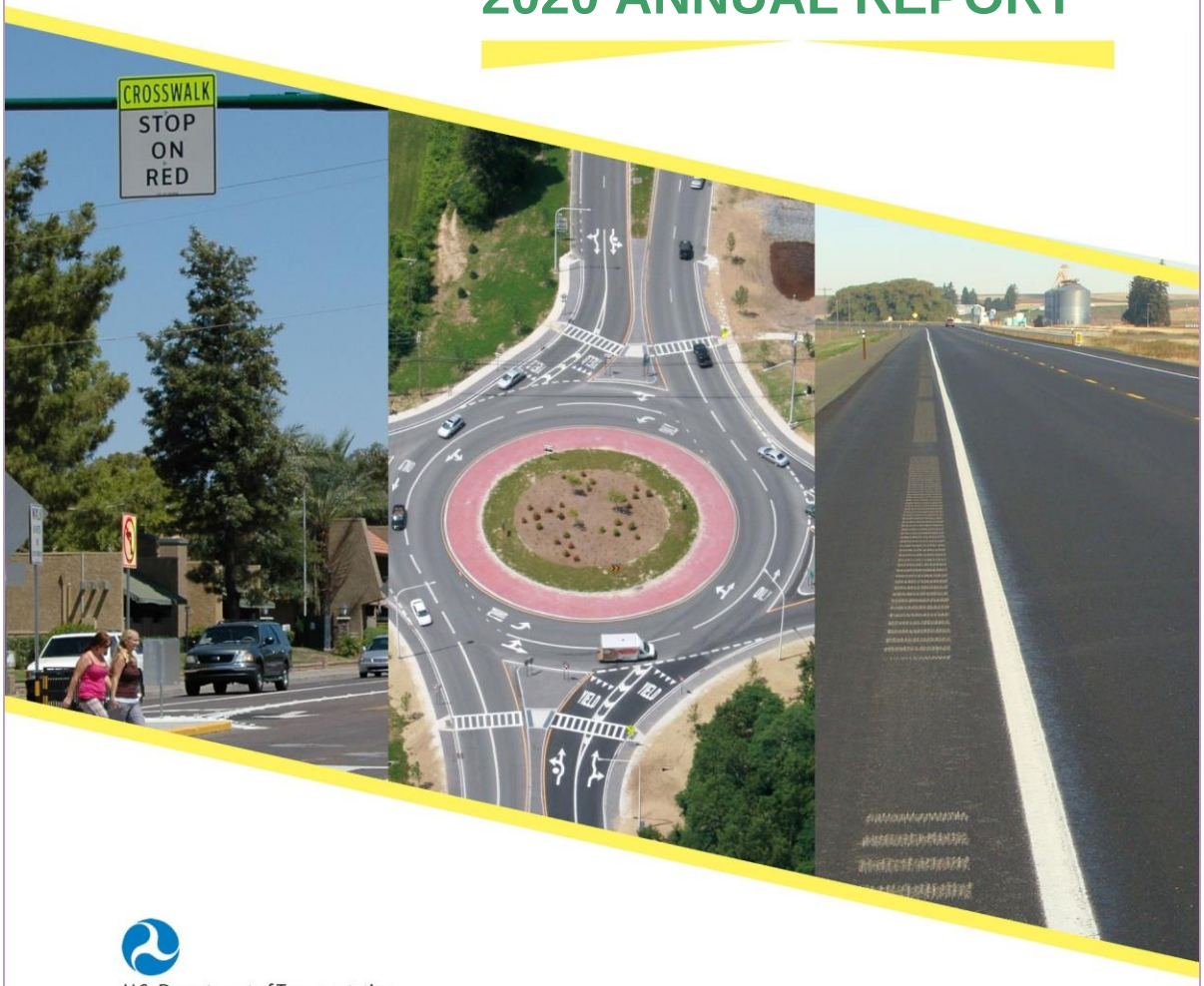
MARYLAND

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2020 ANNUAL REPORT



U.S. Department of Transportation
Federal Highway Administration

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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. 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 2019
• 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 2019.
• 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 the future.
• 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 2019.
• 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 have increased from 520 (FARS) in 2015 to 531 (MD) in 2019 (annual format) and that the number of serious injuries (MD) have increased from 2,598 in 2015 to 3,123 in 2019 (annual format). Please note that all 2018 FARS totals are preliminary at the time of this report. 2019 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 have increased from 111 (FARS) in 2015 to 133 (MD) in 2019 (annual format) and that the number of non-motorized serious

injuries (MD) have increased from 372 in 2015 to 506 in 2019 (annual format). Please see above note on 2018-19 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. Fatalities increased from 60 in 2012 to 73 in 2018 (FARS – annual numbers.). Severe Injuries decreased from 254 in 2012 to 248 in 2018 (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 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.

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 2019. 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

MDOT SHA has draft an HSIP manual and the manual has not been signed yet. We are currently waiting on the process for how we will allocate HSIP funding to local agencies. The process will be developed in FY2021 and the manual will be completed after that.

Select the programs that are administered under the HSIP.

- Bicycle Safety
- 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: Bicycle Safety

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: 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

- All crashes

Exposure

- Volume
- Other-Highway mileage

Roadway

- 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: 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

- All crashes

Exposure

- Volume
- Other-Highway mileage

Roadway

- 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

- All crashes

Exposure

- Volume
- Other-Highway mileage

Roadway

- 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?

4

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

- Install/Improve Pavement Marking and/or Delineation

What process is used to identify potential countermeasures?

- Engineering Study
- Road Safety Assessment

Does the State HSIP consider connected vehicles and ITS technologies?

No

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.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

Calendar Year

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$12,656,000	$1,732,945	13.69%
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	$12,656,000	$1,732,945	13.69%

The programmed HSIP funding for are based on STIP from MPOs with the HSIP funds programmed for FY 2019.

