VIRGINIA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2022 ANNUAL REPORT

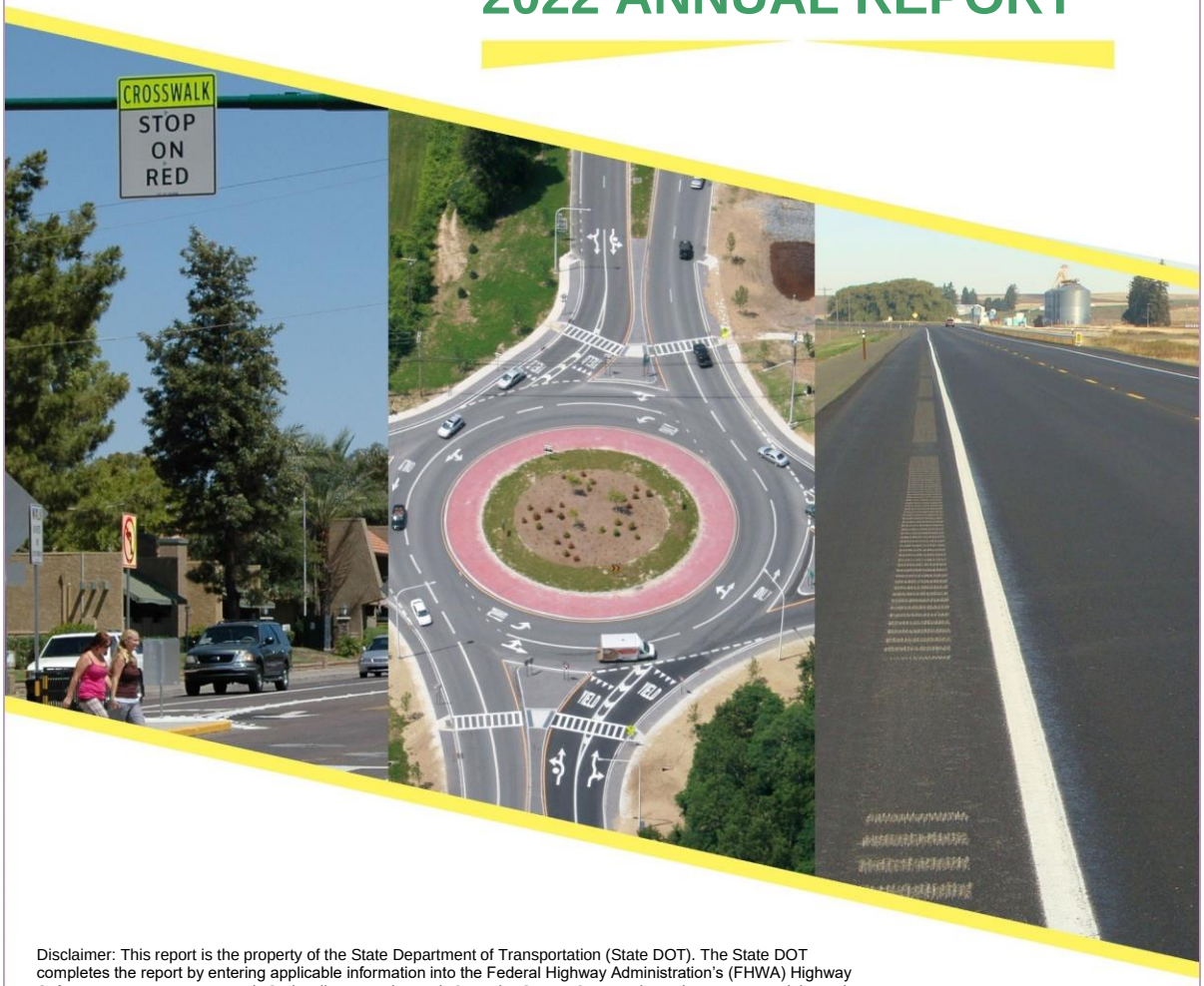

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Table of Contents

Disclaimer

Protection of Data from Discovery Admission into Evidence

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

23 U.S.C. 407 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

Executive Summary

The Fiscal Year (FY) 2022 Highway Safety Improvement Program (HSIP) report submitted to the Federal Highway Administration (FHWA) summarizes and describes Virginia Department of Transportation's (VDOT's) strategic use of new Infrastructure Investment and Jobs Act (IIJA) for the period of July 2021 to June 2022. The IIJA succeeds the Fixing America's Surface Transportation (FAST) Act and continues the HSIP to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal land.

Under U.S. Code 23, Section 154, the Surface Transportation Program and the National Highway Performance Program funds are transferred to be used for HSIP eligible proposals because Virginia does not have all of the required components in its Open Container legislation. As a result, VDOT's HSIP is composed of the following sub-programs which use the mentioned federal funding sources (23 USC Sections):

A. Highway Safety Projects (HSP): Section 148

B. Penalty Transfer-Open Container (OC) Projects: Section 154

C. High Risk Rural Roads (HRRR): Section 148

The Commonwealth of Virginia is committed to developing and maintaining a safe, multimodal transportation system. The spending targets for each VDOT district office are based on the level of FHWA funding in future years. In Virginia, as HSIP funding will be supplemented with Virginia State funds, HSIP will be referenced as Virginia HSIP or VHSIP. A link to the VHSIP guidelines, safety proposal application submission documents, and other VDOT and FHWA resources are provided online at:
http://www.virginiadot.org/business/ted_app_pro.asp

VDOT's HSIP program processes have been developed in consultation with FHWA and in accordance with the FAST Act guidelines, final ruling (policy), and funding provided. Important to note, adding a new HSIP project to Virginia's Six-Year Improvement Program (SYIP) and Statewide Transportation Improvement Plan (STIP) will only be considered if the subject HSIP project was developed in accordance with Virginia's HSIP Project Prioritization Policy.

U.S. Code 23, Section 148 Special Rule

Note: For FY 2022, the special rules on High-Risk Rural Road (HRRR) and Older Drivers as defined in U.S. Code 23, Section 148 (g) (1) do not apply to Virginia for the following reasons:

· HRRR Safety: The fatality rate on rural roads in Virginia has not increased over the most recent two-year period, and therefore, VDOT is not required to obligate a specified amount of funds towards HRRR eligible routes.

· Older Drivers: The fatality rate and serious injury rate for drivers and pedestrians 65 years of age and older have not increased over the most recent 2-year period, and therefore, the special rule for Older Drivers does not apply for Virginia.

Commonwealth Transportation Board (CTB) Resolutions

In June 2019, the Commonwealth Transportation Board (CTB) adopted Safety Performance Targets for Calendar Year (CY) 2020 and found the anticipated safety outcomes associated with the Safety Performance

Targets to be unacceptable, and further directed the Office of Intermodal Planning and Investment (OIPI), working collaboratively with VDOT and Department of Motor Vehicles (DMV), to analyze and develop a plan resulting in a net reduction in fatal and serious injury crashes. A key finding from this data-driven analysis demonstrated that systemic and hybrid corridor safety projects provide greater potential crash reduction benefits for lower cost than traditional spot improvement projects, and this finding was presented to the CTB during multiple workshop meetings. In September 2019, the CTB approved an amendment to FY 2020-2025 Six-Year Improvement Program (SYIP) to begin deployment of systemic safety improvements included in an initial Systemic Improvement Plan. This initial Systemic Improvement Plan identified $136.7 million in potential funding through FY 2025 in order to implement eight systemic countermeasure initiatives at VDOT-maintained roadways. The systemic countermeasure initiatives are as follows:

· High-Visibility Signal Backplates (HVSB)

· Flashing Yellow Arrow (FYA)

· Pedestrian Accommodations Improvements at Signalized Intersections

· Centerline Rumble Strip

· Edgeline Rumble Strip/Stripes

· Curve Delineation

· Improvements at Unsignalized Intersections

· Safety Edge

The systemic countermeasure implementation projects in this initial Systemic Improvement Plan is estimated to save 61 lives and 1,174 injuries per year statewide once implemented. This initial Systemic Improvement Plan also:

· Establishes goals and schedules for deploying the eight systemic countermeasures across VDOT’s network.

· Includes a risk-based assessment of eight systemic countermeasures to include the locations, appropriate improvements, cost estimates, and schedules on all public roads.

· Aligns with emphasis areas in Virginia’s Strategic Highway Safety Plan (SHSP).

· Will be updated periodically to advance additional systemic improvements.

The initial Systemic Improvement Plan is currently ongoing with potential project locations identified and implementation of systemic initiatives underway in many locations. Additional information on the initial HSIP Systemic Implementation Plan is provided on-line at:
http://www.ctb.virginia.gov/resources/2019/sep/pres/9.pdf.

Furthermore, in December 2019, the CTB approved the Highway Safety Improvement Program Project Prioritization Policy where it states the following:

· VDOT shall develop the next phase of the Implementation Plan for the deployment of systemic and hybrid safety countermeasures across the roadway network, including VDOT and locally-maintained facilities. Note: VDOT is currently in development of this next phase of the Safety Improvement Project Plan.

· After HSIP funds are set aside for program administration (approximately 5 to 10 percent), the remaining funds shall be programmed to projects with a goal of approximately 80 percent of funds allocated to systemic and hybrid safety improvements over the Six-Year Improvement Program (SYIP).

· In order to accelerate deployment of systemic and hybrid safety improvements, the CTB will not approve new spot improvement projects until FY 2026-2031 SYIP unless certain conditions are met.

The full CTB approval of the HSIP Project Prioritization Policy is provided on-line at: http://www.ctb.virginia.gov/resources/2019/dec/reso/10.pdf.

In January 2022, the CTB passed a resolution that approved an updated investment strategy to govern prioritization and selection of highway safety infrastructure and behavioral safety projects for funding. The resolution stated that VDOT shall develop an infrastructure implementation plan for the continued deployment of proven systemic and hybrid safety countermeasures across the roadway network, including VDOT and locally-maintained facilities. The passing of this resolution introduced systemic safety initiatives to be funded for locally-maintained roadways while continuing the systemic safety initiatives on VDOT-maintained roadways.

The January 2022 resolution provided additional policy details for funding safety projects at locally-maintained roadways, and they are as follows:

· Minimum funding levels for locally-maintained roadways shall be based on the proportion of fatalities on locally-maintained versus VDOT-maintained roads with funds available beginning in Fiscal Year (FY) 2024 for use on systemic safety improvements.

· Funding for systemic infrastructure projects on locally-maintained roads will be awarded through a competitive application process with projects that have a higher return on investment receiving priority.

VDOT completed a Return-of-Investment (ROI) analysis and worked with VDOT Districts and Localities to identify the following systemic initiatives that will be included in the VHSIP Plan for Localities:

· Flashing Yellow Arrow (FYA) Signals

· High-Visibility Signal Backplates (HVSB)

· Pedestrian Crossings

· Curve Signage

· Unsignalized Intersections

· Road Reconfiguration (Road Diets)

Localities may submit applications for other systemic initiatives that are not on the list above, but those initiatives that are not listed must show high return on investment in the application and may not be prioritized over the initiatives that are on the list.

The January 2022 CTB resolution also noted that spot improvement projects will not be approved until FY 2026 unless systemic and hybrid infrastructure initiatives have been fully funded and their scheduled completion is feasibly accelerated.

The full CTB approval of the January 2022 Virginia Highway Safety Investment Strategy is provided online at: https://www.ctb.virginia.gov/resources/2022/jan/res/15.pdf

VDOT provided technical assistance through VDOT's on-call consultant services to the small cities or towns who do not have resources to prepare application, crash analysis, and etc. VDOT's Safety Circuit Rider (SCR) program offers assistance to localities for analyzing crashes and conducting Road Safety Assessments (RSAs) on locally owned or maintained roads.

Virginia Safety Circuit Rider (SCR) Program

The Virginia Safety Circuit Rider (SCR) program is focused on reducing crashes and improving overall roadway safety throughout Virginia. The program includes services such as one-on-one technical assistance, road safety assessments, and safety-focused training. The Virginia Transportation Research Council (VTRC), the Virginia Department of Transportation (VDOT), and the UVA Center for Transportation Studies launched the Virginia Safety Circuit Rider program to improve safety on more than 11,000 miles of roadways maintained by cities, towns, and local agencies in Virginia.

The goal of the SCR program is to reduce the number and severity of crashes on local roads by conducting roadway safety assessments to then identify and recommend proven low-cost improvements. Some of the services offered through the program are:

· Crash data retrieval and evaluation

· Transportation safety training

· Roadway safety assessments

· Safety-related information and resources clearinghouse

Through the program, the SCR team has coordinated with approximately 30 cities, towns, and counties throughout Virginia. Crash data extraction and analysis has been completed for approximately 10 localities with more to be completed in 2022. The plan is to also identify up to four localities in which to conduct a roadway safety assessment later in 2022.

The SCR team combines both in-person and virtual options to deliver roadway safety training. The SCR team has delivered twenty-nine half-day workshops and twenty full-day workshops this calendar year, reaching 834 students and generating 5,194 contact-hours. The team has conducted two roundtable sessions, bicycle safety session, and Road Safety Champion Program, and reached approximately 55 individuals.

The SCR team embarked on piloting the Road Safety Champion Program, which is an initiative of the National Center for Rural Road Safety to reduce fatal and serious injuries on rural and urban roads. Virginia is the only state currently piloting the program. To become a Road Safety Champion, students must complete seven core subjects and either seven subjects in Maintenance and Construction or six subjects in Planning and Engineering. There are sixty-eight candidates currently registered in the program, and eighteen candidates have completed the training and are considered official Road Safety Champions under this program. Some of the twenty classes offered in the program include:

· Introduction to Road Safety

· Local Road Safety Plans

· Countermeasures for Road Safety

· Systemic Safety Project Selection Tool

· Worker Safety

· Maintaining a Safer Roadway

Virginia's Strategic Highway Safety Plan

In 2022, VDOT completed a multi-agency and disciplinary update of the Commonwealth's Strategic Highway Safety Plan (SHSP). In 2022, FHWA's Virginia Division approved Virginia's 2022-2026 SHSP. VDOT continues to coordinate with its safety partners and implement the SHSP engineering strategies to drive investment decisions to improve safety and reduce deaths and injuries for this reporting period.

