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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. 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**

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 924.14, states are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. This report describes West Virginia's implementation and effectiveness of its Highway Safety Improvement Program from July 1, 2020 through June 30, 2021 and satisfies the requirements of 23 U.S.C. 148(h) and 23 CFR 924.14. The established format consists of five sections: program structure, project in implementation projects, progress in achieving safety performance targets, assessment of the effectiveness of the improvements, and compliance assessment.

In 2007, West Virginia developed it's first Strategic Highway Safety Plan, which focused on nine specific emphasis areas. At the time West Virginia had 432 fatalities and 5,994 serious injuries. Since then, the HSIP has primarily focused on emphasis areas identified in the SHSP. In 2014, the fatality number was 272 which met the primary goal of the 2007 SHSP. Working with several internal and external members, West Virginia revised the SHSP in 2017. The current SHSP has five specific emphasis areas: Road Departure, Alcohol and Drug Impaired Driving, Occupant Protection, Speeding and Aggressive Driving, and Improving Highway Safety Data. Each emphasis area includes action plans that utilize the four E's of Safety to guide the implementation. West Virginia has selected a consultant and will begin revisions for the new SHSP this year. It is expected to be completed in 2022.

WVDOH has members on all emphasis are teams but is lead on infrastructure improvements. These improvements make up the majority of the HSIP projects and are mainly focused on reducing road departure crashes.

In the 14 years since the SHSP was adopted, West Virginia has experienced a significant drop in fatalities and serious injuries. The 25% decline in fatalities was across all road classifications and HSIP funded projects throughout the state. Even though WVDOH maintains 94% of the state's system including local roads, all routes of the system are evaluated for HSIP funding. WVDOH works with local governments as well as Metropolitan Planning Organizations to guarantee the state's safety needs are being addressed.

The Railway Highway Crossing Report will be submitted as a separate document and is not included in any discussions within this report.

### Introduction

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. As per 23 U.S.C. 148(h) and 23 CFR 924.15, States are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. The format of this report is consistent with the HSIP Reporting Guidance dated December 29, 2016 and consists of five sections: program structure, progress in implementing highway safety improvement projects, progress in achieving safety outcomes and performance targets, effectiveness of the improvements and compliance assessment.

### **Program Structure**

### Program Administration

### Describe the general structure of the HSIP in the State.

West Virginia's Highway Safety Improvement Program (HSIP) is coordinated by the ITS, Mobility and Safety Section of the WVDOH's Traffic Engineering Division. The Section is responsible for reviewing and evaluating any project that is a candidate for highway safety funds. The initial review and evaluation of a potential project will include the analysis of crash data for the location, a field review of the site, and the collection of any other information found appropriate to evaluate the proposed project. All projects are supported by the Strategic Highway Safety Plan and were selected using a data driven process.

Once a positive safety benefit is determined to exist for a project, the methodology discussed later is used to select the prioritize projects for the State's HSIP. Upon project selection for the HSIP, the ITS, Mobility and Safety (IMS) Section is responsible for selecting an HSIP funding category for the project, submitting appropriate programming documents where HSIP funds are encumbered, and projects are assigned the State's Statewide Transportation Improvement Program (STIP). The IMS Section monitors the use of HSIP funds and evaluating the effectiveness of a project following its completion. The annual apportionment for HSIP for West Virginia in fiscal year 2021 was approximately \$27.5 million. These funds can be used either for stand-alone projects or in conjunction with other funding to partially fund the safety enhancement portion of a larger project.

### Where is HSIP staff located within the State DOT?

Other-Traffic Engineering

### How are HSIP funds allocated in a State?

- Central Office via Statewide Competitive Application Process
- SHSP Emphasis Area Data

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

West Virginia Department of Transportation maintains approximately ninety-four percent (94%) of the roads in the State, including all secondary or county routes. As such, all HSIP funds are typically used for highway safety projects on the State Highway System. Very few of the State's municipalities own city streets. These are typically lower volume and do not have significant numbers of fatal or serious injury crashes occurring on them; however, should a safety concern exist on a municipal street, the project would be eligible to compete for available HSIP funds. All routes, including locally owned routes, are included when annual ranking lists are

made. Ranking is based on classification so the lower AADT routes are not competing against higher multilane routes. Only routes that are higher than the state average for crashes are evaluated for countermeasures.

If a city request safety funds for a project, they would need to contact the IMS Section of the WVDOH's Traffic Engineering Division or their local MPO. They would need to provide what the proposed improvement would be and the estimated cost. The local roads listed in question #32 are all local roads, including those owned by local municipalities.

