MAINE

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2023 ANNUAL REPORT

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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. 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.

We continue to use data to identify horizontal curves that could benefit from the installation of edge line rumble strips to mitigate went-off-road crashes on these curves. MaineDOT has begun 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 annual VMT was approximately 12.48% lower in 2020 when compared to 2019 levels due to the impacts of COVID-19 on travel, has rebounded to approximately 3% lower than that experienced in 2019. 2022 travel volumes increased very slightly above 2021 levels as we continue to progress back towards normal travel patterns.

In 2022, Maine experienced 182 fatalities which was the highest annual count since 2007 when we experienced 183 fatalities. Combined with slightly lower VMT, this resulted in a significantly higher than expected fatality rate.

Unlike the trend observed with fatalities, Maine continues to experience a slight reduction in the five-year annual average for the number of serious injuries each year and the corresponding serious injury rate. Unusually low serious injury numbers in 2020 because of COVID travel reductions are positively impacting these annual averages, however, and we are concerned this downward trend is not likely to continue based on our post-covid serious injury counts.

The FHWA assessment of Maine's 2022 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. We did, however, trigger the High-Risk Rural Roads special rule in this latest assessment. Although we acknowledge triggering this rule in this report, MaineDOT uses the calendar year as the basis of our annual HSIP report. Individual projects obligated using HRRR funds will be identified in our next annual 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

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 currently has an HSIP Manual in draft form pending final approval by our Safety/Mobility Committee and Engineering Council.

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

Other-Safety Spot Improvements are more substantial safety improvements to Maine's infrastructure such as intersection reconfiguration, signalization, or highway alignment improvements.

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

- Fatal and serious injury crashes only

Exposure

- Lane miles

Roadway

- 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?

- 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

Maine was notified by FHWA in April of 2022 that we triggered the HRRR special rule based on FHWA's evaluation for CY 2020. Based on that determination, Maine is required to obligate in FY 2023 an amount equal to at least 200 percent of its FY 2009 high-risk rural roads set-aside in the amount of $900,000 in FY 2023. MaineDOT did not obligate HRRR funding in calendar year 2022 so projects in this report will not include HRRR as a funding source in this 2022 CY report, but HRRR funds have already been obligated for projects

that will be listed in next year's HSIP report. For this 2022 HSIP report, we simply have established the HRRR Program.

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

These projects may consist of low cost safety countermeasures such as traffic calming, community gateway treatments, etc. or the procurement of enhanced signage and hardware for installation by state or local forces

to increase the conspicuity of horizontal curves, intersections, mid-block pedestrian crossings, and other systemic applications. These are often applied systemically as a part of an incremental, data-driven approach to safety.

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 • Functional classification • Roadside features • 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

MaineDOT's primary countermeasure for Roadway Departure is the application of centerline rumble strips on roadways over 45 mph which our crash data shows is where the majority of our annual fatalities and serious injuries occur. We also use network screening to identify horizontal curves for spot installation of edge line

rumble strips using excess crash with EB adjustment. Rather than separate projects for each location MaineDOT typically programs a single statewide rumble strip contract each year.

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 administered through our Local Roads Center to upgrade old local road signage with poor retro reflectivity, or upgrade signage to MUTCD standards for locations identified as high-risk for lane departure through network screening.

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

- All crashes

Exposure

- Traffic
- Volume

Roadway

- Median width
- 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

The Maine State Police (MSP) receive calls for approximately 50 incidents of wrong-way driving on Maine's interstate highways each year. We are fortunate in that the majority of the time these events are resolved without resulting in a crash largely due to the rural nature of our state highway system. When crashes do occur, however, they usually result in fatalities and serious injuries to multiple vehicle operators and/or passengers. MaineDOT coordinates with MSP to identify the interchanges where wrong-way access has occurred and continues to develop and deploy solutions to reduce these incidents.

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

Unlike the low-cost spot improvements described earlier in this report, these improvements involve a substantial capital investment to improve the safety of these locations. These locations may have a long history of being high crash locations or have characteristics that make them likely to have frequent and severe crashes as a result of predictive analysis through our highway safety screening tools. The scope of work for

these locations may involve substantial reconfiguration of highway segments or intersections, addition of turning lanes, addition or modification of traffic signals, or complete changes in roadway cross section or geometry. Examples include converting urban arterials with road diets or changing intersection control from stop or signal control to a modern roundabout. These projects may also involved right-of-way or environmental permitting impacts and generally take longer to program, design, permit, and build. Local road agencies may submit safety project candidates for funding consideration on a competitive basis.

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

Large animal mitigation projects may include enhanced signing for high impact areas along roadways or roadside vegetation clearing to improve sight lines to Maine's large wildlife (moose, deer, bear) which are often struck at night on our highways.

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

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)	$36,380,193	$15,469,525	42.52%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
VRU Safety Special Rule (23 U.S.C. 148(g)(3))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$4,987,300	$5,939,763	119.1%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$1,619,247	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$8,499,069	$0	0%
State and Local Funds	$8,098,197	$0	0%
Totals	$57,964,759	$23,028,535	39.73%

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.

