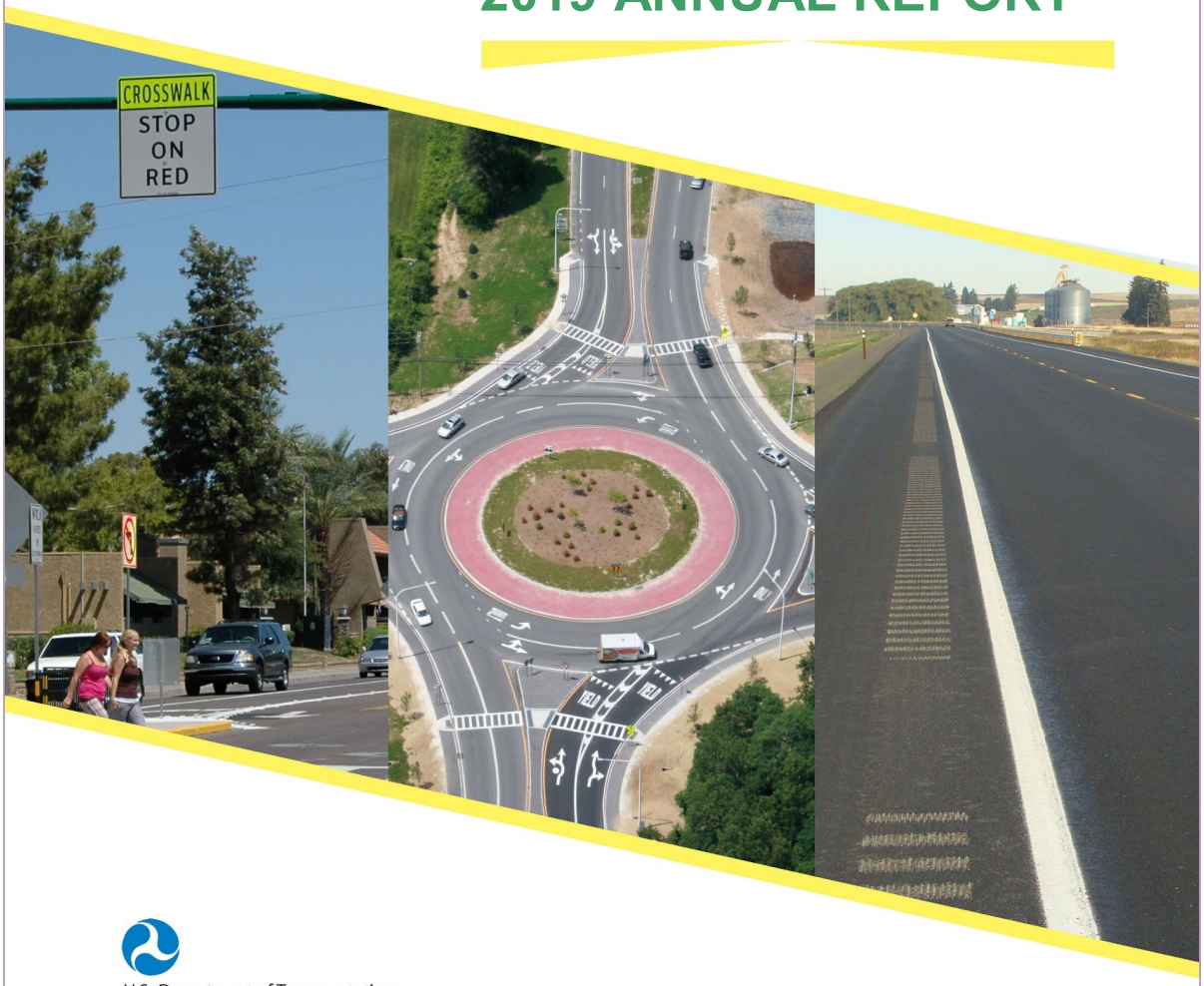
MARYLAND

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2019 ANNUAL REPORT



U.S. Department of Transportation
Federal Highway Administration

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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. 409 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

Executive Summary

Summary Maryland Highway Safety Improvement Program (HSIP) CY 2018
• The purpose of the HSIP is to achieve a significant reduction in traffic fatalities and serious injuries on public roads. To obligate “core” safety funds MDOT SHA must have in effect an HSIP under which the State: 1) develops and implements a Strategic Highway Safety Plan (SHSP) that identifies and analyzes highway safety problems and opportunities to reduce fatalities and serious injuries, 2) produces a program of projects or strategies to reduce identified safety problems, 3) evaluates the plan on a regular basis to ensure the accuracy of the data and priority of proposed improvements, 4) submits an annual report to the FHWA Division.
• The principal objective of Maryland's Fund 76 Safety and Spot Improvement Program is: on an annual basis, to identify those highway locations that contain safety deficiencies based on abnormal collision experience and, as quickly as possible, implement safety improvements to reduce or eliminate these deficiencies.
• HSIP Staff is located in the Planning, Engineering and Highway Safety Office portions of MDOT.
• HSIP is administered centrally via Statewide Competitive Application Process.
• Local roads were not allocated HSIP funds in CY 2018.
• The Maryland Highway Safety Office (MHSO) along with the Maryland Transportation Authority and the Maryland Institute for Emergency Medical Services are important partners with the Maryland State Highway Administration (SHA) in the HSIP process. The Federal Highway Administration (FHWA), National Highway Traffic Safety Administration, Federal Motor Carrier Safety Administration and several regional planning organizations along with local governments, various police agencies and academic organizations also coordinate with the SHA.
• Programs administered under the HSIP
1. Median Barrier
2. Horizontal Curve
3. Skid Hazard
4. Roadway Departure
5. Left-turn crash
6. Intersection Crash Data
7. Low Cost Spot Improvements
8. Pedestrian Safety
9. Rural State Highway
10. Right Angle Crash
11. Highway Sections
• The data types used in the HSIP program methodology are vehicle crashes, traffic volume and highway mileage.
• The project identification methodology used in the HSIP program are crash frequency and relative severity index.
• The HSIP projects are advanced for implementation by a SHA selection committee. The criteria considered are Safety, Congestion, Operations and Local Support. This will be revised in CY 2019.
• Engineering studies and Road Safety Assessments are used to identify potential countermeasures.
• The Highway Safety Manual is used in site specific studies that are related to the HSIP.
• Reporting period for HSIP funding is CY 2018.
• All police crash reports used for the crash database are in electronic format as of January 1, 2015
• The general listing of projects includes various traffic control, roadside, lighting, intersection geometry and pedestrian-bicyclist access projects.
• The overview of safety trends indicates that the reported number of fatalities (FARS) have increased from 442 in 2014 to 513 in 2018 (annual format) and that the number of serious injuries (MD) have increased from 3,053 in 2014 to 3,224 in 2018 (annual format). Please note that all 2017 FARS totals are preliminary at the time of this report. 2018 FARS totals are not available with state totals being used instead at the time of the report.
• The overview of safety trends indicates that the reported number of non-motorized fatalities (FARS) have increased from 106 in 2014 to 139 in 2018 (annual format) and that the number of non-motorized serious injuries (MD) have increased from 431 in 2014 to 554 in 2018 (annual format). Please see above note on 2017-18 FARS totals.

• Overall five-year average crash trends for the individual functional classification and roadway ownership are shown in tables in the annual report.
• Maryland maintains the Toward Zero Deaths (TZD) approach by developing interim targets to reduce fatalities by at least 50 percent in the next two decades.
• “A wide range of stakeholder groups - including federal, state and local government agencies, nongovernmental organizations, regional authorities, and individual advocates - participated in the development of the SHSP (Maryland Strategic Plan). Each EA (Emphasis Area) Team - which includes regional and local agencies - held at least two facilitated discussions to identify, develop, and finalize strategies for the 2016-2020 SHSP. Each EA Team wrestled with difficult decisions regarding how to cover the essentials of transportation safety while remaining strategic and focused on the most vital needs” (2016-20 SHSP).
• Older Driver and pedestrian (65+) Fatalities increased from 69 in 2011 to 80 in 2017 (FARS – annual numbers. 2017 FARS totals are preliminary at the time of this report). Severe Injuries decreased from 295 in 2011 to 278 in 2017 (MD – annual numbers).
• The State measures effectiveness of the HSIP by the change in fatalities and serious injuries
• Overall yearly crash trends for the individual SHSP (Strategic Highway Safety Program) emphasis areas are shown in tables in the annual report.
• All Maryland counties along with Baltimore City are now provided a three-year listing of pedestrian involved crashes which includes a summary of severe injury and fatal crashes on state highways along with a detailed listing for local roads.
• Maryland’s current SHSP was approved by the Governor or designated State representative on 05/31/2017.
• The years being covered by the current SHSP are 2016 to 2020.
• Maryland anticipates completing its next SHSP update by 2020.
• The status (percent complete) of MIRE fundamental data elements collection efforts are shown in tables in the annual report.
• MDOT SHA is implementing Esri’s Roads and Highways (R&H) software to manage our GIS roadway and LRS data for HPMS submission. With the Intersection Manager tool, our ability to better manage intersection data, and data gaps, we will be able to be 100 percent compliant by 2026.
• In conjunction with the ESRI R&H implementation, we also began the One Maryland, One Centerline (OMOC) program where MDOT SHA has met with all 23 counties, and Baltimore City, to discuss the sharing of data between jurisdictions via one common geometry, maintained by the appropriate authority. This geometry will be the base of the R&H data model. This data share and cooperation between levels of jurisdictions will also allow us to identify and fill data gaps, with the appropriate, authoritative information.
• The purpose/scope of the HSIP review in 2016 was to determine if Maryland HSIP Planning Process meets the requirements of 23 CFR 924.9 and identify areas for improvement and successful practices in Maryland HSIP Planning Process.
• An action plan was developed in CY 2016 to bring Maryland’s HSIP planning process into compliance with the HSIP Final Rule.