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

- Design
- Districts/Regions
- Governors Highway Safety Office
- Maintenance
- Operations
- Planning
- Traffic Engineering/Safety

### Describe coordination with internal partners.

To develop, implement and review all aspects needed to maintain a successful HSIP, Traffic Engineering coordinates with every division within WVDOT. Any division or district can recommend a location for safety improvements by contacting the IMS section. The Traffic Safety Planning and Analysis section within Traffic Engineering Division provides all divisions and districts with crash data. The IMS Section will then review the crash data and determine whether a safety concern exists. This review may include performing a mini-Road Safety Audit (RSA) that can be performed either at district level or a full-scale RSA involving multiple disciplines (internal and external partners). Once the concern is identified, and countermeasures are determined, an estimate to implement the countermeasures is prepared. The IMS Section shall perform a benefit/cost ratio to see if project is eligible for HSIP funding. IMS is the lead for all infrastructure SHSP related projects that are identified as HSIP eligible. Other subjects like non-motorist concerns such as pedestrians and bicyclist are typically handled by DOH's Planning Division. All projects utilizing HSIP funds must be reviewed, approved and programmed by IMS section. The IMS Section will provide Design Division with

### Identify which external partners are involved with HSIP planning.

- Academia/University
- FHWA
- Law Enforcement Agency
- Local Government Agency
- Local Technical Assistance Program
- Regional Planning Organizations (e.g. MPOs, RPOs, COGs)

### Describe coordination with external partners.

For the HSIP to be productive Traffic Engineering Division (TED) must work with several external partners as well as their internal partners. The Safety Management Task Force (SMTF) is the governing body of the SHSP implementation. The SMTF is chaired by Traffic Safety Planning and Analysis Section but members of ITS, Mobility and Safety work on different emphasis areas. Through the SMTF the ITS, Mobility and Safety works closely with Governor's Highway Safety Program (GHSP), FHWA, Metropolitan Planning Organizations (MPO),

WVU's Local Technical Assistance Program (LTAP), Law Enforcement, and several others. TED has partnered with different universities to perform research on several emphasis areas identified in the SHSP. In addition, LTAP has been instrumental in helping TED get their Traffic Incident Management (TIM) program off the ground and provides training on DOH's behalf.

The MPO's are another external partner that TED works with closely. The MPO have been helpful in identifying potential projects throughout their urban areas. Either working through WVDOH's Planning Section, the appropriate District or contacting ITS, Mobility and Safety Section directly, the MPO can request possible HSIP funding. The Road Safety Audit (RSA) is another key element that IMS works with the MPO. Their expertise and knowledge of the area is often sought, and the MPO helps coordinate with local enforcement and officials.

### Program Methodology

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

Yes

Attached is a copy of our Program Elements and Process Flow Chart. West Virginia has been working with FHWA for Roadway Departure plan. Once that is complete, West Virginia will rewrite our process at a future date.

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

- HRRR
- HSIP (no subprograms)
- Low-Cost Spot Improvements
- Median Barrier
- Roadway Departure
- Rural State Highways
- Skid Hazard

### Program: HRRR

### Date of Program Methodology:9/1/2014

### What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

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

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes	Traffic	<ul> <li>Functional classification</li> </ul>

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

- Crash frequency
- Crash rate

# Are local roads (non-state owned and operated) included or addressed in this program?

Yes

### **Are local road projects identified using the same methodology as state roads?** Yes

### How are projects under this program advanced for implementation?

• Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

#### **Rank of Priority Consideration** Ranking based on B/C:1

Available funding:2

### Program: HSIP (no subprograms)

### Date of Program Methodology:9/1/2014

### What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

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

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes	Traffic	<ul> <li>Functional classification</li> </ul>

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

- Crash frequency
- Crash rate

# Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads? Yes

### How are projects under this program advanced for implementation?

• Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

**Rank of Priority Consideration** Ranking based on B/C:1 Available funding:2

### Program: Low-Cost Spot Improvements

### Date of Program Methodology:10/1/2016

### What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

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

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes	Traffic	<ul> <li>Functional classification</li> </ul>

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

- Crash frequency
- Crash rate

## Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads? Yes

How are projects under this program advanced for implementation?

Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

#### Rank of Priority Consideration

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

### Program: Median Barrier

### Date of Program Methodology:10/1/2016

### What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

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

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes	Traffic	<ul> <li>Functional classification</li> </ul>

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

- Crash frequency
- Crash rate

# Are local roads (non-state owned and operated) included or addressed in this program?

Yes

### Are local road projects identified using the same methodology as state roads? Yes

### How are projects under this program advanced for implementation?

Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

**Rank of Priority Consideration** Ranking based on B/C:1 Available funding:2

### Program: Roadway Departure

### Date of Program Methodology:9/1/2014

### What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

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

Competes with all projects

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

Crashes	Exposure	Roadway			
All crashes	Traffic	<ul> <li>Functional classification</li> </ul>			

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

- Crash frequency
- Crash rate

# Are local roads (non-state owned and operated) included or addressed in this program?

Yes

### Are local road projects identified using the same methodology as state roads? Yes

### How are projects under this program advanced for implementation?

• Competitive application process

# Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization.

# Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

### Rank of Priority Consideration

Available funding:1

### Program: Rural State Highways

### Date of Program Methodology:9/1/2014

### What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

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

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes	Traffic	<ul> <li>Functional classification</li> </ul>

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

- Crash frequency
- Crash rate

# Are local roads (non-state owned and operated) included or addressed in this program?

Yes

### Are local road projects identified using the same methodology as state roads? Yes

### How are projects under this program advanced for implementation?

Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Rank of Priority Consideration

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

### Program: Skid Hazard

### Date of Program Methodology:10/1/2016

### What is the justification for this program?

- Addresses SHSP priority or emphasis area
- FHWA focused approach to safety

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

Competes with all projects

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

Crashes	Exposure	Roadway
All crashes	Traffic	<ul> <li>Functional classification</li> </ul>

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

- Crash frequency
- Crash rate

# Are local roads (non-state owned and operated) included or addressed in this program?

Yes

### **Are local road projects identified using the same methodology as state roads?** Yes

### How are projects under this program advanced for implementation?

• Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

#### Rank of Priority Consideration

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

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

48

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

- Add/Upgrade/Modify/Remove Traffic Signal
- Cable Median Barriers
- High friction surface treatment
- Horizontal curve signs
- Install/Improve Lighting
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Pavement/Shoulder Widening
- Rumble Strips
- Safety Edge
- Traffic Control Device Rehabilitation
- Upgrade Guard Rails

### What process is used to identify potential countermeasures?

- Crash data analysis
- Engineering Study
- Road Safety Assessment
- SHSP/Local road safety plan
- Stakeholder input

### Does the State HSIP consider connected vehicles and ITS technologies?

Yes

### Describe how the State HSIP considers connected vehicles and ITS technologies.

The WVDOH currently has two safety projects programmed dealing with ITS technologies. The first project provides funds to upgrade ITS and traffic control devices throughout the state. The second provides funds for technical service support for ITS.

The total cost for the two projects is \$8,554,800 which uses \$1,809,977 in safety funds.

No funding has been programmed for CV/AV Technologies.

### 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.

In cases when the WVDOH is considering several solutions to a safety concern, the WVDOH will use the Highway Safety Manual to see what solution should give the best reduction in fatalities and injury crashes.

## Describe other aspects of the HSIP methodology on which the State would like to elaborate.

The overall purpose of the HSIP is to achieve a significant reduction in traffic fatalities and incapacitating injuries through the implementation of infrastructure related highway safety improvements. Components of West Virginia's HSIP include the Strategic Highway Safety Program (SHSP), the Highway Safety Improvement Program (HSIP), and the Railway-Highway Grade Crossing Program. All routes in West Virginia are eligible for HSIP funding including the local routes not under WVDOH control.

FAST ACT removed the requirement for a formal set aside for High Risk Rural Roads, and the funding was absorbed by the larger HSIP. Roads that were traditionally reviewed in the HRRR Program are still being reviewed and ranked in the HSIP. Rural collectors or rural local roads generally correlate to the county route highway class and WVDOH maintains all of the State's more than 28,000 miles in county routes. The State has been able to allocate HSIP funds to the routes that have a crash rate higher than state average for that classification.

Since Road Departure is the #1 cause of death and serious injury in West Virginia, it has been the focus of the HSIP. All routes in West Virginia were ranked based on their runoff the road crash rate and the top US and State routes were divided into two phases. Phase 1 countermeasures were developed and bid in 2017-2020, and were constructed during 2021. WVDOH is currently in negotiations for Phase 2 and county route consultants to develop plans. Two consultants have been hired to guarantee consistency and provide guidance on plan preparation. In addition, projects dealing with other focus areas of the SHSP are reviewed and funded if funds are available and the benefit/cost ratio is above 1.

### **Project Implementation**

### Funds Programmed

### Reporting period for HSIP funding.

State Fiscal Year

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

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	\$35,191,966	\$28,715,633	81.6%
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	\$35,191,966	\$28,715,633	81.6%

# 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

WVDOH owns the majority of the roads in WV which includes local county routes. The few local owned routes are eligible for HSIP funding. However, none of these routes have had a crash history that is above state average.

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

\$135,000

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

\$135,000

# How much funding was transferred in to the HSIP from other core program areas during the reporting period under 23 U.S.C. 126? \$0

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

\$0

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

In 2016, West Virginia became a focus state for run off the road accidents. FHWA contracted TTI to review West Virginia's crash data and develop a plan for 2018-2019 funding. This plan complimented the route selection West Virginia used in 2017 to develop the run off the road projects currently being developed and constructed.

In 2017, West Virginia initiated a program focused on reducing road departure crashes. With this program, West Virginia used available safety funds to upgrade existing cable guardrail to high tension four strand, install new cable guardrail, fund guardrail IDIQ projects, install high friction throughout the state, fund ITS, and install new lighting at interchanges and intersections.

The WVDOH made a commitment to be able to do system analysis and evaluation encompassing the entire state-owned highway network. When this commitment was made, it was under the assumption that the OASIS system would be fully functional and operating at full capacity. While the OASIS did go live in 2014 and was functioning properly, it was discovered that there was some major crash mapping and data quality issues that needed to be remedied. At launch, there were approximately 60% of the crashes statewide that were able to be mapped. This means that all of the data analysis as well as network screening (sliding window analysis) were inlay able to utilize 60% of the total crashes. Traffic's Safety Planning and Analysis Section, working with FHWA, has acquired a system outside of OASIS to provide accurate data. The new system is scheduled to be operational in 2022.

