometry | Add/modify auxiliary lanes | 0.23 | Miles | $926161 | $4060568 | Other Federal-aid Funds (i.e. STBG, NHPP) | Urban | Principal Arterial-Other | 20,431 | 25 | State Highway Agency | Spot | Intersections | IC-2 |
| 021664.00-BATH, ROUTE 1/STATE ROAD | Intersection geometry | Intersection realignment | 0.26 | Miles | $206966 | $3740000 | Other Federal-aid Funds (i.e. STBG, NHPP) | Urban | Multiple/Varies | 2,657 | 35 | State Highway Agency | Spot | Intersections | IC-2 |
| 021840.00-WESTFIELD, ROUTE 1 | Roadside | Roadside - other | 0.08 | Miles | $328500 | $365000 | Other Federal-aid Funds (i.e. STBG, NHPP) | Rural | Principal Arterial-Other | 4,611 | 55 | State Highway Agency | Spot | Winter Driving | WC-3 |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 022823.00-ARUNDEL- SIGNAL | Intersection traffic control | Modify traffic signal – modernization/replacement | 1 | Intersections | $314100 | $349000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 9,552 | 40 | State Highway Agency | Spot | Intersections | IC-2 |
| 022952.00-OXFORD, ROUTE 26 | Intersection geometry | Intersection realignment | 1 | Intersections | $718734 | $800054 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 11,720 | 50 | State Highway Agency | Spot | Intersections | IC-2 |
| 023112.00-BREWER, ROUTE 9 | Intersection traffic control | Modify traffic signal – modernization/replacement | 5 | Intersections | $236736 | $313920 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 16,577 | 25 | State Highway Agency | Spot | Intersections | IC-2 |
| 023114.00-BANGOR, ROUTE 2 | Intersection traffic control | Modify traffic signal – modernization/replacement | 8 | Intersections | $769594 | $984585 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 16,503 | 25 | State Highway Agency | Spot | Intersections | IC-2 |
| 023509.00-ARUNDEL, ROUTE 1 | Intersection traffic control | Modify traffic signal – modernization/replacement | 1 | Miles | $461700 | $513000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 11,449 | 35 | State Highway Agency | Spot | Intersections | IC-2 |
| 023573.00-BANGOR, STATE STREET | Intersection traffic control | Modify traffic signal – modernization/replacement | 1 | Intersections | $89600 | $140000 | Other Federal-aid Funds (i.e. STBG, NHPP) | Urban | Minor Arterial | 9,390 | | State Highway Agency | Spot | Intersections | IC-2 |
| 023871.23-STATEWIDE STRIPING 2023 CONTRA | Roadway delineation | Longitudinal pavement markings - remarking | | | $640516 | $800646 | HSIP (23 U.S.C. 148) | Multiple/Varies | Multiple/Varies | 0 | | State Highway Agency | Systemic | Lane Departure | LD-13 |
| 024201.00-TURNER, ROUTE 4 | Intersection geometry | Intersection realignment | 1 | Miles | $3207600 | $3564000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 9,856 | 45 | State Highway Agency | Spot | Intersections | IC-2 |
| 024207.00-AUGUSTA, ROUTE 3 | Roadway | Restripe roadway to revise separation between opposing lanes and/or shoulder widths | 0.314 | Miles | $435375 | $483750 | Other Federal-aid Funds (i.e. STBG, NHPP) | Rural | Principal Arterial-Other | 8,445 | 45 | State Highway Agency | Spot | Lane Departure | LD-13 |
| 024229.00-STATEWIDE, SCHOOL ZONE SIGNAGE | Roadway signs and traffic control | Roadway signs and traffic control - other | | | $554980 | $616644 | Penalty Funds (23 U.S.C. 154) | Rural | Multiple/Varies | 0 | | State Highway Agency | Spot | Pedestrians | P-11 |
| 024363.00-SOUTH PORTLAND, I-295 EXIT 4 | Lighting | Interchange lighting | 0.011 | Miles | $2830500 | $3145000 | Other Federal-aid Funds (i.e. STBG, NHPP) | Urban | Principal Arterial-Interstate | 635 | 55 | State Highway Agency | Spot | Intersections | IC-2 |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 024647.00-BERWICK, ROUTE 9/SAW MILL ROAD | Intersection geometry | Intersection realignment | 0.137 | Miles | $160000 | $1384700 | Other Federal-aid Funds (i.e. STBG, NHPP) | Urban | Minor Arterial | 8,983 | 25 | State Highway Agency | Spot | Intersections | IC-2 |
| 024987.00-2023 STATEWIDE RUMBLE STRIPS | Roadway | Rumble strips – center | 83.341 | Miles | $670500 | $745000 | HSIP (23 U.S.C. 148) | Rural | Multiple/Varies | 3,357 | 55 | State Highway Agency | Systemic | Lane Departure | LD-3 |
| 024987.10-2023 STATEWIDE RUMBLE STRIPS | Roadway | Rumble strips – center | 179.2 | Miles | $758467 | $842741 | HSIP (23 U.S.C. 148) | Rural | Multiple/Varies | 0 | 45-55 | State Highway Agency | Systemic | Lane Departure | LD-3 |
| 025228.24-2024 INTERSTATE 295/95/395 SERVICE PATROL | Roadside | Roadside - other | 2 | Locations | $450000 | $500000 | Other Federal-aid Funds (i.e. STBG, NHPP) | Rural | Multiple/Varies | 0 | 45-55 | State Highway Agency | Systemic | Work Zones/Traffic Incident Management | WZ-7 |
| 025263.00-STATEWIDE, BACKPLATE INSTALLATION | Intersection traffic control | Modify traffic signal – add backplates with retroreflective borders | 6 | Locations | $118800 | $132000 | HSIP (23 U.S.C. 148) | Urban | Multiple/Varies | 0 | 25-35 | State Highway Agency | Systemic | Intersections | IC-6 |
| 025271.00-ELLSWORTH, ROUTE 1 | Intersection geometry | Intersection realignment | 1 | Intersections | $632250 | $702500 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 11,396 | 25 | State Highway Agency | Spot | Intersections | IC-2 |
| 025275.00-POLAND, ROUTE 26 | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $456946 | $507718 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 8,200 | 40 | State Highway Agency | Spot | Intersections | IC-2 |
| 025329.00-DOVER FOXCROFT, ROUTE 15 | Intersection traffic control | Modify traffic signal –other | 1 | Intersections | $94500 | $1455000 | Other Federal-aid Funds (i.e. STBG, NHPP) | Rural | Minor Arterial | 6,593 | 25 | State Highway Agency | Spot | Intersections | IC-2 |
| 025459.00-ALFRED, ROUTE 202 | Intersection geometry | Intersection realignment | 0.252 | Miles | $2088000 | $2320000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 8,775 | 55 | State Highway Agency | Spot | Intersections | IC-2 |
| 025461.00-ELLSWORTH, ROUTE 1A/WINKUMPAUGH ROAD | Intersection geometry | Add/modify auxiliary lanes | 1 | Intersections | $851541 | $946156 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 11,630 | 55 | State Highway Agency | Spot | Intersections | IC-2 |
| 025955.01-SABATTUS, ROUTE 9/ROUTE 126 | Intersection traffic control | Modify traffic signal timing – left-turn phasing | 1 | Intersections | $29077 | $32308 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 9,380 | 45 | State Highway Agency | Spot | Intersections | IC-2 |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 025955.02-SABATTUS, ROUTE 9/ROUTE 132 | Intersection traffic control | Modify traffic signal timing – left-turn phasing | 1 | Intersections | $27316 | $30351 | HSIP (23 U.S.C. 148) | Urban | Minor Arterial | 9,150 | 45 | State Highway Agency | Spot | Intersections | IC-2 |
| 026013.00-STATEWIDE WEIGH STATIONS | Shoulder treatments | Widen shoulder – paved or other (includes add shoulder) | 0.071 | Miles | $236307 | $262564 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 14,570 | 50 | State Highway Agency | Systemic | Work Zones/Traffic Incident Management | WZ-4 |
| 026021.00-HOLLIS, ROUTE 202 | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $647286 | $719207 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 6,522 | 35-45 | State Highway Agency | Spot | Intersections | IC-2 |
| 026260.00-2024 STATEWIDE RUMBLE STRIPS | Roadway | Rumble strips – center | 166.959 | Miles | $670500 | $745000 | Other Federal-aid Funds (i.e. STBG, NHPP) | Rural | Multiple/Varies | 0 | 45-55 | State Highway Agency | Systemic | Lane Departure | LD-3 |
| 026282.00-LYMAN, ROUTE 111 | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $1585000 | $1900000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 12,625 | 55 | State Highway Agency | Spot | Intersections | IC-2 |
| 026284.00-CHELSEA, ROUTE 17 | Intersection geometry | Add/modify auxiliary lanes | 1 | Intersections | $756000 | $945000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 8,950 | 50 | State Highway Agency | Spot | Intersections | IC-2 |
| 026286.00-TURNER, ROUTE 4 | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $1190250 | $1307500 | Other Federal-aid Funds (i.e. STBG, NHPP) | Rural | Principal Arterial-Other | 10,537 | 45 | State Highway Agency | Spot | Intersections | IC-2 |
| 026288.00-LEBANON, ROUTE 202 | Intersection geometry | Intersection realignment | 1 | Intersections | $2178000 | $2500000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 9,375 | 55 | State Highway Agency | Spot | Intersections | IC-2 |
| 026916.00-REGION 3 CABLE GUARDRAIL REPLACEMENT | Roadside | Barrier – cable | 3.064 | Miles | $1162088 | $1306208 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 0 | | State Highway Agency | Systemic | Lane Departure | LD-15 |
| 026924.00-STATEWIDE WEIGH STATIONS | Shoulder treatments | Widen shoulder – paved or other (includes add shoulder) | 1 | Locations | $135000 | $150000 | HSIP (23 U.S.C. 148) | Rural | Multiple/Varies | 0 | | State Highway Agency | Systemic | Work Zones/Traffic Incident Management | WZ-4 |
| 026926.00-STATEWIDE WEIGH STATIONS | Shoulder treatments | Widen shoulder – paved or other (includes add shoulder) | 1 | Locations | $135000 | $150000 | Penalty Funds (23 U.S.C. 154) | Rural | Major Collector | 1,910 | 55 | State Highway Agency | Systemic | Work Zones/Traffic Incident Management | WZ-4 |