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.

The purpose of the HSIP is to achieve a significant reduction in traffic fatalities and serious injuries on public roads. To obligate “core” safety funds MDOT SHA must have in effect an HSIP under which the State: 1) develops and implements a Strategic Highway Safety Plan (SHSP) that identifies and analyzes highway safety problems and opportunities to reduce fatalities and serious injuries, 2) produces a program of projects or strategies to reduce identified safety problems, 3) evaluates the plan on a regular basis to ensure the accuracy of the data and priority of proposed improvements, 4) submits an annual report to the FHWA Division.

Emphasis on Maryland’s highways is placed on improving the safety of intersections, sections and ramps that are identified as Candidate Safety Improvement Locations (CSILs) or through Road Safety Audits and on implementing proven blanket safety improvements on a systematic basis. Safety improvements include the installation of rumble strips and median barriers; upgrading signs, signals, and markings; improving geometrics; and highway and bridge widening, resurfacing, rehabilitation, and reconstruction.

The processes used to identify locations, referred to in the HSIP as hazardous locations, which have abnormal accident experience. Those locations, referred to herein as Candidate Safety Improvement Locations (CSILs), include intersections, spots and sections where the combination of accident frequencies and/or rates are significantly higher than those at similar locations. The identification of CSILs is based on all police reported collisions, i.e., those crashes reported by law enforcement agencies across Maryland to the Maryland State Police. Information from these reports is entered into a statewide accident database for analysis.

The State Highway Administration (SHA) typically identifies CSILs only on the state maintained highway system. Several local jurisdictions use the accident data, which SHA provides to all of the jurisdictions annually, to identify similar location on their road systems.

The principal objective of Maryland's Fund 76 Safety and Spot Improvement Program is: on an annual basis, to identify those highway locations that contain safety deficiencies based on abnormal collision experience and, as quickly as possible, implement safety improvements to reduce or eliminate these deficiencies. Locations identified by the District Engineers as having a combined safety/capacity problem although not necessarily qualifying as Candidate Safety Improvement Locations, also can be included as candidate Fund 76 Program projects. The SHA Administrator makes the final project selection.

Maryland's Fund 76 Spot Improvement Program was developed under the guidelines set forth in 23 CFR 924, and was designed to address the most critical highway safety problems statewide through a systematic and

unbiased approach. The Fund 76 Program is under the direction of the SHA's Deputy Administrator/Chief Engineer for Operations, with program development and assistance from the Office of Traffic and Safety.

Through the Fund 76 process, accident data for all State highways is reviewed annually, and all sections and intersections experiencing abnormally high accident rates are studied to determine what countermeasures are applicable. In addition, listings of accidents on local roads are sent to the local governments for their use.

Where is HSIP staff located within the State DOT?

Other-Planning and Engineering

How are HSIP funds allocated in a State?

- Central Office via Statewide Competitive Application Process

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

Local Roads are usually not given HSIP funds from the State

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

- Districts/Regions
- Governors Highway Safety Office
- Planning
- Traffic Engineering/Safety
- Other-Maryland State Highway District Offices

Describe coordination with internal partners.

Within the Maryland Department of Transportation (MDOT) the State Highway Administration (SHA) Office of Traffic and Safety and Office of Planning and Preliminary Engineering along with the Motor Vehicle Administration (MVA) Maryland Highway Safety Office (MHSO) provided leadership, support, and coordination for Maryland's highway safety projects in CY 2018. Part of SHA and MVA's responsibility is to work with other State agencies to address highway safety issues. This effort results in a multi agency approach which includes the Maryland Transportation Authority, the Maryland Institute for Emergency Medical Services and others that have roles in highway safety problems. The seven SHA District Offices also provide a network of field personnel willing to coordinate and provide technical assistance to local agencies.

Identify which external partners are involved with HSIP planning.

- Academia/University
- FHWA
- Law Enforcement Agency
- Local Government Agency
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)
- Other-External partners including MPOs, local government, police agencies and academic organizations were included in the 2016-20 SHSP planning process

Describe coordination with external partners.

As stated in the 2016-20 SHSP (Maryland Highway Strategic Plan), stakeholder groups which included HSIP external partners participated in the development of the SHSP to identify, develop, and finalize strategies for the 2016-2020 SHSP. Stakeholder groups have coordinated in the collection and maintaining of safety data for all public roads and processes for advancing the State's capabilities for safety data collection and analysis through the TRCC).

Program Methodology

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

No

The current process for the planning and implementation is detailed in the Safety and Spot Improvement Program Fund 76. The evaluation process was documented in the HSIP evaluation reports before the new template was created. A new process/manual is in development and was an action plan item from the July 2016 HSIP Process review.

Select the programs that are administered under the HSIP.

- Horizontal Curve
- Intersection
- Left Turn Crash
- Low-Cost Spot Improvements
- Median Barrier
- Pedestrian Safety
- Right Angle Crash
- Roadway Departure
- Rural State Highways
- Segments
- Skid Hazard

Program: Horizontal Curve

Date of Program Methodology:1/1/2010

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes	Volume Other-Highway mileage	Functional classification

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Relative severity index

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).

Relative Weight in Scoring

Other-Safety:60
Other-Congestion / Operations:30
Other-Support / Opportunity:10
Total Relative Weight:100

A new Candidate Project Rating Form will be implemented in CY 2019.

Program: Intersection

Date of Program Methodology:1/1/2010

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes		

What project identification methodology was used for this program?

- Crash frequency
- Relative severity index

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).

Relative Weight in Scoring

Other-Safety:60
Other-Congestion / Operations:30
Other-Support / Opportunity:10
Total Relative Weight:100

Program: Left Turn Crash

Date of Program Methodology:1/1/2010

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes		

What project identification methodology was used for this program?

- Crash frequency
- Relative severity index

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).

Relative Weight in Scoring

Other-Safety:60
Other-Congestion / Operations:30
Other-Support / Opportunity:10
Total Relative Weight:100

Program: Low-Cost Spot Improvements

Date of Program Methodology:1/1/2010

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes	Volume Other-Highway mileage	

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Relative severity index

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).

Relative Weight in Scoring

Other-Safety:60
Other-Congestion / Opeartions:30
Other-Support / Opportunity:10
Total Relative Weight:100

Program: Median Barrier

Date of Program Methodology:1/1/2010

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes	Volume Other-Highway mileage	

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Relative severity index

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).

Relative Weight in Scoring

Other-Safety:60
Other-Congestion / Operations:30
Other-Support / Opportunity:10
Total Relative Weight:100

Program: Pedestrian Safety

Date of Program Methodology:1/1/2012

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes	Volume Other-Highway mileage	

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Relative severity index

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).

Relative Weight in Scoring

Other-Safety:60
Other-Congestion / Operations:30
Other-Support / Opportunity:10
Total Relative Weight:100

Program: Right Angle Crash

Date of Program Methodology:1/1/2010

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes		

What project identification methodology was used for this program?

- Crash frequency
- Relative severity index

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).

Relative Weight in Scoring

Other-Safety:60
Other-Congestion / Operations:30
Other-Support / Opportunity:10
Total Relative Weight:100

Program: Roadway Departure

Date of Program Methodology:1/1/2010

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes	Volume Other-Highway mileage	

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Relative severity index

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).

Relative Weight in Scoring

Other-Safety:60
Other-Congestion / Operations:30
Other-Support / Opportunity:10
Total Relative Weight:100

Program: Rural State Highways

Date of Program Methodology:1/1/2010

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 Other-Highway mileage	Roadside features

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Relative severity index

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).

Relative Weight in Scoring

Other-Safety:60
Other-Congestion / Operations:30
Other-Support / Opportunity:10
Total Relative Weight:100

Program: Segments

Date of Program Methodology:1/1/2010

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes	Volume Other-Highway mileage	Functional classification

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Relative severity index

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).

Relative Weight in Scoring

Other-Safety:60
Other-Congestion / Operations:30
Other-Support / Opportunity:10
Total Relative Weight:100

Program: Skid Hazard

Date of Program Methodology:1/1/2012

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes	Exposure	Roadway
All crashes	Volume Other-Highway mileage	

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Relative severity index

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).