### 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
Clothier Signing	Roadway delineation	Roadway signs (including post) - new or updated	1	route	\$67555	\$67555	HSIP (23 U.S.C. 148)	Rural	Major Collector	1,600	40	State Highway Agency	Systemic	Roadway Departure	
Kenova Signing +1	Roadway delineation	Roadway signs (including post) - new or updated	2	routes	\$686911	\$686911	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
D3 Roadway Departure	Roadway delineation	Roadway signs (including post) - new or updated	9	routes	\$2083656	\$2083656	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
D4 Roadway Departure Imp Project +8	Roadway delineation	Roadway signs (including post) - new or updated	9	routes	\$3717134	\$3717134	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
D5 Roadway Departure Imp Project +9	delineation	Roadway signs (including post) - new or updated	9	routes	\$1298390	\$1298390	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
D6 Roadway Departure	Roadway delineation	Roadway signs (including post) - new or updated	9	routes	\$785158	\$785158	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
D7 Roadway Departure Imp Project +5	Roadway delineation	Roadway signs (including post) - new or updated	9	routes	\$959208	\$959208	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
D8 Roadway Departure Imp Project +8	delineation	Roadway signs (including post) - new or updated	9	routes	\$1831539	\$1831539	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
D9 Roadway Departure Imp Project +9	delineation	Roadway signs (including post) - new or updated	9	routes	\$1273210	\$1273210	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
D10 Rodway Departure Imp Project +5	delineation	Roadway signs (including post) - new or updated	9	routes	\$519256	\$519256	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
Roadway Departure County	Non- infrastructure	Data analysis	1	Numbers	\$135000	\$150000	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	

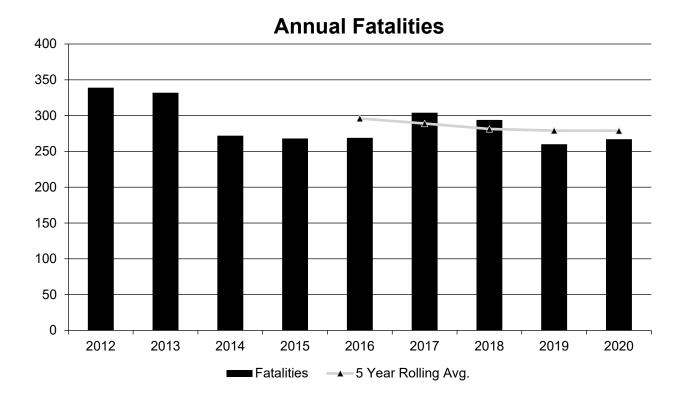
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST(\$)	TOTAL PROJECT COST(\$)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
Mount Lookout Intersection Warning Sign	Roadway delineation	Roadway signs (including post) - new or updated	1	Intersections	\$77350	\$77350	HSIP (23 U.S.C. 148)	Rural	Principal Arterial- Other	14,600	65	State Highway Agency	Spot	Intersections	
I-79 Signing	Roadway delineation	Roadway signs (including post) - new or updated	60.02	Miles	\$1449052	\$2898103	HSIP (23 U.S.C. 148)	Rural	Principal Arterial- Interstate	20,600	70	State Highway Agency	Systemic	Roadway Departure	
Roadway Striping	Roadside	Rumble strips – edge or shoulder	1	district	\$1707531	\$1707531	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
Roadway Striping	Roadside	Rumble strips – edge or shoulder	1	district	\$1484210	\$1484210	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
Roadway Striping	Roadside	Rumble strips – edge or shoulder	1	district	\$1875131	\$1875131	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
Roadway Striping	Roadside	Rumble strips – edge or shoulder	1	district	\$1928740	\$1928740	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
Roadway Striping	Roadside	Rumble strips – edge or shoulder	1	district	\$1386796	\$1386796	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
Roadway Striping	Roadside	Rumble strips – edge or shoulder	1	district	\$1658276	\$1658276	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
Roadway Striping	Roadside	Rumble strips – edge or shoulder	1	district	\$1308286	\$1308286	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
Roadway Striping	Roadside	Rumble strips – edge or shoulder	1	district	\$1798816	\$1798816	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
Roadway Striping	Roadside	Rumble strips – edge or shoulder	1	district	\$1842626	\$1842626	HSIP (23 U.S.C. 148)	Multiple/Varies	Multiple/Varies	0	0	State Highway Agency	Systemic	Roadway Departure	
Charleston HFST	Roadside	Pavement surface – high friction surface	1	Miles	\$590042	\$655603	HSIP (23 U.S.C. 148)	Urban	Principal Arterial- Interstate	0	0	State Highway Agency	Systemic	Roadway Departure	
Old Turnpike Rd Intersection Sign	Roadway delineation	Roadway signs (including post) - new or updated	1	Signs	\$83300	\$83300	HSIP (23 U.S.C. 148)	Rural	Principal Arterial- Other	0	0	State Highway Agency	Systemic	Intersections	