| PROJECT NAME | IMPROVEMENT CATEGORY | SUBCATEGORY | OUTPUTS | OUTPUT TYPE | HSIP PROJECT COST($) | TOTAL PROJECT COST($) | FUNDING CATEGORY | LAND USE/AREA TYPE | FUNCTIONAL CLASSIFICATION | AADT | SPEED OR SPEED RANGE | OWNERSHIP | METHOD FOR SITE SELECTION | SHSP EMPHASIS AREA | SHSP STRATEGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 027036.00-WARREN, ROUTE 90 | Intersection traffic control | Modify control – Modern Roundabout | 1 | Intersections | $2763000 | $3200000 | Penalty Funds (23 U.S.C. 154) | Rural | Minor Arterial | 6,621 | 50 | State Highway Agency | Spot | Intersections | IC-2 |
| 027040.00-AUBURN, ROUTE 202 | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $67500 | $75000 | HSIP (23 U.S.C. 148) | Urban | Principal Arterial-Other | 18,330 | 50 | State Highway Agency | Spot | Intersections | IC-2 |
| 027044.00-OXFORD, ROUTE 26 | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $1350000 | $1500000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 15,580 | 45 | State Highway Agency | Spot | Intersections | IC-2 |
| 027046.00-ARUNDEL, LOG CABIN ROAD | Intersection geometry | Intersection realignment | 1 | Intersections | $1350000 | $1500000 | HSIP (23 U.S.C. 148) | Rural | Major Collector | 5,751 | 45 | State Highway Agency | Spot | Intersections | IC-2 |
| 027124.00-ELLSWORTH-TRENTON-BAR HARBOR | Advanced technology and ITS | Congestion detection / traffic monitoring system | 4.79 | Miles | $483000 | $4700000 | Other Federal-aid Funds (i.e. STBG, NHPP) | Rural | Multiple/Varies | 0 | 25-45 | State Highway Agency | Systemic | Lane Departure | LD-13 |
| 027126.00-BRUNSWICK - COOK'S CORNER AREA TRAFFIC SIGNALS | Intersection traffic control | Modify traffic signal – modernization/replacement | 11 | Intersections | $270000 | $4500000 | Other Federal-aid Funds (i.e. STBG, NHPP) | Urban | Multiple/Varies | 0 | 35 | State Highway Agency | Spot | Intersections | IC-2 |
| 027132.00-ELIOT, ROUTE 103/236 | Intersection geometry | Add/modify auxiliary lanes | 1 | Intersections | $120000 | $150000 | Other Federal-aid Funds (i.e. STBG, NHPP) | Rural | Minor Arterial | 15,336 | 45 | State Highway Agency | Spot | Intersections | IC-2 |
| 027134.00-ELIOT, ROUTE 101/236 | Intersection geometry | Add/modify auxiliary lanes | 1 | Intersections | $200000 | $250000 | HSIP (23 U.S.C. 148) | Rural | Minor Arterial | 11,763 | 45 | State Highway Agency | Spot | Intersections | IC-2 |
| 027484.00-BANGOR, STILLWATER AVENUE | Intersection traffic control | Modify traffic signal – modernization/replacement | 11 | Intersections | $2655000 | $2950000 | HSIP (23 U.S.C. 148) | Urban | Major Collector | 10,140 | 35 | State Highway Agency | Spot | Intersections | IC-2 |
| 027506.00-PORTLAND, STATE/HIGH STREET | Intersection traffic control | Modify traffic signal – modernization/replacement | 14 | Intersections | $5458500 | $6065000 | HSIP (23 U.S.C. 148) | Urban | Multiple/Varies | 0 | 25 | State Highway Agency | Spot | Intersections | IC-2 |
| 027786.00-EDGECOMB, ROUTE 1 | Intersection traffic control | Modify control – new traffic signal | 1 | Intersections | $634500 | $705000 | HSIP (23 U.S.C. 148) | Rural | Principal Arterial-Other | 13,360 | 50 | State Highway Agency | Spot | Intersections | IC-2 |

020581.23-STATEWIDE, STRIPING 2023 includes $900.000 of HRRR funding to meet Maine's FY 2023 HRRR special rule obligation requirement.