Relative Weight in Scoring

Other-Saftey:60
Other-Congestion / Operations:30
Other-Support / Opportunity:10
Total Relative Weight:100

What percentage of HSIP funds address systemic improvements?

13

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

- Upgrade Guard Rails

What process is used to identify potential countermeasures?

- Engineering Study
- Road Safety Assessment

Does the State HSIP consider connected vehicles and ITS technologies?

No

This is expected to be addressed in the future.

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.

The Highway Safety Manual is used in site specific studies as part of the HSIP Planning Process. It will be used in future ratings of Candidate Projects.

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)	$19,060,000	$18,188,240	95.43%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$0	$0	0%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$0	$0	0%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$0	$0	0%
Totals	$19,060,000	$18,188,240	95.43%

2018 programmed total not available at report time. 2019 figure used instead.

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%

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?

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

$17,000,000

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

none at this time

Describe any other aspects of the State's progress in implementing HSIP projects on which the State would like to elaborate.

All Police crash reports used for the crash database are in electronic format as of January 1 2015

General Listing of Projects

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

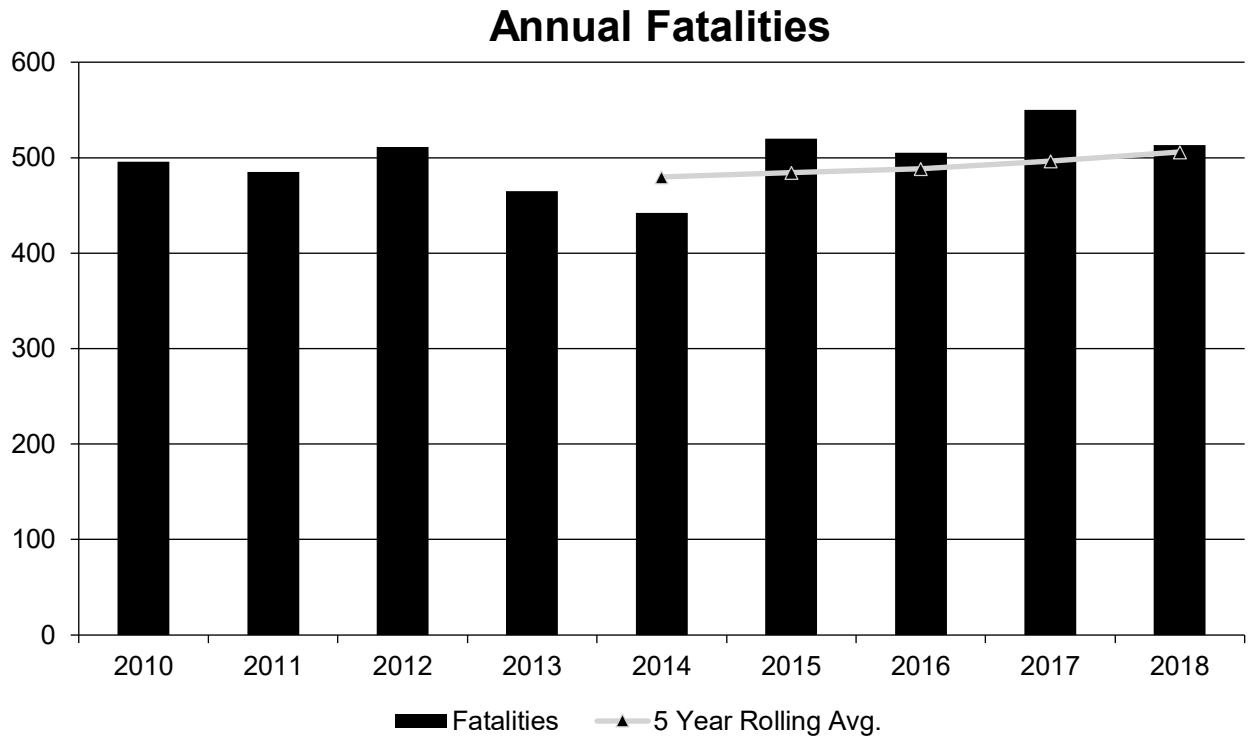
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
1301175	Intersection geometry	Intersection geometry - other			$2938705	$3218643	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	30,372	55	State Highway Agency	Spot	Highway Infrastructure	Corridor safety improvements
3301016	Intersection geometry	Intersection geometry - other			$3510176	$3868544	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	27,502	55	State Highway Agency	Spot	Highway Infrastructure	Corridor safety improvements
1251067	Intersection geometry	Intersection geometry - other			$1242050	$1378706	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	29,051	55	State Highway Agency	Spot	Highway Infrastructure	Corridor safety improvements
1301176	Intersection geometry	Intersection geometry - other			$2027754	$2239266	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	24,522	55	State Highway Agency	Spot	Highway Infrastructure	Corridor safety improvements
2511077	Intersection geometry	Intersection geometry - other			$1344801	$1541864	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	28,320	45	State Highway Agency	Spot	Highway Infrastructure	Corridor safety improvements
000B196	Roadside	Barrier- metal			$1832616	$2036240	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Highway Infrastructure	Corridor saftey improvements
000B233	Roadside	Barrier- metal			$1859000	$1870440	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Highway Infrastructure	Corridor safety improvements
000B238	Roadway delineation	Longitudinal pavement markings - new			$2102098	$2358166	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Systemic	Highway Infrastructure	Corridor safety improvements
6956382	Lighting	Site lighting - interchange			$1331040	$1331040	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0		State Highway Agency	Spot	Highway Infrastructure	Corridor safety improvements