Most of the programmed HSIP projects in STIP are group projects, which were not fully obligated during Year 2019, as the STIP went through multiple amendments in each year.

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%

We are going to develop a process that allows local agencies to compete for the HSIP funds, establish selection criteria for proposals, and provide approaches to implement the improvements.

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

$292,500

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

$292,500

The non-infrastructure safety project is the development of Maryland Safety and Crash Analysis Network (MSCAN).

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?

$17,000,000

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

none at this time

General Listing of Projects

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

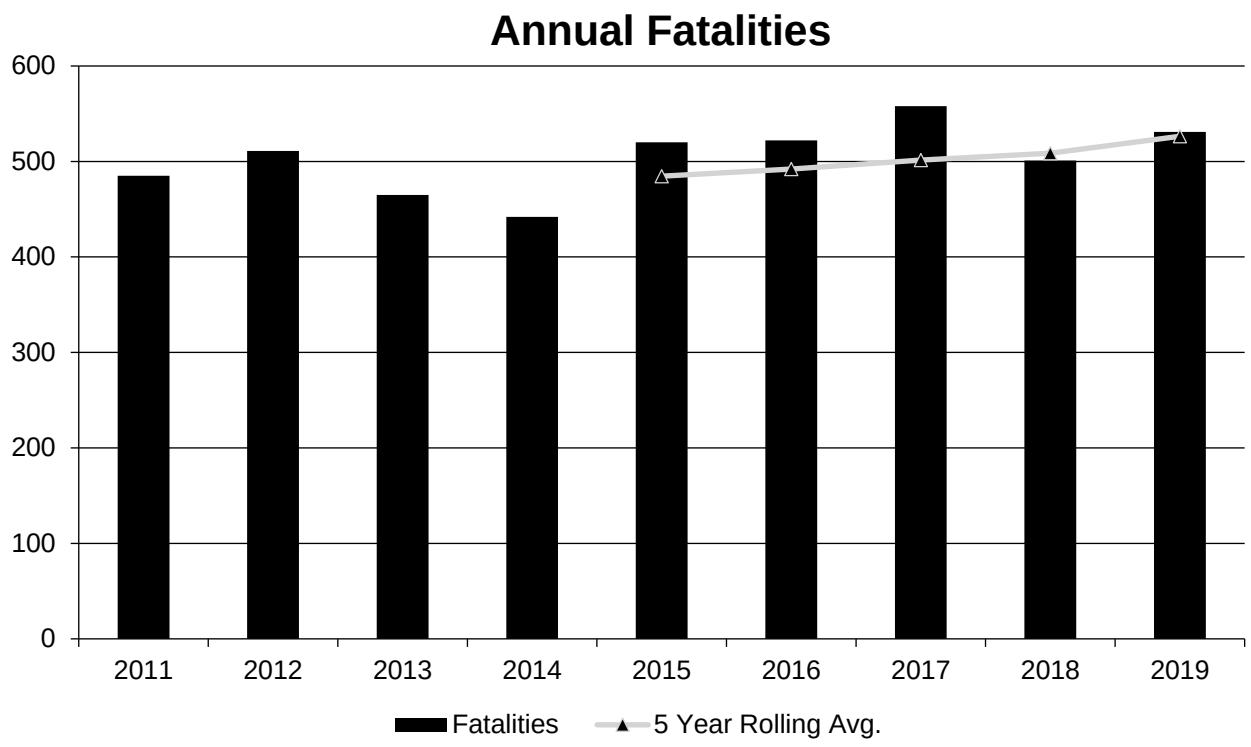
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
000B237	Roadway delineation	Longitudinal pavement markings - new			$1,440,445	$1,609,219	HSIP (23 U.S.C. 148)			0		State Highway Agency	Systemic	Lane Departure	Corridor safety
0003597	Non-infrastructure	Data/traffic records			$292,500	$325,000	HSIP (23 U.S.C. 148)			0				Data	