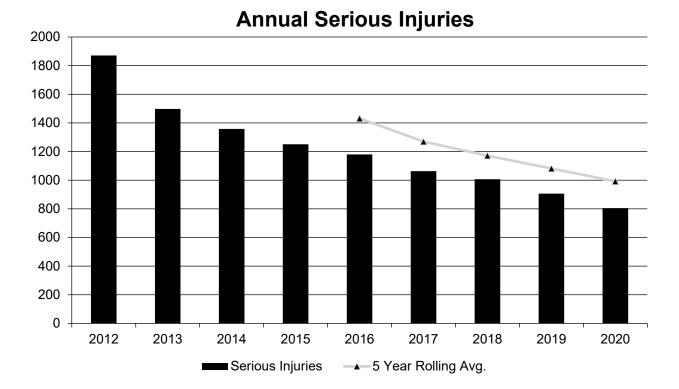
### Safety Performance

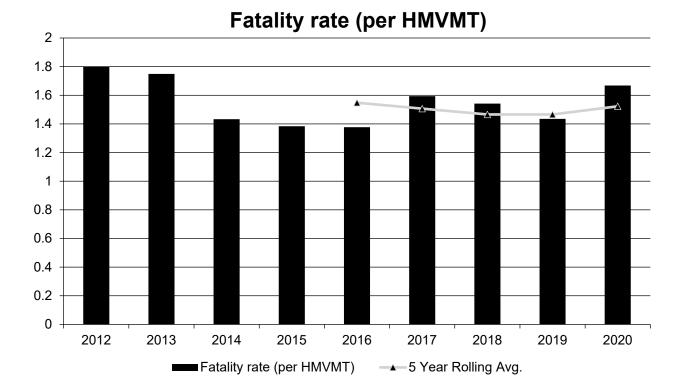
### General Highway Safety Trends

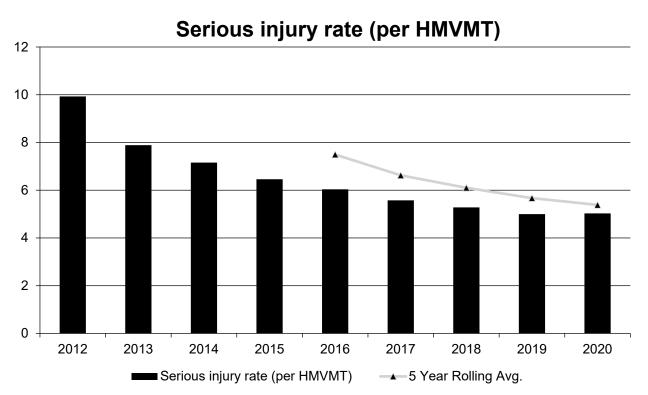
# Present data showing the general highway safety trends in the State for the past five years.

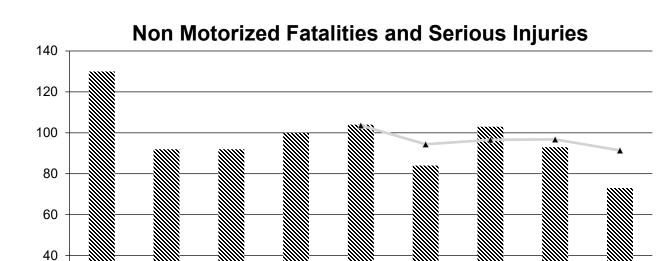
PERFORMANCE MEASURES	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fatalities	339	332	272	268	269	304	294	260	267
Serious Injuries	1,871	1,498	1,358	1,251	1,180	1,063	1,007	906	805
Fatality rate (per HMVMT)	1.799	1.749	1.433	1.384	1.377	1.594	1.542	1.435	1.668
Serious injury rate (per HMVMT)	9.927	7.889	7.157	6.459	6.039	5.574	5.280	5.000	5.028
Number non-motorized fatalities	32	28	21	20	27	29	27	34	22
Number of non- motorized serious injuries	98	64	71	80	77	55	76	59	51











### **Describe fatality data source.**

2013

Fatalities

2014

2015

**MMM** Serious Injuries

FARS

20

0

2012

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

2016

2017

2019

2018

→ 5 Year Rolling Avg.

2020

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	39.4	0.64	1.71
Rural Principal Arterial (RPA) - Other Freeways and Expressways	0	0	0	0
Rural Principal Arterial (RPA) - Other	44	118.2	2.07	5.54
Rural Minor Arterial	29.2	112.8	2.07	7.94
Rural Minor Collector	7.4	25	2.19	7.18
Rural Major Collector	53.8	197.2	2.37	8.33

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 Local Road or Street	24.6	78.6	2.59	8.28
Urban Principal Arterial (UPA) - Interstate	20.2	43.6	0.6	1.29
Urban Principal Arterial (UPA) - Other Freeways and Expressways	0	0.8	0	0.97
Urban Principal Arterial (UPA) - Other	29.4	80.6	1.38	3.75
Urban Minor Arterial	25.8	95.4	1.4	5.24
Urban Minor Collector	8.2	0.8	16.2	2.98
Urban Major Collector	7.2	39	0.85	4.48
Urban Local Road or Street	6.4	19.2	1.46	4.02