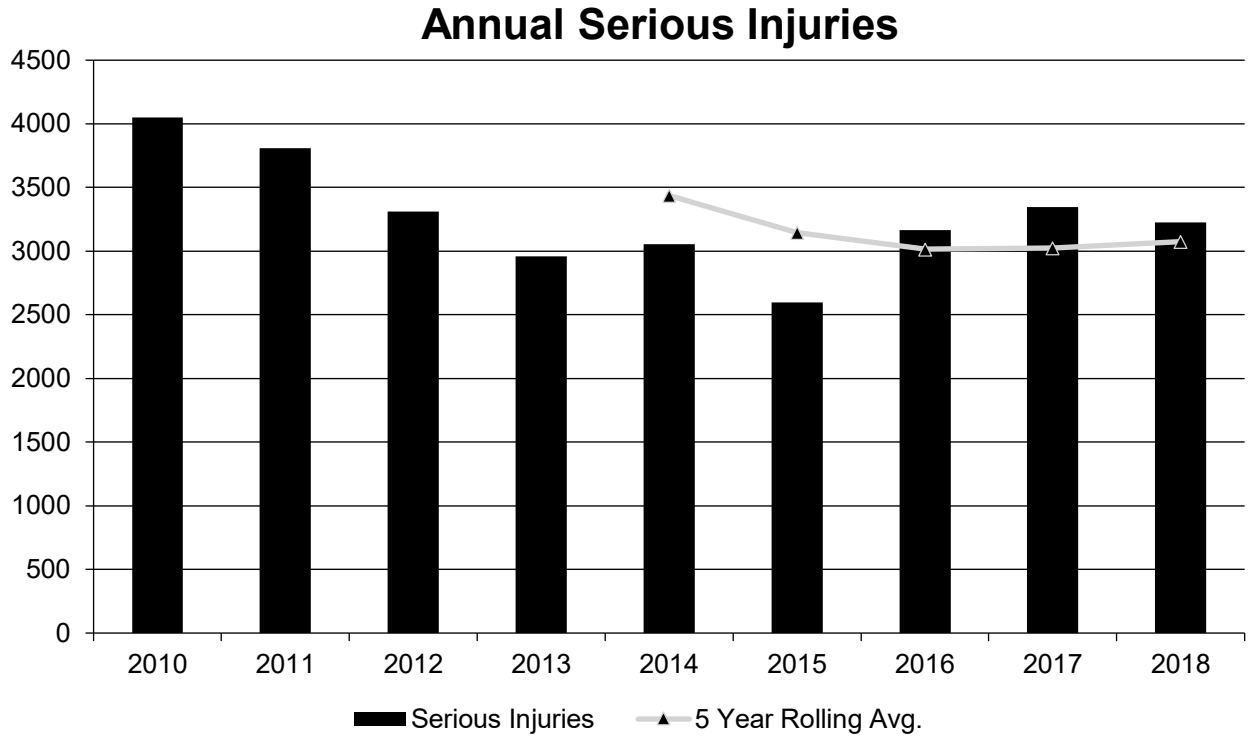
Safety Performance

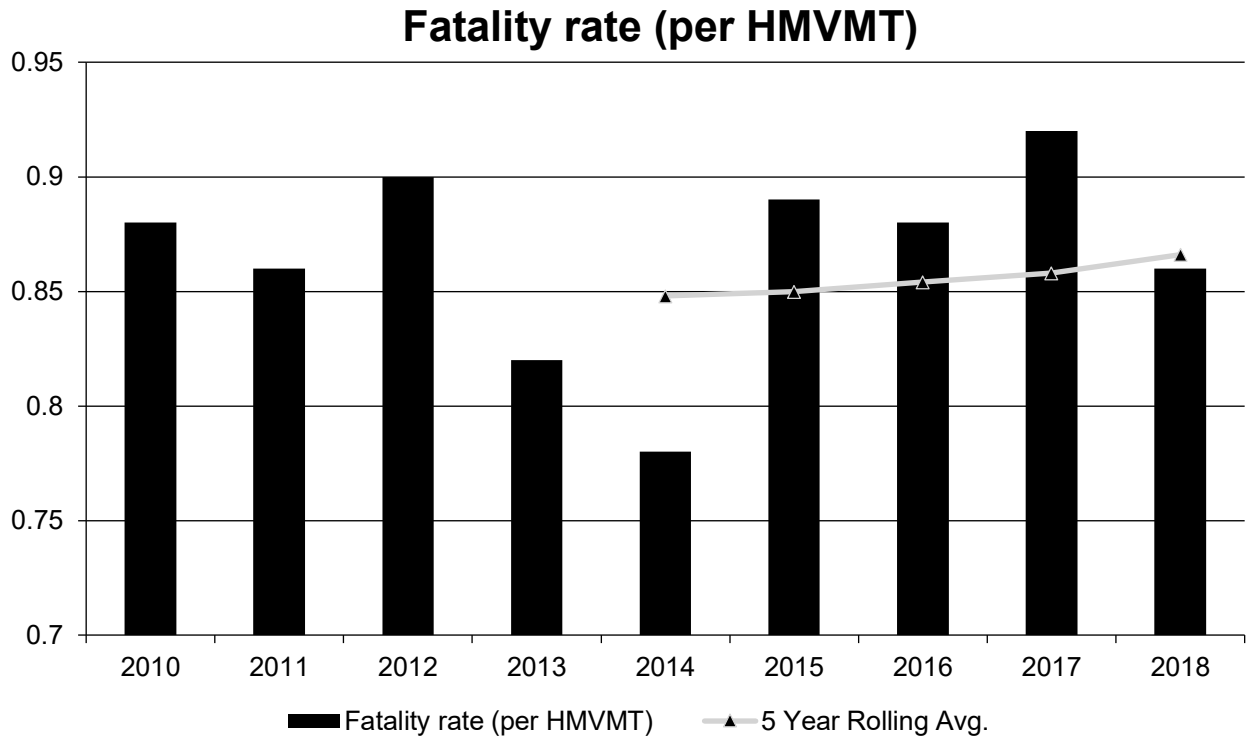
General Highway Safety Trends

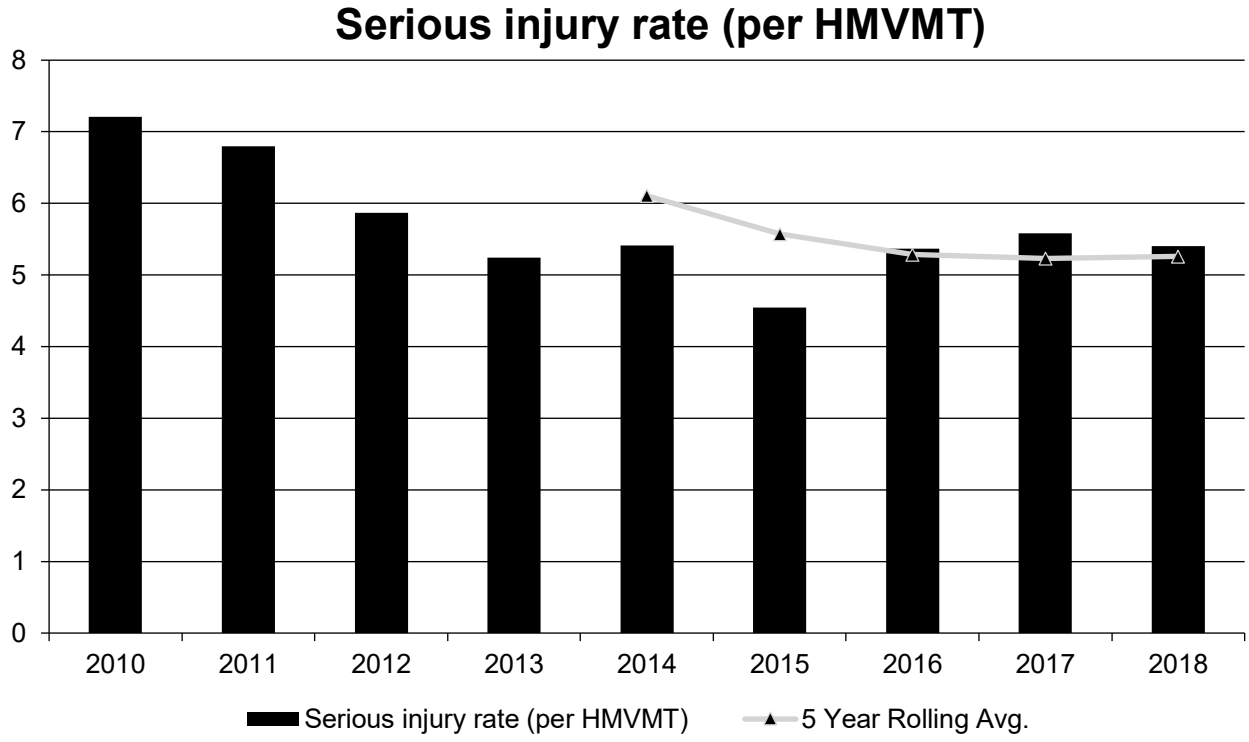
Present data showing the general highway safety trends in the State for the past five years.

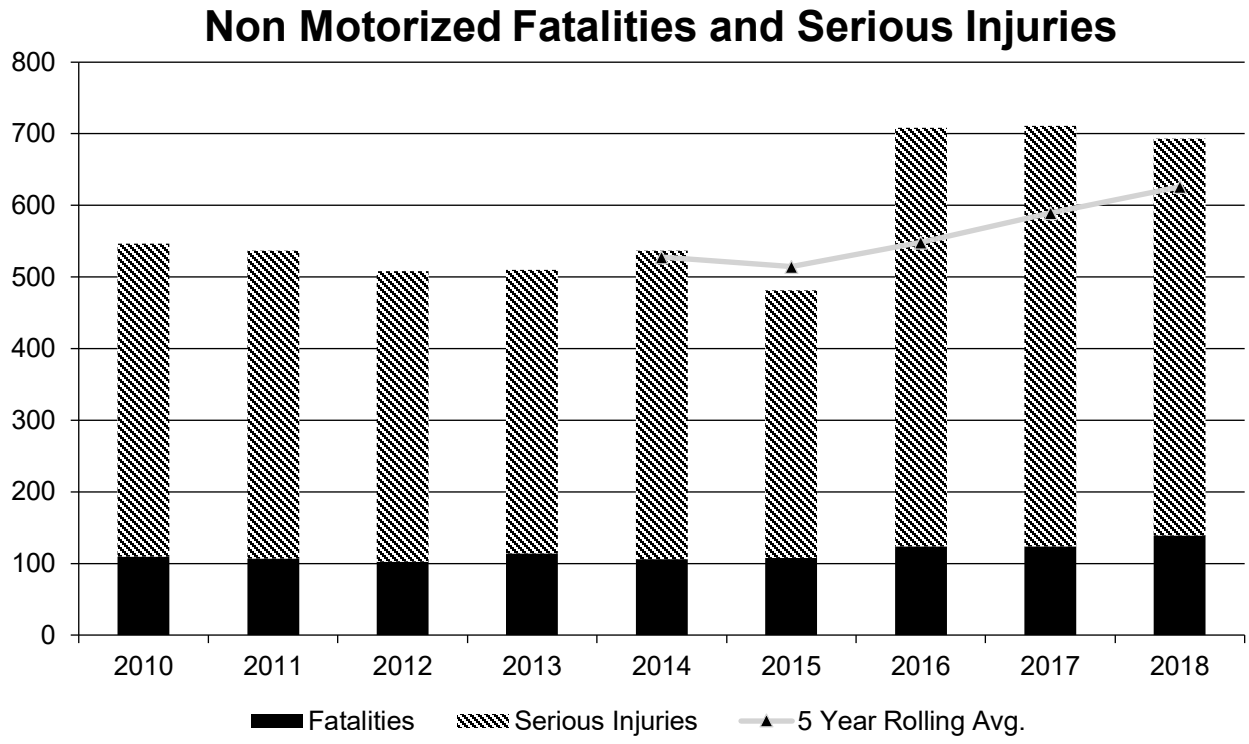
PERFORMANCE MEASURES	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fatalities	496	485	511	465	442	520	505	550	513
Serious Injuries	4,051	3,809	3,312	2,957	3,053	2,595	3,164	3,345	3,224
Fatality rate (per HMVMT)	0.880	0.860	0.900	0.820	0.780	0.890	0.880	0.920	0.860
Serious injury rate (per HMVMT)	7.210	6.800	5.870	5.240	5.410	4.550	5.370	5.585	5.407
Number non-motorized fatalities	110	107	102	114	106	108	124	124	139
Number of non-motorized serious injuries	437	430	406	396	431	373	584	587	554


Annual Fatalities
600
500
400
300
200
100
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
4500
4000
3500
3000
2500
2000
1500
1000
500
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
0.95
0.9
0.85
0.8
0.75
0.7
2010
2011
2012
2013
2014
2015
2016
2017
2018
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
8
7
6
5
4
3
2
1
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



2017 Fatalities and Fatality Rates are preliminary FARS totals
2018 Fatalities and Fatality Rates are Maryland State Totals - FARS totals are unavailable at reporting time

Describe fatality data source.