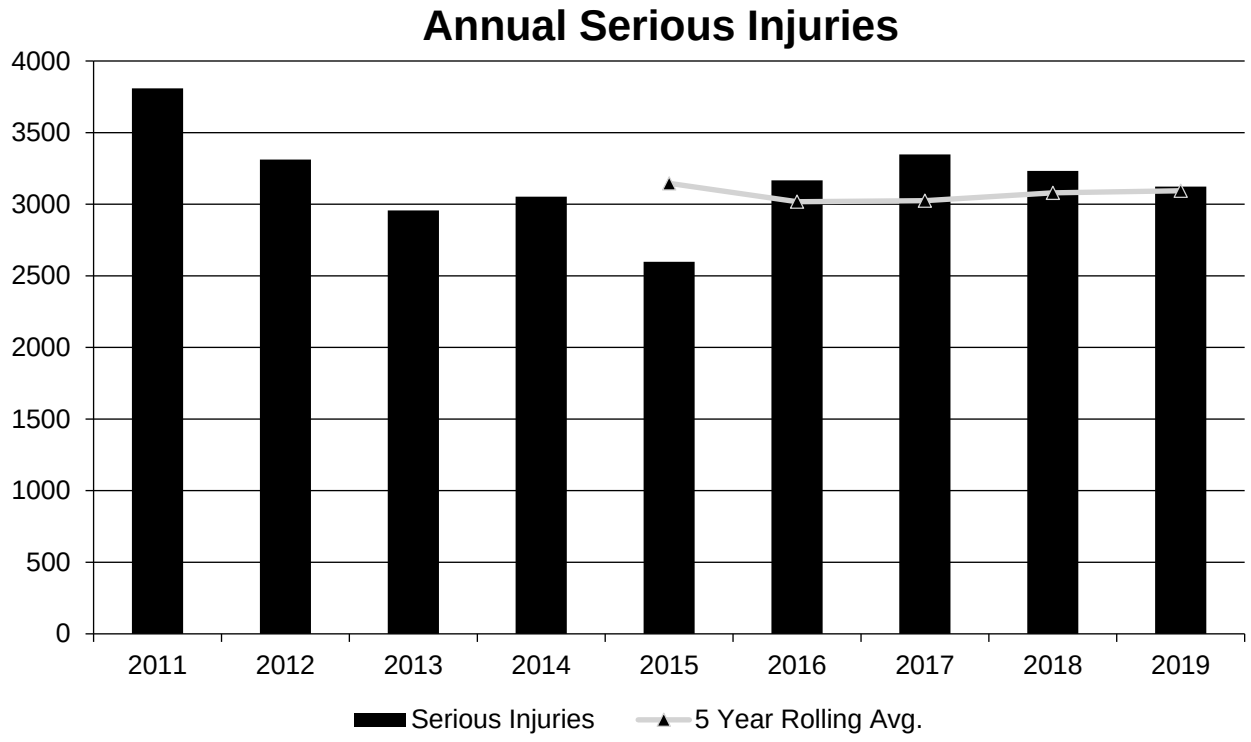
Safety Performance

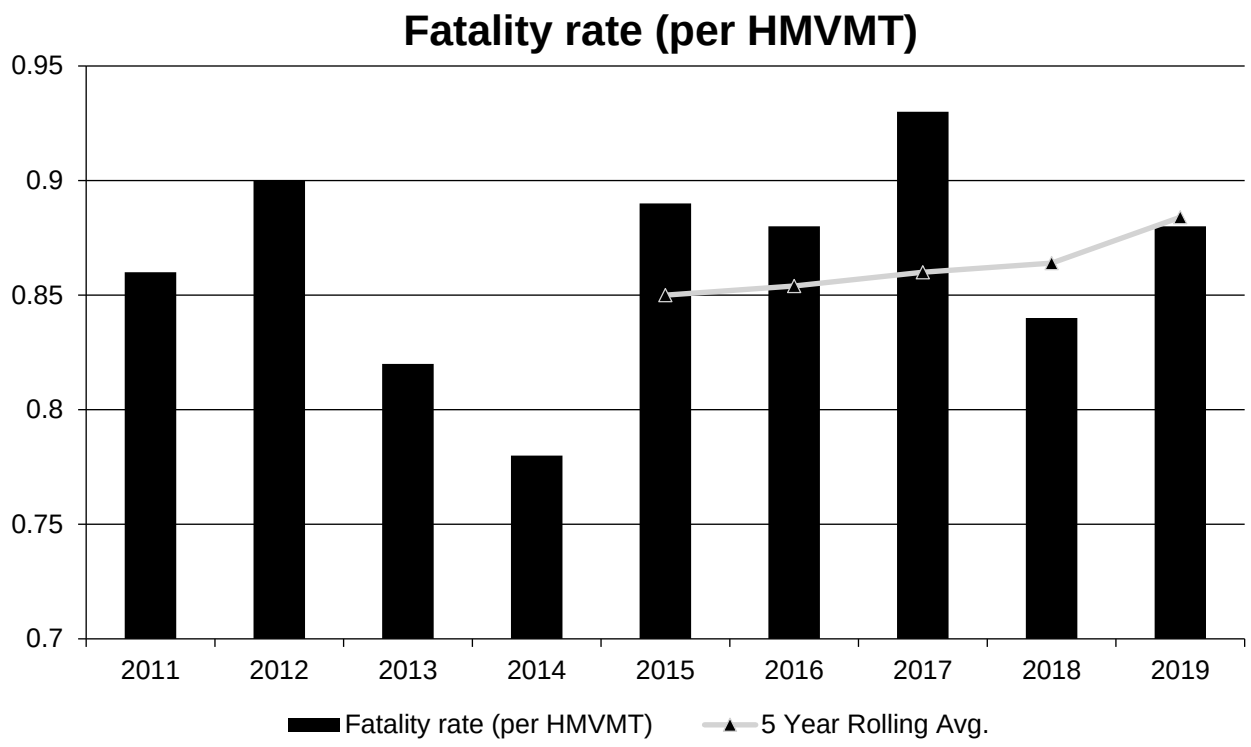
General Highway Safety Trends

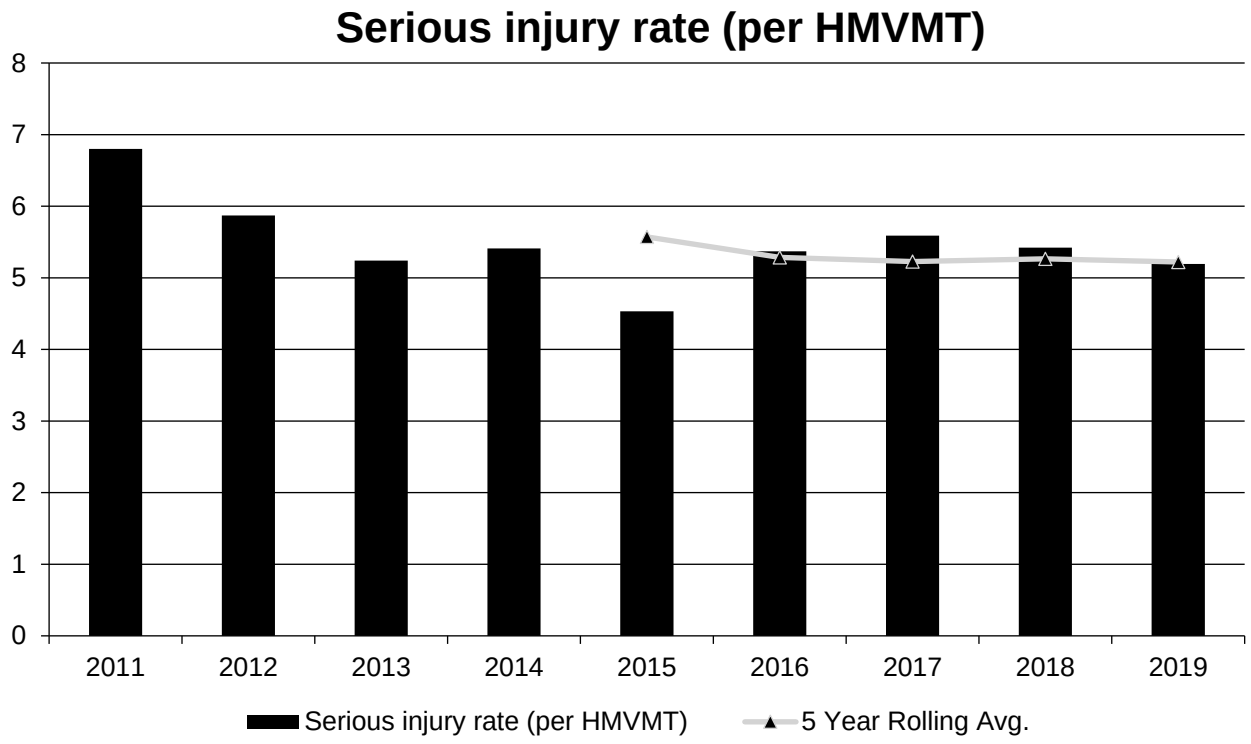
Present data showing the general highway safety trends in the State for the past five years.