Many safety partners are working towards reducing the number and severity of vehicle crashes on the Commonwealth's highways. Virginia's HSIP is structured to focus on infrastructure safety emphasis areas that may be improved with low cost minimal environmental impact (e.g., project has no or minimal right of way costs) engineering countermeasures, namely:

A. Intersection geometry and traffic control

B. Roadway and roadside improvements

C. Bicycle and pedestrian risk reductions

Data-driven Decision-making on Transportation Safety

VDOT emphasizes data-driven decision-making to improve transportation safety and safety data. One way that VDOT has employed the use of the Highway Safety Manual (HSM) is through statewide evaluation of systemic improvement projects. This evaluation involves a simple before-and-after evaluation of all eligible systemic projects funded through the HSIP program. Also, this effort involved preparations for future systemic evaluations, including collection of project-level data and modification of the HSIP project application forms.

Also, in order to make data-driven decisions regarding the use of public funding for safety improvements, VDOT developed state-specific Safety Performance Functions (SPFs) and prioritized a list of locations with the largest Potential for Safety Improvements (PSI). The use of SPFs and PSI for network screening and project prioritization are well documented throughout the HSM.

VDOT developed a comprehensive set of state-specific SPFs covering 98 percent of its state-maintained roadway locations. The impetus for VDOT developing their own SPFs and analytical tools arose from the decision that AASHTOWare Safety Analyst™ did not meet their needs. VDOT developed state-specific SPFs using historical crash, traffic, and roadway inventory data. SPF developers worked closely with engineers throughout the development process to evaluate whether each SPF was implementable for all types of improvements (spot, corridor, and systemic). To date, VDOT has developed 24 SPFs covering the majority of roadway facilities, including two-lane roads, intersections, and freeways/multi-lane highways.

VDOT incorporates the comparisons of actual- to predicted-crash frequencies in its network screening, and then identifies the top 100 intersections and top 100 miles of segments with the largest PSI annually. This list is sent to the district engineers, and each district engineer can determine which site(s) to prioritize based on their practical experience and knowledge of the area.

VDOT has noted several benefits of the data-driven Virginia’s SPF and PSI implementation effort, including:

· Prioritization of systemic countermeasure implementation locations at a District-level

· Use public funding in a cost-effective manner

· Measure quantifiable benefits for both systemic and spot improvements

· Better manage public concern

· Compare locations to prioritize projects

The state-specific SPFs and PSIs are incorporated beyond the HSIP and are being used as tools to develop project prioritization in VTran's Long-Range Transportation Plan (VTrans2040) and Statewide Project Prioritization (SMARTSCALE). VTrans2040, completed in January 2018, is a major milestone in a performance-based planning framework. It established a direct link between planning (VTrans) and funding (SMARTSCALE). SMARTSCALE is a statewide program that distributes funding based on transparent and objective evaluation of projects to effectively support the Commonwealth achieve its transportation goals. In the SMARTSCALE application process, data-driven safety analysis is one of the weighting factors in the selection process, and a project with high PSI is more likely to receive a higher score for Safety than that of lower PSI.

The SPF development team conducts training (including an annual "roadshow" to all nine districts) and hosts webinars to ensure district engineers understand the methodology and how to use the SPFs. VDOT has not mandated the use of SPFs and PSIs by the districts because the process of introducing a new methodology takes time. However, the district engineers are aware that it is the preferred method for network screening

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 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.

The primary objective of the Highway Safety Improvement Program (HSIP) is to identify and improve locations where there is a high concentration, or risk, of vehicle crashes that result in deaths or injuries. HSIP staff conduct network screening for the engineering emphasis areas in Virginia's Strategic Highway Safety Plan (SHSP). After conducting network screening, HSIP staff fulfill transportation safety planning requirements by producing listings of the largest Potential for Safety Improvement (PSI) on VDOT maintained intersections and segments. The lists are distributed to District staff, and each District Engineer determines which site(s) to prioritize based on their practical experience and knowledge of the area. Safety proposals are not limited to the locations that are identified by VDOT staff. Detailed crash analysis and site evaluation is typically conducted through a documented engineering study or Road Safety Assessment (RSA).

VDOT also uses the systemic approach methodology which provides a consistent framework for addressing risk using the HSIP process by identifying system-wide roadway safety concerns and strategies to address these concerns. Applying a systemic approach to addressing safety is beneficial to proactively address widespread safety issues and cost-effectively minimize crash potential. Rather than focus on specific crash locations, a systemic approach targets consistent crash trends and common risk factors in crashes throughout the roadway network.

In June 2019, the Commonwealth Transportation Board (CTB) adopted Safety Performance Targets for CY 2020 and found the anticipated safety outcomes associated with the Safety Performance Targets to be unacceptable, and further directed the Office of Intermodal Planning and Investment (OIPI), working collaboratively with VDOT and Department of Motor Vehicles (DMV), to analyze and develop a plan resulting in a net reduction in fatal and serious injury crashes. A key finding from this data-driven analysis demonstrated that systemic and hybrid corridor safety projects provide greater potential crash reduction benefits for lower cost than traditional spot improvement projects, and this finding was presented to the CTB during multiple workshop meetings. In September 2019, the CTB approved an amendment to FY 2020-2025 Six-Year Improvement Program (SYIP) to begin deployment of systemic safety improvements included in an initial Systemic Improvement Plan. This initial Systemic Improvement Plan identified $136.7 million in potential

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· Includes a risk-based assessment of eight systemic countermeasures to include the locations, appropriate improvements, cost estimates, and schedules on all public roads.

· Aligns with emphasis areas in Virginia's Strategic Highway Safety Plan (SHSP).

· Will be updated periodically to advance additional systemic improvements.

In December 2019, the CTB approved the Highway Safety Improvement Program Project Prioritization Policy where it states the following:

· VDOT shall develop the next phase of the Implementation Plan for the deployment of systemic and hybrid safety countermeasures across the roadway network, including VDOT and locally-maintained facilities. Note: VDOT is currently in development of the second phase of the Safety Improvement Project Plan.

· After HSIP funds are set aside for program administration (approximately 5 to 10 percent), the remaining funds shall be programmed to projects with a goal of approximately 80 percent of funds allocated to systemic and hybrid safety improvements over the Six-Year Improvement Program (SYIP).

· In order to accelerate deployment of systemic and hybrid safety improvements, the CTB will not approve new spot improvement projects until FY 2026-2031 SYIP unless certain conditions are met.

The full CTB approval of the HSIP Project Prioritization Policy is provided on-line at: http://www.ctb.virginia.gov/resources/2019/dec/reso/10.pdf .

The initial Systemic Improvement Plan with the eight systemic countermeasure initiatives is currently ongoing with potential project locations identified and implementation of systemic initiatives underway or completed in

many locations. Additional information on the initial HSIP Systemic Implementation Plan is provided on-line at: http://www.ctb.virginia.gov/resources/2019/sep/pres/9.pdf .

In January 2022, the CTB passed a resolution that approved an updated investment strategy to govern prioritization and selection of highway safety infrastructure and behavioral safety projects for funding. The resolution stated that VDOT shall develop an infrastructure implementation plan for the continued deployment of proven systemic and hybrid safety countermeasures across the roadway network, including VDOT and locally-maintained facilities. The passing of this resolution introduced systemic safety initiatives to be funded for locally-maintained roadways while continuing the systemic safety initiatives on VDOT-maintained roadways.

The January 2022 resolution provided additional policy details for funding safety projects at locally-maintained roadways, and they are as follows:

· Minimum funding levels for locally-maintained roadways shall be based on the proportion of fatalities on locally-maintained versus VDOT-maintained roads with funds available beginning in Fiscal Year (FY) 2024 for use on systemic safety improvements.

· Funding for systemic infrastructure projects on locally-maintained roads will be awarded through a competitive application process with projects that have a higher return on investment receiving priority.

VDOT completed a Return-of-Investment (ROI) analysis and worked with VDOT Districts and Localities to identify the following systemic initiatives that will be included in the VHSIP Plan for Localities:

· Flashing Yellow Arrow (FYA) Signals

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Localities may submit applications for other systemic initiatives that are not on the list above, but those initiatives that are not listed must show high return on investment in the application and may not be prioritized over the initiatives that are on the list.

The January 2022 CTB resolution also noted that spot improvement projects will not be approved until FY 2026 unless systemic and hybrid infrastructure initiatives have been fully funded and their scheduled completion is feasibly accelerated.

The full CTB approval of the January 2022 Virginia Highway Safety Investment Strategy is provided online at: https://www.ctb.virginia.gov/resources/2022/jan/res/15.pdf .

VDOT is planning to propose Investment Plan to CTB this fall with the new added State Fund and increased Federal dollar to cover the above new systemic initiative along with spot improvement.

VDOT Central Office is responsible for establishing the process and conducting network screening, scoring, and selection of HSIP systemic improvement projects. VDOT Districts are responsible for further evaluation of the selected HSIP project locations for feasibility based on local knowledge and data-driven analysis. Once the

final HSIP projects are prioritized and selected by Central Office, the selected HSIP projects are included in Virginia's Six-Year Improvement Program (SYIP), which is then presented to the Commonwealth Transportation Board (CTB) for approval. Once the HSIP projects are approved, programmed, and have received allocated funds, the HSIP staff monitor the projects from scoping through construction to the final voucher. The project monitoring process consists of tracking changes that occur to the following functions: advertisement dates, funding authorization dates, engineer's estimates, and expenditures. Cost, schedule, and scope are monitored and measured to ensure that the HSIP projects are being delivered on time and on budget. HSIP project schedules and cost both directly affect the Federal Strategy and VDOT's ability to meet their Obligation Authority for the HSIP Program.

Where is HSIP staff located within the State DOT?

Engineering

VDOT recently (in August 2022) underwent an organizational change to combine Operations Division and Traffic Engineering Division into a single Traffic Operations Division, and VDOT HSIP staff is located within this Traffic Operations Division.

How are HSIP funds allocated in a State?

- Formula via Districts/Regions
- Other-Systemic Approach

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

Local roads account for approximately 40 percent of all crashes and 20 percent of all fatal and serious injury crashes on Virginia's highways. Therefore, local safety projects are targeted to receive up to 20 percent of Virginia's HSIP funds for implementation and completion of their safety projects. VDOT has been providing the state-match to these safety projects for the past several years.

The safety proposals for local and tribal roads are required to follow the same HSIP Implementation Guidelines as the safety proposals for VDOT roads. The HSIP Systemic Implementation Plan that was implemented in FY 2020 states that the HSIP funds are to be allocated based on risk-based locations of systemic safety improvements in VDOT's initial Systemic Implementation Plan. Also, the initial Systemic Implementation Plan lays out the funding process for local projects as described below:

· Approximately 80 percent of available HSIP funds shall be allocated to systemic safety improvements over the six-year improvement program.

· Minimum funding levels for locally owned roadways shall be based on proportion of fatalities between VDOT and locality-maintained roads (i.e., approximately 20%).

· The proposed Funds for systemic safety improvement on locality maintained or owned roads are available beginning in FY 2024 thru FY 2027

· SMART Portal will open to receive local agency's safety applications for HSIP funding.

· Application must be for eligible systemic treatment that was presented to the Commonwealth Transportation board (CTB) in December 2021.

· The funding will be awarded through a competitive application process with application that have a higher return on investment and other factors.

· VDOT has developed guidelines and implementation criteria for screening, scoring and selection of local projects.

VDOT assists the localities and tribal agencies by publishing Virginia's crash data from VDOT's Power BI crash analysis tool. VDOT Power BI crash analysis tool pulls the crash data from those crashes reported to the Virginia Department of Motor Vehicles (DMV)'s crash data source as DMV owns and maintains the main source of the crash data. This crash analysis tool allows the localities and tribal agencies to perform their own safety analysis, project prioritization, and project selection for submission to VDOT for funding consideration.

The University of Virginia's Center for Transportation Studies (CTS), Virginia Transportation Research Council (VTRC), and VDOT administers the Safety Circuit Rider (SCR) program, an important component of the Virginia Local Technical Assistance Program (LTAP). LTAP provides technical workshops, seminars, and short courses in the various transportation related topics for local government staff. The SCR's goal is to improve safety on the 11,000 miles of streets and roadways maintained by cities, towns, and local agencies in the Commonwealth of Virginia. The SCR provides four key services:

· Virtual/In-classroom transportation safety training

· One-on-one technical assistance and site visits

· Grant and proposal development support for state and federal aid

· Annual low-cost safety initiative

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

- Design
- Districts/Regions
- Local Aid Programs Office/Division
- Operations
- Planning
- Traffic Engineering/Safety

Describe coordination with internal partners.

Central Office Traffic Engineering HSIP staff communicates with District staff regarding HSIP activities, such as sharing information on requirements, emphasis areas, prioritization, funding, and safety data. In FY 2022, VDOT Central Office Traffic Engineering HSIP staff have been in frequent coordination through monthly office hour meetings with District HSIP staff to discuss project progress, issues, concerns, technical support, and partnerships. Also, to track HSIP progress, COTED has been working with District HSIP staff to develop an inventory of existing, planned, and potential for implementation locations of the initial eight systemic countermeasure initiatives for each District. The inventories of the systemic countermeasure initiatives were then mapped in ArcGIS, and the ArcGIS maps were distributed back to the Districts for their use in tracking and recording the overall project implementation progress.

VDOT emphasizes the importance of a data-driven decision-making approach to improve safety in the Commonwealth of Virginia. In order to make a data-driven decision on the use of public funding for safety improvements, VDOT developed state-specific Safety Performance Functions (SPFs) and prioritized list of

intersections and segments with the largest Potential for Safety Improvements (PSI). The SPF and PSI analysis are shared across the Districts and localities. Along with other safety data and analysis, the SPF and PSI analysis are encouraged to be used for project consideration and selection.