FARS

State Fatality Totals used for selected questions in the HSIP as noted

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

Year 2017

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	15	33	0.69	1.51
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other	26	120	1.29	5.96
Rural Minor Arterial	32	129	1.81	7.29
Rural Minor Collector	17	53	2.19	6.83

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 Major Collector	33	131	2.05	8.16
Rural Local Road or Street	24	104	1.4	6.07
Urban Principal Arterial (UPA) - Interstate	42	164	0.27	1.04
Urban Principal Arterial (UPA) - Other Freeways and Expressways	32	106	0.47	1.55
Urban Principal Arterial (UPA) - Other	99	722	0.92	6.71
Urban Minor Arterial	49	343	0.64	4.45
Urban Minor Collector				
Urban Major Collector	41	207	0.95	4.78
Urban Local Road or Street	12	173	0.37	5.39

Year 2018

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	384	1,851		
County Highway Agency	89	789		
Town or Township Highway Agency				
City or Municipal Highway Agency	24	238		
State Park, Forest, or Reservation Agency				
Local Park, Forest or Reservation Agency				
Other State Agency				
Other Local Agency	2	11		
Private (Other than Railroad)				
Railroad				
State Toll Authority				
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				

2018 Functional Classification totals not available as of report time

Safety Performance Targets

Safety Performance Targets

Calendar Year 2020 Targets *

Number of Fatalities:425.7

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

2019 Maryland Highway Safety Improvement Program
Maryland has set highway safety performance targets that are quantifiable and data driven, maintaining the Toward Zero Deaths (TZD) approach by developing interim targets to reduce overall fatalities and serious injuries by at least 50 percent in the next two decades, starting with a baseline of 2008 to an end goal in 2030. Five-year rolling averages are used to calculate five-year-average targets for fatalities and serious injuries, e.g., 2013–2017 actual crash data are used to determine targets for 2016–2020 (five-year average). (However, it should be noted that due to significant declines in serious injuries in recent years, and a recent change in the Maryland crash report definition of injury severity, the use of historical trends currently puts the State at or below current targets for serious injuries.) This method is applied to the five performance measures required by the Federal Highway Administration (FHWA): fatalities, fatality rate, serious injuries, serious injury rate, and non-motorized fatalities and serious injuries with the first three being identical in Maryland's HSP and HSIP.

Number of Serious Injuries:3029.4

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

Maryland has set highway safety performance targets that are quantifiable and data driven, maintaining the Toward Zero Deaths (TZD) approach by developing interim targets to reduce overall fatalities and serious injuries by at least 50 percent in the next two decades, starting with a baseline of 2008 to an end goal in 2030. Five-year rolling averages are used to calculate five-year-average targets for fatalities and serious injuries, e.g., 2013–2017 actual crash data are used to determine targets for 2016–2020 (five-year average). (However, it should be noted that due to significant declines in serious injuries in recent years, and a recent change in the Maryland crash report definition of injury severity, the use of historical trends currently puts the State at or below current targets for serious injuries.) This method is applied to the five performance measures required by the Federal Highway Administration (FHWA): fatalities, fatality rate, serious injuries, serious injury rate, and non-motorized fatalities and serious injuries with the first three being identical in Maryland's HSP and HSIP.

Fatality Rate:0.750

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

Maryland has set highway safety performance targets that are quantifiable and data driven, maintaining the Toward Zero Deaths (TZD) approach by developing interim targets to reduce overall fatalities and serious injuries by at least 50 percent in the next two decades, starting with a baseline of 2008 to an end goal in 2030. Five-year rolling averages are used to calculate five-year-average targets for fatalities and serious injuries, e.g., 2013–2017 actual crash data are used to determine targets for 2016–2020 (five-year average). (However, it should be noted that due to significant declines in serious injuries in recent years, and a recent change in the Maryland crash report definition of injury severity, the use of historical trends currently puts the State at or below current targets for serious injuries.) This method is applied to the five performance measures required by the Federal Highway Administration (FHWA): fatalities, fatality rate, serious injuries, serious injury rate, and non-motorized fatalities and serious injuries with the first three being identical in Maryland's HSP and HSIP.

Serious Injury Rate:5.372

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

2019 Maryland Highway Safety Improvement Program
Maryland has set highway safety performance targets that are quantifiable and data driven, maintaining the Toward Zero Deaths (TZD) approach by developing interim targets to reduce overall fatalities and serious injuries by at least 50 percent in the next two decades, starting with a baseline of 2008 to an end goal in 2030. Five-year rolling averages are used to calculate five-year-average targets for fatalities and serious injuries, e.g., 2013–2017 actual crash data are used to determine targets for 2016–2020 (five-year average). (However, it should be noted that due to significant declines in serious injuries in recent years, and a recent change in the Maryland crash report definition of injury severity, the use of historical trends currently puts the State at or below current targets for serious injuries.) This method is applied to the five performance measures required by the Federal Highway Administration (FHWA): fatalities, fatality rate, serious injuries, serious injury rate, and non-motorized fatalities and serious injuries with the first three being identical in Maryland's HSP and HSIP.

Total Number of Non-Motorized Fatalities and Serious Injuries:465.8

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

Maryland has set highway safety performance targets that are quantifiable and data driven, maintaining the Toward Zero Deaths (TZD) approach by developing interim targets to reduce overall fatalities and serious injuries by at least 50 percent in the next two decades, starting with a baseline of 2008 to an end goal in 2030. Five-year rolling averages are used to calculate five-year-average targets for fatalities and serious injuries, e.g., 2013–2017 actual crash data are used to determine targets for 2016–2020 (five-year average). (However, it should be noted that due to significant declines in serious injuries in recent years, and a recent change in the Maryland crash report definition of injury severity, the use of historical trends currently puts the State at or below current targets for serious injuries.) This method is applied to the five performance measures required by the Federal Highway Administration (FHWA): fatalities, fatality rate, serious injuries, serious injury rate, and non-motorized fatalities and serious injuries with the first three being identical in Maryland's HSP and HSIP.

Serious Injury Rate 2016-20 Target is 5.372
Total Number of Non-Motorized Fatalities and Serious Injuries Target is 465.8

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

"Stakeholders. A wide range of stakeholder groups - including federal, state and local government agencies, nongovernmental organizations, regional authorities, and individual advocates - participated in the development of the SHSP (Maryland Strategic Plan). Each EA (Emphasis Area) Team - which includes regional and local agencies - held at least two facilitated discussions to identify, develop, and finalize strategies for the 2016-2020 SHSP. Each EA Team wrestled with difficult decisions regarding how to cover the essentials of transportation safety while remaining strategic and focused on the most vital needs."[1] This list of stakeholder safety partner agencies is as follows: Baltimore Metropolitan Council Washington Regional Alcohol Program Maryland Institute for Emergency Medical Services System National Study Center State Highway Administration Maryland Highway Safety Office Motor Vehicle Administration Maryland Department of Health and Mental Hygiene National Highway Traffic Safety Administration Federal Highway Administration Maryland Transportation Authority Police Maryland State Police Montgomery County Police Department Howard County Police Department Maryland Chiefs of Police Association Leidos consultants Sabra, Wang & Associates consultants[2] [1] Maryland Strategic Highway Safety Plan 2016-20 PG 5 [2] Maryland Strategic Highway

Does the State want to report additional optional targets?

No

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

1. Number of traffic fatalities (FARS)

Reduce the number of traffic-related fatalities on all roads in Maryland from 499.8 (2013-2017 average, FARS ARF) to 425.7 (2016–2020 average) or fewer by December 31, 2020. Maryland's 2015-2019 fatalities target is 438.2. The actual number of fatalities was 499.8 (2013-2017 average), which is higher than the target; therefore, Maryland is not progressing towards its target.

Mirroring national trends in increased vehicle miles traveled, Maryland experienced an increase of fatalities for three straight years (2015–2017). In 2018, Maryland fatalities and VMT experienced a decrease. Maryland was not able to meet or progress toward its targets due to the three years of increases but hopes the 2018 downward trend continues to move back toward its TZD 2030 targets.