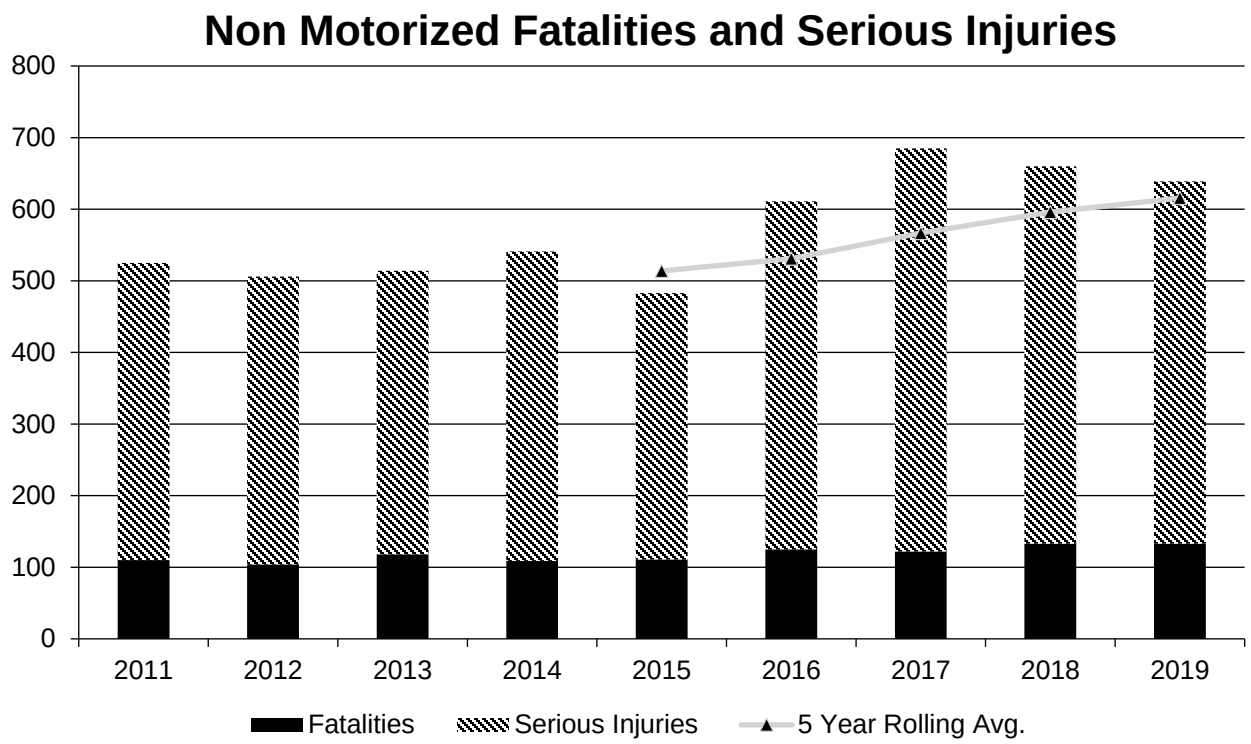
PERFORMANCE MEASURES	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fatalities	485	511	465	442	520	522	558	501	531
Serious Injuries	3,809	3,312	2,957	3,053	2,598	3,167	3,347	3,233	3,123
Fatality rate (per HMVMT)	0.860	0.900	0.820	0.780	0.890	0.880	0.930	0.840	0.880
Serious injury rate (per HMVMT)	6.800	5.870	5.240	5.410	4.533	5.370	5.588	5.422	5.193
Number non-motorized fatalities	110	104	118	109	111	125	122	133	133
Number of non-motorized serious injuries	415	402	396	432	372	486	563	527	506


Annual Fatalities
600
500
400
300
200
100
0
2011
2012
2013
2014
2015
2016
2017
2018
2019
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
4000
3500
3000
2500
2000
1500
1000
500
0
2011
2012
2013
2014
2015
2016
2017
2018
2019
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
0.95
0.9
0.85
0.8
0.75
0.7
2011
2012
2013
2014
2015
2016
2017
2018
2019
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
8
7
6
5
4
3
2
1
0
2011
2012
2013
2014
2015
2016
2017
2018
2019
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



The number of serious injuries has changed in TANG since we last reported these numbers. Data for the years 2015-2019 is reflective of the most recent query of TANG and is also the numbers submitted in MDOT's MFR.