Year 2020											
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	271.8	937	1.68	5.74							
County Highway Agency											
Town or Township Highway Agency											
City or Municipal Highway Agency	5.8	56.6	1.01	11.39							
State Park, Forest, or Reservation Agency											
Local Park, Forest or Reservation Agency											
Other State Agency	1.2	0.2	23.93								
Other Local Agency											
Private (Other than Railroad)											
Railroad											
State Toll Authority											
Local Toll Authority											
Other Public Instrumentality (e.g. Airport, School, University)											
Indian Tribe Nation											

### Year 2020

### Safety Performance Targets

### Safety Performance Targets

### Calendar Year 2022 Targets \*

### Number of Fatalities:262.1

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

West Virginia's SHSP established the overall goal of cutting the 5-year average number of fatalities in half by the year 2030, using 2005-2009 as our baseline year. At the time of SHSP development, targets were

calculated for each year. Annually, the targets are adjusted based upon the most current five-year average number of fatalities available (currently 2016-2020) while keeping the 2030 goal the same as it was when the SHSP was adopted.

### Number of Serious Injuries:926.4

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

West Virginia's SHSP established the overall goal of cutting the 5-year average number of serious injuries to one third of baseline number by the year 2030, using 2009-2013 as our baseline year. At the time SHSP development, targets were calculated for each year. Annual, the targets are adjusted based upon the most current five-year average number of serious injuries available (currently 2016-2020) while keeping the 2030 goal the same as it was when the SHSP was adopted.

### Fatality Rate:1.558

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

West Virginia's SHSP established the overall goal of cutting the 5-year average number of fatalities in half by the year 2030, using 2005-2009 as our baseline year. It also established a target fatality rate based on the goal five-year number of fatalities and an assume annual VMT growth of 0.44%. At the time of SHSP development, targets were calculated for each year with target fatality rates being calculated from target 5-year average numbers of fatalities and the assume VMT growth previously described. Annual, the targets are adjusted based upon the most current five-year average number of fatalities available (currently 2016-2020) while keeping the 2030 goal the same as it was when the SHSP was adopted.

### Serious Injury Rate:5.634

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

West Virginia's SHSP established the overall goal of cutting the 5 year average number of serious injuries to one third of baseline numbers by the year 2030, using 2009-2013 as our baseline year. It also established a target serious injury rate based on the goal based on the goal five-year average number of serious injuries and an assumed annual VMT growth of 0.44%. At the time SHSP development, targets were calculated for each year. Annually, the targets are adjusted based upon the most current five-year average number of serious injuries available (currently 2016-2020) while keeping the 2030 goal the same as it was when the SHSP was adopted.

### **Total Number of Non-Motorized Fatalities and Serious Injuries:80.9**

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

To decrease pedestrian fatalities by 4 percent from 23 (2013-2017) to 22 (2017-2021) and to maintain bicyclist fatalities at one 2013-2017 average through the 2017-2021 average, non-motorized crashes are not an emphasis area within West Virginia's SHSP. Safety performance targets for this area have been established in the same manner that targets for fatalities of serious injuries. The baseline 5-year average for this was 2009-2013 and the goal was to cut them to one third of that average. We adjust them annual, just as we do for fatalities and serious injuries keeping the 2030 goal the same.

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

In the mid-1990's, various officials with highway safety responsibilities in West Virginia recognized the value of banding together to advance highway safety. This resulted in the creation of the State's first Highway Safety Management Task Force. After a brief hiatus, the renamed Safety Management Task Force (SMTF) reconvened in late 2001 and met regularly to coordinate highway safety-related activities and programs and

allowed participants to speak with one voice for greater safety impacts. The Task Force continued this mission as its more than 30 members provided oversight in the plan development, implementation, and evaluation.of the State's current SHSP as they will again as we begin the required 2022 update.

An effort to revitalize and expand the Task Force is underway as a kick-off to the 2022 SHSP update draws near. More than 50 members are being invited to provide oversight of the new SHSP, including plan development, implementation, and evaluation. This update will be a continuation of the work to address the State's current traffic safety issues that task force members have continued to diligently perform and coordinate in spite of the difficulties in officially meeting together that the past few years have brought. Members of the SMTF include the Division of Highways, Division of Motor Vehicles, Governor's Highway Safety Program, Department of Health and Human Resources, the Public Service Commission's Motor Carrier Safety Section, West Virginia State Police along with representatives from local law enforcement agencies, Department of Education, Alcohol Beverage Control Administration, Office of the Insurance Commissioner, West Virginia Parkways Authority, West Virginia Association of Metropolitan Organizations, West Virginia Commission of Drunk Driving Prevention, Federal Highway Administration, Federal Motor Carrier Safety Administration, National Highway Traffic Safety Administration, and many more highway safety minded agencies, organizations and commissions.