2024 Maine Highway Safety Improvement Program

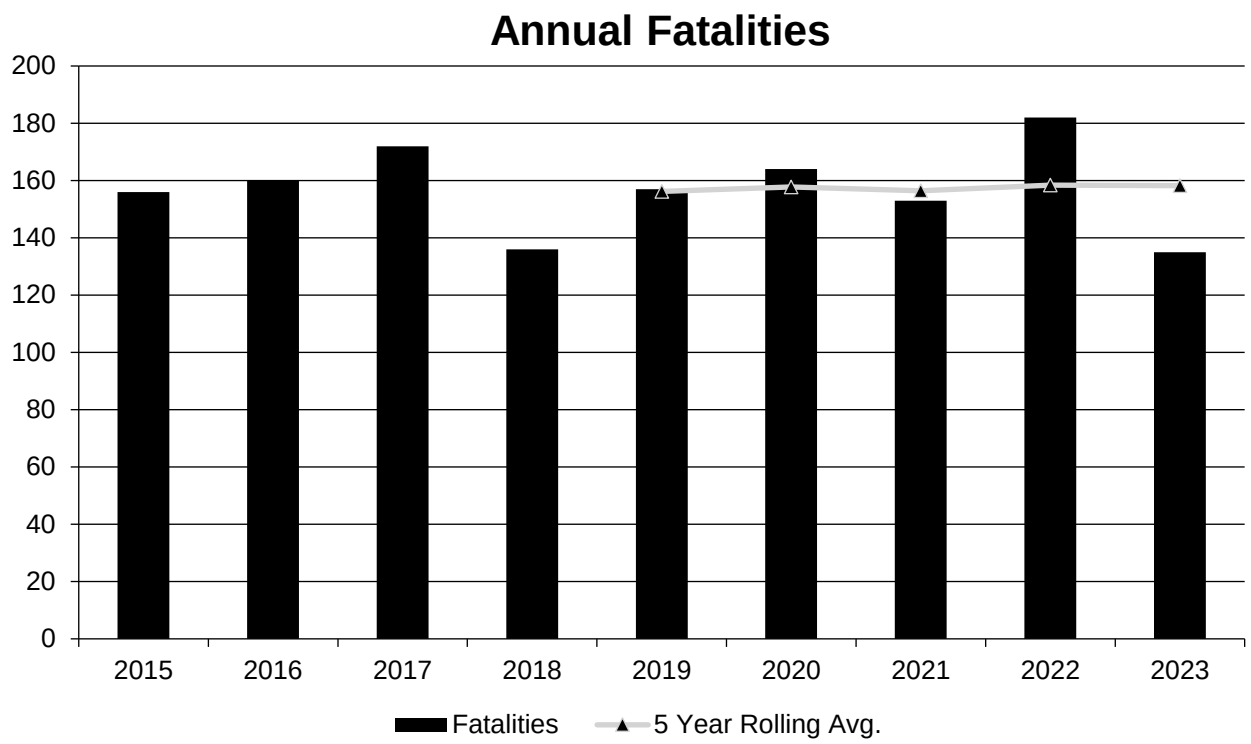
020581.24-STATEWIDE, STRIPING 2024 includes $900,000 of HRRR funding to meet Maine's FY 2024 HRRR special rule obligation requirement.