State includes pedestrian type/non-motorist types 01, 02, 03 only. (Benchmark Reports/Profiles) Some queries include 07 for other conveyances. Need to be more consistent with this.

2011~2018 fatalities, fatality rates, and non-motorized fatalities are based on FARS, and 2019 numbers are based on state data.

Describe fatality data source.

FARS

For Year 2019, when FARS data are not available, the state crash database was applied.

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

Year 2018

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	19.2	37.4	0.9	1.76
Rural Principal Arterial (RPA) - Other				

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)**
Freeways and Expressways				
Rural Principal Arterial (RPA) - Other	32.8	128.2	2.91	10.21
Rural Minor Arterial	38	139.6	2.12	7.8
Rural Minor Collector	11.4	53.6	1.32	6.28
Rural Major Collector	29	110.6	1.83	6.98
Rural Local Road or Street	18.2	78.2	1.08	4.64
Urban Principal Arterial (UPA) - Interstate	69.4	518.6	0.45	3.4
Urban Principal Arterial (UPA) - Other Freeways and Expressways	43.8	182	0.68	2.8
Urban Principal Arterial (UPA) - Other	169.6	925.4	1.55	8.44
Urban Minor Arterial	97.4	534	1.08	7.29
Urban Minor Collector				
Urban Major Collector	34.4	237.8	0.81	5.63
Urban Local Road or Street	26.4	238.8	0.83	7.54

Year 2019

Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	376.4	1,781		
County Highway Agency	106.8	738		
Town or Township Highway Agency				
City or Municipal Highway Agency	26.8	226.6		
State Park, Forest, or Reservation Agency				
Local Park, Forest or Reservation Agency				
Other State Agency	0	2.8		
Other Local Agency				
Private (Other than Railroad)				
Railroad				
State Toll Authority				
Local Toll Authority				
Other Public Instrumentality (e.g. Airport, School, University)	1.4	6.8		
Indian Tribe Nation				

Safety Performance Targets

Safety Performance Targets

Calendar Year 2021 Targets *

Number of Fatalities:420.6

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., 2014–2018 actual crash data are used to determine targets for 2017–2021 (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:2905.8

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., 2014–2018 actual crash data are used to determine targets for 2017–2021 (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:0.742

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., 2014–2018 actual crash data are used to determine targets for 2017–2021 (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:5.075

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., 2014–2018 actual crash data are used to determine targets for 2017–2021 (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:467.7

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., 2014–2018 actual crash data are used to determine targets for 2017–2021 (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.

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]

The 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

Maryland Department of Transportation State Highway Administration

Maryland Highway Safety Office

Maryland Department of Transportation 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

2020 Maryland Highway Safety Improvement Program

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 Safety Plan 2016-20 Appendix A

The process stakeholders from SHSP were consulted to establish safety performance targets

Does the State want to report additional optional targets?

No

Describe progress toward meeting the State's 2019 Safety Performance Targets (based on data available at the time of reporting). For each target, include a discussion of any reasons for differences in the actual outcomes and targets.

PERFORMANCE MEASURES	TARGETS	ACTUALS
Number of Fatalities	435.0	526.4
Number of Serious Injuries	3211.1	3093.6
Fatality Rate	0.771	0.884
Serious Injury Rate	5.702	5.221
Non-Motorized Fatalities and Serious Injuries	473.9	615.6

1. Number of traffic fatalities (FARS)

Reduce the number of traffic-related fatalities on all roads in Maryland from 508.6 (2014-2018 average, FARS ARF) to 409.1 (2018–2022 average) or fewer by December 31, 2020. Maryland's 2017-2021 target is 420.7. The actual number of fatalities was 508.6 (2014-2018 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; however 2019 reversed this trend with increased VMT and fatalities. Maryland has experienced a downward trend in serious injuries for more than the past decade.

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

Reduce the number of traffic-related serious injuries on all roads in Maryland from 3,089.6 (2015–2019 average) to 2,791.6 (2018–2022 average) or fewer by December 31, 2020. Maryland's 2017-2021 target is 2,905.5. The actual number of serious injuries was 3,089.6 (2014–2018 average), which is higher than the target; therefore, Maryland is not progressing towards 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).

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

Reduce the number of traffic-related fatality rate on all roads in Maryland from 0.866 (2014–2018 average, FARS ARF) to 0.719 (2018–2022 average) or lower by December 31, 2020. Maryland's 2017-2021 target is 0.741. The actual fatality rate was 0.866 (2014-2018), 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; however 2019 reversed this trend with increased VMT and fatalities.

1. 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 from 5.258 (2015–2019 average) to 4.871 (2018–2022 average) or lower by December 31, 2020. Maryland's 2017-2021 target is 5.075. The actual serious injury rate was 5.258 (2014–2018 average), which is higher than the target; therefore, Maryland is not progressing towards 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).

1. 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 610.4 (2014-2018 average) to 455.3 (2018–2022 average) or fewer by December 31, 2020. Maryland's 2017-2021 target is 467.7. The actual number of traffic-related non-motorized fatalities and serious injuries was 610.4 (2014–2018 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 529.0 (2015–2019 average, State data) to 416.2 (2018–2022 average) or fewer by December 31, 2020. The actual number of fatalities was 529.0 (2015–2019 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 Maryland's 2017-2021 target is 427.2.

experienced a decrease; however 2019 reversed this trend with increased VMT and fatalities. Maryland has experienced a downward trend in serious injuries for more than the past decade.

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

Reduce the number of traffic-related fatality rate on all roads in Maryland from 0.894 (2015–2019 average, State data) to 0.737 (2018–2022 average) or lower by December 31, 2020. Maryland's 2017-2021 target is 0.757. The actual fatality rate was 0.894 (2014–2018 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; however 2019 reversed this trend with increased VMT and fatalities. Maryland has experienced a downward trend in serious injuries for more than the past decade.

