



VIRGINIA

# RAILWAY-HIGHWAY 2020 ANNUAL REPORT



U.S. Department of Transportation  
Federal Highway Administration

Photo source: Montana Department of Transportation

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## **Disclaimer**

### ***Protection of Data from Discovery Admission into Evidence***

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

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

## Executive Summary

Virginia's Highway-Rail Grade Crossing Safety Improvement Program continues to put emphasis on the reduction of fatal and serious crashes at highway rail grade crossings, and the Virginia Department of Transportation (VDOT) tracks the number and outcome of vehicle-train crashes at all public crossings and for individual projects completed. The general trend in number of crashes at all public crossings has declined since 2001. However, even with the increased number of completed safety projects to address safety concerns, there has been an increase in injuries and fatalities over the last decade at various grade crossing locations outside of the improvement locations.

In order to measure the effectiveness of locations where safety improvements were implemented, three years of before and after crash data were used to measure and analyze the at-grade crossing improvements at multiple locations. There have been zero crashes for the years 2017, 2018, and 2019 at the locations where safety improvement projects were completed in 2016. Important to note, new projects to effectively improve conditions at public grade crossings continue to be requested each Fiscal Year.

The percentage of grade crossing locations across the state with active warning devices is now at 84%. The analysis showed that majority of the highway rail grade crossings crashes occur at active warning device-controlled crossings.

Two percent of Virginia's annual Section 130 funding is again used for crossing inventory. For the current year, a new system administered by VDOT and provided by Tavla Solutions will keep inventory records as accurate as possible. Up to date and accurate inventory data is the basis to a consistent Safety Improvement Program.

VDOT project management is currently being restructured to ensure smooth project delivery. The agreement process and actual project management duties will be separated. This will represent a drastic improvement over the current process, giving each VDOT district control over the project management process for more timely delivery of each project.

## **Introduction**

Title 23 of United States Code (USC) Section 130 provides funding to States annually for the elimination of hazards at railway-highway crossings. One of the requirements of 23 USC 130 is that States must submit an annual report on the progress and effectiveness of implementing the program. The report shall include, but not be limited to, the number of projects undertaken, their distribution by cost range, road system, nature of treatment, and subsequent crash experience at improved locations.

## **Program Structure**

### **Reporting period for railway-highway crossing program funding.**

State Fiscal Year

Virginia State Fiscal Year is from July 1 through June 30 of the following year.

### **Describe how funds are distributed and administered in the State.**

The Section 130 R-HCP is implemented in Virginia to reduce risk at public highway-rail grade crossings. The R-HCP is administered centrally by VDOT Traffic Engineering staff. Related data collection and compilation, project planning and selection for programming are a Central Office role. Project scoping for proposals and programmed project delivery is the function of VDOT Districts, localities and Railroad Companies. In accordance with Section 130, VDOT programmed 2% or \$90,000 of Section 130 funds in State FY 2019 and FY 2020 for a data collection project for all public at-grade crossings. VDOT is allocated \$4.46M in Highway-Rail Grade Crossing Program funds and VDOT Federal Programs Management Team determines the obligation strategy for the funds and coordinates with Traffic Engineering. In this reporting period, VDOT obligated no additional projects.

### **Describe the method(s) used for project selection.**

Each year, HSIP Staff will transmit highway-rail grade crossing inventory listings to the localities, railroads, and VDOT District Traffic Engineers and Residency Engineers for review of potential safety improvements at grade crossing locations within their jurisdictions. The Local Assistance Division and District Traffic Engineers are requested to work with, or forward these listings to, the appropriate persons in cities, towns and counties who may submit locations for candidate improvements. Utilizing the grade crossing list, the sponsors are requested to conduct engineering safety assessments, including field reviews of the locations prior to submitting proposed safety improvements. Field review pictures and sketches are helpful to prioritizing the safety needs of the proposals submitted.

Proposals will be evaluated on a statewide basis. The grade crossing APM inputs are adjusted to incorporate additional data identified in the engineering study and proposal form, such as, vehicle type volumes, and physical characteristics. Candidate locations are ranked statewide using the FRA APM formula. Field reviews are conducted by HSIP staff to evaluate the crossing to confirm or adjust the proposal as needed.

### **Describe the method(s) used to measure effectiveness (in terms of reducing fatalities and serious injuries) of the projects and program.**

VDOT tracks the number and outcome of vehicle-train crashes at all public crossings and for individual projects completed. The trend in number of crashes at all public crossings has declined overall since 2001, however even with the increased number of completed safety projects to address the safety issues, there has been an increase in injuries and fatalities over the last decade at various locations.

## 2020 Virginia Railway-Highway Crossing Program

Three years of before and after crash data are used to measure the outcome of at-grade crossing improvements at multiple locations. There have been 0 crashes at the locations where safety improvement projects were completed in 2016 for the years 2017, 2018, and 2019.