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
018656.00 - LEWISTON, VARIOUS INTERSECTION	Intersection traffic control	Modify traffic signal – modernization/replacement	4	Intersections	$314577	$451007	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	0		State Highway Agency	Spot	Intersections	IC-2
018656.01 - LEWISTON, VARIOUS INTERSECTION, PHASE 2	Intersection traffic control	Modify traffic signal – modernization/replacement	7	Intersections	$680627	$857533	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	0		State Highway Agency	Spot	Intersections	IC-2
018769.21 - STATEWIDE, INTERSTATE STRIPING	Roadway delineation	Longitudinal pavement markings - remarking	54.49	Miles	$880622	$880622	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	0	75	State Highway Agency	Systemic	Lane Departure	LD-13
018769.22 - STATEWIDE, INTERSTATE STRIPING	Roadway delineation	Longitudinal pavement markings - remarking	51.148	Miles	$769920	$769927	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Interstate	0	75	State Highway Agency	Systemic	Lane Departure	LD-13
019001.00 - SANFORD, ALFRED & SCHOOL ST	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$1674000	$1860000	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural	Minor Arterial	12,810	45	State Highway Agency	Spot	Intersections	IC-2
020204.00 - FALMOUTH, RTE 9/WOODS ROAD	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$2169661	$2572342	HSIP (23 U.S.C. 148)	Rural	Major Collector	4,780	30	State Highway Agency	Spot	Intersections	IC-3
020581.21 - STATEWIDE, STRIPING 2021	Roadway delineation	Longitudinal pavement markings - remarking			$4067816	$5084771	Penalty Funds (23 U.S.C. 154)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	LD-13
020581.22 - STATEWIDE, STRIPING 2022	Roadway delineation	Longitudinal pavement markings - remarking			$5330435	$6663045	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	LD-13
020581.23 - STATEWIDE, STRIPING 2023	Roadway delineation	Longitudinal pavement markings - remarking			$6886986	$8608733	HSIP (23 U.S.C. 148)	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	Multiple/Varies	0	25	State Highway Agency	Spot	Intersections	IC-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	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
021783.00 - EDGECOMB, ROUTE 1	Intersection geometry	Add/modify auxiliary lanes	0.8	Miles	$2477768	$2755247	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	13,280	50	State Highway Agency	Spot	Intersections	IC-3
021829.00 - SOUTH BERWICK, ROUTE 236	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$2661378	$3653002	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	15,240	45	State Highway Agency	Spot	Intersections	IC-2
022672.00 - FALMOUTH,I295 NB RAMP/BUCKNAM	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$1017052	$1130058	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	12,330	35	State Highway Agency	Spot	Intersections	IC-2
022873.00 - GORHAM, ROUTE 25	Intersection traffic control	Modify traffic signal – modernization/replacement	1	Intersections	$462600	$514000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	8,060	35	State Highway Agency	Spot	Intersections	IC-2
022881.00 - HOLDEN, ROUTE 1A	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	1.01	Miles	$1427522	$1586136	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	20,104	45	State Highway Agency	Spot	Pedestrians	P-4
022883.00 - HOLDEN, ROUTE 1A	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.74	Miles	$859763	$955291	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	21,114	45	State Highway Agency	Spot	Pedestrians	P-4
022887.00 - JAY, ROUTE 133	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$220472	$244969	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,367	35	State Highway Agency	Spot	Intersections	IC-2
022952.00 - OXFORD, ROUTE 26	Intersection traffic control	Modify traffic signal – modernization/replacement	1	Intersections	$718734	$800054	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	13,314	50	State Highway Agency	Spot	Intersections	IC-2
022962.00 - POWNAL, ROUTE 9	Intersection traffic control	Modify control – two-way stop to all-way stop	1	Intersections	$200700	$223000	HSIP (23 U.S.C. 148)	Rural	Major Collector	3,930	35	State Highway Agency	Spot	Intersections	IC-3
023030.00 - WEST BATH, STATE ROAD	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$983659	$1092955	HSIP (23 U.S.C. 148)	Rural	Major Collector	8,590	45	State Highway Agency	Spot	Intersections	IC-2
023689.00 - NEWPORT, ROUTE 2	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.22	Miles	$373500	$5815000	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural	Principal Arterial-Other	11,557	35	State Highway Agency	Spot	Pedestrians	P-4
023733.00 - REGION 3, CABLE GUARDRAIL	Roadside	Barrier- metal	1.205	Miles	$282357	$313730	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0	45	State Highway Agency	Systemic	Roadway Departure	LD-15
023767.00 - STATEWIDE, ITS ARCHITECTURE	Advanced technology and ITS	Advanced technology and ITS - other			$153991	$171101	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Spot	Intersections	IC-9

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
023783.00 - TOPSHAM - MODIFY SIGNAL	Intersection traffic control	Modify traffic signal – modernization/replacement	1	Intersections	$378450	$420500	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	12,230	25	State Highway Agency	Spot	Intersections	IC-2
023793.00 - WELLS, ROUTE109	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$284400	$366000	Penalty Funds (23 U.S.C. 154)	Rural	Principal Arterial-Other	9,790	40	State Highway Agency	Spot	Intersections	IC-2
023871.21 - STATEWIDE STRIPING 2021 CONTRA	Roadway delineation	Longitudinal pavement markings - remarking			$208903	$261128	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	LD-13
023871.22 - STATEWIDE STRIPING 2022 CONTRA	Roadway delineation	Longitudinal pavement markings - remarking			$351350	$439188	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Lane Departure	LD-13
024181.00 - STATEWIDE, MESSAGE BOARD	Advanced technology and ITS	Dynamic message signs			$50512	$56125	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Winter Crashes	WC-2
024183.00 - STATEWIDE, DYNAMIC SPEED SIGN	Speed management	Dynamic Speed Feedback Signs			$151988	$168875	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Spot	Illegal/Unsafe Speed	SP-4
024199.00 - TURNER, ROUTE 4	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$801000	$890000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	13,146	45	State Highway Agency	Spot	Intersections	IC-2
024201.00 - TURNER, ROUTE 4	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$2372000	$2930000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	9,798	45	State Highway Agency	Spot	Intersections	IC-2
024205.00 - AUGUSTA, ROUTE 3	Roadway delineation	Longitudinal pavement markings – new	0.32	Miles	$437175	$485750	Other Federal-aid Funds (i.e. STBG, NHPP)	Urban	Principal Arterial-Other	7,100		State Highway Agency	Systemic	Lane Departure	LD-13
024207.00 - AUGUSTA, ROUTE 3	Roadway delineation	Longitudinal pavement markings – new	0.314	Miles	$435375	$483750	Other Federal-aid Funds (i.e. STBG, NHPP)	Urban	Principal Arterial-Other	10,310		State Highway Agency	Systemic	Lane Departure	LD-13
024209.00 - PALMYRA, ROUTE 2	Roadside	Slope Flattening	1	Locations	$669015	$743875	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	4,350	45	State Highway Agency	Systemic	Roadway Departure	LD-11
024235.00 - 2021 STATEWIDE RUMBLE STRIPS	Roadway	Rumble strips – center	145.56	Miles	$591983	$740286	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0	45	State Highway Agency	Systemic	Roadway Departure	LD-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	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
024261.00 - STATEWIDE PROCUREMENT OF SIGN EQUIPMENT	Roadway signs and traffic control	Sign sheeting - upgrade or replacement	0		$113880	$126534	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Older Drivers	MD-2
024359.00 - BRUNSWICK EXIT 28 LIGHTING-FREEPORT CAMERAS	Lighting	Interchange lighting	2.442	Miles	$2021257	$2245841	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	0	65	State Highway Agency	Spot	Intersections	IC-2
024547.00 - 2022 STATEWIDE RUMBLE STRIPS	Roadway	Rumble strips – center	90.438	Miles	$352961	$392179	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0	45	State Highway Agency	Systemic	Roadway Departure	LD-3
024987.00 - 2023 STATEWIDE RUMBLE STRIPS	Roadway	Rumble strips – center	83.341	Miles	$670500	$745000	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0	45	State Highway Agency	Systemic	Roadway Departure	LD-3
025103.00 - BREWER, I-395 EXIT 5 LIGHTING	Lighting	Interchange lighting	0		$1048500	$1165000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	9,070	65	State Highway Agency	Spot	Intersections	IC-2
025228.21 - INTERSTATE 295 SERVICE PATROL	Roadside	Roadside - other	51.86	Miles	$144718	$160798	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	0	65	State Highway Agency	Systemic	Work Zones	WZ-7
025228.22 - INTERSTATE 295 SERVICE PATROL	Roadside	Roadside - other	51.86	Miles	$225000	$250000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	0	65	State Highway Agency	Systemic	Work Zones	WZ-7
025228.23 - 2023 INTERSTATE 295/95/395 SERVICE PATROL	Roadside	Roadside - other	51.86	Miles	$450000	$500000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Interstate	0	65	State Highway Agency	Systemic	Work Zones	WZ-7
025263.00 - STATEWIDE, BACKPLATE INSTALLATION	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders			$90000	$100000	HSIP (23 U.S.C. 148)	Urban	Multiple/Varies	0		State Highway Agency	Spot	Intersections	IC-7
025273.00 - AUGUSTA, ROUTE 201	Intersection geometry	Intersection realignment	1	Intersections	$630000	$700000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	21,398	35	State Highway Agency	Spot	Intersections	IC-3
025461.00 - ELLSWORTH, ROUTE 1A/WINKUMPAUGH ROAD	Intersection geometry	Add/modify auxiliary lanes	1	Intersections	$378000	$420000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	11,251	55	State Highway Agency	Spot	Intersections	IC-2
025527.00 - STATEWIDE WEIGH AREAS	Roadway	Roadway widening - add lane(s) along segment	0.114	Miles	$322276	$358084	HSIP (23 U.S.C. 148)	Rural	Multiple/Varies	0		State Highway Agency	Spot	Illegal/Unsafe Speed	SP-1