VDOT also uses its Strategically Targeted Affordable Roadway Solutions (STARS) Program managed by the Transportation Mobility and Planning Division to address congestion and safety concerns throughout the Commonwealth. STARS projects typically result in multiple recommended improvements that may be eligible for funding and implementation under maintenance budgets, applications in the SMART SCALE process, applications for the HSIP, State of Good Repair budgets, and/or applications for revenue sharing.

The HSIP projects are programmed through Virginia's Six-Year Improvement Program (SYIP). HSIP projects in SYIP are programmed with the appropriate Fiscal Year (FY) allocations for a specific phase to be delivered, and HSIP projects in the SYIP are tracked internally across appropriate divisions during their relevant phase of the project.

Identify which external partners are involved with HSIP planning.

- FHWA
- Local Government Agency
- Other-District/Design/Pe and Planning Staff
- Other-Virginia Local Technical Assistance Program (LTAP)

Describe coordination with external partners.

VDOT Districts are responsible for communicating with localities for any HSIP related projects, and each district office has its own local liaison. All external local partners must coordinate with their Local Liaison for the development and submission of the safety proposal. In addition, VDOT’s Local Technical Assistance Program (LTAP) provides technical workshops, seminars, and short courses in the various transportation related topics for local government staff.

VDOT participates in the Local Programs Workshop with local government representatives every year. The focus of this workshop is to communicate with external stakeholders on various HSIP information and tools, such as reviewing the information on funding eligibility, process of applying for appropriate safety funding, application and project selection process, and available safety data and resources. In 2022, VDOT held three workshops covering topics such as HSIP program overview, systemic safety, and HSIP application submission process to prepare local agencies in submitting their HSIP applications when HSIP funding opens up.

VDOT emphasizes the importance of a data-driven decision-making approach to improve safety in the Commonwealth of Virginia. In order to make data-driven decisions on the use of public funding for safety improvements, VDOT developed a state-specific Safety Performance Functions (SPFs) and a prioritized list of intersections and segments with the largest Potential for Safety Improvements (PSI). The SPF and PSI analyses are shared across the Districts and localities. Along with other safety data and analysis, the SPF and PSI analyses can be used for project consideration and selection. The localities also have full access to crash data from VDOT’s Power BI crash analysis tool. VDOT Power BI crash analysis tool pulls the crash data from Virginia Department of Motor Vehicles (DMV)’s crash data source as DMV owns and maintains the main source of the crash data.

VDOT coordinates with local government partners, such as Metropolitan Planning Organizations (MPOs) and Planning District Commissions (PDCs), through meetings and webinars to set an obtainable target that coincides with VDOT's Strategic Highway Safety Plan (SHSP) goals.

Virginia's Commonwealth Transportation Board (CTB) oversees transportation projects and initiatives for the Commonwealth of Virginia. VDOT has the responsibility for construction, maintenance, and operation of Virginia's roadways under the overall guidance of the CTB. VDOT Central Office HSIP staff coordinates with CTB staff for prioritization of HSIP projects and through final HSIP project selection.

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

According to the 2017 VDOT Pedestrian Crash Assessment: Analysis of Pedestrian Crashes Occurring Between 2012-2016, pedestrian fatalities in Virginia have increased by 19 percent since 2012. In response to the continuing increase in pedestrian fatality rates, the VDOT Traffic Engineering Division completed an inaugural statewide Pedestrian Safety Action Plan (PSAP) in early 2018. This report documents the process VDOT followed to complete the PSAP and considers ways to improve pedestrian safety and ultimately reduce pedestrian fatalities throughout the Commonwealth. In 2020, VDOT updated the plan, PSAP-2, with most recent crash and transportation equity data, generating new priority corridors and crash clusters. The corridors were screened based upon various factors including traffic volumes, speed, transit proximity, vehicle ownership levels by household, state Health Opportunity Index (HOI), and etc. In February 2022, the new version of PSAP, PSAP-3, became available with most recent crash data between 2016 and 2020 with two notable changes: 1) Both pedestrian and bicycle crashes are used in the screening analysis 2) In addition to the statewide and regional priority corridors, the Version 3 also provides district-level priority segments

VDOT worked with a multidisciplinary group of stakeholders to identify and address pedestrian safety concerns through a data driven approach. This approach included identifying and addressing locations with a history of pedestrian safety crashes along with proactively addressing pedestrian crash risk through the identification of priority corridors. This report complements other pedestrian safety efforts in the Commonwealth, including the Virginia new 2022–2026 Strategic Highway Safety Plan (SHSP), VDOT HSIP, SMART SCALE, Transportation Alternatives Program, and Safe Routes to School program. Local, regional, and state agencies should review this report to identify and implement potential countermeasures, update design policies, and supplement other State pedestrian safety initiatives.

Program Methodology

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

Yes

VDOT is currently in process of updating the VDOT HSIP Implementation Manual.

Select the programs that are administered under the HSIP.

- HRRR
- HSIP (no subprograms)

Program: HRRR

Date of Program Methodology:8/22/2018

What is the justification for this program?

- FHWA focused approach to safety

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes

- Fatal and serious injury crashes only

Exposure

- Traffic
- Volume

Roadway

- Functional classification

What project identification methodology was used for this program?

- Equivalent property damage only (EPDO Crash frequency)
- Excess expected crash frequency using SPFs

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).

Relative Weight in Scoring

Other-B/C Ranking:40
Other-Project in PSI or District SHSP Listing:25
Other-High Number of Targeted Crashes:10
Other-Cost Estimate and Project Schedule:10
Other-Other:15
Total Relative Weight:100

Program: HSIP (no subprograms)

Date of Program Methodology:12/1/2019

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes

- All crashes
- Fatal and serious injury crashes only

Exposure

- Traffic
- Volume
- Lane miles

Roadway

- Median width
- Horizontal curvature
- Functional classification
- Roadside features

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Excess expected crash frequency with the EB adjustment
- Other-Systemic initiative analysis

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?

No

Describe the methodology used to identify local road projects as part of this program.

Localities must conduct analysis using data-driven approach following the HSIP guidelines and submit an application to show project return-on-investment,

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).

Relative Weight in Scoring

Other-Systemic Analysis:100
Total Relative Weight:100

What percentage of HSIP funds address systemic improvements?

100

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

- Other-Centerline and Edgeline Rumble Strips/Stripes
- Other-Curve Delineation Improvements
- Other-Flashing Yellow Arrow
- Other-High Visibility Signal Backplates
- Other-Pedestrian Crossing Improvements
- Other-Safety Wedge
- Other-Unsignalized Intersection Improvements

What process is used to identify potential countermeasures?

- Crash data analysis
- Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)
- Engineering Study
- Road Safety Assessment
- SHSP/Local road safety plan
- Stakeholder input

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

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

In the Virginia's Strategic Highway Safety Plan (SHSP), VDOT considers Connected Vehicle/Autonomous Vehicles as a special area of focus. The SHSP provides a strategy in providing future technology regarding this specific topic: Ensure that future connected and autonomous vehicle technology deployments maximize potential safety benefits for all users by supporting necessary planning and research activities.

Intelligent Transportation Systems (ITS) technologies are part of HSIP projects as there can be cost-effective ITS projects that improve safety.

Examples of ITS technologies applicable for HSIP:

· Real-time Adaptive Signal Controllers,

· Advance Transportation Controllers

· Signal Optimization

· Dynamic Message Sign (DMS), Overhead Message Boards, and Closed-Circuit Television (CCTV)

· Fiber Optic Lines and Connection.

· Incident Management: Signs and Camera

· Real-time Performance Measuring Software: iPeMS (Iteris Performance Measurement System)

· Retrofit Pedestrian signal heads with pedestrian countdown signals, Accessible Pedestrian Signal (APS) and Accessible Pedestrian signal Detectors (APD)

· Controller Actuated Beacon / flasher (CAB)

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.

VDOT emphasizes data-driven decision-making to improve transportation safety and safety data. One way that VDOT has employed the use of the Highway Safety Manual (HSM) is through a statewide evaluation of systemic improvement projects. This evaluation involved a simple before-and-after evaluation of all eligible systemic projects funded through the HSIP program. Also, this effort involved preparations for future systemic evaluations, including collection of project-level data and modification of the HSIP project application forms.

In order to make data-driven decisions on the use of public funding for safety improvements, VDOT developed state-specific Safety Performance Functions (SPFs) and prioritized list of locations with the largest Potential for Safety Improvements (PSI). The use of SPFs and PSI for network screening and project prioritization are well documented throughout the HSM.

VDOT developed a comprehensive set of state-specific SPFs, covering 98 percent of its state-maintained roadway locations. The impetus for VDOT developing their own SPFs and analytical tools arose from the decision that AASHTOWare Safety Analyst™ did not meet their needs. VDOT developed state-specific SPFs using historical crash, traffic, and roadway inventory data. SPF developers worked closely with engineers throughout the development process to evaluate whether each SPF was implementable for all types of improvements (spot, corridor, and systemic). To date, VDOT has developed 24 SPFs covering the majority of roadway facilities, including two-lane roads, intersections, and freeways/multi-lane highways. For each facility/location type, VDOT developed two separate SPFs: one for total crashes and the other for fatal + injury crashes. Actual crash frequency for any specific location can be compared to the SPF for locations of that type to see if, for the level of traffic volume, the location has more than the predicted number of crashes.

VDOT incorporates the comparisons of actual- to predicted-crash frequencies in its network screening and provides district engineers with a list of the top 100 intersections and top 100 miles of roadway segments drawn from the locations that are above the SPF. VDOT uses the most recent three years of crash data to calculate the PSI. The PSI is the expected number of crashes for the site minus the predicted number of crashes based on the SPF for that facility type. As with SPFs, VDOT calculates the PSI for total crashes and fatal + injury crashes. A site with a positive PSI warrants examination and those with the highest PSI values should be considered high priority. With this PSI list, each district engineer can determine which site(s) to prioritize based on their practical experience and knowledge of the area.

VDOT has noted several benefits of the data-driven SPF and PSI implementation effort, including:

· Prioritization of systemic countermeasure implementation locations at a District-level

· Using public funding in a cost-effective manner

· Measuring quantifiable benefits for both systemic and spot improvements

· Managing public concern

· Comparing locations to prioritize projects

The SPF development team conducts training (including an annual “roadshow” to all nine districts) and hosts webinars to ensure district engineers understand the methodology and how to use the SPFs. VDOT has not mandated the use of SPFs and PSIs by the districts because the process of introducing a new methodology takes time. However, the district engineers are aware that it is the preferred methodology for network screening.

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

VDOT Traffic Engineering Central Office administers the HSIP and provides the VDOT District Offices with Targeted Safety Needs (TSN) intersections and segments based in the Highway Safety Manual (HSM) network screening methodology. TSN locations indicate intersections or segments that have a positive Potential for Safety Improvements (PSI) value in three or more years of the five-year period, indicating recurring safety issues. VDOT districts use this information with local knowledge to initiate further engineering studies of the locations and scope projects to be submitted for inclusion in its Six-Year Improvement Program (SYIP).

Depending on the scale and complexity of the projects, VDOT district offices conduct Roadway Safety Assessments (RSA) as determined by the VDOT District Traffic Engineer. To assist the District Traffic Engineer with conducting these RSAs, VDOT's Highway Safety Program developed Virginia specific guidelines for performing these assessments.

VDOT Central Office is responsible for establishing the process and conducting network screening, scoring, and selection of HSIP systemic improvement projects. HSIP projects are selected based upon the risk factors across an entire roadway network or all locations where investments of HSIP funds may yield highest rate of return in terms of reducing deaths and serious injuries. The HSIP Systemic Implementation Plan includes eight low-cost and high-benefit systemic safety countermeasures on VDOT-maintained roadways in the Commonwealth, and each of the eight systemic safety countermeasures have had proven safety results in the Commonwealth or in other states. Once the inventory or locations are screened, the VDOT Districts are responsible for further evaluation of the selected HSIP project locations for feasibility based on local knowledge and data-driven analysis. Once the final HSIP projects are prioritized and selected by Central Office, the selected HSIP projects are included in Virginia’s Six-Year Improvement Program (SYIP), which is then presented to the Commonwealth Transportation Board (CTB) for approval. Once the HSIP projects are approved, programmed, and have received allocated funds, the HSIP staff monitor the projects from scoping through construction to the final voucher. The project monitoring process consists of tracking changes that occur to the following functions: advertisement dates, funding authorization dates, engineer’s estimates, and expenditures. Cost, schedule, and scope are monitored and measured to ensure that the HSIP projects are being delivered on time and on budget. HSIP project schedules and cost both directly affect the Federal Strategy and VDOT’s ability to meet their Obligation Authority for the HSIP Program.

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)	$62,500,000	$48,600,000	77.76%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$0	$5,900,000	0%
Penalty Funds (23 U.S.C. 154)	$13,700,000	$15,900,000	116.06%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$2,800,000	$1,800,000	64.29%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$87,250,000	$0	0%
Totals	$166,250,000	$72,200,000	43.43%

How much funding is programmed to local (non-state owned and operated) or tribal safety projects?

$13,600,000

How much funding is obligated to local or tribal safety projects?

$12,000,000

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

$3,760,000

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

$3,760,000

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?

$31,233,814

On August 25, 2021, $31,233,814 was transferred out of the HSIP program related to the information listed below. At the end of FFY19, $83.4 million of other federal apportionments (STBG, CMAQ, TAP) subject to the FAST Act rescission were transferred into the HSIP program to reduce the amount of these funds subject to the FAST Act rescission upon its calculation date of September 30, 2019. Such transfers are administrative actions explicitly provided for in federal regulations. The intent is to transfer these funds back out of HSIP in increments over the next three federal fiscal years; therefore, there is no impact or change to the HSIP program or funding as currently projected in the Six-Year Financial Plan (SYFP). Put another way, the HSIP program is anticipated to remain funded at the levels currently shown in the SYFP and SYIP (absent, of course, any changes to future revenue projections or policy direction). As a result, there is no anticipation or expectation that any HSIP funds will lapse.