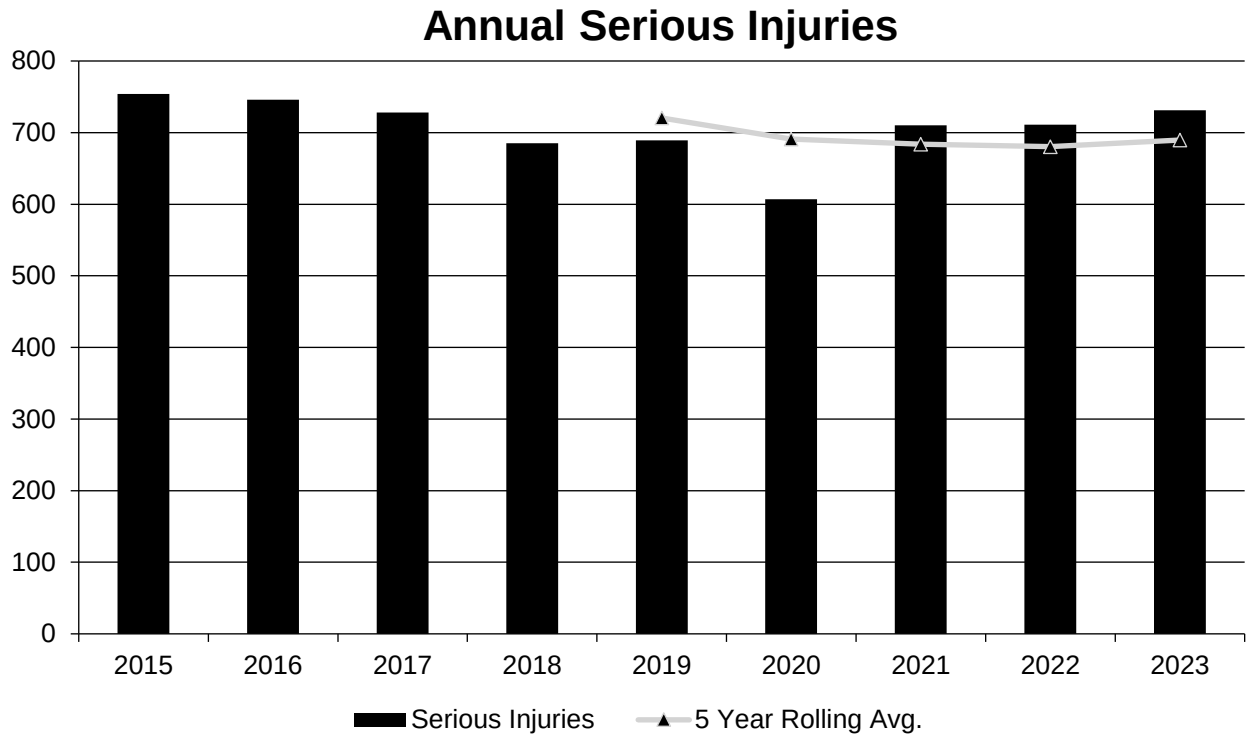
# Safety Performance

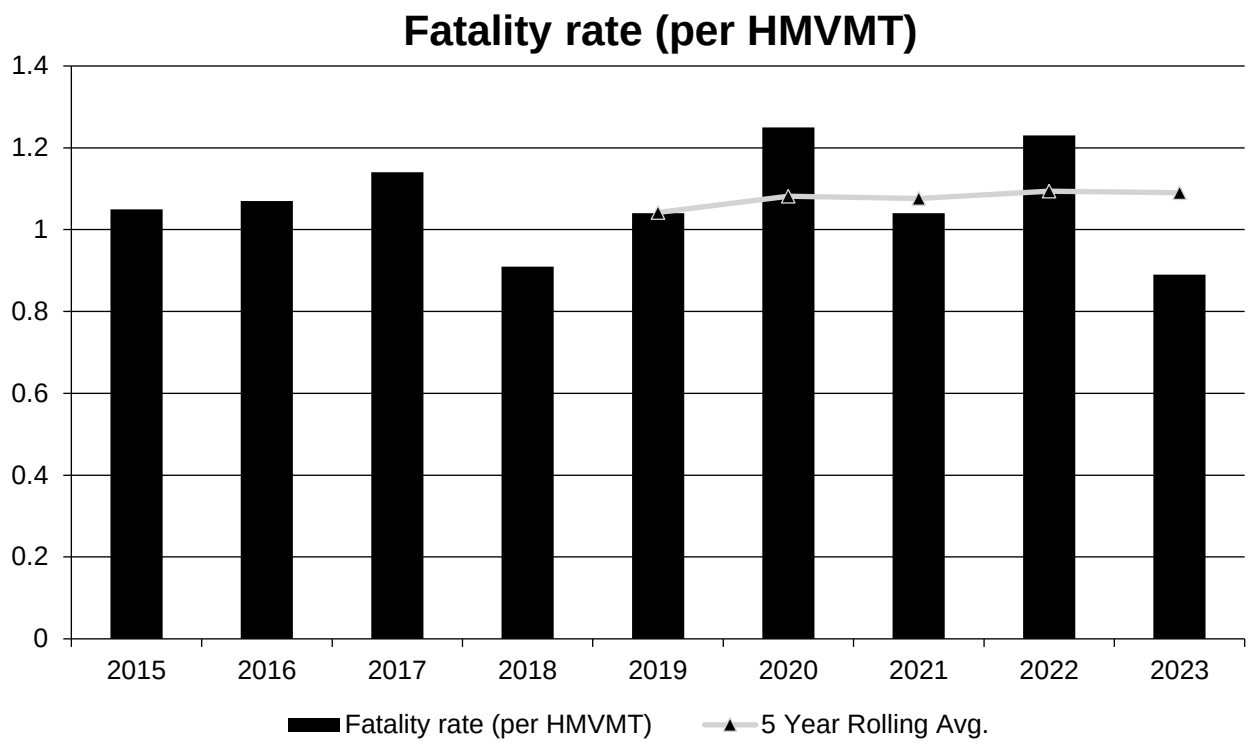
## *General Highway Safety Trends*

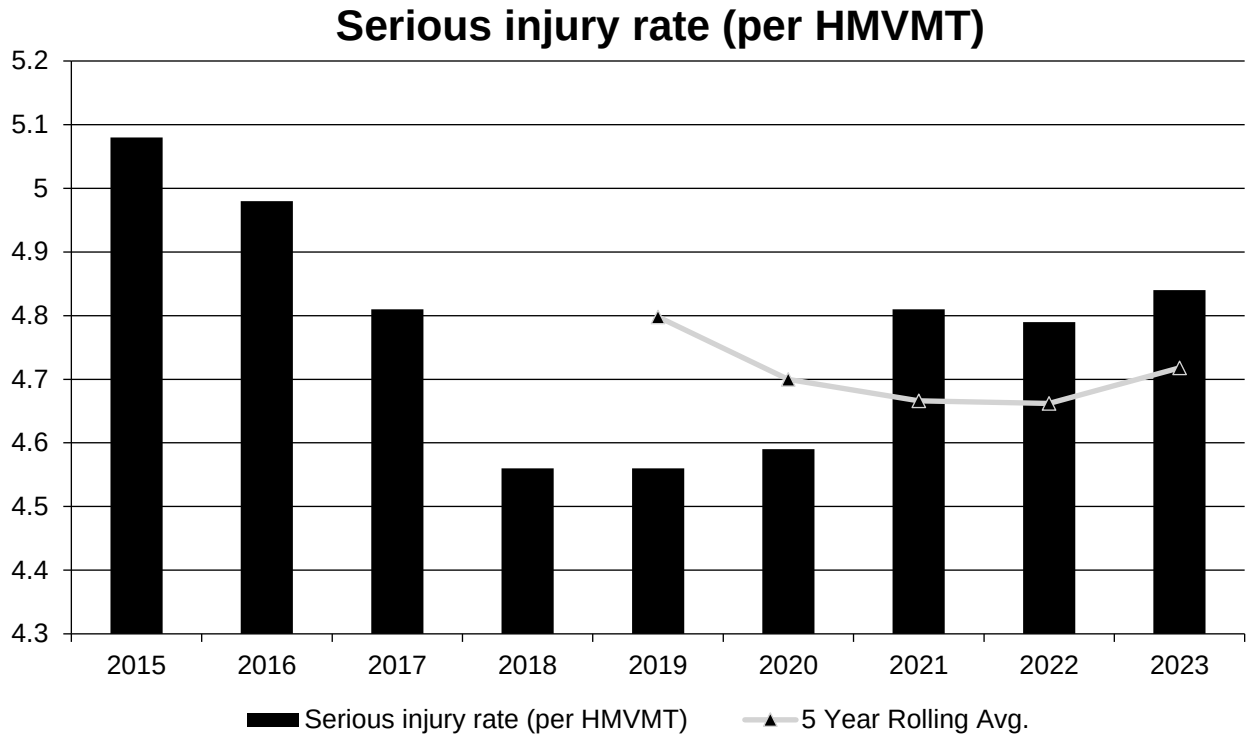
### Present data showing the general highway safety trends in the State for the past five years.

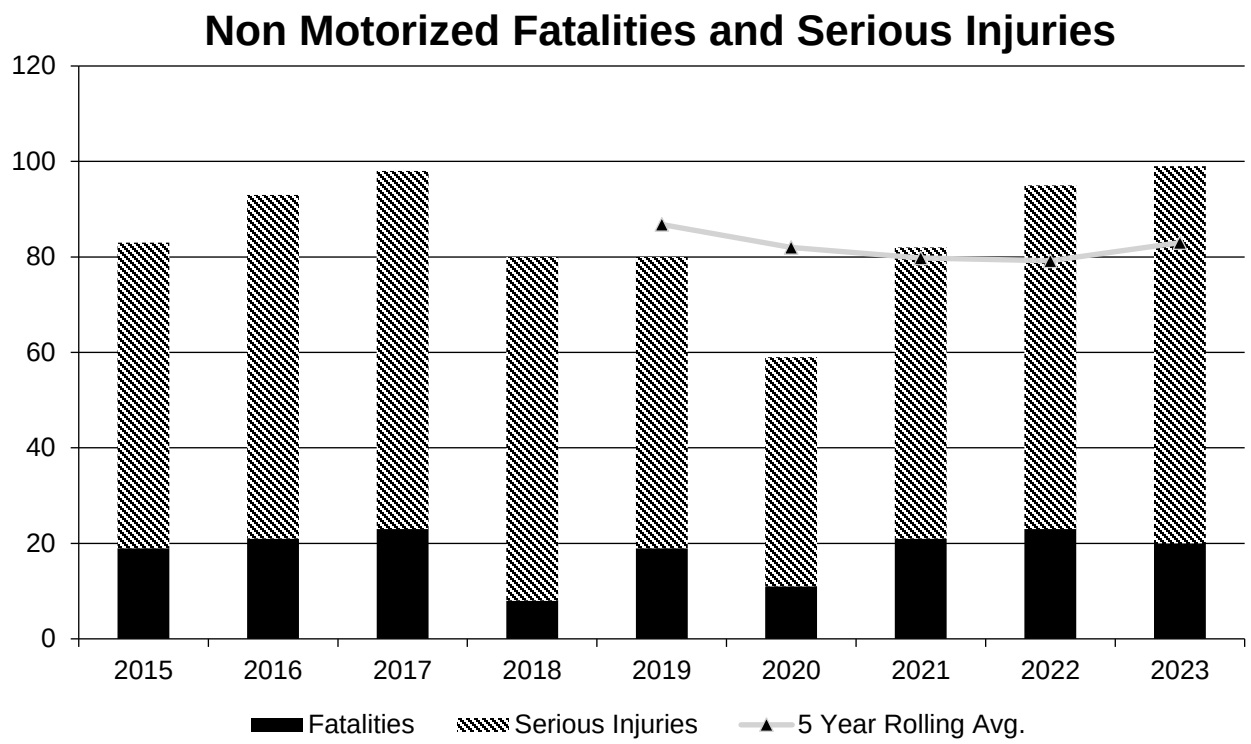
| PERFORMANCE MEASURES | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|
| Fatalities | 156 | 160 | 172 | 136 | 157 | 164 | 153 | 182 | 135 |
| Serious Injuries | 754 | 746 | 728 | 685 | 689 | 607 | 710 | 711 | 731 |
| Fatality rate (per HMVMT) | 1.050 | 1.070 | 1.140 | 0.910 | 1.040 | 1.250 | 1.040 | 1.230 | 0.890 |
| Serious injury rate (per HMVMT) | 5.080 | 4.980 | 4.810 | 4.560 | 4.560 | 4.590 | 4.810 | 4.790 | 4.840 |
| Number non-motorized fatalities | 19 | 21 | 23 | 8 | 19 | 11 | 21 | 23 | 20 |
| Number of non-motorized serious injuries | 64 | 72 | 75 | 72 | 61 | 48 | 61 | 72 | 79 |