2023 Maine Highway Safety Improvement Program

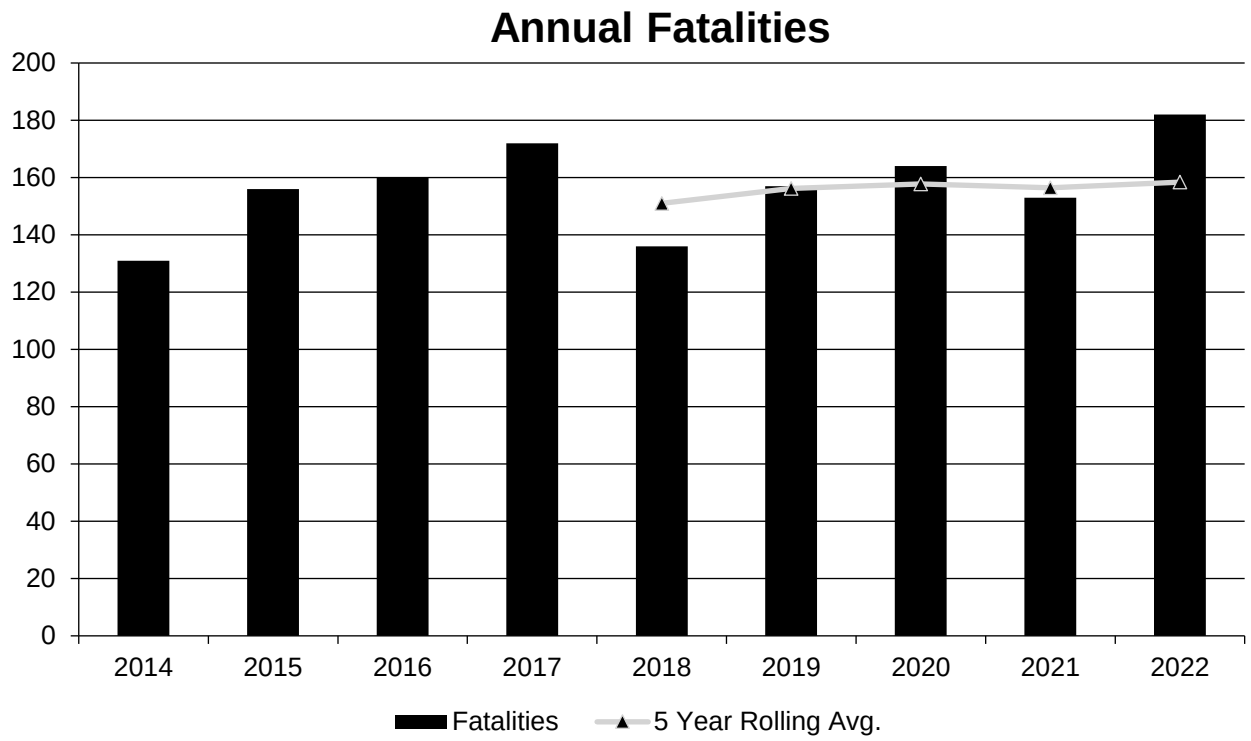
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
025955.03 - ROCKPORT, ROUTE 17	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$65958	$73286	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural	Minor Arterial	7,310	35	State Highway Agency	Spot	Intersections	IC-2
025955.04 - LEBANON, ROUTE 202	Intersection traffic control	Modify traffic signal – modernization/replacement	1	Intersections	$65958	$73286	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural	Principal Arterial-Other	10,190	45	State Highway Agency	Spot	Intersections	IC-2
026019.00 - DAMARISCOTTA, ROUTE 1	Intersection traffic control	Modify control – Modern Roundabout	1	Locations	$2790000	$3100000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	9,760	55	State Highway Agency	Spot	Intersections	IC-3
026021.00 - HOLLIS, ROUTE 202	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$86025	$692083	Other Federal-aid Funds (i.e. STBG, NHPP)	Rural	Principal Arterial-Other	6,400	35	State Highway Agency	Spot	Intersections	IC-2