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

Having realistic and attainable project schedules may be considered as an impediment to obligating HSIP funds. Few Districts have struggled in the project development of HSIP funded safety projects, which resulted in some safety projects missing their submission deadlines. Ultimately, HSIP funds were not used for those projects in the planned years. To overcome these project delivery issues, the HSIP staff are working with the District Traffic Engineers to track the milestones of HSIP projects. This will ensure District project managers stay on schedule and deliver the safety improvement projects on time.

Inflation of project materials and labor costs are also becoming a big issue in project delivery along with contractor capacity.

VDOT will continue to work through its District offices to provide guidance and support in the project development phase of these safety projects.

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

In September 2019, the CTB approved an amendment to FY 2020-2025 Six-Year Improvement Program (SYIP) to begin deployment of systemic safety improvements included in an initial Systemic Improvement Plan with the eight systemic countermeasures initiatives. The eight systemic countermeasure initiatives are as follows:

- High-Visibility Signal Backplates (HVSB)
- Flashing Yellow Arrow (FYA)
- Pedestrian Accommodations Improvements at Signalized Intersections
- Centerline Rumble Strip
- Edgeline Rumble Strip/Stripes
- Curve Delineation
- Improvements at Unsignalized Intersections
- Safety Edge

The detail Implementation Criteria found in: https://www.virginiadot.org/business/resources/vhsip/VDOT-2nd-Phase-VHSIP-Systemic-Safety-Initiative-Implementation-Criteria-Locality_acc050222.pdf

Of the eight systemic safety initiatives, VDOT plans to complete the High Visibility Signal Backplates (HVSB) and Flashing Yellow Arrow (FYA) initiatives by December 2021. Implementation of the other initiatives will also make progress along with the completion of HVSB and FYA initiatives, and below is the progress of the eight systemic countermeasure initiatives as of June 2021:

- High-Visibility Signal Backplates (HVSB): 100% Complete – 3039 Locations
- Flashing Yellow Arrow (FYA): 100% Complete – 1242 Locations
- Pedestrian Accommodations Improvements at Signalized Intersections: 20.5% Complete – 112 Locations
- Centerline Rumble Strip: 24.5% Complete – 428 Miles
- Edgeline Rumble Strip/Stripes: 12.8% Complete – 426 Miles
- Curve Delineation: 33.4% Complete – 535 Locations
- Improvements at Unsignalized Intersections: 10.3% Complete – 156 Locations
- Safety Edge: 1% Complete – 238 Miles

In January 2022, the Commonwealth Transportation Board (CTB) approved the Virginia Highway Safety Investment Strategy that continued deployment of proven systemic and hybrid safety countermeasures across the Commonwealth. The new and updated systemic safety initiatives for VDOT-maintained roads include the following:

· Expanded Flashing Yellow Arrow

· Pedestrian Crossings

· Two-Lane Rural Roads

The systemic safety initiatives for locally maintained streets and roads include the following:

· Flashing Yellow Arrow (FYA)

· High-Visibility Signal Backplates (HVSB)

· Pedestrian Crossings

· Curve Signage

· Unsignalized Intersections

· Road Reconfiguration (Road Diet)

SMART Portal will open for localities to submit safety applications for HSIP funding consideration, and SMART Portal Intake Period beginning August 1st through October 31st, 2022. Application must be for eligible systemic treatment that was presented to Commonwealth Transportation board (CTB) in December 2021.The funding will be awarded through a competitive application process with application that have a higher return on investment and other factors.

VDOT also developed the Virginia-specific comprehensive crash costs for use in highway safety project evaluation. This crash costs should be used by practitioners in Virginia when calculating the benefit-cost ratio for specific safety treatments. The detail information’s is provided in the following link: https://www.virginiadot.org/business/resources/vhsip/VDOT-Crash-Costs-Memo_acc050222.pdf

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
FedID:5B01150 - Project Description: - 110209-ROUTE 28 @ ROUTE 605 - RIGHT TURN LANE	Intersection geometry	Add/modify auxiliary lanes	0.08	Miles	$333848	$333848	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	14,000	45	State Highway Agency	Spot	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID:5102174 - Project Description: - 110873-Euclid Ave. - Install Mast Arms and Pedestrian Signal Heads	Intersection traffic control	Modify traffic signal –other	1	Intersections	$962403	$962403	Penalty Funds (23 U.S.C. 154)	Multiple/Varies	Principal Arterial-Other	12,300	35	City or Municipal Highway Agency	Spot	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID:5111399 - Project Description: - 110898-Rt. 610/ASHLEIGH CHANNELIZE OFFSET RT TURN LANE - SPOTSY	Intersection geometry	Add/modify auxiliary lanes	0.095	Miles	$825999	$825999	HSIP (23 U.S.C. 148)	Urban	Major Collector	11,900	45	State Highway Agency	Spot	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID:5A04247 - Project Description: - 111005-Western Branch Blvd Flashing Yellow Arrows (FYA)	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	4	Intersections	$97507	$97507	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		Other	Systemic	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID:5A04248 - Project	Intersection traffic control	Modify traffic signal – add	8	Intersections	$130247	$130247	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		Other	Systemic	Intersections	Strategy 1. Reduce number

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
Description: - 111006-Cedar Road Flashing Yellow Arrows (FYA)		flashing yellow arrow													and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID:5A27714 - Project Description: - 111106-RTE 250 SIDEWALK - DOMINION BLVD TO SPRINGFIELD RD	Pedestrians and bicyclists	Install sidewalk	1.364	Miles	$2456545	$2456545	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		State Highway Agency	Systemic	Pedestrians	Strategy 1. Identify locations having concentrations of ped activity or the potential for crashes to apply proven ped safety countermeasures.
FedID:5113028 - Project Description: - 113319-Downtown Main Street Pedestrian Improvements - City of Galax	Pedestrians and bicyclists	Install new crosswalk		Other	$543022	$543022	HSIP (23 U.S.C. 148)	Multiple/Varies	Minor Arterial	0		Other	Systemic	Pedestrians	Strategy 1. Identify locations having concentrations of ped activity or the potential for crashes to apply proven ped safety countermeasures.
FedID:5128473 - Project Description: - 113324-Installation of Pedestrian Countdown Signal	Pedestrians and bicyclists	Pedestrian signal	1	Intersections	$98997	$98997	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		Other	Spot	Pedestrians	Strategy 1. Identify locations having concentrations of ped activity or the potential for crashes to apply proven ped safety countermeasures.
FedID:5A04249 - Project Description: - 113824-Providence Road & Mount Pleasant Road FYA	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	11	Intersections	$226018	$226018	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		Other	Systemic	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID:5A04250 - Project	Intersection traffic control	Modify traffic signal – add	8	Intersections	$218038	$218038	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		Other	Systemic	Intersections	Strategy 1. Reduce number

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
Description: - 113825-S. Military Highway & George Washington Highway FYA		flashing yellow arrow													and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID:5118307 - Project Description: - 114064-GRAVES MILL ROAD - INSTALL ADAPTIVE SIGNAL CONTROLS	Advanced technology and ITS	Adaptive Signal Control System	5	Intersections	$520203	$520203	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID:0623149 - Project Description: - 114095-RTE 29 - SHOULDER WIDENING, RUMBLE STRIPS, GR (NELSON)	Roadway	Rumble strips – edge or shoulder	5.38	Miles	$3847598	$3847598	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	0		State Highway Agency	Systemic	Roadway Departure	Strategy 1. Reduce chance of vehicles leaving travel lane at locations with road departure crashes by improving roadway and traffic control devices.
FedID:9622117 - Project Description: - 117211-FY 21 Curve Delineation	Roadway signs and traffic control	Curve-related warning signs and flashers		Other	$839920	$839920	HSIP (23 U.S.C. 148)	Multiple/Varies	Principal Arterial-Other	0		State Highway Agency	Systemic	Roadway Departure	Strategy 1. Reduce chance of vehicles leaving travel lane at locations with road departure crashes by improving roadway and traffic control devices.
FedID:5128448 - Project Description: - 117221-Franklin Road Sidewalk Improvements - Rt. 220 B- Phase 2	Pedestrians and bicyclists	Install sidewalk	0.71	Miles	$1791406	$2240783	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		Other	Systemic	Pedestrians	Strategy 1. Identify locations having concentrations of ped activity or the potential for crashes to apply

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
															proven ped safety countermeasures.
FedID:9666116 - Project Description: - 117572-DISTRICTWIDE - TRENCH WIDENING (TOP 100 SEGMENTS)	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)		Other	$1361618	$1361618	HSIP (23 U.S.C. 148)	Urban	Major Collector	0		State Highway Agency	Systemic	Roadway Departure	Strategy 1. Reduce chance of vehicles leaving travel lane at locations with road departure crashes by improving roadway and traffic control devices.
FedID:9644149 - Project Description: - 120008-HSIP Safety Pre-Scoping -- RICHMOND DISTRICT	Miscellaneous	Miscellaneous - other		Other	$1342265	$1342265	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0		State Highway Agency	Systemic	Other	Engineering: This E involves the design of roadways and environment using solutions that reduce number or severity of crashes when they occur.
FedID:9677103 - Project Description: - 120678-District-wide Unsignalized Intersections Improvements	Intersection traffic control	Systemic improvements – stop-controlled		Other	$661853	$661853	HSIP (23 U.S.C. 148)	Rural	Major Collector	0		State Highway Agency	Systemic	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID: 92063- Project Description: - 106701-HRRR - Safety Improvements	Intersection geometry	Intersection geometry - other	1	Intersections	$2570931	$2570931	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	1,500	40	State Highway Agency	Spot	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID: 5138207- Project Description:-	Shoulder treatments	Widen shoulder – paved or other	12.46	Miles	$3801165	$3801165	Penalty Funds (23 U.S.C. 154)	Rural	Minor Arterial	12,000	55	State Highway Agency	Spot	Roadway Departure	Strategy 1. Reduce chance of vehicles leaving

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
107022-RTE 50 - SAFETY IMPROVEMENTS		(includes add shoulder)													travel lane at locations with road departure crashes by improving roadway and traffic control devices.
FedID: 5A03908-Project Description:-108792-Virginia Beach Systemic FYA	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	23	Intersections	$487228	$487228	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Systemic	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID: 5A03994-Project Description:-108797-Cheseapeake Blvd/ Cromwell Drive Int. Improvements	Intersection geometry	Intersection geometry - other		Various	$1301759	$1301759	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Systemic	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID: 5A27736-Project Description:-108885-#SMART18 - HOPKINS ROAD SIDEWALK (BONNIEBANK RD TO S MELODY)	Pedestrians and bicyclists	Install sidewalk	0.52	Miles	$966200	$1167646	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	8,000	35	State Highway Agency	Spot	Pedestrians	Strategy 1. Identify locations having concentrations of ped activity or the potential for crashes to apply proven ped safety countermeasures.
FedID: 5A27742-Project Description:-108887-#SMART18 - HARROWGATE ROAD/COUGAR TRAIL - PEDESTRIAN IMPROVE	Pedestrians and bicyclists	Install sidewalk	0.265	Miles	$889000	$2525792	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	18,590	45	State Highway Agency	Spot	Pedestrians	Strategy 1. Identify locations having concentrations of ped activity or the potential for crashes to apply proven ped safety countermeasures.

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
FedID: 828070-Project Description:-109062-TRENCH WIDEN SHOULDERS AND INSTALL RUMBLE STRIPS RTE 259	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	12.25	Miles	$4165000	$4165000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	2,700	55	State Highway Agency	Spot	Roadway Departure	Strategy 1. Reduce chance of vehicles leaving travel lane at locations with road departure crashes by improving roadway and traffic control devices.
FedID: 938046-Project Description:-109068-TRENCH WIDEN SHOULDERS AND INSTALL RUMBLE STRIPES - RTE 55	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	7.22	Miles	$2155766	$2155766	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	22,000	55	State Highway Agency	Spot	Roadway Departure	Strategy 1. Reduce chance of vehicles leaving travel lane at locations with road departure crashes by improving roadway and traffic control devices.
FedID: 5111401-Project Description:-109516-ROUTE 711 - CROSSOVER MOVEMENT CONVERSION	Roadway	Roadway widening - add lane(s) along segment	2	Locations	$1957450	$1957450	HSIP (23 U.S.C. 148)	Urban	Major Collector	20,000	35	State Highway Agency	Spot	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID: 5204127-Project Description:-109573-ROUTE 522 ROAD DIET AND BIKE PEDESTRIAN IMPROVEMENTS	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.77	Miles	$3029921	$3046235	Penalty Funds (23 U.S.C. 154)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Pedestrians	Strategy 1. Identify locations having concentrations of ped activity or the potential for crashes to apply proven ped safety countermeasures.
FedID: 5154113-Project Description:-113352-Roanoke Street Sidewalk at 460 By-Pass	Pedestrians and bicyclists	Install sidewalk	0.28	Miles	$684483	$996199	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	0		City or Municipal Highway Agency	Spot	Pedestrians	Strategy 1. Identify locations having concentrations of ped activity or the potential for crashes to apply