Annual Fatalities
200
180
160
140
120
100
80
60
40
20
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
800
700
600
500
400
300
200
100
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
5.2
5.1
5
4.9
4.8
4.7
4.6
4.5
4.4
4.3
2015
2016
2017
2018
2019
2020
2021
2022
2023
Serious injury rate (per HMVMT)
5 Year Rolling Avg.




**Describe fatality data source.**

**Other**

**If Other Please describe**

FARS and MaineDOT Dashboard

For question 30, fatalities are from FARS, but for questions 32 and 33 pertaining to jurisdiction and ownership, MaineDOT's dashboard was used for fatality counts.

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

**Year 2023**

| Functional Classification | Number of Fatalities (5-yr avg) | Number of Serious Injuries (5-yr avg) | Fatality Rate (per HMVMT) (5-yr avg) | Serious Injury Rate (per HMVMT) (5-yr avg) |
|---|---|---|---|---|
| Rural Principal Arterial (RPA) - Interstate | 6.4 | 21.4 | 0.31 | 1.03 |
| Rural Principal Arterial (RPA) - Other Freeways and Expressways | 0 | 0 | 0 | 0 |
| Rural Principal Arterial (RPA) - Other | 15.4 | 89 | 0.88 | 5.04 |
| Rural Minor Arterial | 17.8 | 77.4 | 1.08 | 4.64 |
| Rural Minor Collector | 21 | 73 | 2.04 | 7.19 |
| Rural Major Collector | 25.6 | 93.6 | 1.3 | 4.74 |
| Rural Local Road or Street | 18 | 98.8 | 1.24 | 6.91 |
| Urban Principal Arterial (UPA) - Interstate | 7 | 24.2 | 0.52 | 1.85 |
| Urban Principal Arterial (UPA) - Other Freeways and Expressways | 0.6 | 4.8 | 0.38 | 3.05 |
| Urban Principal Arterial (UPA) - Other | 7.4 | 43.8 | 1.1 | 6.56 |
| Urban Minor Arterial | 9.4 | 64.4 | 0.96 | 6.69 |
| Urban Minor Collector | 5.6 | 26.4 | 4.36 | 16.92 |
| Urban Major Collector | 4.4 | 38 | 0.49 | 5.1 |
| Urban Local Road or Street | 6.8 | 34.6 | 1.47 | 7.51 |

## Year 2023

| 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 | 125.8 | 541.6 | 1.13 | 4.84 |
| County Highway Agency | | | | |
| Town or Township Highway Agency | 29 | 132 | 1.58 | 7.2 |
| City or Municipal Highway Agency | | | | |
| State Park, Forest, or Reservation Agency | | | | |
| Local Park, Forest or Reservation Agency | | | | |
| Other State Agency | | | | |
| Other Local Agency | | | | |
| Private (Other than Railroad) | | | | |
| Railroad | | | | |
| State Toll Authority | 4.6 | 15 | 0.25 | 0.98 |
| Local Toll Authority | | | | |
| Other Public Instrumentality (e.g. Airport, School, University) | | | | |
| Indian Tribe Nation | | | | |

## *Safety Performance Targets*

### Safety Performance Targets

### Calendar Year 2025 Targets *

#### *Number of Fatalities:160.0*

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

Maine Fatality count data has varied widely during the 2023 Benchmark Performance Period (2019-2023) ranging from 182 in 2022 to 135 in 2023. The 2022 fatality count of 182 was the highest in Maine since 2007, whereas the 2023 count of 135 was the lowest count since 2014. The 5-year fatality count average was 158.6 through the performance period. We expect to see a slight increase in the fatality count 5-year annual average in 2024 Benchmark. We will set a constant target for 2025 that matches our 2024 target until we see a positive trend in reducing our statewide fatalities.

#### *Number of Serious Injuries:709.0*

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

Serious Injuries (A) have shown steady improvement over the years before the COVID 19 pandemic, an exceptionally low count in the 2020 pandemic year, but increased each year from 2021-2023 with 2023's serious injury count being the highest since 2017. The 2023 Benchmark Performance (2019-2023) 5-year average for serious injuries was 690.20. This was the first increase in 5-year AA benchmark performance for this measure since 2013. We will set a constant target for 2025 that matches our 2024 target.

#### *Fatality Rate:1.120*

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

Despite a rebound in traffic volumes experienced in 2023 to near pre-pandemic levels, the lower annual VMT experienced in 2021 and 2022 will continue to impact rate-based performance measure computations and make target setting a challenge. We will set a constant target for 2025 that matches our 2024 target until the impact of the COVID pandemic on VMT no longer influences our fatality and serious injury rates.

#### *Serious Injury Rate:4.790*

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

As with the fatality rate, post-pandemic VMT recovery played a role in the increases in serious injury rates for the past few performance periods which included 2020-2022 VMT in the calculations. This was exacerbated by the unexpected increase in serious injury counts in the past three years. As a result, Maine's 2019-2023 5YAA benchmark serious injury rate has changed from a decreasing to an increasing trajectory for the first time in many years. We will set a constant target for 2025 that matches our 2024 target until the impact of the COVID pandemic on VMT no longer influences our fatality and serious injury rates.

#### *Total Number of Non-Motorized Fatalities and Serious Injuries:85.0*

#### *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. Prior to 2020 Maine experienced slow but steady progress in reducing these numbers. Our 2020 non-motorized K&A count of 61 was our lowest in more than 17 years. Post-pandemic, we have seen significant increases reversing the pre-pandemic trend. The 5-year Average for the 2019-2023 Benchmark Period was 80.8, slightly higher than the previous evaluation period. We will set a constant target for 2025 that matches our 2024 target.

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:

· Statewide annual VMT for 2023 has almost rebounded to our 2019 pre-pandemic volumes. We expect continued modest growth at rates equal to pre-pandemic levels.