Note:

Targets (conforming to federal requirements) set using an exponential trend line for an overall reduction by 2030 with yearly interim targets based on five-year rolling averages. Current targets through 2022 are set using a baseline five-year average of 2004-2009, updated to include trend changes in 2015-2019. The target for 2019 is the midpoint of the rolling five-year average target for 2017-2021; and the 2020 target is the midpoint of the rolling five-year average target for 2018-2022.

Applicability of Special Rules

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

No

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

PERFORMANCE MEASURES	2012	2013	2014	2015	2016	2017	2018
Number of Older Driver and Pedestrian Fatalities	60	50	63	71	74	80	73
Number of Older Driver and Pedestrian Serious Injuries	254	235	258	172	263	279	248

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
2017 Fatalities - 82
2018 Fatalities – 93
2019 Fatalities – 70
2017 Serious Injuries - 461
2018 Serious Injuries – 552
2019 Serious Injuries – 368

For Wet Surface crashes, the Fatalities decreased for 17% and Serious Injuries for 25% during the 2017-19 period.

Program Type: Left Turn Crashes
Target Crash Type: Left Turn
2017 Fatalities - 33
2018 Fatalities – 30
2019 Fatalities - 25
2017 Serious Injuries - 269
2018 Serious Injuries – 260
2019 Serious Injuries – 222

For Left Turn crashes, the Fatalities decreased for 32% and Serious Injuries for 21% during the 2017-19 period.

Program Type: Angle Crashes
Target Crash Type: Angle
2017 Fatalities - 76
2018 Fatalities - 77
2019 Fatalities - 73
2017 Serious Injuries - 618
2018 Serious Injuries – 576
2019 Serious Injuries – 538

For Angle crashes, the Fatalities decreased for 4% and Serious Injuries for 15% during the 2017-19 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

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

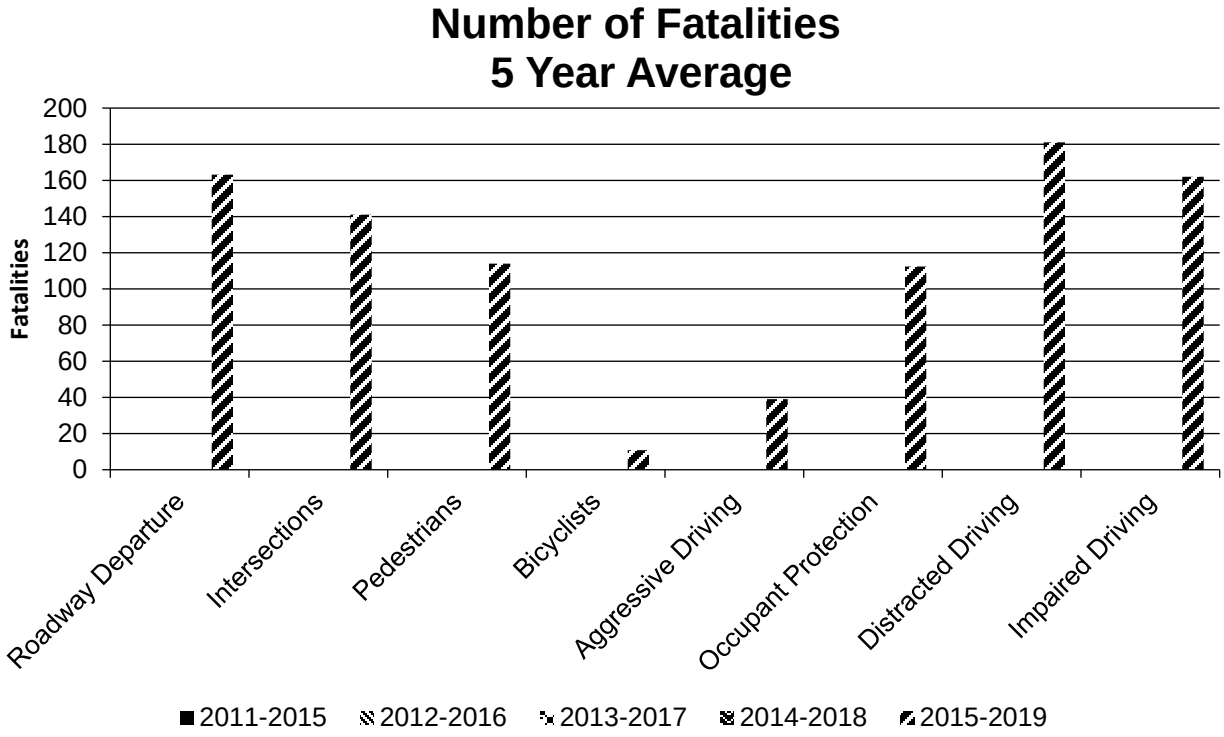
Work continues on an improved process for project selection and evaluation for the HSIP program. An HSIP Implementation Plan is created to identify activities, strategies, and projects that would improvement safety performance in Maryland.