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
															proven ped safety countermeasures.
FedID: 5A27909-Project Description:-113772-SYSTEMIC SIGNAL TIMING OPTIMIZATION #3 - DISTRICTWIDE	Intersection traffic control	Modify traffic signal timing – general retiming		Various	$727800	$727800	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		State Highway Agency	Systemic	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements while considering context
FedID: 5A04238-Project Description:-113821-Potters Road Road Diet	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.98	Miles	$570000	$856401	Penalty Funds (23 U.S.C. 154)	Urban	Major Collector	5,400	35	City or Municipal Highway Agency	Spot	Pedestrians	Strategy 1. Identify locations having concentrations of ped activity or the potential for crashes to apply proven ped safety countermeasures.
FedID: 5115258-Project Description:-113894-Main Street Pedestrian Safety Improvement - Bridgewater	Pedestrians and bicyclists	Pedestrians and bicyclists – other	4	Intersections	$181033	$240639	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		City or Municipal Highway Agency	Spot	Pedestrians	Strategy 1. Identify locations having concentrations of ped activity or the potential for crashes to apply proven ped safety countermeasures.
FedID: 5118317-Project Description:-114062-#HSIP16 - BUS 501 - CONSTRUCT SIDEWALK (KEMPER STREET)	Pedestrians and bicyclists	Install sidewalk	0.255	Miles	$560484	$673543	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Pedestrians	Strategy 1. Identify locations having concentrations of ped activity or the potential for crashes to apply proven ped safety countermeasures.
FedID: 9688115-Project Description:-116686-STAUNTON DISTRICT UNSIGNALIZED INTERSECTION IMPROVEMENTS	Intersection traffic control	Intersection traffic control - other		Various	$1582595	$1582595	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	0		State Highway Agency	Systemic	Intersections	Strategy 1. Reduce number and severity of crashes at intersections with design, traffic control, operational improvements

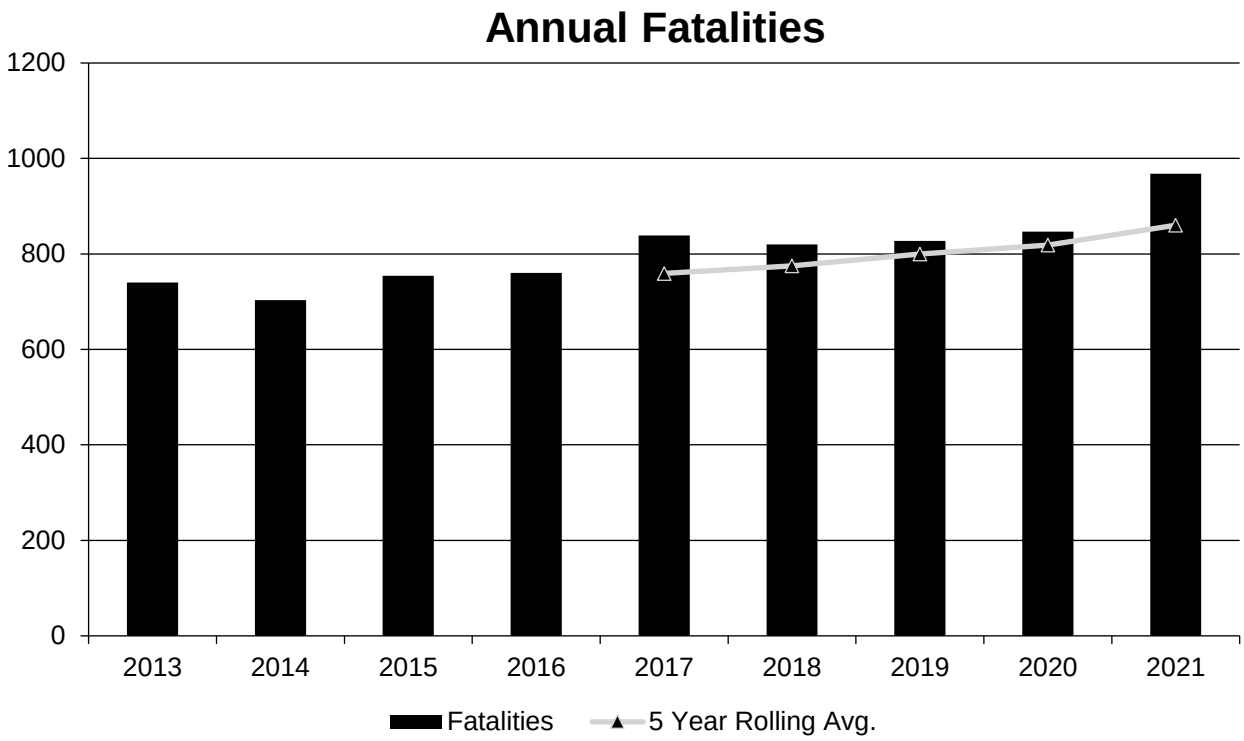
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															while considering context
FedID: TS02264-Project Description:-117215-FY 21 Edgeline Rumblestrips	Roadway	Rumble strips – edge or shoulder		Various	$791322	$791322	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		State Highway Agency	Systemic	Roadway Departure	Strategy 1. Reduce chance of vehicles leaving travel lane at locations with road departure crashes by improving roadway and traffic control devices.
FedID: 9644152-Project Description:-120285-ROADWAY DEPARTURE ON-CALL CONTRACT - DISTRICTWIDE	Roadway	Rumble strips – edge or shoulder		Various	$776452	$776452	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0		State Highway Agency	Systemic	Roadway Departure	Strategy 1. Reduce chance of vehicles leaving travel lane at locations with road departure crashes by improving roadway and traffic control devices.

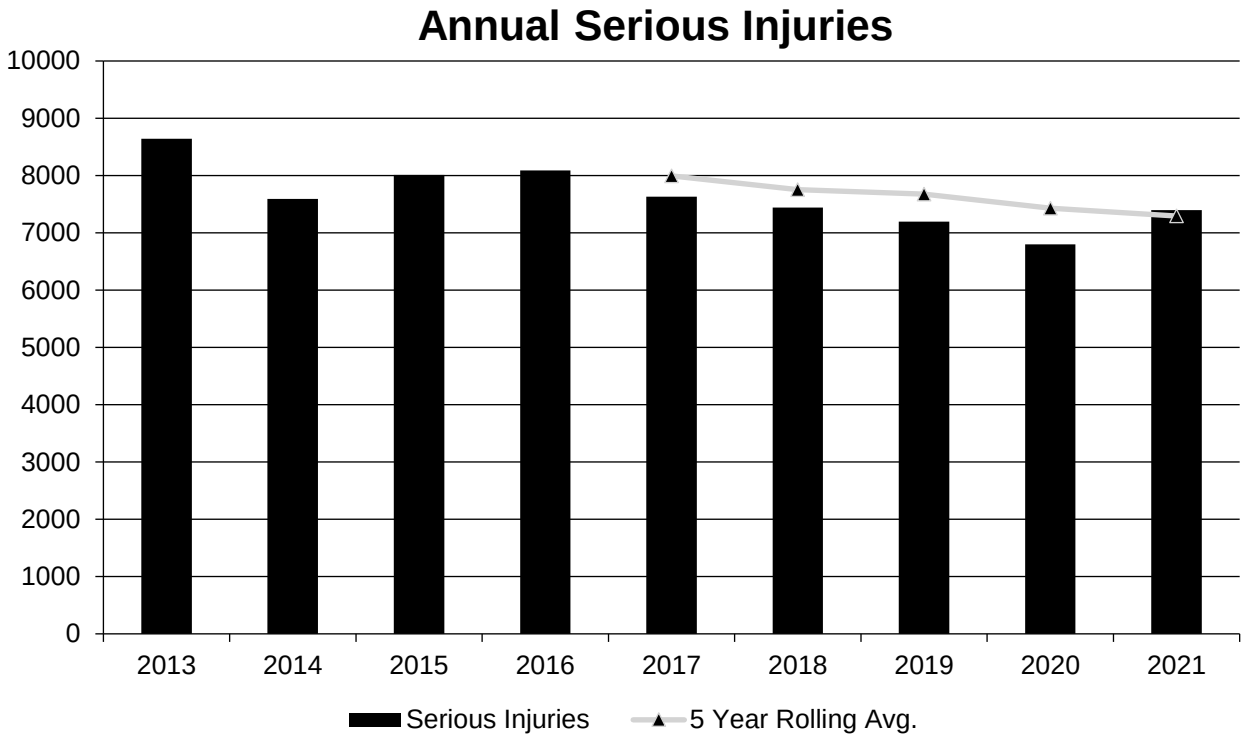
Safety Performance

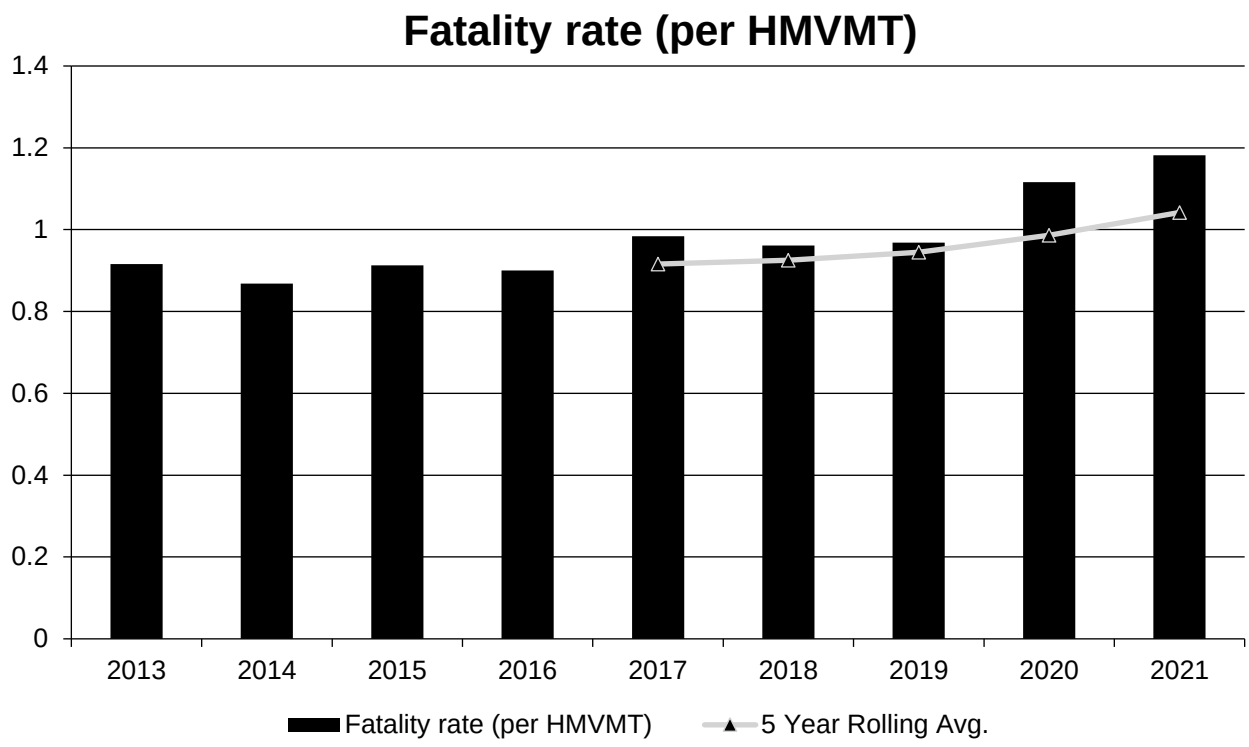
General Highway Safety Trends

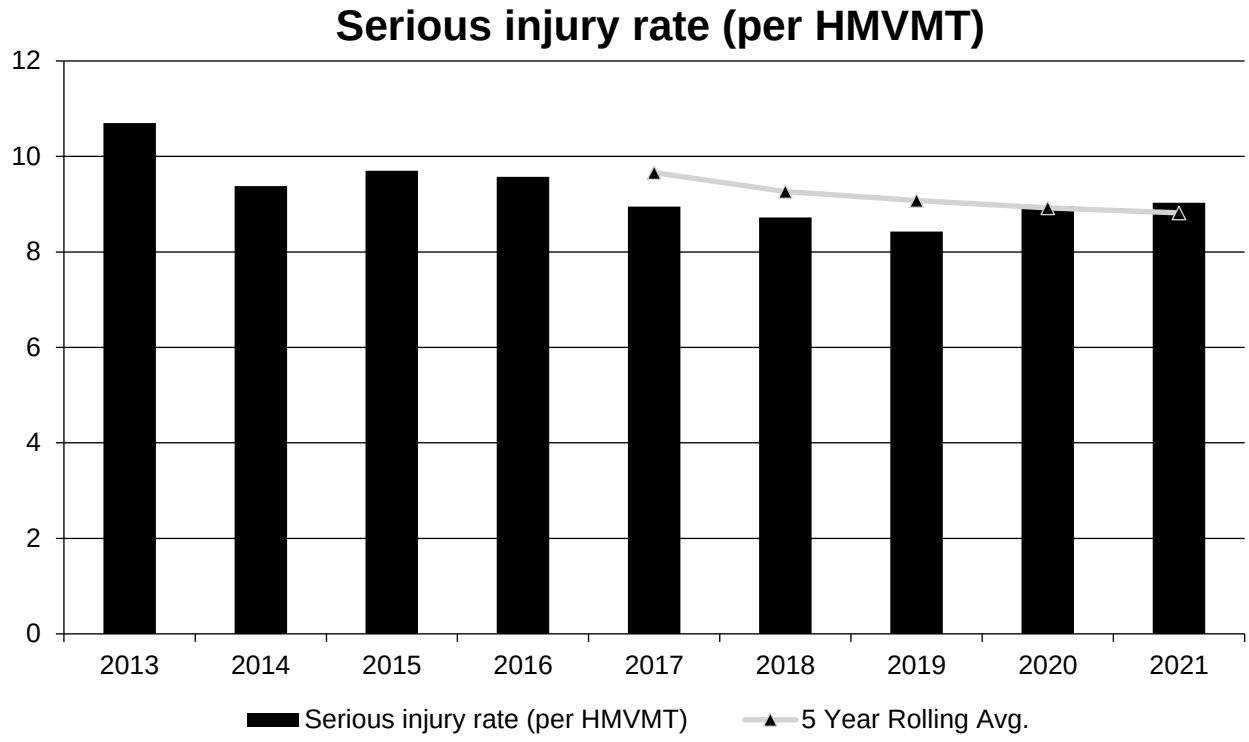
Present data showing the general highway safety trends in the State for the past five years.