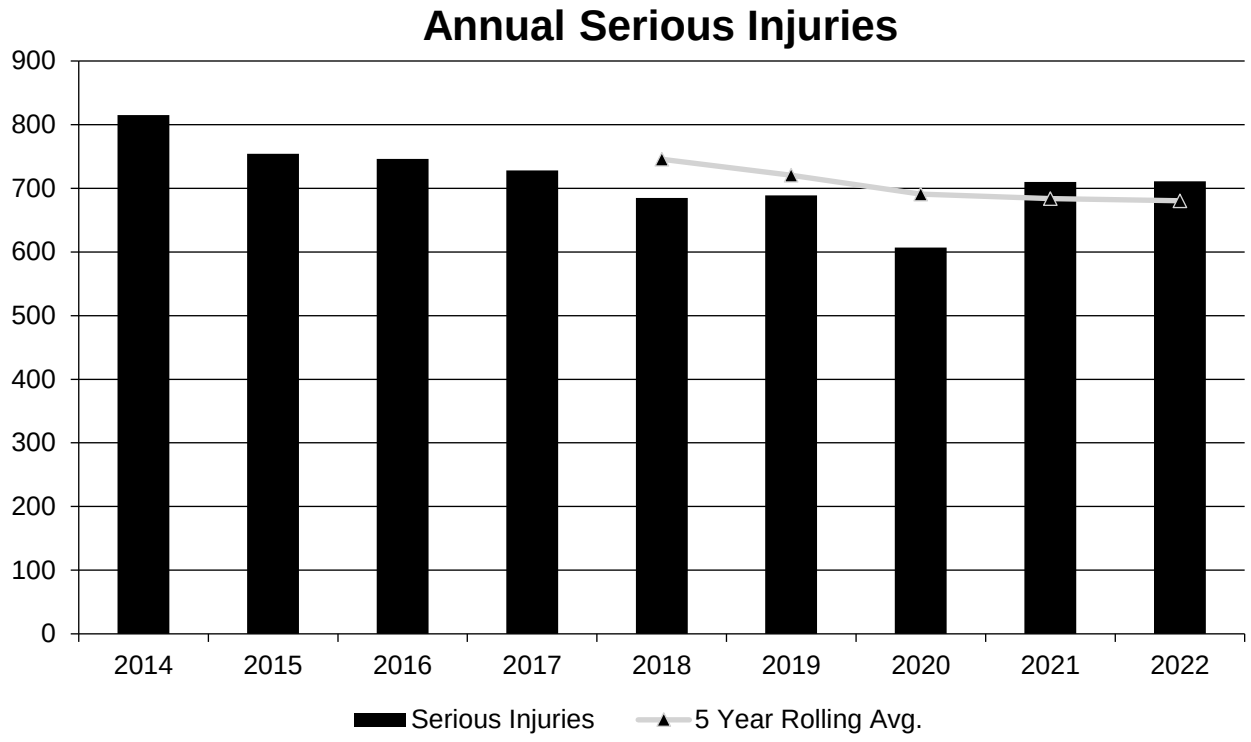
Safety Performance

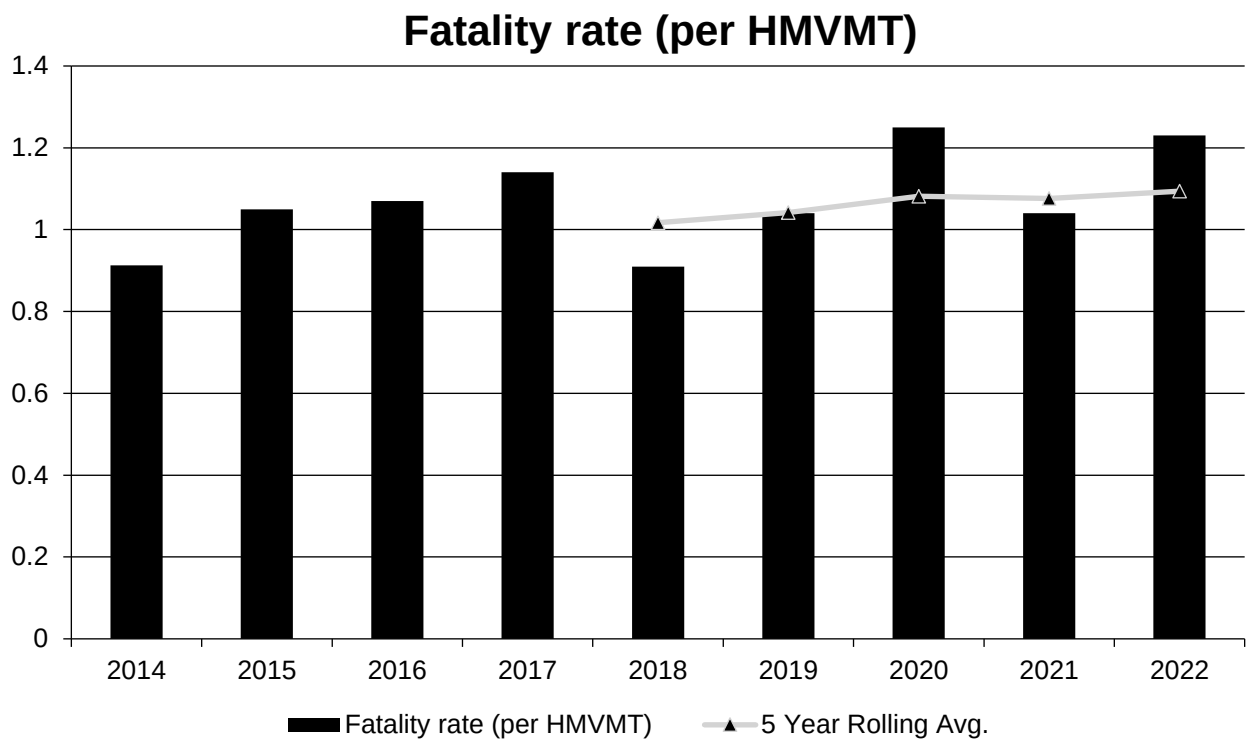
General Highway Safety Trends

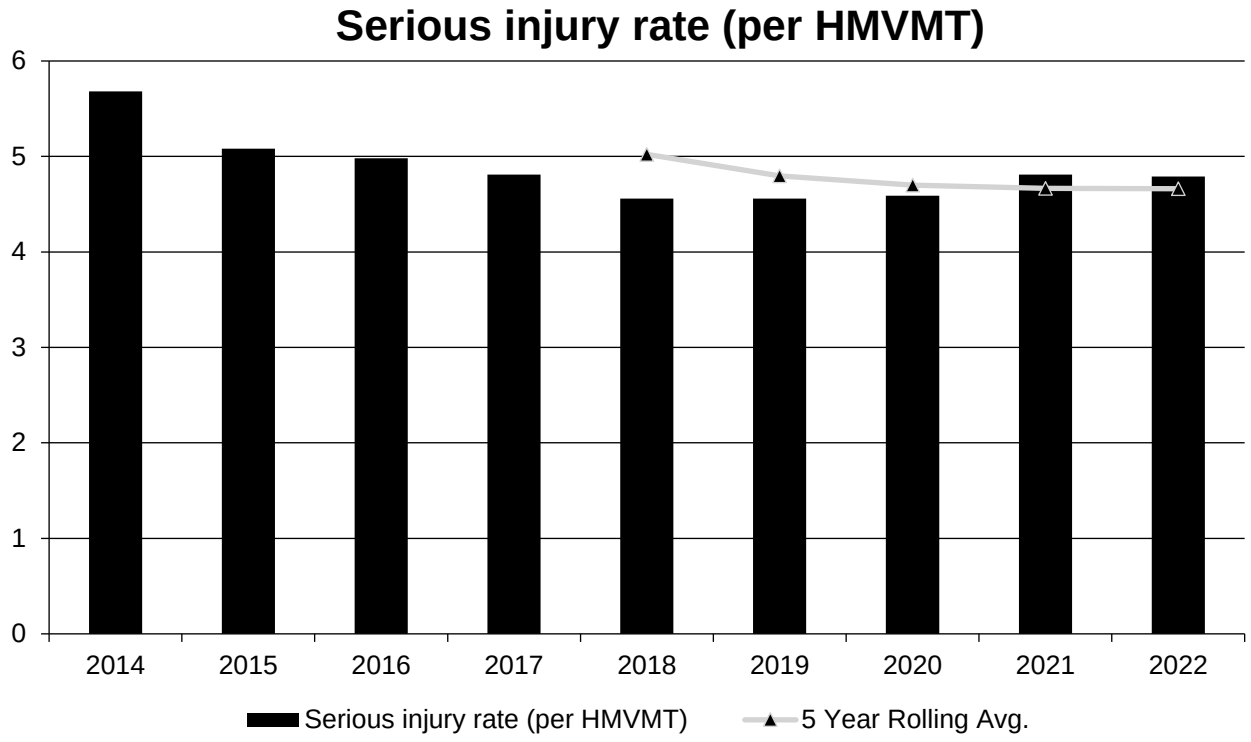
Present data showing the general highway safety trends in the State for the past five years.