2. Number of serious injuries in traffic crashes (State Data)

Reduce the number of traffic-related serious injuries on all roads in Maryland to 3,029.4 (2016–2020 average) or fewer by December 31, 2020. Maryland's 2015-2019 serious injuries target is 3,153.1. The actual number of serious injuries was 3,022.2 (2013–2017 average), which is lower than the target; therefore, Maryland has met its target.

Maryland has experienced a downward trend in serious injuries for more than the past decade. The most recent years have fluctuated as VMT increases in Maryland and fatalities have increased. Some reasons for the fluctuations in serious injury trends can be attributed to changes in how law enforcement is trained and submitting injury severity information on the Maryland crash report (ACRS).

3. Annual rate of traffic-related fatalities/VMT (FARS)

Reduce the number of traffic-related fatality rate on all roads in Maryland from 0.860 (2013–2017 average, FARS ARF) to 0.750 (2016–2020 average) or lower by December 31, 2020. Maryland's 2015-2019 fatality rate target is 0.775. The actual rate of fatalities was 0.860 (2013-2017 average), which is higher than the target; therefore, Maryland is not progressing towards its target.

Mirroring national trends in increased vehicle miles traveled, Maryland experienced an increase of fatalities for three straight years (2015–2017). In 2018, Maryland fatalities and VMT experienced a decrease. Maryland was not able to meet or progress toward its targets due to the three years of increases but hopes the 2018 downward trend continues to move back toward its TZD 2030 targets.

4. Annual rate of traffic-related serious injuries per 100 million vehicle miles traveled (State Data)

Reduce the traffic-related serious injury rate on all roads in Maryland to 5.372 (2016–2020 average) or lower by December 31, 2020. Maryland's 2015-2019 serious injury rate target is 5.591. The actual serious injury rate was 5.225 (2013–2017 average), which is lower than the target; therefore, Maryland has met its target.

Maryland has experienced a downward trend in serious injuries for more than the past decade. The most recent years have fluctuated as VMT increases in Maryland and fatalities have increased. Some reasons for the fluctuations in serious injury trends can be attributed to changes in how law enforcement is trained and submitting injury severity information on the Maryland crash report (ACRS).

5. Number of non-motorized fatalities plus serious injuries on all roads (FARS and State Data)

Reduce the number of traffic-related non-motorized fatalities and serious injuries on all roads in Maryland from 578.2 (2013-2017 average) to 465.8 (2016–2020 average) or fewer by December 31, 2020. Maryland's 2015-2019 non-motorized fatalities and serious injuries target is 479.5. The actual number of traffic-related non-motorized fatalities and serious injuries was 578.2 (2013–2017 average), which is higher than the target; therefore, Maryland is not progressing towards its target.

Mirroring national trends, Maryland has experienced increases in fatalities and serious injuries in its most vulnerable road users—non-motorists (pedestrians and bicyclists). While Maryland does not have an exposure measure to determine precisely an increase in road use by pedestrians and bicyclists, Maryland has increased pedestrian and bicyclist facilities year after year and is experiencing similar trends in changes in transportation mode use seen nationally.

*

1a. Number of traffic fatalities (State Data)

Reduce the number of traffic-related fatalities on all roads in Maryland from 501.8 (2013–2017 average, State data) to 426.3 (2016–2020 average) or fewer by December 31, 2020. Maryland's 2015-2019 fatalities target was 438.8. The actual number of fatalities was 501.8 (2013–2017 average, State data), which is higher than the target; therefore, Maryland did not meet its target.

Mirroring national trends in increased vehicle miles traveled, Maryland experienced an increase of fatalities for three straight years (2015–2017). In 2018, Maryland fatalities and VMT experienced a decrease. Maryland was not able to meet or progress toward its targets due to the three years of increases but hopes the 2018 downward trend continues to move back toward its TZD 2030 targets.

2a. Annual rate of traffic-related Fatalities/VMT (State Data)

Reduce the number of traffic-related fatality rate on all roads in Maryland from 0.868 (2013–2017 average, State data) to 0.756 (2016–2020 average) or lower by December 31, 2020. Maryland's 2015-2019 fatality rate target was 0.778. The actual fatality rate was 0.868 (2013–2017 average, State data), which is higher than the target; therefore, Maryland did not meet its target.

Mirroring national trends in increased vehicle miles traveled, Maryland experienced an increase of fatalities for three straight years (2015–2017). In 2018, Maryland fatalities and VMT experienced a decrease. Maryland was not able to meet or progress toward its targets due to the three years of increases but hopes the 2018 downward trend continues to move back toward its TZD 2030 targets.

Applicability of Special Rules

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

No

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

PERFORMANCE MEASURES	2011	2012	2013	2014	2015	2016	2017
Number of Older Driver and Pedestrian Fatalities	69	60	50	63	71	74	80
Number of Older Driver and Pedestrian Serious Injuries	295	254	235	258	172	263	278

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Change in fatalities and serious injuries

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

Program Type
Wet Surface Crashes
Target Crash Type
Wet Road
2016 Fatalities - 78
2017 Fatalities - 82
2018 Fatalities - 93
2016 Serious Injuries - 411
2017 Serious Injuries - 461
2018 Serious Injuries – 552

The increase in Wet Surface Fatalities and Serious Injuries reflects the increase in traffic volumes during the 2016-18 period
Program Type

Left Turn Crashes
Target Crash Type
Left Turn
2016 Fatalities - 29
2017 Fatalities - 33
2018 Fatalities - 30
2016 Serious Injuries - 235
2017 Serious Injuries - 269
2018 Serious Injuries – 260

While there is only a minor increase in Left Turn Fatalities, the increase in Serious Injuries reflects the increase in traffic volumes during the 2016-18 period

Program Type
Angle Crashes
Target Crash Type - Angle
2016 Fatalities - 71
2017 Fatalities - 76
2018 Fatalities - 77
2016 Serious Injuries - 610
2017 Serious Injuries - 618
2018 Serious Injuries – 576

The increase in Angle Fatalities reflects the increase in traffic volumes during the 2016-18 period while the reduction in Serious Injuries shows a decrease even though the traffic volumes increased during this period.

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

- Increased awareness of safety and data-driven process
- Increased focus on local road safety

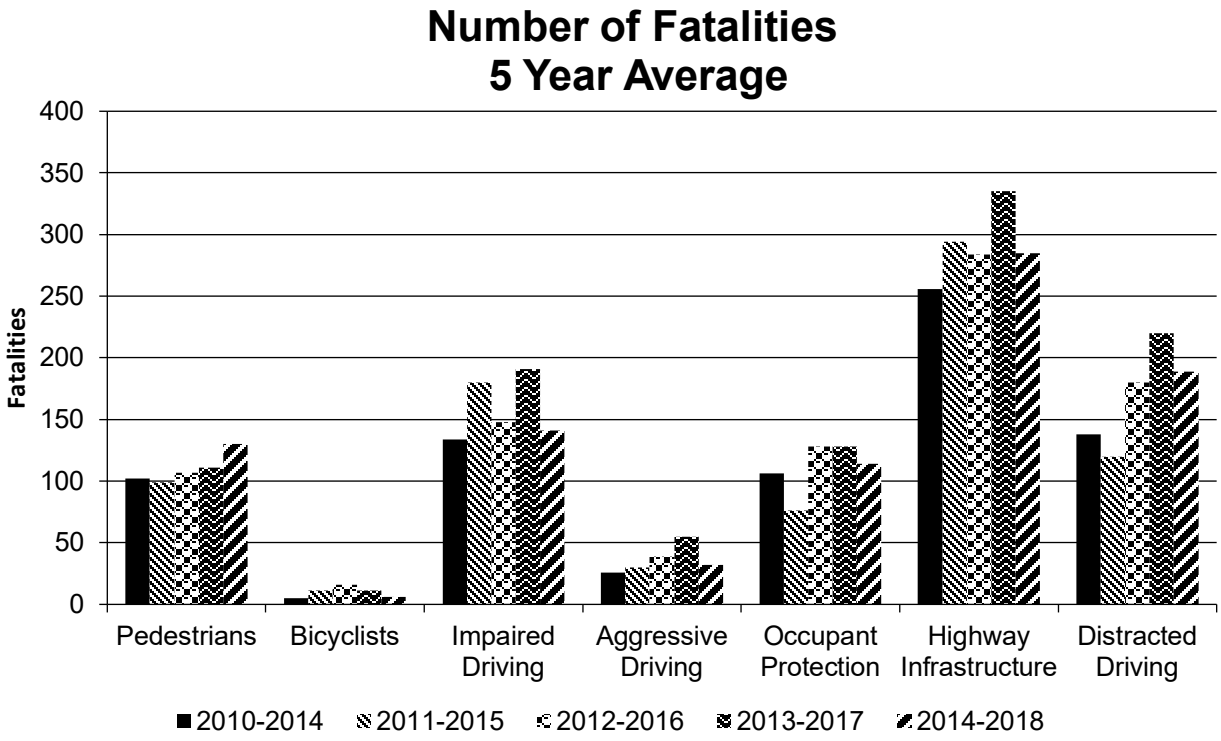
All Maryland counties along with Baltimore City are now provided a three year listing of pedestrian involved crashes which includes a summary of severe injury and fatal crashes on state highways along with a detailed listing for local roads. In 2016 SHA established a HSM implementation team. Work continues on an updated process for project selection and evaluation for the HSIP program.