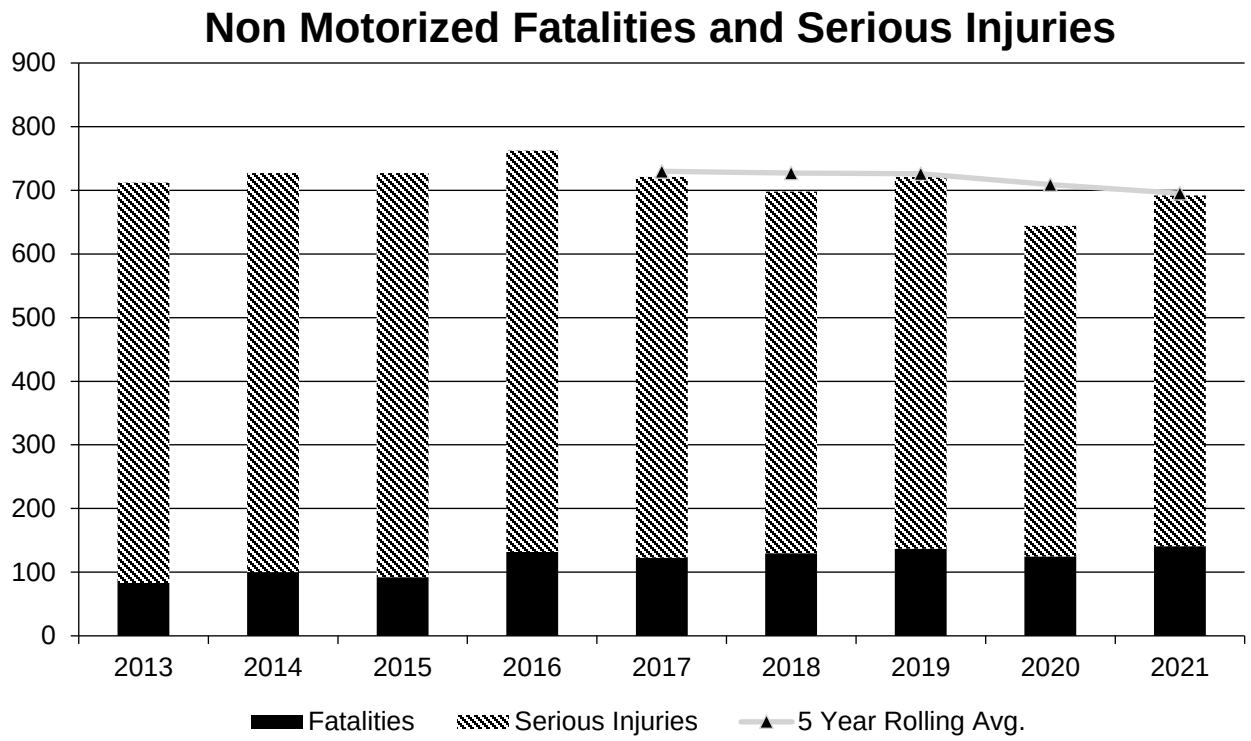
PERFORMANCE MEASURES	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fatalities	740	703	754	760	839	820	827	847	968
Serious Injuries	8,643	7,594	8,014	8,087	7,634	7,442	7,197	6,798	7,397
Fatality rate (per HMVMT)	0.916	0.868	0.913	0.900	0.984	0.961	0.968	1.116	1.182
Serious injury rate (per HMVMT)	10.701	9.377	9.699	9.575	8.953	8.721	8.426	8.957	9.032
Number non-motorized fatalities	83	100	92	132	123	130	137	125	141
Number of non-motorized serious injuries	629	627	635	630	598	568	584	519	551


Annual Fatalities
1200
1000
800
600
400
200
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
12
10
8
6
4
2
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Describe fatality data source.

FARS

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

Year 2021

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	53	340.8	0.6	3.87
Rural Principal Arterial (RPA) - Other Freeways and Expressways				
Rural Principal Arterial (RPA) - Other	84.4	544.6	1.2	7.79
Rural Minor Arterial	111.8	629.4	2.09	11.8
Rural Minor Collector	16.8	132.8	1.67	13.27
Rural Major Collector	124	847.6	3.31	22.66

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	56.8	466.8	2.32	19.18
Urban Principal Arterial (UPA) - Interstate	69.8	674	0.41	3.96
Urban Principal Arterial (UPA) - Other Freeways and Expressways	14	128.2	0.31	2.83
Urban Principal Arterial (UPA) - Other	101.6	884.4	0.99	8.62
Urban Minor Arterial	76.4	808.8	0.93	9.82
Urban Minor Collector	37.4	405.8	0.91	9.6
Urban Major Collector				
Urban Local Road or Street	16	190.6	0.47	5.78

Year 2021

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	678	5,041.6	1.23	9.33
County Highway Agency	8.2	87.4	0.42	4.69
Town or Township Highway Agency	32.6	362.2	0.81	8.52
City or Municipal Highway Agency	104.2	1,233.4	0.38	4.61
State Park, Forest, or Reservation Agency				
Local Park, Forest or Reservation Agency				
Other State Agency				
Other Local Agency				
Private (Other than Railroad)				
Railroad				
State Toll Authority				
Local Toll Authority	1.2	5	0.99	4.05
Other Public Instrumentality (e.g. Airport, School, University)				
Indian Tribe Nation				
Other				

Safety Performance Targets

Safety Performance Targets

Calendar Year 2023 Targets *

Number of Fatalities:926.4

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

Five Year Rolling Average above is based on predicted annual value of 971 fatalities in 2022 and 1012 fatalities in 2023. These annual and 5-year average targets represent an increase that began in 2015 and is anticipated into 2023. Additional information on the prediction method used and collaboration with the Virginia Governor's Highway Safety Office (GHSO) is described in Question 35. Although the upward trend continued, Virginia's 2022-2026 SHSP safety performance objectives were set to match a 50 percent reduction by 2045 goal. This goal equates to about a two percent per year fatality reductions during the five year period. These optimistic two percent reductions in fatalities were adopted by the Commonwealth Transportation Board (CTB) as state targets and objectives. Without intense intervention to improve travel technology and safety culture, reversing the recent trends will be difficult. Now that data-driven targets are being set and approved by CTB showing the predicted increases, the new SHSP actions and goals have even more support, with policy focus on safety, the reprioritization of HSIP on more cost effective systemic countermeasures, and new additional state funding of safety improvements starting last year.

Number of Serious Injuries:7211.8

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

Five Year Rolling Average above is based on predicted annual value of 7,217 Serious Injury (SI) in 2022 and 7,465 SI in 2023. These annual and 5-year average targets represent an distinct leveling that began in 2015, after a long period of declines, and is anticipated to continue into 2023. Additional information on the prediction method used and collaboration with the Virginia GHSO is described in Question 35. Although the level trend continued, Virginia's 2022-2026 SHSP safety performance objectives were set to match a 50 percent reduction by 2045 goal. This goal equates to about a two percent per year SI reductions during the five year period. These optimistic two percent reductions in SI were adopted by the Commonwealth Transportation Board (CTB) as state targets and objectives. Without intense intervention to improve travel technology and safety culture, reversing the recent trends will be difficult. Now that data-driven targets are being set and approved by CTB showing the predicted slight increases, the new SHSP actions and goals have even more support, with policy focus on safety, the reprioritization of HSIP on more cost effective systemic countermeasures, and new additional state funding of safety improvements starting last year.

Fatality Rate:1.134

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

Five Year Rolling Average above is based on predicted annual value of 1.176 fatalities per HMVMT in 2021 and 1.216 fatalities per HMVMT in 2023. These annual and 5-year average targets represent an increase that began in 2015 and is anticipated into 2023, particularly with the uncertainty of VMT growth through and after the pandemic. Additional information on the prediction method used and collaboration with the GHSO is described in Question 35. Virginia's 2022-2026 SHSP safety performance objectives set optimistic objectives based on 50 percent fatality and serious injury reductions by 2045. Recently, however, fatalities have increased while pre-pandemic VMT growth was minimal to a reduction in 2020 and 2021 VMT generating fluctuations in rates. Now that data-driven targets are being set for and approved by CTB, the SHSP actions and goals have even more support, given recent rate trends, with the reprioritization of HSIP on more cost effective systemic countermeasures and additional state funding of safety improvements starting last year.

Serious Injury Rate:8.822

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

Five Year Rolling Average above is based on predicted annual value of 8.740 fatalities per HMVMT in 2021 and 8.971 fatalities per HMVMT in 2023. These annual values began increasing in 2019 after a long period of declines. The 5-year average targets represent a leveling that began in 2018 and is anticipated into 2023,

particularly with the uncertainty of VMT growth through and after the pandemic. Additional information on the prediction method used and collaboration with the GHSO is described in Question 35. Virginia's 2022-2026 SHSP safety performance objectives set optimistic objectives based on 50 percent fatality and serious injury reductions by 2045. Recently, however, SI have increased while pre-pandemic VMT growth was minimal to a reduction in 2020 and 2021 VMT generating fluctuations in rates. Now that data-driven targets are being set for and approved by CTB, the SHSP actions and goals have even more support, given recent rate trends, with the reprioritization of HSIP on more cost effective systemic countermeasures and additional state funding of safety improvements starting last year.

Total Number of Non-Motorized Fatalities and Serious Injuries:663.2

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

Five Year Rolling Average above is based on predicted annual value of 663 and then 662 non-motorized fatalities and serious injuries in 2022 and 2023, respectively. With the exception of 2020 with decreased travel, these annual and 5-year average targets represent a slight decrease of the expected outcomes. Additional information on the prediction method used and collaboration with the GHSO are described in Question 35. Although there was a 50 percent increase in pedestrian fatalities in 2016 which has remained at that level, serious injuries from all non-motorized crashes were declining until an increase in 2021. This combination resulted in a leveling trend for annual total values and slight downward trend in five-year averages. To support SHSP fatality and SI goals, reducing our non-motorized deaths will provide an important part of the mission. Indicating a leveling of non-motorized severe outcomes and targets has led to support of SHSP non-motorized safety actions identified for additional funding of infrastructure improvements and education initiatives within VDOT and across our safety partner organizations.

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

During the 2019 safety target setting coordination with Virginia’s GHSO (At DMV) and then new Commonwealth Transportation Board (CTB) approval process, the Board requested that VDOT investigate a more robust and data-driven methodology than using previous measure data trend lines or optimistic targets based on the SHSP.

VDOT HSIP staff investigated best practices (e.g., NCHRP 17-67) and prepared a work plan to develop a log-linear regression model to obtain baseline count predictions of future year measures and then adjust the baseline by assessing the expected benefits (crash modifications) of transportation projects to be completed the year prior. The new method was tested for setting 2019 targets, as a comparison, but first utilized for the 2020 safety targets. The rate measures would then be determined based on VMT forecasts used in the prediction model. Multiple social, economic, population, infrastructure and behavioral program spending and Vehicle-Miles Traveled (VMT) factors were tested for significance in predicting the count measures.

VDOT began coordination with the Virginia Department of Motor Vehicles (DMV) State Highway Safety Offices (SHSO) early in the process to obtain their vehicle and license data and input on predictions since the first 2020 target setting using this method. Several years of SHSO grant program spending was obtained to determine if crash modifications could be determined at the jurisdictional level for each program or in aggregate. Strong correlation between program spending and measure rates could not be produced, but a downward trend in rates was observed with increased spending for several programs. A Transportation Research Board published paper (https://journals.sagepub.com/eprint/HY7SGYAVUKKNGAA6G4TD/full) explains the methodology first used for target setting. In the past four years there have been refinements of the inputs and the model validation methods.

The behavioral (GHSO total spending were tested and included in the fatality, serious injury and non-motorized regression models as significant factors for 2023 predictions. Several other VDOT spending categories for construction, maintenance, and operations were also tested and included in the models. As the baseline predictions were prepared, each SMART SCALE (capital improvement) and HSIP project to be completed in 2021 and early 2022 was assessed to determine the crash reduction benefits based on published Crash Modification Factors (CMFs). CMFs are refined based on the probability of effectiveness for those that include alcohol impairment and speeding based on the levels recorded. These project benefits were then subtracted from the baseline predictions to determine the final 2022 targets. The 2023 annual targets were then used, with the 2022 interim year targets using the same methods, to determine the 5-year average targets as entered in Question #34.

The baseline target models were developed using VDOT district and monthly aggregated data where available. This construct, combined with the consideration of programmed projects completed, includes the local and regional agency priorities for capital and behavioral program spending. The models could be used to test different spending scenarios. As such, the jurisdictional and regional mobility and safety initiatives are directly incorporated into the target setting methodology.

Since 2017, VDOT has held quarterly Metropolitan Planning Organization (MPO) coordination meetings for all FHWA (and optional FTA) performance measures and target setting. These meetings continue with MPO safety target setting resources provided each year after the statewide targets are set and reported. An Excel workbook with regional safety measures and VMT data showing linear predictions is provided. This updated data and prediction tool has been provided since setting their 2018 MPO targets. A SharePoint site was developed and introduced for obtaining the workbook and submitting the targets. The workbook update required refining the Fatality Analysis Reporting System (FARS) geospatial data with Virginia fatality data to provide fatalities that occurred in Virginia for the multi-state MPOs. VDOT also provided a submittal letter template for MPOs to indicate if they will support the State or choose their own targets. All MPOs submittals have been received since the 2018 target setting. Three (of 15) of the larger MPOs have decided to set at least one independent targets from the State percent reductions. Updates and outreach for MPO 2023 target setting will occur in September 2022.

Does the State want to report additional optional targets?

No

Describe progress toward meeting the State's 2022 Safety Performance Targets (based on data available at the time of reporting). For each target, include a discussion of any reasons for differences in the actual outcomes and targets.