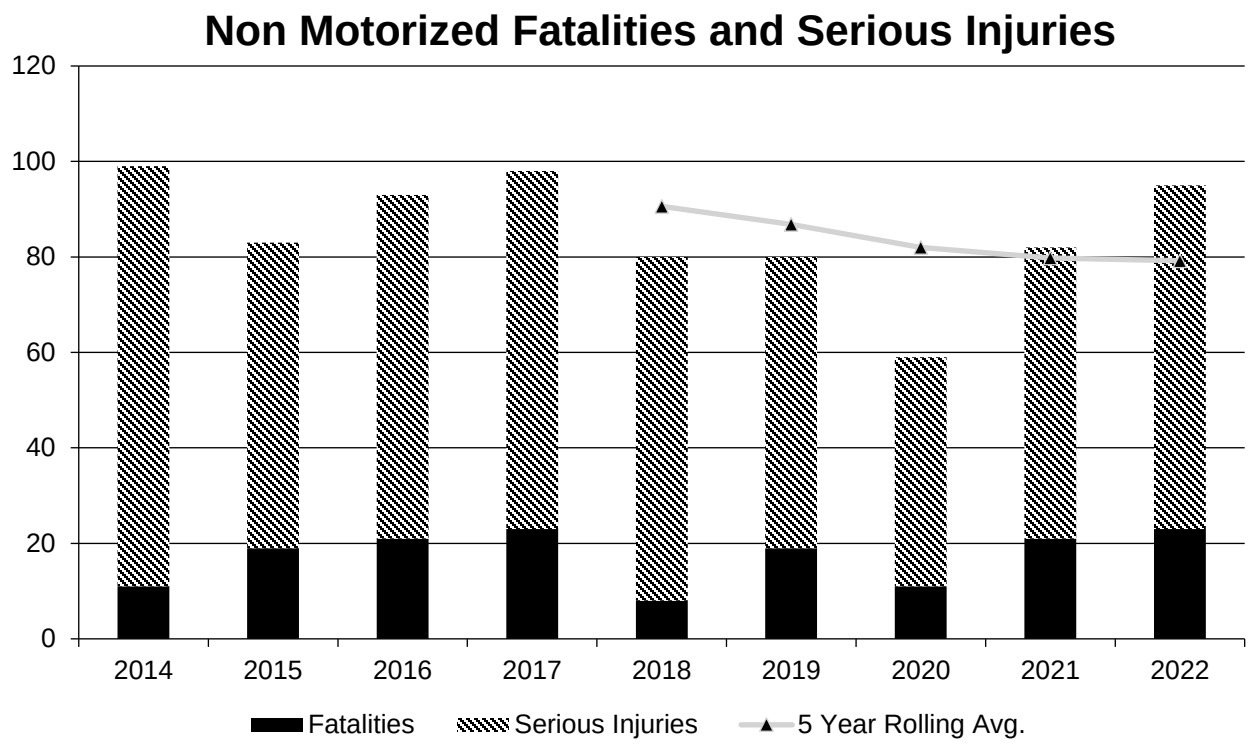
PERFORMANCE MEASURES	2014	2015	2016	2017	2018	2019	2020	2021	2022
Fatalities	131	156	160	172	136	157	164	153	182
Serious Injuries	815	754	746	728	685	689	607	710	711
Fatality rate (per HMVMT)	0.913	1.050	1.070	1.140	0.910	1.040	1.250	1.040	1.230
Serious injury rate (per HMVMT)	5.680	5.080	4.980	4.810	4.560	4.560	4.590	4.810	4.790
Number non-motorized fatalities	11	19	21	23	8	19	11	21	23
Number of non-motorized serious injuries	88	64	72	75	72	61	48	61	72


Annual Fatalities
200
180
160
140
120
100
80
60
40
20
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
900
800
700
600
500
400
300
200
100
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
6
5
4
3
2
1
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
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 2022

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	7.4	23	0.35	1.1
Rural Principal Arterial (RPA) - Other Freeways and Expressways	0	0	0	0
Rural Principal Arterial (RPA) - Other	18.2	84.2	1.03	4.76

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 Minor Arterial	17	79	1.04	4.75
Rural Minor Collector	26.8	86.8	2.15	7.04
Rural Major Collector	21.8	78.2	1.26	4.82
Rural Local Road or Street	15.8	95.6	1.09	6.71
Urban Principal Arterial (UPA) - Interstate	5.2	24	0.39	1.84
Urban Principal Arterial (UPA) - Other Freeways and Expressways	0.6	5.2	0.38	3.25
Urban Principal Arterial (UPA) - Other	6.8	44.2	1.01	6.55
Urban Minor Arterial	10.8	62	1.09	6.35
Urban Minor Collector	6.4	35.2	4.29	16.07
Urban Major Collector	2.8	28.2	0.31	4.87
Urban Local Road or Street	6.8	34.8	1.47	7.55

Year 2022

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	130	535	1.17	4.78
County Highway Agency	0.2	1.4	1.32	8.66
Town or Township Highway Agency	26.8	128.8	1.47	7.04
City or Municipal Highway Agency	0	0	0	0
State Park, Forest, or Reservation Agency	0	0.8	0	12.66
Local Park, Forest or Reservation Agency	0	0	0	0
Other State Agency	0	0	0	0
Other Local Agency	0	0	0	0
Private (Other than Railroad)	0	0	0	0
Railroad	0	0	0	0
State Toll Authority	3.4	15.2	0.18	1
Local Toll Authority	0	0	0	0
Other Public Instrumentality (e.g. Airport, School, University)	0.2	0	1.44	0
Indian Tribe Nation	0	0	0	0

Safety Performance Targets

Safety Performance Targets

Calendar Year 2024 Targets *

Number of Fatalities:160.0

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

· Maine Fatality data has varied widely during the 2023 Benchmark Performance Period (2018-2022) ranging from 139 in 2018 to 182 in 2022. This latest 2022 fatality count of 182 is the highest in Maine since

2007. The 5-year fatality count average was 158.4 through the period. Despite the rebound in traffic volumes experienced in 2022 the lower VMT experienced in 2020 and 2021 due to the pandemic will continue to impact the 5-year fatality rate for a few more years. The good news is that Maine's YTD 2023 fatality count as of June 1 is significantly lower than at this point in any of the previous four years.

· MaineDOT's 2024 fatality and fatal rate targets will be set equal to those set for 2023, and likely will remain constant until the trend of increasing fatalities and fatality rate reverses and progress towards improvement is observed.

Number of Serious Injuries:709.0

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

· Serious Injuries (A) have continued to show steady improvement over the years, but it too, has had erratic performance in the past. The 2023 Benchmark Performance (2018-2022) 5-year average for serious injuries 680.40, a slight decrease from the previous benchmark period. Maine's 2022 serious injury counts of 710 in 2021 and 711 in 2022 are higher than progress that had been made prior to the onset of COVID-19. In that year, Maine experienced a low of 607 serious injuries on our highways and had been trending downwards since 2012. It's too early to tell if the higher numbers of 2021 and 2022 indicate a reversal of our steady progress or outliers due to an increase in traffic volumes post-COVID.