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

No

Describe progress toward meeting the State's 2020 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	267.0	278.8
Number of Serious Injuries	1120.0	992.2
Fatality Rate	1.482	1.523
Serious Injury Rate	5.360	5.384
Non-Motorized Fatalities and Serious Injuries	78.6	91.4

West Virginia met its safety performance target in 2020 for the number of serious injuries. West Virginia came close the safety target in number of fatalities, fatality rate, and serious injury rate. The five year average for number of fatalities, fatality rate, and serious injury rate was 278.8, 1.523, and 5.384 and the target was 267.0, 1.482, and 5.360 respectively.

### 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	2014	2015	2016	2017	2018	2019	2020
Number of Older Driver and Pedestrian Fatalities	42	35	41	43	65	43	57
Number of Older Driver and Pedestrian Serious Injuries	126	97	89	104	117	95	98

### Evaluation

### Program Effectiveness

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

- Benefit/Cost Ratio
- Change in fatalities and serious injuries
- Economic Effectiveness (cost per crash reduced)

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

West Virginia has focused on Road Departure with it's HSIP since it has the best chance of reducing the fatality and injury rates. However, other projects are evaluated if they meet the SHSP goals.

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

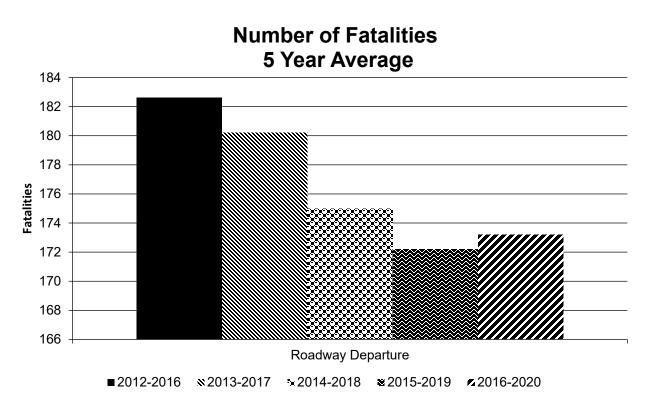
- HSIP Obligations
- More systemic programs

### Effectiveness of Groupings or Similar Types of Improvements

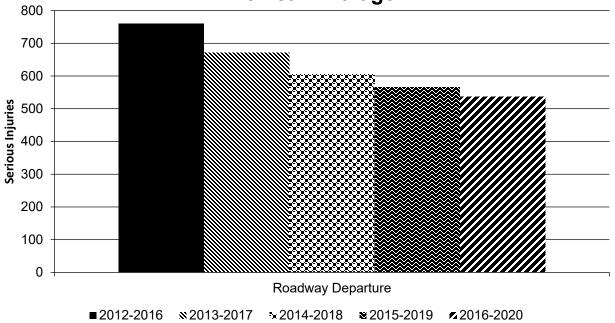
### Present and describe trends in SHSP emphasis area performance measures.

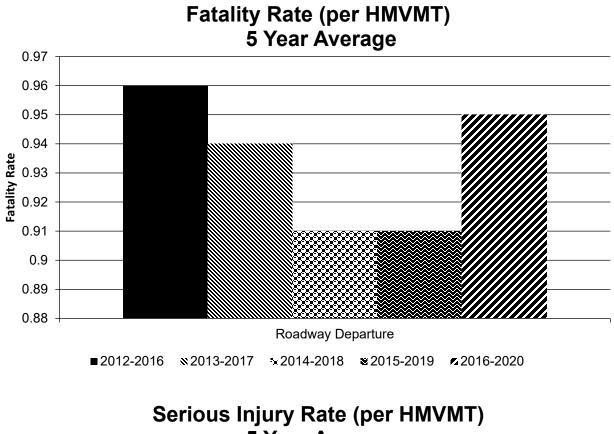
		tear 20	20		
SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Roadway Departure		173.2	536	0.95	2.93

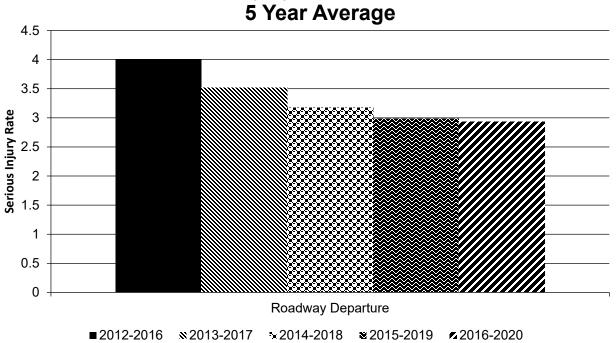
Year 2020



Number of Serious Injuries 5 Year Average







### 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)
Ohio County Interstate 70	Urban Principal Arterial (UPA) - Interstate	Lighting	Continuous roadway lighting	99.00	314.00		2.00	2.00	8.00	39.00	81.00	140.00	405.00	
Berkeley County WV 45	Rural Minor Arterial	Intersection geometry	Add/modify auxiliary lanes	13.00	14.00					10.00	6.00	23.00	20.00	
Kanawha County US 119	Urban Principal Arterial (UPA) - Other	Lighting	Continuous roadway lighting	94.00	129.00			3.00	1.00	39.00	35.00	136.00	165.00	
Putnam County WV 62	Rural Major Collector	Intersection geometry	Add/modify auxiliary lanes	4.00	5.00					2.00	2.00	6.00	7.00	
Jefferson County US 340	Urban Principal Arterial (UPA) - Other	Intersection traffic control	Intersection flashers –sign- mounted or overhead	68.00	70.00			2.00	2.00	29.00	19.00	99.00	91.00	
Kanawha County Interstate 64	Urban Principal Arterial (UPA) - Interstate	Roadway	Pavement surface – high friction surface	106.00	56.00					33.00	19.00	139.00	75.00	