· Maine’s economy continues to be affected by inflation in many sectors including the costs of fuel, food, and construction materials which have been rising steadily this past year. Labor shortages in many economic sectors exist right now.

· Multi-agency safety efforts will continue to be refined and focused on primary serious crash trends such as lane departure and vulnerable users.

· 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 translate to serious crash exposures.

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

The 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 unexpected traffic volumes experienced during 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 in support of the statewide Safety Performance Targets.

## Does the State want to report additional optional targets?

No

None

## Describe progress toward meeting the State’s 2023 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** | 160.0 | 158.2 |
| **Number of Serious Injuries** | 710.0 | 689.6 |
| **Fatality Rate** | 1.120 | 1.090 |
| **Serious Injury Rate** | 4.800 | 4.718 |
| **Non-Motorized Fatalities and Serious Injuries** | 85.0 | 83.0 |

All five of Maine's 2023 Safety Performance Targets were met. This was in large part to the unusual drop in statewide fatalities in 2023 which when included in our 5-year average benchmark somewhat mitigates the 182 FARS fatalities Maine experienced in 2022. The trend of overall Highway Fatalities in Maine continues to climb slightly, however, and the rate more so than the raw number due to the continued impact of pandemic-lowered VMT in Maine which plunged in 2020 and is only now close to rebounding to pre-pandemic levels. Our continuing goal is to work towards levelling that trend off and then we can work towards further reductions.

For nearly a decade Maine's statewide serious injury counts and rates had been steadily decreasing despite increased statewide VMT. Starting in 2021 Maine's post-pandemic serious injury counts and rates have been increasing, however. Our 2020 pedestrian fatal and count was abnormally low which played a large role in meeting our non-motorized K&A target this year. We most likely will not meet this target once the 2020 data no longer influences Maine's actual performance due to sharp non-motorized K&A count increases in 2022 and 2023.

## *Applicability of Special Rules*

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

Yes

MaineDOT was notified in April of 2023 that we triggered the HRRR Special Rule because of our CY 2021 Safety Performance Target Assessment. In accordance with that determination, Maine is required to obligate in FY 2024 an amount equal to at least 200 percent of its FY 2009 high-risk rural roads set-aside in the amount of $900,000. MaineDOT uses the calendar year for HSIP reporting purposes, so this report includes two specific projects to meet our FY 2023 and FY 2024 HRRR obligation requirements under this special rule:

020581.23-STATEWIDE, STRIPING 2023 ($900,000 HRRR funds, $6,638,019 Total Funds)

020581.24-STATEWIDE, STRIPING 2024 ($900,000 HRRR funds, $7,700,000 Total Funds)

Maine's severe winter climate and frequent snow/ice removal activities significantly degrade and often obliterate our pavement markings each winter. These two projects provide most of the funding for the remarking of longitudinal pavement markings for Maine's state-owned rural highway system as a systemic safety improvement.

Maine's collector highway system includes 5961 centerline miles of which 90% (5356 mi) are rural. MaineDOT's Striping Policy states that all state-owned highways with an AADT of greater than 600 that are outside of an "urban compact" zone are to have yellow centerline pavement markings repainted every year. Those highway sections with an AADT of less than 600 have pavement markings repainted every other year. Additional rules apply for repainting white edge line pavement markings based on MaineDOT's highway

corridor priorities (HCP) which don't neatly coincide with federal functional class so will be excluded from this discussion.

In 2023, an "odd" year, Maine applied centerline pavement markings to approximately 5230 centerline miles of our state-owned highways. This included 4756 miles of rural collector highways (about 89% of Maine's entire rural collector network) at a cost of $3,437,518. Approximately 48% of these miles experience a crash rate at least 10% higher than the statewide average for their classification which meets one of the criteria used to identify Maine's High Risk Rural Road (HRRR) network. This equates to an expenditure of more than $1,615,000 on our HRRR network from this one project.

MaineDOT's CY 2024 Statewide Striping project (an "even" year) is currently under way, and weather permitting we will apply new yellow centerline pavement markings to approximately 4761 centerline miles of rural collectors in the state system. The actual funds expended on Maine's HRRR mileage will be slightly more than our CY 2023 costs.

The effectiveness of this program is impossible to quantify because MaineDOT has been restoring the retro reflectivity of longitudinal pavement markings for decades so no valid "before" data exists. It is intuitively obvious that visible lane delineation at night plays a significant role in preventing crashes on our highway system.

## Does the VRU Safety 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 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|
| Number of Older Driver and Pedestrian Fatalities | 42 | 28 | 31 | 33 | 29 | 39 | 25 |
| Number of Older Driver and Pedestrian Serious Injuries | 92 | 86 | 95 | 61 | 79 | 85 | 103 |

# Evaluation

## *Program Effectiveness*

### How does the State measure effectiveness of the HSIP?

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

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

Maine's fatality rate has been trending upward for the past few years despite being mitigated by a significant decrease in pedestrian fatalities in 2018. In 2020, our statewide fatality total was similar to the previous year despite a 12.5% reduction in VMT due to reduced travel during the Covid-19 pandemic. Since then, our fatality rate since then has continued to increase slightly each year. 2023's annual fatality count was a bit of a reprieve from this upward trend but we continue to experience wide swings in annual counts and rates.

Maine's serious injury rate has been steadily decreasing since a peak in 2012. This downward trend continued through 2022 but our 5YAA serious injury counts have been increasing as of late and for the first time in more than a decade our serious injury rate is trending higher. 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 continue to assess our center line rumble strip program for those segments with three years of before/after crash data available which when last evaluated showed an average reduction in fatalities and serious injuries of 62.9% and 48.1% respectively where these are installed. These percentages were based on a naïve before/after analysis of both head/on and lane departure crashes. A more rigorous performance evaluation of centerline rumble strip performance in partnership with the University of Maine's college of engineering has shown a reduction of 28%-48% of head-on and opposite sideswipe collisions on rural two-lane roads.

MaineDOT is also continuing to study 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 continuing to observe 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?