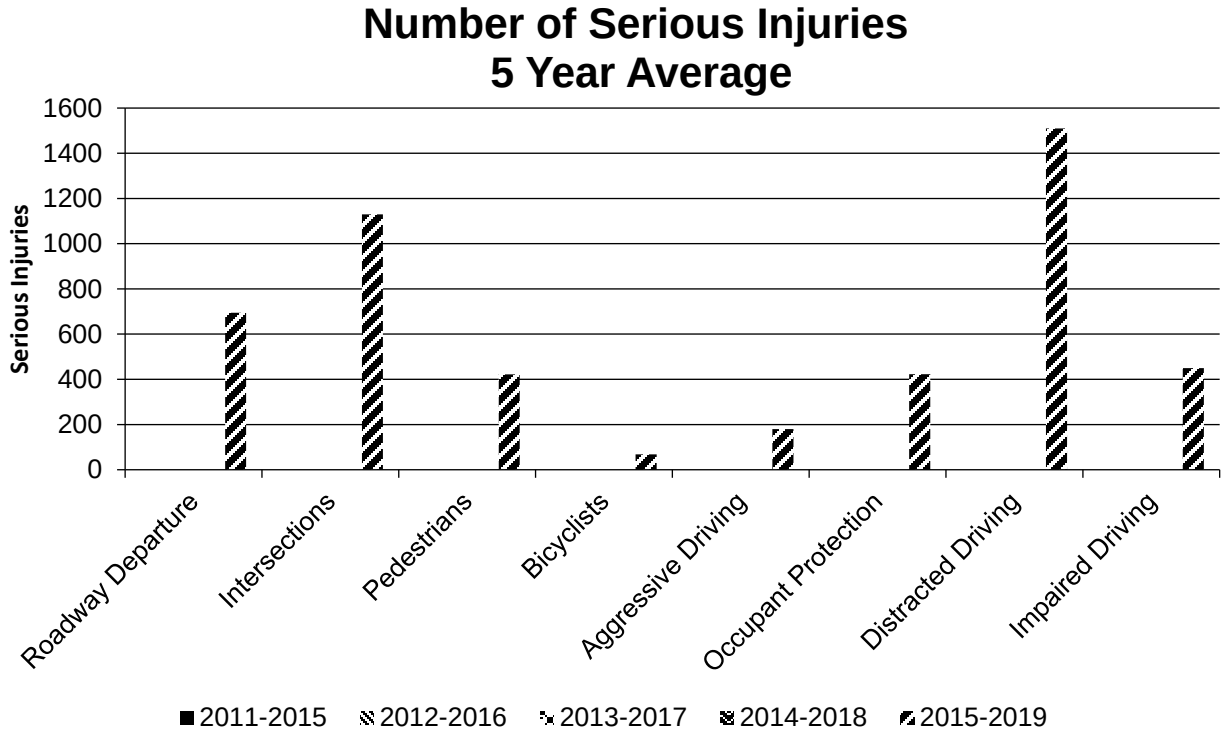
Effectiveness of Groupings or Similar Types of Improvements

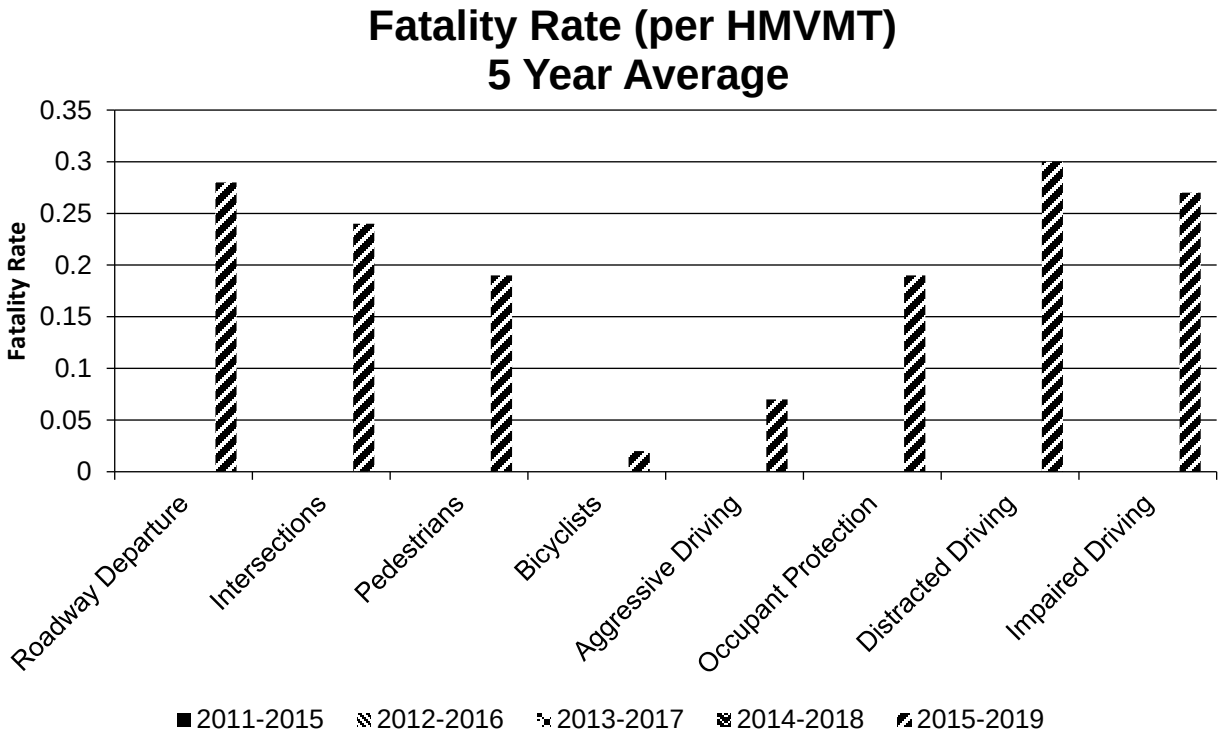
Present and describe trends in SHSP emphasis area performance measures.