Due to past performance, Maine's 2024 serious injury count and rate targets have optimistically been set slightly lower than those established for 2023.

Fatality Rate:1.120

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

See the supporting documentation above for the 2024 Fatalities Target.

Serious Injury Rate:4.790

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

See the supporting documentation above for the 2024 Serious Injuries Target.

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. Post-pandemic, we have seen significant increases in 2021 and 2022 completely reversing the pre-pandemic trend. Our 2020 non-motorized K&A count of 61 was our lowest in more than 17 years. Our 2022 count of 94 is the highest since 2017.

· The 5-year Average for the 2018-2022 Benchmark Period was 79.6, slightly lower than the previous evaluation period. Given the marked increase in non-motorized K&A counts and historic volatility in these numbers, MaineDOT is setting a level performance target of 85 in 2024.

There are a variety of other assumptions and factors that influence MaineDOT's setting of safety performance targets.

· It appears that the substantial reduction in Maine's VMT due to the COVID-19 pandemic has rebounded with Maine's 2022 VMT approximately 0.5% higher than the 2019 pre-pandemic volume. This growth trend appears to be continuing in 2023 with an increase of approximately 3.6% through the end of May when compared to where we were at this point in 2022.

· 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. A busy year for the tourism industry in Maine is expected as early indicators show demand for travel will continue to be strong in 2023.

· 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 translates 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 2022 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	158.4
Number of Serious Injuries	715.0	680.4
Fatality Rate	1.120	1.094
Serious Injury Rate	4.900	4.662

Non-Motorized Fatalities and Serious Injuries	87.0	79.2

All five of Maine's 2022 Safety Performance Targets were met. This was in large part to the unusual drop in pedestrian fatalities in 2018 which continued to bring the overall and 5-year average benchmark fatal numbers down despite 182 FARS fatalities in Maine for 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 substantially lower VMT in Maine in 2020. Our continuing goal is to work towards levelling that trend off and then we can work towards further reductions.

Maine's serious injury numbers and rates have also been steadily decreasing since 2012 despite increased statewide VMT. Both factors contributed to our meeting the number of non-motorized fatalities and serious injury performance target as well. We are, however, concerned that our 2018 and 2022 fatality counts and 2020 VMT experience are statistical outliers, the effect of which will impact the five-year averages for awhile, after which we'll see a jump in these numbers and rates.

Applicability of Special Rules

Does the VRU Safety Special Rule apply to the State for this reporting period?

No

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

Yes

MaineDOT was notified in April of 2022 that we had triggered the HRRR Special Rule as a result of our CY 2020 Safety Performance Target Assessment. In accordance with that determination, Maine is required to obligate in FY 2023 an amount equal to at least 200 percent of its FY 2009 high-risk rural roads set-aside in the amount of $900,000.

In accordance with Maine's 2022 Strategic Highway Safety Plan update:

High risk rural roads are of safety interest and present opportunities for safety improvements. These are roads defined as having the Federal Functional Classification of Rural Major and Minor Collectors, and Rural Local roads that have significant safety risks.

A "significant safety risk" may be identified as a section of road or intersection with one or more of the following qualities:

· A crash, fatality and/or serious injury rate that is at least 10% higher than roadways of similar functional classifications in Maine

· Meets the definition of Maine's High Crash Location criteria

· Has significant crash clusters of head-on or went-off-road crashes

· Are identified as high-risk locations through engineering/safety field reviews, safety assessments, road safety audits, and local town/law enforcement knowledge. Using information from observations in the field can identify high risk locations that may not be identified through data analysis

· Increases in traffic volumes that are likely to create a crash rate for fatalities and incapacitating injuries that exceed the statewide average at those locations

The HRRR set-aside funding does not appear in the obligated project listing for this 2022 CY reporting period but will be reflected in next year's 2023 CY HSIP annual report.

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	2016	2017	2018	2019	2020	2021	2022
Number of Older Driver and Pedestrian Fatalities	32	42	28	31	33	29	39
Number of Older Driver and Pedestrian Serious Injuries	78	92	86	95	61	79	85

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.

Maine's serious injury rate has been steadily decreasing since a peak in 2012. This downward trend continued in 2022. 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. A more rigorous performance evaluation of centerline rumble strips is underway in partnership with the University of Maine's college of engineering.

MaineDOT is also continuing 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?

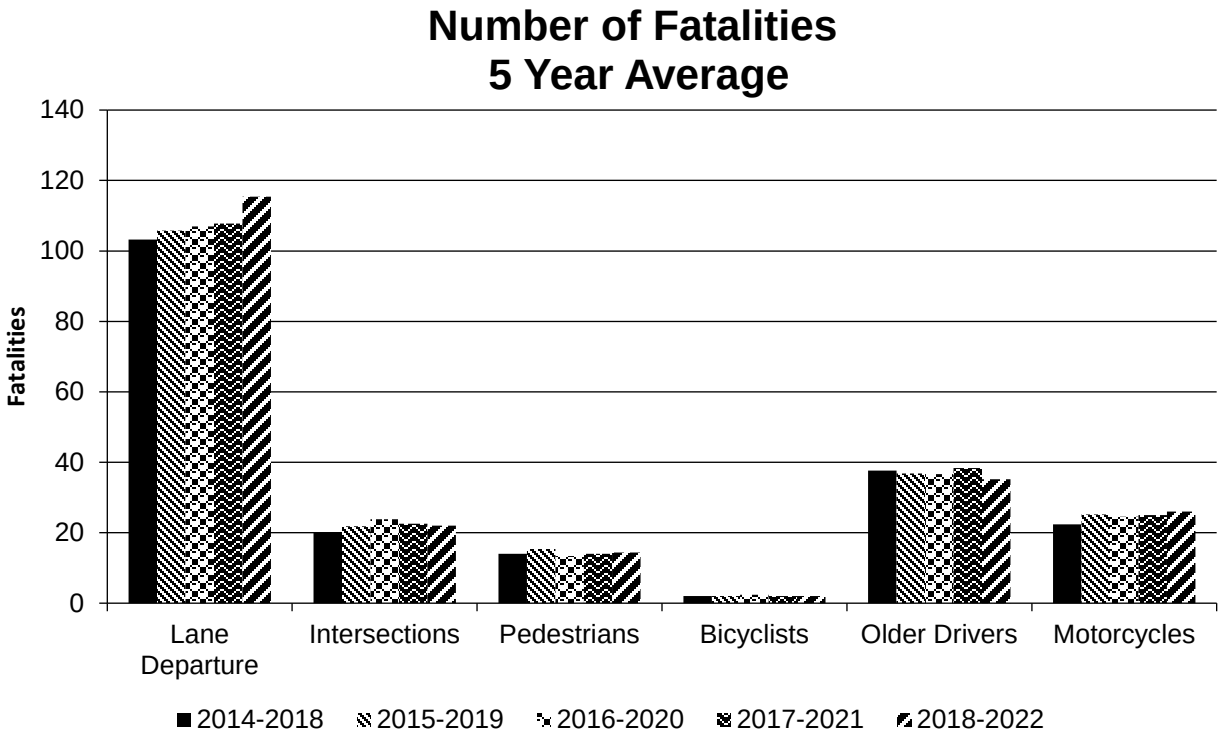
- # miles improved by HSIP
- # RSAs completed
- Increased awareness of safety and data-driven process
- Increased focus on local road safety
- More systemic programs
- Policy change
- Other-Pedestrian Strategic Focus Outcomes