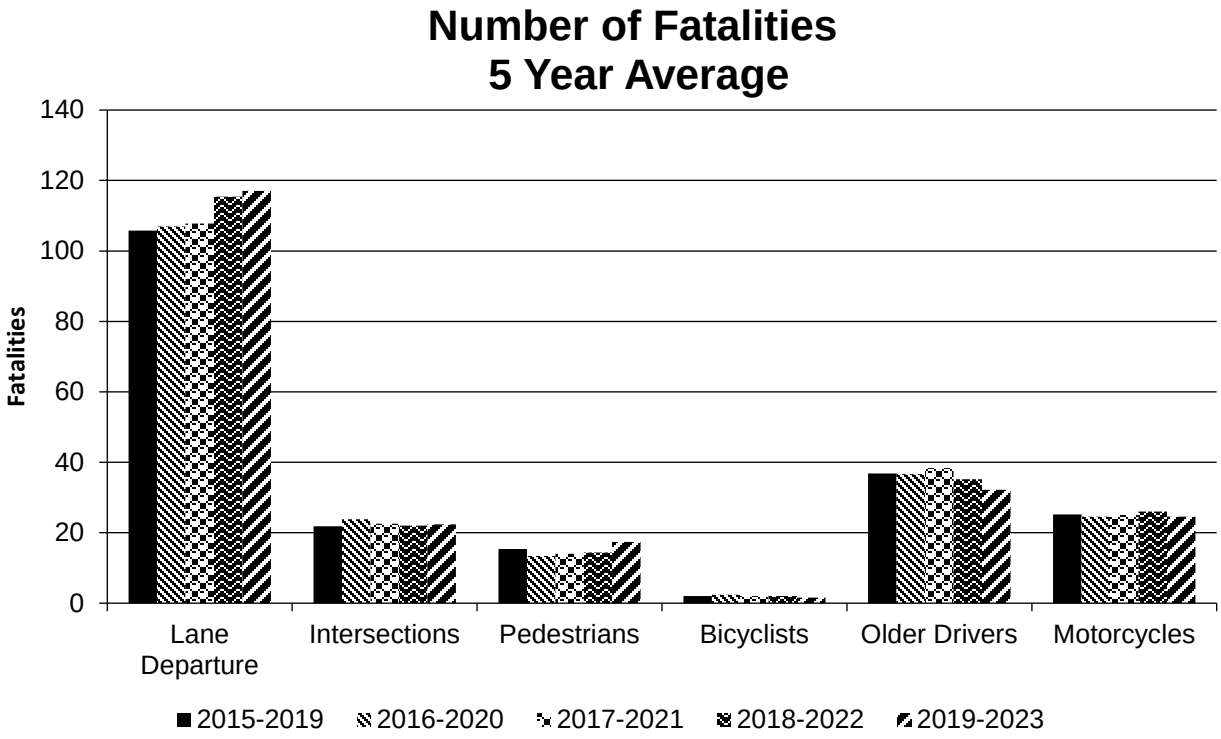
- # miles improved by HSIP
- Increased awareness of safety and data-driven process
- More systemic programs
- Policy change
- Other-Pedestrian Strategic Focus Outcomes

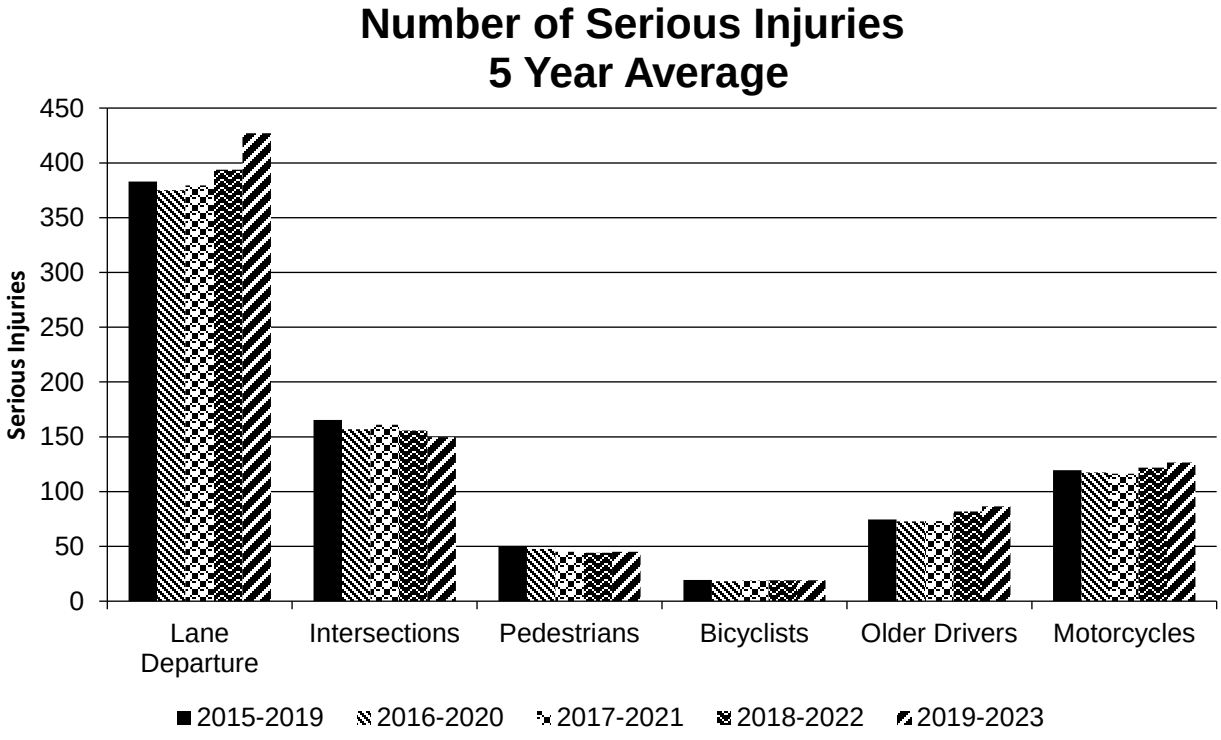
## *Effectiveness of Groupings or Similar Types of Improvements*

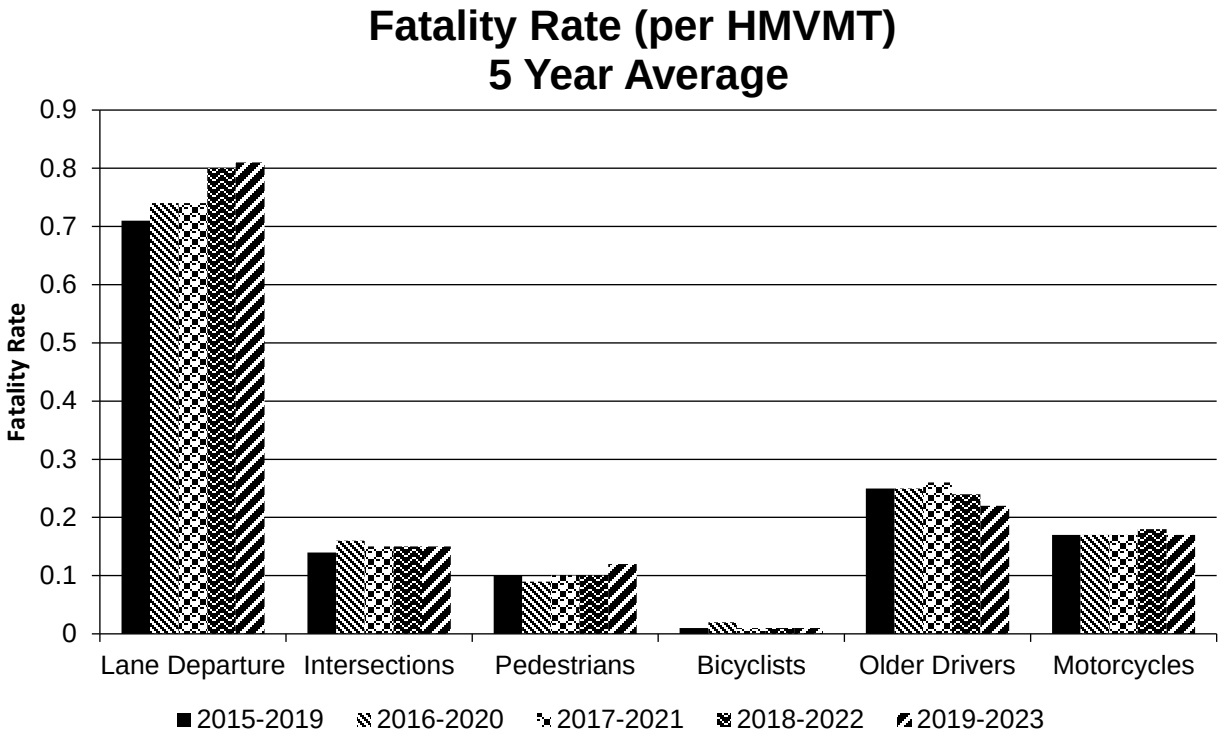
### Present and describe trends in SHSP emphasis area performance measures.