### **Compliance Assessment**

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

07/31/2017

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

From: 2017 To: 2021

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

2022

WVDOH has selected WRA as the consultant for the 2022 SHSP update. We are currently in contract negotiations with them and it is anticipated that the contract will be awarded and Notice to Proceed will be given within the next few weeks. Meanwhile, WVDOH Strategic Safety Planning and Analysis Staff are diligently working to prepare all information that will be needed to support the develop efforts so that work may begin promptly following Notice to Proceed. It is anticipated that the updated SHSP will be ready far ahead of the deadline.

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

ROAD TYPE		NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVE	D ROADS	UNPAVED ROADS	
	NO.)	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
	Route Number (8) [8]	100									
	Route/Street Name (9) [9]	100									
	Federal Aid/Route Type (21) [21]	100									
	Rural/Urban Designation (20) [20]	100						100			
	Surface Type (23) [24]	100						100			
	Begin Point Segment Descriptor (10) [10]	100						100	95	100	95
	End Point Segment Descriptor (11) [11]	100						100	95	100	95
	Segment Length (13) [13]	100									
	Direction of Inventory (18) [18]	100									

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

	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAROADS - INTER		NON LOCAL ROADS - RAM	PAVED IPS	LOCAL PAVE	D ROADS	UNPAVED RO	ADS
	NO.)	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Functional Class (19) [19]	100						100		100	
	Median Type (54) [55]	80									
	Access Control (22) [23]	100									
	One/Two Way Operations (91) [93]	100									
	Number of Through Lanes (31) [32]	100						100			
	Average Annual Daily Traffic (79) [81]	100						100			
	AADT Year (80) [82]	100									
	Type of Governmental Ownership (4) [4]	100						100	100	100	100
INTERSECTION	Unique Junction Identifier (120) [110]			50	50						
	Location Identifier for Road 1 Crossing Point (122) [112]			50	50						
	Location Identifier for Road 2 Crossing Point (123) [113]			50	50						
	Intersection/Junction Geometry (126) [116]			20	20						
	Intersection/Junction Traffic Control (131) [131]										
	AADT for Each Intersecting Road (79) [81]			50							
	AADT Year (80) [82]			50							
	Unique Approach Identifier (139) [129]			50	50						
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]					100					

ROAD TYPE	*MIRE NAME (MIRE	NON LOCAL PAVED ROADS - SEGMENT			NON LOCAL PAVED ROADS - INTERSECTION		PAVED MPS	LOCAL PAVE	D ROADS	UNPAVED ROADS	
	NO.)	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Location Identifier for Roadway at Beginning of Ramp Terminal (197) [187]										
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]										
	Ramp Length (187) [177]					100					
	Roadway Type at Beginning of Ramp Terminal (195) [185]					100					
	Roadway Type at End Ramp Terminal (199) [189]					100					
	Interchange Type (182) [172]										
	Ramp AADT (191) [181]					100					
	Year of Ramp AADT (192) [182]					100					
	Functional Class (19) [19]					100					
	Type of Governmental Ownership (4) [4]					100					
Totals (Average Perce	nt Complete):	98.89	0.00	40.00	27.50	72.73	0.00	100.00	43.33	100.00	78.00

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

The MIRE data elements were originally submitted to FHWA in 2020, and since then changes have been made. The values in the INTERSECTION section are reduced after a recent review of the data. WVDOH has ran Esri's intersection tool and Transcend Spatial's Intersection Manager tool, manually checking individual intersections generated by the tools, etc. Since WVDOH is still exploring a solution to generate the intersection related data, we believe such numbers are more realistic compared to the ones reported previously. Once WVDOH receives more guidance from FHWA and gains more experience, we plan to have a solution to meet the deadlines set by FHWA.

### 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.

Based on the Safety Data Assessment performed in 2018, West Virginia ranked low in data quality and collection particularly in the area of Minimum Inventory of Roadway Elements (MIRE). As such, West Virginia has been selected as a pilot or focus state allowing for additional technical assistance. West Virginia staff has participated in a peer exchange and is developing a plan to prioritize key data element definitions and collection. Our Strategic Data Management and Technology Division as the Roadway Inventory managers and the Traffic Engineering Division as the primary user in managing highway safety analysis are coordinating to ensure the MIRE FDE fully meets or exceeds the national standard.

### **Optional Attachments**

Program Structure:

WV HSIP Process.docx 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.