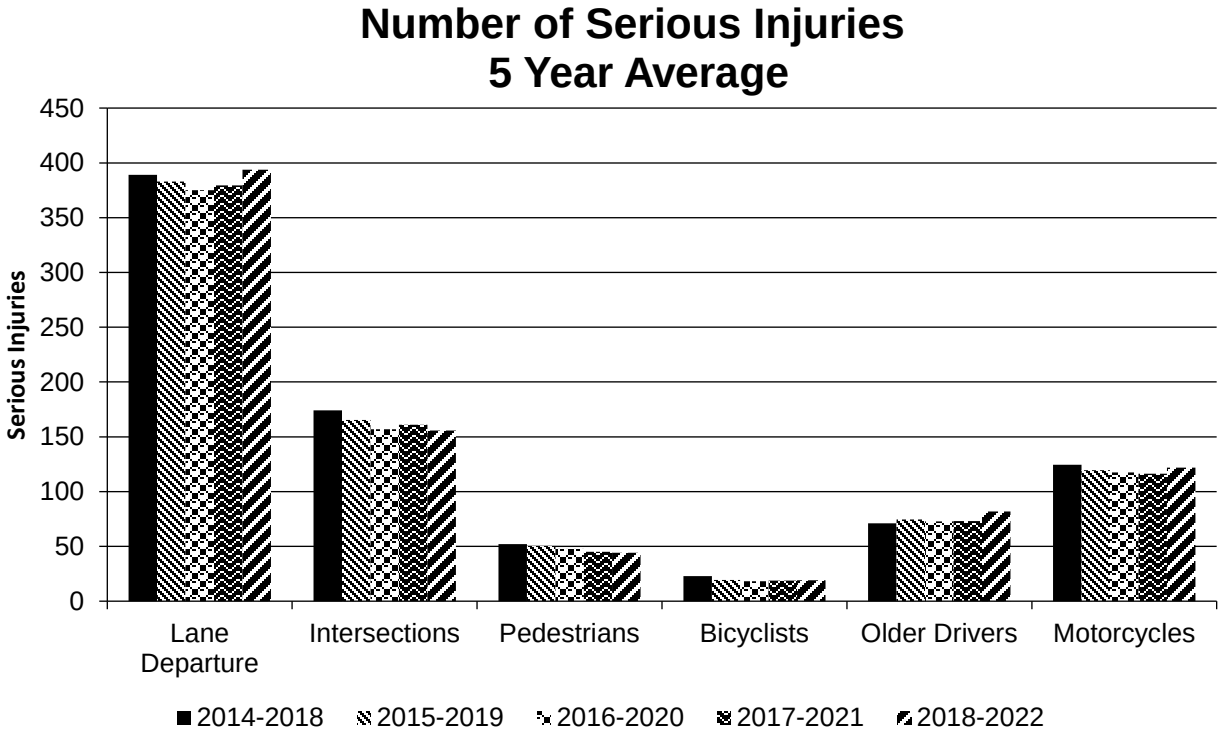
Effectiveness of Groupings or Similar Types of Improvements

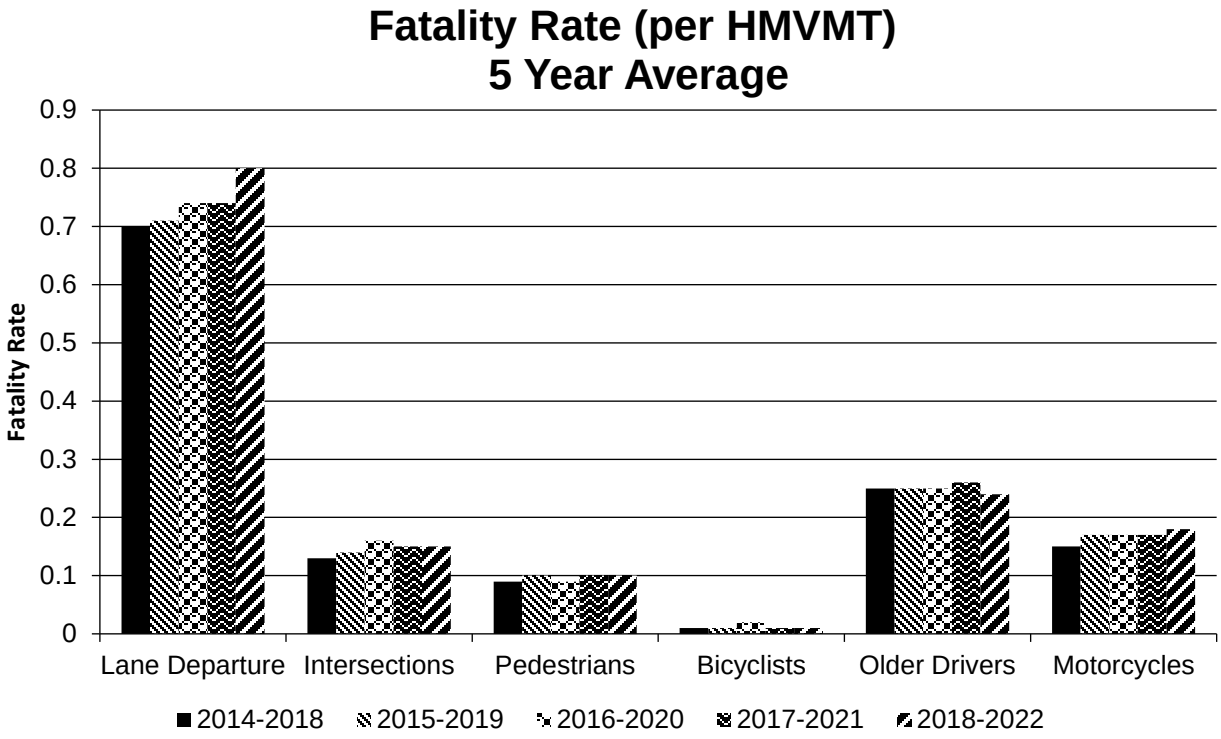
Present and describe trends in SHSP emphasis area performance measures.