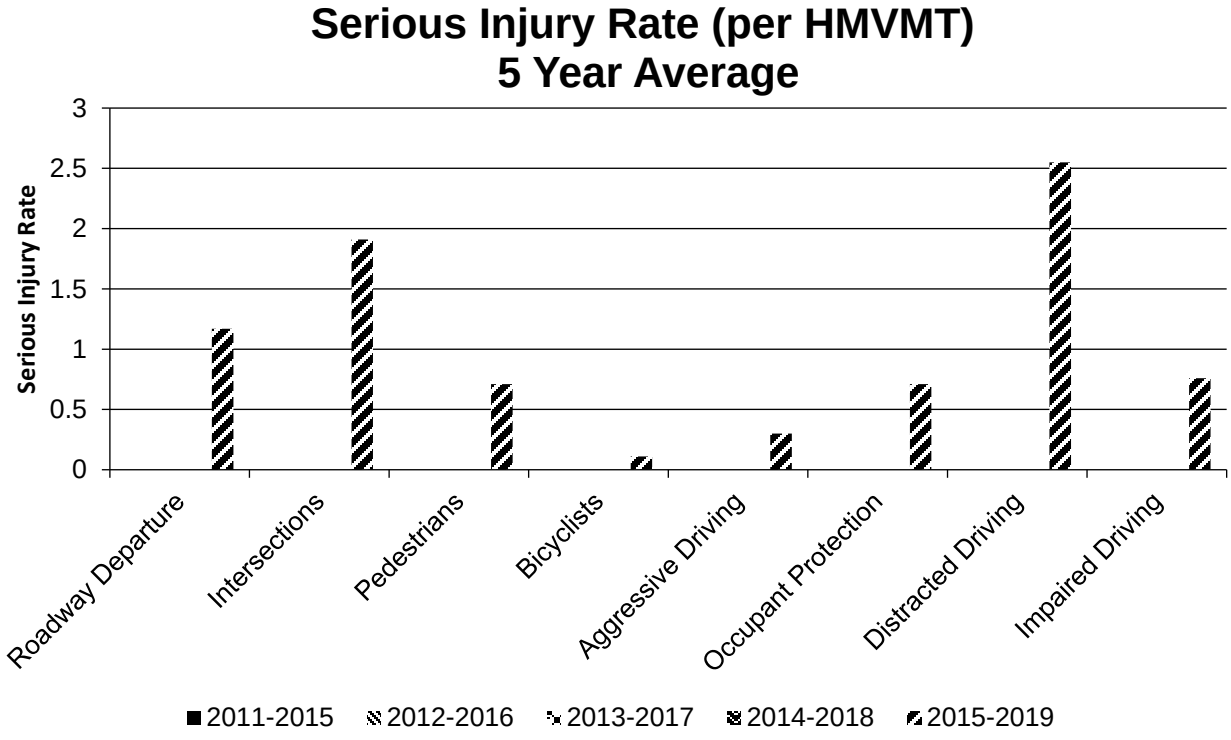
Year 2019

SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Roadway Departure	Run-off-road	163.2	694.6	0.28	1.17
Intersections	Intersections	141	1,129.8	0.24	1.91
Pedestrians	Vehicle/pedestrian	114	422.2	0.19	0.71
Bicyclists	Vehicle/bicycle	10.8	68.2	0.02	0.11
Aggressive Driving	All	39	180.2	0.07	0.3
Occupant Protection	All	112.4	423	0.19	0.71
Distracted Driving	All	181	1,509.8	0.3	2.55
Impaired Driving	All	162	449.8	0.27	0.76


Number of Fatalities
5 Year Average
Fatalities
200
180
160
140
120
100
80
60
40
20
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Aggressive Driving
Occupant Protection
Distracted Driving
Impaired Driving
2011-2015
2012-2016
2013-2017
2014-2018
2015-2019


Number of Serious Injuries
5 Year Average
Serious Injuries
1600
1400
1200
1000
800
600
400
200
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Aggressive Driving
Occupant Protection
Distracted Driving
Impaired Driving
2011-2015
2012-2016
2013-2017
2014-2018
2015-2019


Fatality Rate (per HMVMT)
5 Year Average
Fatality Rate
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Aggressive Driving
Occupant Protection
Distracted Driving
Impaired Driving
2011-2015
2012-2016
2013-2017
2014-2018
2015-2019


Serious Injury Rate (per HMVMT)
5 Year Average
Serious Injury Rate
3
2.5
2
1.5
1
0.5
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Aggressive Driving
Occupant Protection
Distracted Driving
Impaired Driving
2011-2015
2012-2016
2013-2017
2014-2018
2015-2019

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.

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

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT	Segment Identifier (12) [12]	100	100					100	100	100	100
	Route Number (8) [8]	100	100								
	Route/Street Name (9) [9]	100	100								
	Federal Aid/Route Type (21) [21]	100	100								
	Rural/Urban Designation (20) [20]	100	100					100	100		
	Surface Type (23) [24]	100	100					100	100		
	Begin Point Segment Descriptor (10) [10]	100	100					100	100	100	100
	End Point Segment Descriptor (11) [11]	100	100					100	100	100	100
	Segment Length (13) [13]	100	100								
	Direction of Inventory (18) [18]	100	100								
	Functional Class (19) [19]	100	100					100	100	100	100

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Median Type (54) [55]	100	100								
	Access Control (22) [23]	100	100								
	One/Two Way Operations (91) [93]	100	100								
	Number of Through Lanes (31) [32]	100	90					100	90		
	Average Annual Daily Traffic (79) [81]	100	98					50			
	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]			95	95						
	Intersection/Junction Traffic Control (131) [131]			50	50						
	AADT for Each Intersecting Road (79) [81]			35	35						
	AADT Year (80) [82]			25	25						
	Unique Approach Identifier (139) [129]			75	75						
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]					100	100				
	Location Identifier for Roadway at					100	100				

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Beginning of Ramp Terminal (197) [187]										
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					100	100				
	Ramp Length (187) [177]					100	100				
	Roadway Type at Beginning of Ramp Terminal (195) [185]					100	100				
	Roadway Type at End Ramp Terminal (199) [189]					100	100				
	Interchange Type (182) [172]					100	100				
	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**	**99.33**	**72.50**	**72.50**	**100.00**	**100.00**	**94.44**	**87.78**	**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.

- 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.

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.