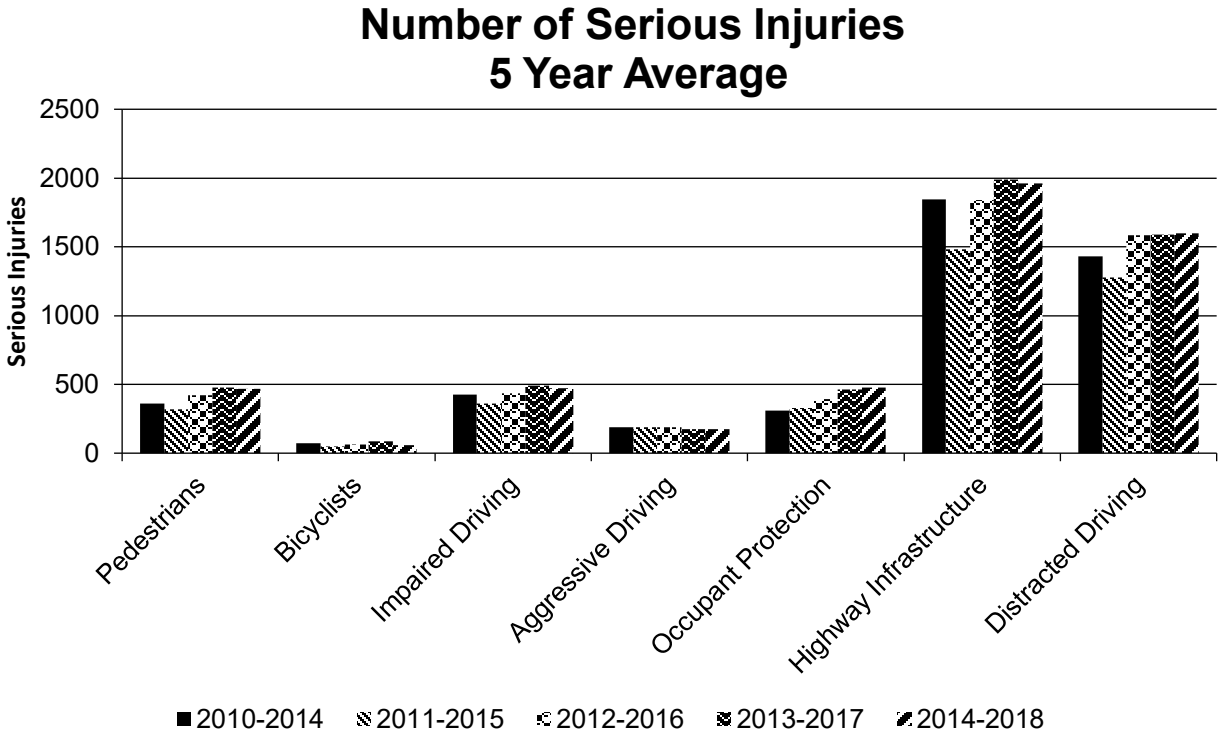
Effectiveness of Groupings or Similar Types of Improvements

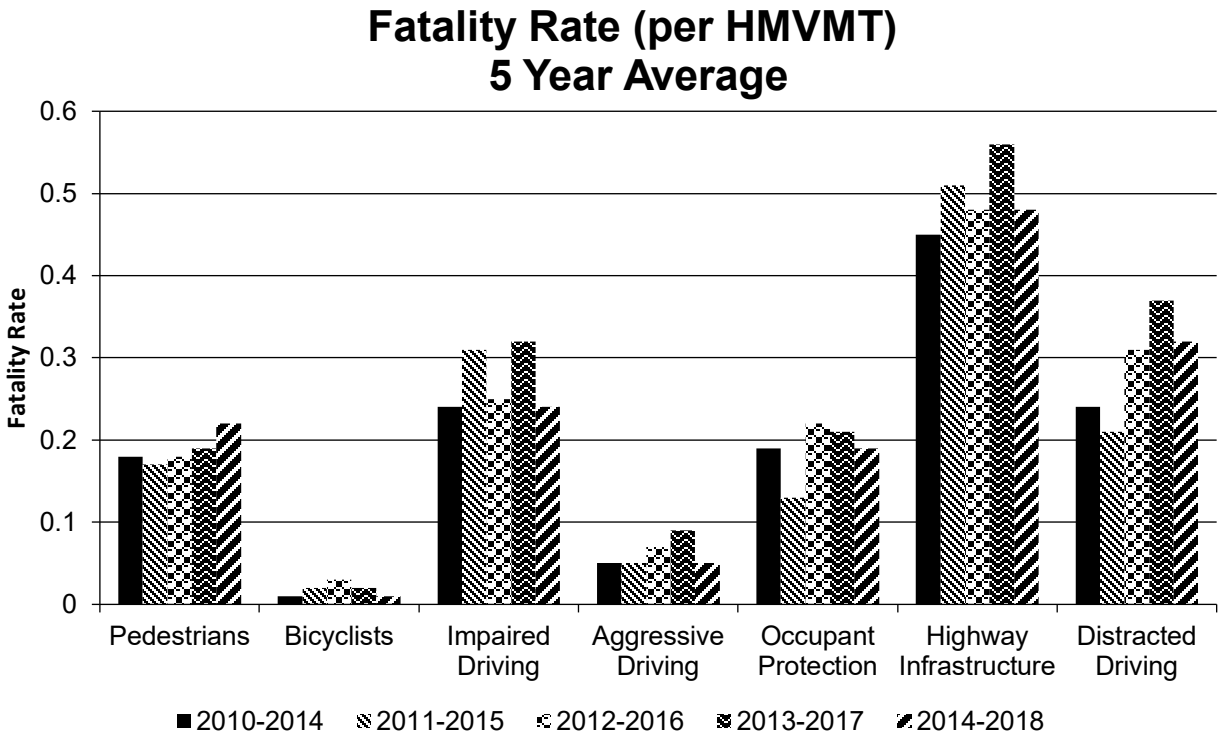
Present and describe trends in SHSP emphasis area performance measures.

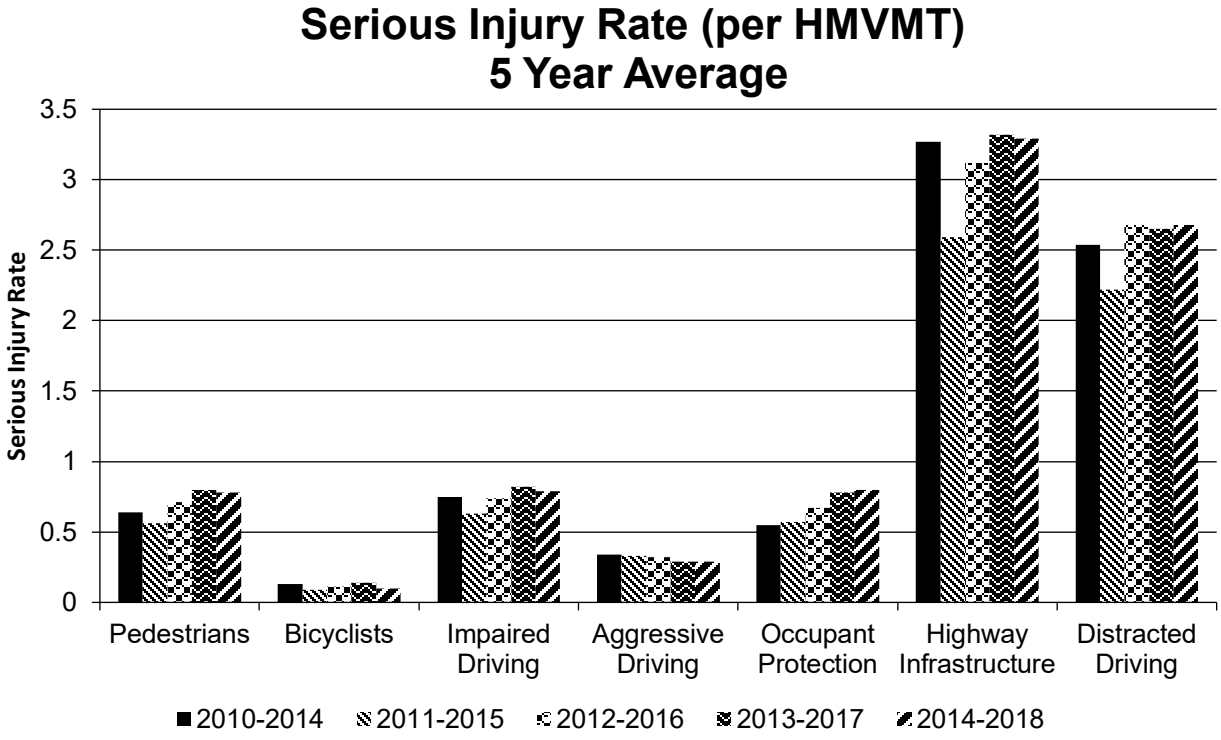
Year 2018

SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Pedestrians	All	130	466	0.22	0.78
Bicyclists	All	6	59	0.01	0.1
Impaired Driving	All	141	470	0.24	0.79
Aggressive Driving	All	32	174	0.05	0.29
Occupant Protection	All	114	478	0.19	0.8
Highway Infrastructure	All	285	1,961	0.48	3.29
Distracted Driving	All	189	1,600	0.32	2.68