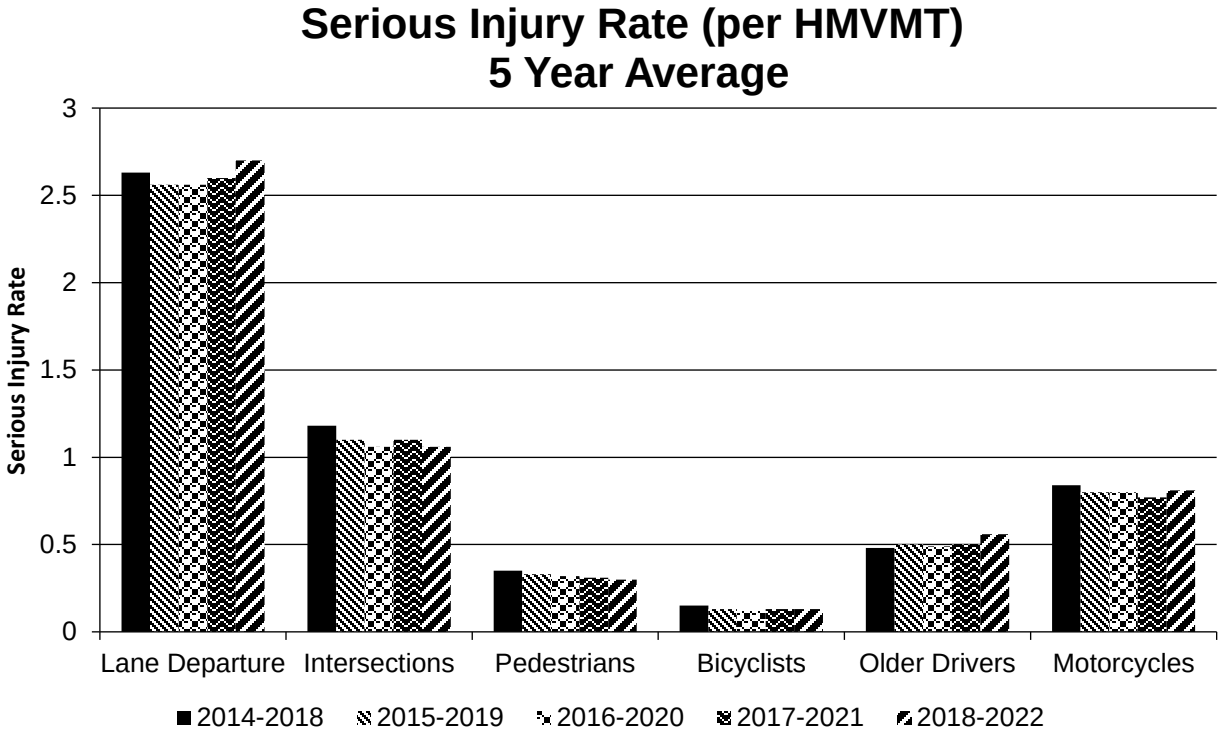
Year 2022

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		115.4	393.6	0.8	2.7
Intersections		22	155.6	0.15	1.06
Pedestrians		14.4	44.2	0.1	0.3
Bicyclists		2	19	0.01	0.13
Older Drivers		35.2	81.8	0.24	0.56
Motorcycles		26	121.8	0.18	0.81


Number of Fatalities
5 Year Average
Fatalities
140
120
100
80
60
40
20
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcycles
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


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
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


Fatality Rate (per HMVMT)
5 Year Average
Fatality Rate
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcycles
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


Serious Injury Rate (per HMVMT)
5 Year Average
Serious Injury Rate
3
2.5
2
1.5
1
0.5
0
Lane Departure
Intersections
Pedestrians
Bicyclists
Older Drivers
Motorcycles
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022

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)
019246.00 - DEXTER, ROUTE 7	Rural Minor Arterial	Roadway	Roadway - other	22.00	32.00					9.00	6.00	31.00	38.00	.0353809
019002.00 - ARUNDEL,INT OF ALFRED & NEW RD	Urban Principal Arterial (UPA) - Other	Intersection geometry	Intersection realignment	14.00	6.00					4.00		18.00	6.00	.25115648
019197.00 - BAR HARBOR, ROUTE 3	Rural Minor Arterial	Roadway	Roadway - other	67.00	65.00	1.00	1.00	1.00	3.00	18.00	20.00	87.00	89.00	-.06885915
020205.00 - DAYTON, ROUTES 5 & 35	Rural Major Collector	Intersection geometry	Add/modify auxiliary lanes	13.00	7.00					6.00	1.00	19.00	8.00	.30702509
020210.00 - STANDISH, RT 25/MANCHESTER/SAC	Rural Minor Arterial	Intersection geometry	Add/modify auxiliary lanes	7.00	10.00	2.00				7.00		16.00	10.00	8.21445588
020213.00 - WINTHROP, ROUTE 202/MAIN ST	Rural Minor Arterial	Intersection geometry	Intersection realignment	18.00	9.00					5.00	5.00	23.00	14.00	.07114073
022506.00 - OXFORD, ROUTE 26/ROUTE 121	Rural Principal Arterial (RPA) - Other	Intersection geometry	Add/modify auxiliary lanes	8.00	2.00					4.00		12.00	2.00	.82061371
022674.00 - BATH, RT 1/HIGH STREET RAMP	Urban Principal Arterial (UPA) - Other Freeways and Expressways	Interchange design	Acceleration / deceleration / merge lane	32.00	18.00					11.00	1.00	43.00	19.00	1.87421472
022683.00 - BELFAST RT 1/RT 7 SB RAMP	Rural Principal Arterial (RPA) - Other	Interchange design	Acceleration / deceleration / merge lane	7.00	2.00					2.00	1.00	9.00	3.00	.28785964
022692.00 - ORONO, ROUTE 2/RANGELEY RD	Urban Minor Arterial	Intersection traffic control	Modify control – Modern Roundabout	35.00	19.00					6.00		41.00	19.00	.21208642
022704.00 - KENNEBUNK - WELLS	Urban Major Collector	Intersection traffic control	Intersection flashers –sign-mounted or overhead	1.00	1.00					2.00		3.00	1.00	1.72028519
022881.00 - HOLDEN, ROUTE 1A	Rural Principal Arterial (RPA) - Other	Roadway	Roadway narrowing (road	20.00	12.00					7.00	8.00	27.00	20.00	.05346327

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)
			diet, roadway reconfiguration)											
022883.00 - HOLDEN, ROUTE 1A	Rural Principal Arterial (RPA) - Other	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	21.00	11.00	1.00	1.00	1.00	1.00	8.00	4.00	31.00	17.00	.88536892
022976.00 - SCARBOR-S.PRTLAND GUARD RAIL	Urban Principal Arterial (UPA) - Other Freeways and Expressways	Roadside	Barrier – cable	10.00	21.00					2.00	2.00	12.00	23.00	-.16479672
023014.00 - T2R8 NWP INTERSTATE EXIT 227	Rural Principal Arterial (RPA) - Interstate	Lighting	Interchange lighting							1.00		1.00		.1047281

Project effectiveness evaluated using 3 years before/after data from the MaineDOT crash system. The fatality data in this system is likely slightly different than what would be found in the FARS system.

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 it's 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

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.

Most of the outstanding elements can be generated from data we have already collected programmatically. The remaining element which will require some human interpretation is "Interchange Type", which MaineDOT intends to have done by the deadline.

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.