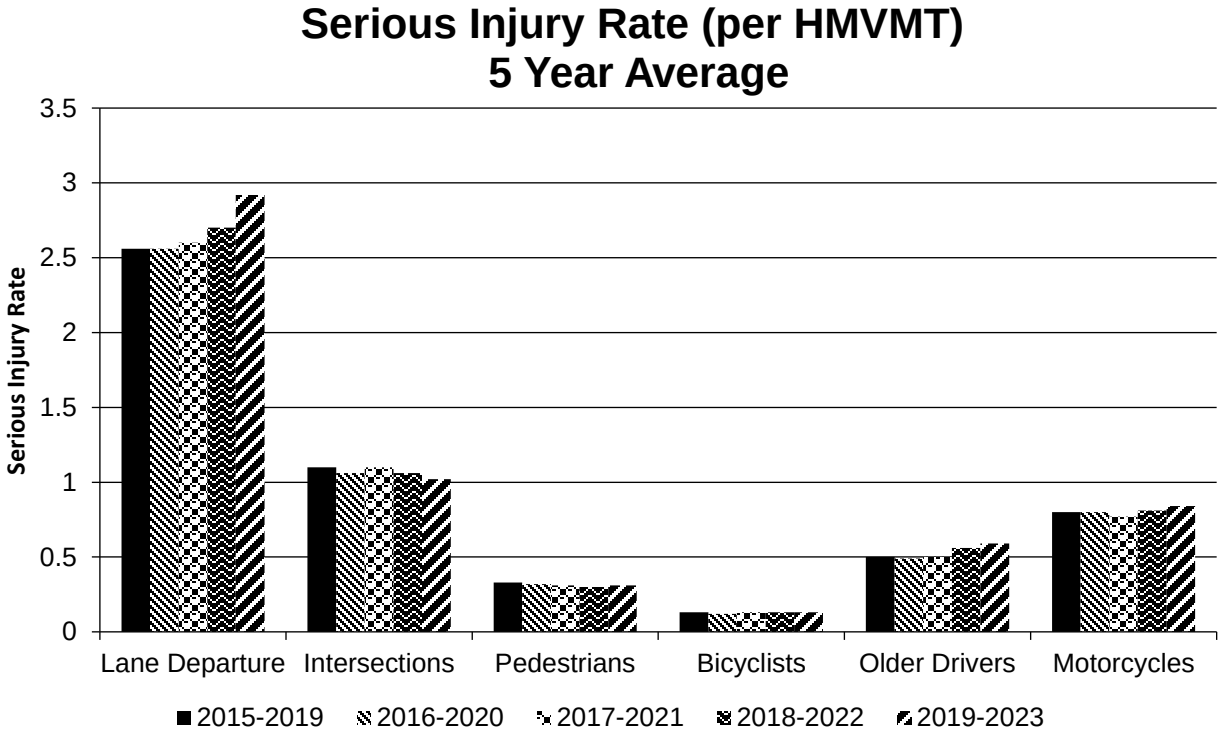
**Year 2023**

| 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 | | 117 | 427 | 0.81 | 2.92 |
| Intersections | | 22.4 | 149.6 | 0.15 | 1.02 |
| Pedestrians | | 17.4 | 45.2 | 0.12 | 0.31 |
| Bicyclists | | 1.6 | 19.2 | 0.01 | 0.13 |
| Older Drivers | | 32.2 | 86.4 | 0.22 | 0.59 |
| Motorcycles | | 24.6 | 126.4 | 0.17 | 0.84 |


Number of Fatalities
5 Year Average
Fatalities
140
120
100
80
60
40
20
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcycles
2015-2019
2016-2020
2017-2021
2018-2022
2019-2023


Number of Serious Injuries
5 Year Average
Serious Injuries
450
400
350
300
250
200
150
100
50
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcycles
2015-2019
2016-2020
2017-2021
2018-2022
2019-2023




**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:** | Rumble Strips |
| **Description:** | Exploring the Safety Impact of Rumble Strips on Prevention of Lane Departure Crashes in Maine - April 2024 Authors: Shirazi, Mohammadali; Garder, Per; Gil-Marin, Jhan; Sawtelle, Alainie Maine Transport Lab (PI: Mohammadali Shirazi, Ph.D.) University of Maine Department of Civil and Environmental Engineering 5711 Boardman Hall https://umaine.edu/transportlab/ |
| **Target Crash Type:** | Head on |
| **Number of Installations:** | |
| **Number of Installations:** | |
| **Miles Treated:** | |
| **Years Before:** | |
| **Years After:** | |
| **Methodology:** | Before/after using comparison group |
| **Results:** | This study finds that the installations of centerline rumble strips are associated with reductions of 28%-48% of head-on and opposite sideswipe collisions on rural two-lane roads in Maine. In addition, the benefits of the rumble strip installations are at least 14 times the cost. |

File Name: Hyperlink

### *Project Effectiveness*

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

## Compliance Assessment

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

12/13/2022

### What are the years being covered by the current SHSP?

From: 2022 To: 2026

### When does the State anticipate completing its next SHSP update?

2026

MaineDOT and our safety partners updated our SHSP during 2022 (https:// www.maine.gov/mdot/safety/docs/2023/strategic-hwy-safety-plan_shsp2022.pdf . We also completed our VRU Safety Assessment as a separate addendum to the 2022 SHSP in 2023. (https://www.maine.gov/mdot/safety/docs/2023/Maine%202023%20VRU%20Safety%20Assessment.pdf)

### 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 | | | | | | | | |

| 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 |
| | Functional Class (19) [19] | 100 | 100 | | | | | 100 | 100 | 100 | 100 |
| | 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] | | | 100 | 100 | | | | | | |
| | Location Identifier for Road 1 Crossing Point (122) [112] | | | 100 | 100 | | | | | | |
| | Location Identifier for Road 2 Crossing Point (123) [113] | | | 100 | 100 | | | | | | |
| | Intersection/Junction Geometry (126) [116] | | | 50 | 50 | | | | | | |
| | Intersection/Junction Traffic Control (131) [131] | | | 50 | 50 | | | | | | |
| | AADT for Each Intersecting Road (79) [81] | | | 100 | 100 | | | | | | |
| | AADT Year (80) [82] | | | 100 | 100 | | | | | | |
| | Unique Approach Identifier (139) [129] | | | 100 | 100 | | | | | | |
| **INTERCHANGE/RAMP** | Unique Interchange Identifier (178) [168] | | | | | | | | | | |

| 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 |
| | Location Identifier for Roadway at Beginning of Ramp Terminal (197) [187] | | | | | 100 | 100 | | | | |
| | 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** | **87.50** | **87.50** | **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]

**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.**

The biggest level of effort remaining is for MaineDOT to assign intersection and interchange type identifiers. We are currently holding internal meetings to figure out the best way to accomplish this. Other outstanding data elements such as unique identifiers are going to be generated through automation and scripting.

## Optional Attachments

Program Structure:

MaineDOT HSIP Manual Draft - 4-21-2021.pdf
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.