Number of Fatalities
5 Year Average
Fatalities
400
350
300
250
200
150
100
50
0
Pedestrians
Bicyclists
Impaired Driving
Aggressive Driving
Occupant Protection
Highway Infrastructure
Distracted Driving
2010-2014
2011-2015
2012-2016
2013-2017
2014-2018


Number of Serious Injuries
5 Year Average
Serious Injuries
2500
2000
1500
1000
500
0
Pedestrians
Bicyclists
Impaired Driving
Aggressive Driving
Occupant Protection
Highway Infrastructure
Distracted Driving
2010-2014
2011-2015
2012-2016
2013-2017
2014-2018





Question 44

Note 1
“An aggressive driving crash occurs when at least one driver in the crash was reported to be driving aggressively, defined by having one of the following values in both the primary and secondary Contributing Circumstance fields from the standard crash report form:

Failed to yield right-of-way
Failed to obey stop sign
Failed to keep right of center
Failed to stop for a school bus
Too fast for conditions
Followed too closely
Failed to obey other traffic control
Exceeded speed limit
Failed to obey traffic signal
Improper lane change
Improper passing
Other improper action
Disregarded other road markings
Wrong way on a one way street
Failure to obey traffic signs, signals, or officer
Operated motor vehicle in erratic/reckless manner “

Note 2
“A distracted driving crash occurs when a driver shifts attention away from the driving task due to a number of things, including adjusting a radio, attending to a child, or using a cell phone (e.g., talking, texting, or other use).”
Note 3

“According to NHTSA’s Fatal Analysis Reporting System (FARS), drivers are considered to be alcohol-impaired when their blood alcohol concentration (BAC) is 0.08 grams per deciliter (g/dL) or higher. Thus, any fatality occurring in a crash involving a driver with a BAC of 0.08 or higher is considered to be an alcohol-impaired driving fatality. In Maryland, an impaired driving crash as indicated on the Maryland crash report is determined by the investigating officer based on the driver’s condition, BAC, and/or substance use detection. It will include any level of alcohol in the system and/or drug impairment. Therefore Maryland impaired driving targets are different than the targets based on FARS data.”
Note 4
“An unrestrained-occupant crash is defined as including a passenger vehicle (automobile, station wagon, van, SUV, or pickup truck) occupant:
• Less than eight years of age recorded as not using a “Child/Youth Restraint,”
• Eight years of age or older recorded as not using a “Lap and Shoulder Belt” or “Air Bag and Belt,” or
• Whose restraint use was recorded as using “None” or “Air Bag Only.”

Note 5
“Intersection-related and run-off-the-road crashes are the prime indicators of roadway infrastructure opportunities for improvement. Work-zone crashes also are included in this emphasis area.

A Run-Off-the-Road Crash is defined as a crash where the first event was recorded as striking a fixed object or running off the road, or the location of the crash was reported as off-road or in the median.

Intersection Crashes are those crashes reported as occurring in an intersection or being intersection-related (i.e., in a traffic situation resulting from an intersection).

Work-Zone Crashes are those crashes reported as occurring in a work zone in the standard crash report. They can include construction, maintenance, and utility work zones.”

Note 6

“Pedestrian crashes are defined as crashes involving a person reported as a pedestrian on foot (using the

‘pedestrian’ person type and ‘pedestrian on foot’ pedestrian type), including a motorist who has exited a vehicle. Bicyclist crashes are defined as crashes involving a person reported as a bicyclist or pedalcyclist (using the ‘bicyclist’ or ‘other pedalcyclist’ type).”

All notes are from the Maryland Strategic Highway Safety Plan 2016-20

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

No

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)
Maryland has chosen not to complete this optional section														

Compliance Assessment

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

05/31/2017

What are the years being covered by the current SHSP?

From: 2016 To: 2020

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

2020

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

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
ROADWAY SEGMENT	Segment Identifier (12)	100	100					100	100	100	100
	Route Number (8)	100	100								
	Route/Street Name (9)	100	100								
	Federal Aid/Route Type (21)	100	100								
	Rural/Urban Designation (20)	100	100					100	100		
	Surface Type (23)	100	100					100	100		
	Begin Point Segment Descriptor (10)	100	100					100	100	100	100
	End Point Segment Descriptor (11)	100	100					100	100	100	100
	Segment Length (13)	100	100								
	Direction of Inventory (18)	100	100								
	Functional Class (19)	100	100					100	100	100	100
	Median Type (54)	100	100								
	Access Control (22)	100	100								

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
	One/Two Way Operations (91)	100	100								
	Number of Through Lanes (31)	100	90					100	90		
	Average Annual Daily Traffic (79)	100	98					50			
	AADT Year (80)	100	100								
	Type of Governmental Ownership (4)	100	100					100	100	100	100
INTERSECTION	Unique Junction Identifier (120)			100	100						
	Location Identifier for Road 1 Crossing Point (122)			100	100						
	Location Identifier for Road 2 Crossing Point (123)			100	100						
	Intersection/Junction Geometry (126)			85	85						
	Intersection/Junction Traffic Control (131)			50	50						
	AADT for Each Intersecting Road (79)			25	25						
	AADT Year (80)			25	25						
	Unique Approach Identifier (139)			75	75						
INTERCHANGE/RAMP	Unique Interchange Identifier (178)					100	100				
	Location Identifier for Roadway at Beginning of Ramp Terminal (197)					100	100				
	Location Identifier for Roadway at Ending Ramp Terminal (201)					100	100				
	Ramp Length (187)					100	100				

ROAD TYPE	MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	
	Roadway Type at Beginning of Ramp Terminal (195)					100	100				
	Roadway Type at End Ramp Terminal (199)					100	100				
	Interchange Type (182)					100	100				
	Ramp AADT (191)					100	100				
	Year of Ramp AADT (192)					100	100				
	Functional Class (19)					100	100				
	Type of Governmental Ownership (4)					100	100				
Totals (Average Percent Complete):		**100.00**	**99.33**	**70.00**	**70.00**	**100.00**	**100.00**	**94.44**	**87.78**	**100.00**	**100.00**

*Based on Functional Classification

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

• MDOT SHA has implemented Esri's Roads and Highways (R&H) software to manage our GIS roadway and LRS data for HPMS submission. This year MDOT SHA used Roads and Highways for their HPMS submission. With the Intersection Manager tool, our ability to better manager intersection data, and data gaps, we will be able to be 100 percent compliant by 2026.
• In conjunction with the Esri R&H implementation, we also began the One Maryland, One Centerline (OMOC) program where MDOT SHA has met with all 23 counties, and Baltimore City, to discuss the sharing of data between jurisdictions via one common geometry, maintained by the appropriate authority. We have begun a pilot conflation process between MDOT SHA and two county jurisdictions to test process and develop the protocols that will be used for the integration of the remaining counties of Maryland. This geometry will be the base of the R&H data model. This data sharing and cooperation between the local and state jurisdictions will better allow us to identify and fill data gaps, with the appropriate, authoritative information.
• FHWA has authorized several pilots to investigate developing methodologies to more accurately calculate local AADTs for lower functionally classified roadways. MIRE FDEs require this type of data, while the local jurisdictions do not have the wherewithal nor need to completely capture and maintain this type of data. Therefore, the need to develop better proxies or models to better estimate these AADTs for local roads is an ongoing activity.

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

No

2020

When does the State plan to complete its next HSIP program assessment.

2019

Optional Attachments

Program Structure:

Project Implementation:

Safety Performance:

Evaluation:

Compliance Assessment:

Glossary

5 year rolling average: means the average of five individuals, consecutive annual points of data (e.g. annual fatality rate).

Emphasis area: means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.

Highway safety improvement project: means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.

HMVMT: means hundred million vehicle miles traveled.

Non-infrastructure projects: are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.

Older driver special rule: applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent 2-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.

Performance measure: means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.

Programmed funds: mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.

Roadway Functional Classification: means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

Strategic Highway Safety Plan (SHSP): means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

Systematic: refers to an approach where an agency deploys countermeasures at all locations across a system.

Systemic safety improvement: means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.

Transfer: means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.