PERFORMANCE MEASURES	TARGETS	ACTUALS
Number of Fatalities	852.0	860.2
Number of Serious Injuries	7451.0	7293.6
Fatality Rate	0.984	1.042
Serious Injury Rate	8.615	8.818
Non-Motorized Fatalities and Serious Injuries	725.0	695.2

The above 2021 five-year average safety targets were the second year that the above (Question 35) prediction model and project benefit methods were used. The rate targets are based on growth in VMT expected in 2021

and 2023. The ACTUALS values in the above table are based on Virginia safety measure counts and VMT estimates available in July 2021 (2021 VMT is not available at the time of this report).

The year 2021 was not typical for Virginia's severe crash outcomes given the influence of the pandemic on travel and behaviors. Although fatalities continued the increases that began in 2014, but they outpaced the predicted increases resulting in a five-year average target greater than submitted. Serious injuries were thought to continue to level off, but declined for two years, as did the five-year average. Given the predicted VMT increases did not materialize and decreased 11 percent in 2020 and predicted to rebound about three percent in 2021, the fatality and serious injury rate targets were preliminarily not met while. Given declines in non-motorized serious injuries, the associated target was met. So preliminarily two of the five targets were meet the targets with the impacts of behavior and VMT during the pandemic being realized.

Although 2020 and 2021 were atypical for fatality outcomes and VMT (thus rate measures), review of 2022 severe crash outcomes through June indicated a continued increase. At the request of the CTB, Virginia's HSIP and HSP project plans are being revisited to focus on critical emphasis areas. Data driven safety analysis methods are being investigated and used to focus on speeding and unbelted occupants behaviors with a combination of pedestrian, intersection and road departure systemic (with a few spot/corridor) infrastructure projects.

Applicability of Special Rules

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

No

Virginia's fatality rate on rural roads has not increased over the most recent two year period, and therefore, VDOT is not required to obligate a specified amount of funds towards HRRR eligible routes. The HRRR Special Rule does not apply in VA for this fiscal year.

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	2015	2016	2017	2018	2019	2020	2021
Number of Older Driver and Pedestrian Fatalities	122	126	159	144	170	144	179
Number of Older Driver and Pedestrian Serious Injuries	643	665	665	688	697	595	726

The rate of traffic fatalities and rate of serious injuries for drivers and pedestrians 65 years of age and older have not increased during the most recent 2-year period (two time periods of 5-year rolling average rates of fatalities and serious injuries using a 2-year spread), and therefore, the Older Drivers and Pedestrians Special Rule does not apply in VA for this fiscal year.

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

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

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

VDOT is programming more systemic safety projects and as a result is in interested in understanding the effectiveness of these projects. In 2018, VDOT began an effort to evaluate all HSIP-funded systemic improvement projects. Because systemic projects are usually deployed in several locations over one or multiple jurisdictions, it has proven to be difficult to gather accurate data or perform analysis on the overall effectiveness of these systemic improvement projects. As a result of the challenges encountered in the evaluation effort, VDOT has engaged in an effort to develop a project tracking tool specifically designed to track these HSIP-funded systemic projects. Also, VDOT coordinate with all nine districts monthly to check the progress and obtained the status of eight systemic safety initiatives, to better track VDOT developed the systemic safety initiative tracking tools.

Some of the systemic projects that have been completed under the 2018 Systemic Implementation Plan have been completed for some time now, and there are now after-implementation data becoming more available. In the coming years, VDOT is planning more extensive effectiveness analysis of the systemic improvements as additional after-implementation data becomes available.

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

- # miles improved by HSIP
- HSIP Obligations
- More systemic programs

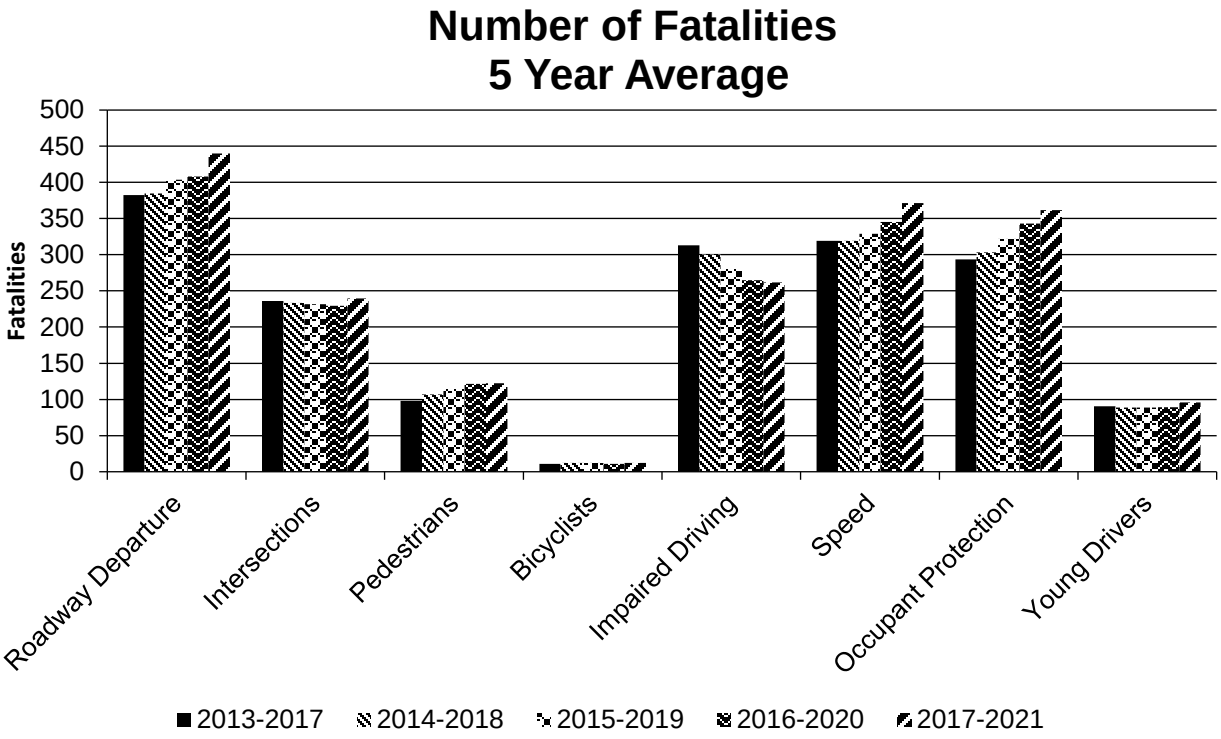
Effectiveness of Groupings or Similar Types of Improvements

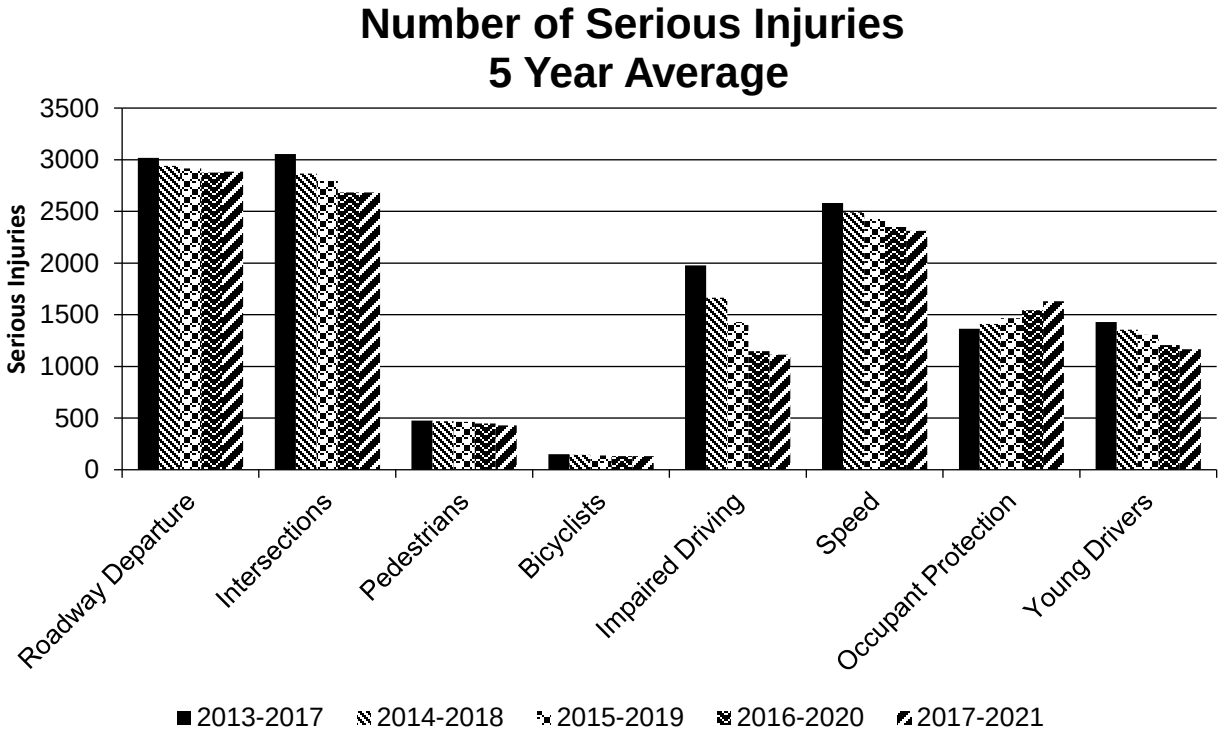
Present and describe trends in SHSP emphasis area performance measures.

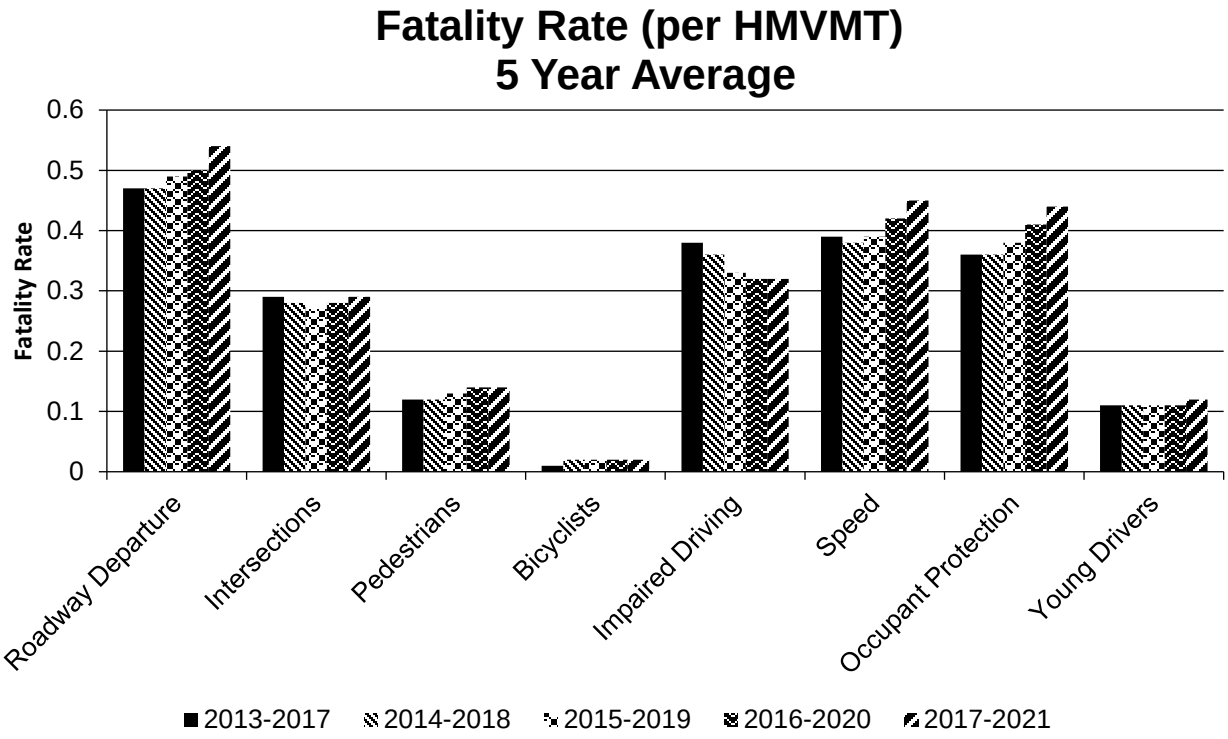
Year 2021

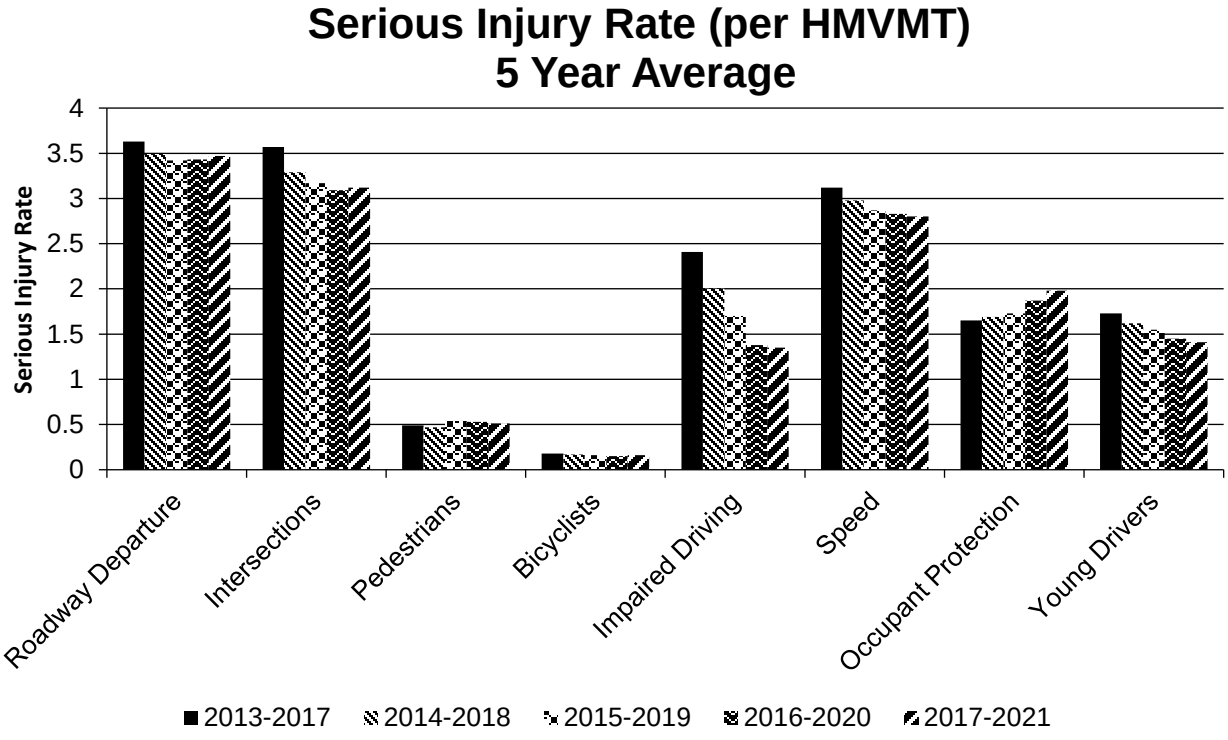
SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Roadway Departure	Run-off-road	440	2,883.4	0.54	3.47
Intersections	Intersections	239.8	2,684.8	0.29	3.12
Pedestrians	Vehicle/pedestrian	122.4	430.6	0.14	0.51
Bicyclists	Vehicle/bicycle	12	131.6	0.02	0.16

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)
Impaired Driving	Other (define)	261.8	1,115	0.32	1.35
Speed	Speed-related	371.2	2,313	0.45	2.8
Occupant Protection	Other (define)	361.8	1,631.6	0.44	1.98
Young Drivers	Other (define)	96	1,165.6	0.12	1.41


Number of Fatalities
5 Year Average
Fatalities
500
450
400
350
300
250
200
150
100
50
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Impaired Driving
Speed
Occupant Protection
Young Drivers
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021


Number of Serious Injuries
5 Year Average
Serious Injuries
3500
3000
2500
2000
1500
1000
500
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Impaired Driving
Speed
Occupant Protection
Young Drivers
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021


Fatality Rate (per HMVMT)
5 Year Average
Fatality Rate
0.6
0.5
0.4
0.3
0.2
0.1
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Impaired Driving
Speed
Occupant Protection
Young Drivers
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021


Serious Injury Rate (per HMVMT)
5 Year Average
Serious Injury Rate
4
3.5
3
2.5
2
1.5
1
0.5
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Impaired Driving
Speed
Occupant Protection
Young Drivers
2013-2017
2014-2018
2015-2019
2016-2020
2017-2021

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)
107066	Rural Principal Arterial (RPA) - Other	Roadway	Rumble strips – edge or shoulder	10.00	27.00			2.00		3.00	8.00	15.00	35.00	
107072	Rural Principal Arterial (RPA) - Other	Roadway	Rumble strips – edge or shoulder	22.00	28.00	1.00	2.00	4.00	3.00	19.00	9.00	46.00	42.00	
107123	Rural Principal Arterial (RPA) - Other	Roadway	Rumble strips – edge or shoulder	2.00	4.00			1.00		1.00	4.00	4.00	8.00	
104110	Rural Minor Arterial	Roadway	Rumble strips – center	10.00	5.00	1.00	1.00		1.00	7.00	2.00	18.00	9.00	
111424	Rural Principal Arterial (RPA) - Other	Intersection traffic control	Modify traffic signal – modernization/replacement	16.00	12.00	1.00		3.00		8.00	8.00	28.00	20.00	
107012	Rural Principal Arterial (RPA) - Other	Roadway	Rumble strips – edge or shoulder	7.00	1.00		1.00	2.00		4.00	3.00	13.00	5.00	
107014	Rural Principal Arterial (RPA) - Other	Roadway	Rumble strips – edge or shoulder	5.00	1.00			1.00		2.00		8.00	1.00	
107015	Urban Principal Arterial (UPA) - Other	Roadway	Rumble strips – edge or shoulder	7.00	2.00			2.00	1.00	2.00	2.00	11.00	5.00	
109593	Rural Minor Arterial	Roadway	Rumble strips – edge or shoulder	4.00	2.00			1.00		4.00	2.00	9.00	4.00	
109731	Rural Minor Arterial	Roadside	Barrier- metal		1.00								1.00	
110108	Rural Minor Arterial	Roadway	Rumble strips – edge or shoulder	18.00	16.00	3.00	1.00	5.00	7.00	9.00	11.00	35.00	35.00	
111976	Rural Minor Arterial	Roadway	Rumble strips – center	18.00	9.00	4.00		5.00	1.00	8.00	3.00	35.00	13.00	
111977	Rural Minor Arterial	Roadway	Rumble strips – center	9.00	4.00	2.00		4.00		4.00	3.00	19.00	7.00	
107053	Rural Minor Arterial	Roadway	Rumble strips – edge or shoulder	3.00	2.00	1.00		1.00		4.00	1.00	9.00	3.00	

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)
107019	Rural Minor Arterial	Roadway	Rumble strips – edge or shoulder	7.00	7.00	1.00	1.00	2.00	1.00	15.00	16.00	25.00	25.00	
51845	Urban Minor Arterial	Intersection geometry	Add/modify auxiliary lanes	14.00	20.00			1.00	2.00	13.00	8.00	28.00	30.00	
107098	Major Collector	Roadway	Pavement surface – high friction surface	789.00	839.00	19.00	10.00	98.00	78.00	331.00	298.00	1237.00	1225.00	
104337	Other Principal Arterial	Intersection geometry	Add/modify auxiliary lanes	40.00	37.00			1.00	3.00	20.00	8.00	61.00	48.00	
108312	Other Principal Arterial	Advanced technology and ITS	Adaptive Signal Control System	347.00	421.00	4.00	3.00	26.00	20.00	217.00	224.00	594.00	668.00	
109701	Other Principal Arterial	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	22.00	18.00		2.00	2.00	3.00	22.00	20.00	46.00	43.00	
111316	Other Principal Arterial	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	11.00	6.00		1.00	2.00	2.00	8.00	5.00	21.00	14.00	
96751	Other Principal Arterial	Pedestrians and bicyclists	Install sidewalk	29.00	22.00				1.00	4.00	4.00	33.00	27.00	
100634	Other Principal Arterial	Pedestrians and bicyclists	Pedestrians and bicyclists – other	20.00	21.00				2.00	8.00	10.00	28.00	33.00	
100640	Other Principal Arterial	Intersection geometry	Intersection geometry - other	18.00	12.00		2.00		3.00	10.00	5.00	28.00	22.00	
96750	Other Principal Arterial	Pedestrians and bicyclists	Install sidewalk	8.00	5.00			1.00	2.00	5.00	2.00	14.00	9.00	
100689	Urban Local Road or Street	Pedestrians and bicyclists	Install new crosswalk							2.00	1.00	2.00	1.00	
103316	Interstate	Roadway	Roadway widening - add lane(s) along segment	80.00	135.00		1.00	3.00	7.00	22.00	29.00	105.00	172.00	
105501	Urban Principal Arterial (UPA) - Other Freeways and Expressways	Intersection geometry	Add/modify auxiliary lanes	19.00	9.00				1.00	12.00	4.00	31.00	14.00	
105597	Other Principal Arterial	Pedestrians and bicyclists	Install sidewalk	14.00	19.00					11.00	6.00	25.00	25.00	
106362	Other Principal Arterial	Roadside	Barrier- metal	3.00	3.00						1.00	3.00	4.00	

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)
106942	Major Collector	Intersection traffic control	Modify control – Modern Roundabout	11.00	3.00			1.00		1.00	1.00	13.00	4.00	
108447	Other Principal Arterial	Roadway signs and traffic control	Curve-related warning signs and flashers	220.00	178.00	6.00		13.00	16.00	112.00	84.00	351.00	278.00	
109485	Other Principal Arterial	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	201.00	253.00	1.00	3.00	14.00	9.00	153.00	139.00	369.00	404.00	
109620	Minor Arterial	Intersection traffic control	Modify control – new traffic signal	4.00	2.00					2.00		6.00	2.00	
110265	Urban Principal Arterial	Intersection traffic control	Modify control – new traffic signal	4.00	2.00				1.00	11.00	1.00	15.00	4.00	
111547	Minor Arterial	Pedestrians and bicyclists	Install new crosswalk											
112523	Major Collector	Intersection traffic control	Modify traffic signal – modernization/replacement	14.00	7.00					8.00	5.00	22.00	12.00	
104666	Other Principal Arterial	Pedestrians and bicyclists	Pedestrians and bicyclists – other	100.00	71.00			1.00	1.00	42.00	41.00	143.00	113.00	
106938	Urban Principal Arterial (UPA) - Interstate	Advanced technology and ITS	Dynamic message signs	592.00	1171.00	7.00	12.00	42.00	76.00	257.00	457.00	898.00	1716.00	
107772	Urban Principal Arterial (UPA) - Interstate	Advanced technology and ITS	Dynamic message signs	769.00	1740.00	1.00	11.00	26.00	76.00	175.00	497.00	971.00	2324.00	
108590	Major Collector	Intersection traffic control	Intersection flashers –sign-mounted or overhead	11.00	8.00	1.00		4.00		5.00	8.00	21.00	16.00	
109558	Major Collector	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	7.00	5.00						1.00	7.00	6.00	
109562	Major Collector	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	3.00	17.00					1.00	6.00	4.00	23.00	
109566	Other Principal Arterial	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	13.00	25.00				2.00	8.00	8.00	21.00	35.00	
109567	Minor Arterial	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	10.00	12.00						5.00	10.00	17.00	
109569	Minor Arterial	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	8.00	5.00					1.00	1.00	9.00	6.00	

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)
109065	Minor Arterial	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	55.00	102.00	1.00	2.00	4.00	10.00	19.00	40.00	79.00	154.00	
109071	Minor Arterial	Intersection traffic control	Modify traffic signal timing – signal coordination	28.00	45.00	1.00		3.00		8.00	17.00	40.00	62.00	
109072	Minor Arterial	Intersection traffic control	Modify traffic signal timing – signal coordination	52.00	55.00	1.00		9.00		26.00	32.00	88.00	87.00	
110829	Urban Principal Arterial (UPA) - Interstate	Roadway	Pavement surface – high friction surface	44.00	35.00	2.00	1.00	2.00	2.00	14.00	7.00	62.00	45.00	

Compliance Assessment

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

05/12/2017

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?

2027

The Virginia Strategic Highway Safety Plan (SHSP) has been updated in 2021, but it is awaiting final signatures for official approval. Virginia is currently operating under the Virginia 2022-2026 Strategic Highway Safety Plan per approval from the Secretary of Transportation even though signatures are not yet complete.

To read the Virginia 2022-2026 Strategic Highway Safety Plan, please visit: https://www.virginiadot.org/info/resources/SHSP/FR1_VA_SHSP_2022_acc061622.pdf

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

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

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT	Segment Identifier (12) [12]	100	100					100	100	100	100
	Route Number (8) [8]	100	100								
	Route/Street Name (9) [9]	100	100								
	Federal Aid/Route Type (21) [21]	100	99								
	Rural/Urban Designation (20) [20]	100	100					100	7		
	Surface Type (23) [24]	100	97					100	6		
	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								

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
	Direction of Inventory (18) [18]	100	100								
	Functional Class (19) [19]	100	100					100	100	100	100
	Median Type (54) [55]	96	93								
	Access Control (22) [23]	100	100								
	One/Two Way Operations (91) [93]	99	96								
	Number of Through Lanes (31) [32]	97	94					99	6		
	Average Annual Daily Traffic (79) [81]	98	97					94	4		
	AADT Year (80) [82]	98	97								
	Type of Governmental Ownership (4) [4]	100	100					100	100	100	100
INTERSECTION	Unique Junction Identifier (120) [110]			85							
	Location Identifier for Road 1 Crossing Point (122) [112]			100							
	Location Identifier for Road 2 Crossing Point (123) [113]			100							
	Intersection/Junction Geometry (126) [116]			85							
	Intersection/Junction Traffic Control (131) [131]			50							
	AADT for Each Intersecting Road (79) [81]			92	56						
	AADT Year (80) [82]			92	56						
	Unique Approach Identifier (139) [129]			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
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]										
	Location Identifier for Roadway at Beginning of Ramp Terminal (197) [187]					100					
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					100					
	Ramp Length (187) [177]					100	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]					68	75				
	Year of Ramp AADT (192) [182]					68	75				
	Functional Class (19) [19]					100	78				
	Type of Governmental Ownership (4) [4]					100	100				
Totals (Average Percent Complete):		**99.33**	**98.50**	**88.00**	**14.00**	**76.00**	**38.91**	**99.22**	**58.11**	**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.

VDOT follows the 10-step VDOT MIRE FDE Implementation Plan to meet the requirement to have complete access to the MIRE Fundamental Data Elements (FDE) on all public roads. VDOT is wrapping up steps 5 and 6 which include developing the data collection plan and the cost estimate for collecting the remaining data. This fiscal year, VDOT finalized the review of VDOT's existing inventory (for both state-owned and non-state-owned roadways) to identify missing gaps within VDOT's existing databases. The responses to Question 49 have been updated based on that assessment. VDOT is in the process of completing the detailed data collection plan and a cost estimate for the data collection and assessing innovative technologies. VDOT has also started to collect additional information and video record for non-VDOT-maintained roadways. When funding sources have been identified, VDOT will collect all remaining data needed to have complete access to the MIRE fundamental data elements on all public roads.

Optional Attachments

Program Structure:

FINAL_VDOT_HSIP_Implementation_Manual.pdf
Project Implementation:

Safety Performance:

Evaluation:

Compliance Assessment:

Glossary

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

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

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

HMVMT: means hundred million vehicle miles traveled.

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

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

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

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

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

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

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

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

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