### **Describe any noteworthy efforts the State has used to effectively deliver a successful program.**

Having good inventory data and project oversight is the key to Virginia's R-HCP. VDOT has expedited and gained efficiencies with the crossing inventory data collection using reduced staff with consultant support and automated field data collection devices with interactive database interfaces. Secondly, VDOT has assigned project management oversight to Right-of-Way and Utilities Division Rail Team who develop project agreements with the railroads, track progress, and process bills. Having staff focused on project delivery has improved keeping projects on time and on budget.

### **Describe the status of data acquisition and analysis efforts (including inventory and other efforts utilizing the two percent funding allowance)**

VDOT implemented a data collection project for all public at grade crossings, in accordance with Section 130. This project utilizes 2% of Section 130 funds, approximately \$90,000 annually, with the state match for data compilation and analysis to support program development. This project also provided the data needed to develop the Highway-Rail Crossing inventory in order to address the Rail Safety Improvement Act of 2008 (RSIA 2008 ) requirement that up to date physical inventory data be provided for each public-at-grade highway/rail crossing annually, and for use preparing annual reports to the FRA and FHWA.

The Section 130 Program was implemented to reduce crash risk at highway-rail grade crossings. Understanding how to reduce crash risk begins with documenting how the crossing is being used by vehicles and trains, if the highway geometrics and built environment may cause potential hazards and if the current traffic control devices are sufficient. Since inventory information is specific to each crossing and changes with time, VDOT collects, tracks and compares detailed data at individual crossings using Virginia modified FRA crash risk assessment model. This information is required to support priority planning, risk assessments and investment decisions for programming Section 130 improvement projects. To be more efficient, timely, and accurate in complying with these requirements, VDOT implemented a safety project that developed a platform for data collection, acquired the data collection devices, and collects the inventory data on a three year cycle.

### **Input the number of crossings and program emphasis areas by crossing type.**

<b>CROSSING TYPE</b>	<b>NUMBER OF CROSSINGS</b>
At-Grade Active Warning Devices	1469
At-Grade Passive Warning Devices	341
Grade-Separated RR Under Road	608
Grade-Separated RR Over Road	510
Non-Motorized Active Warning Devices	
Non-Motorized Passive Warning Devices	

**Provide the specific program emphasis area, and if necessary a discussion of significant variations from previous reports.**

Virginia had no significant variations from previous reports of its Section 130 Program.

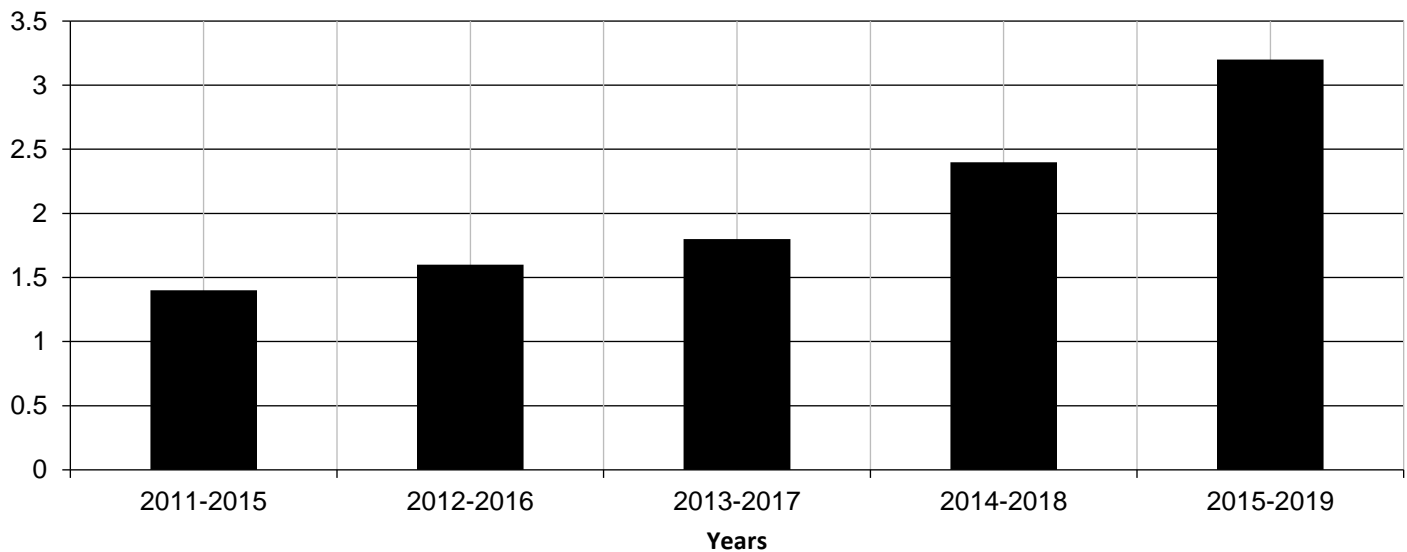
**Describe the overall Section 130 Program effectiveness, any evaluation results, and how the results are used to improve the Section 130 Program.**

VDOT has no areas of the Section 130 Program Effectiveness for which it would like to elaborate at this time.

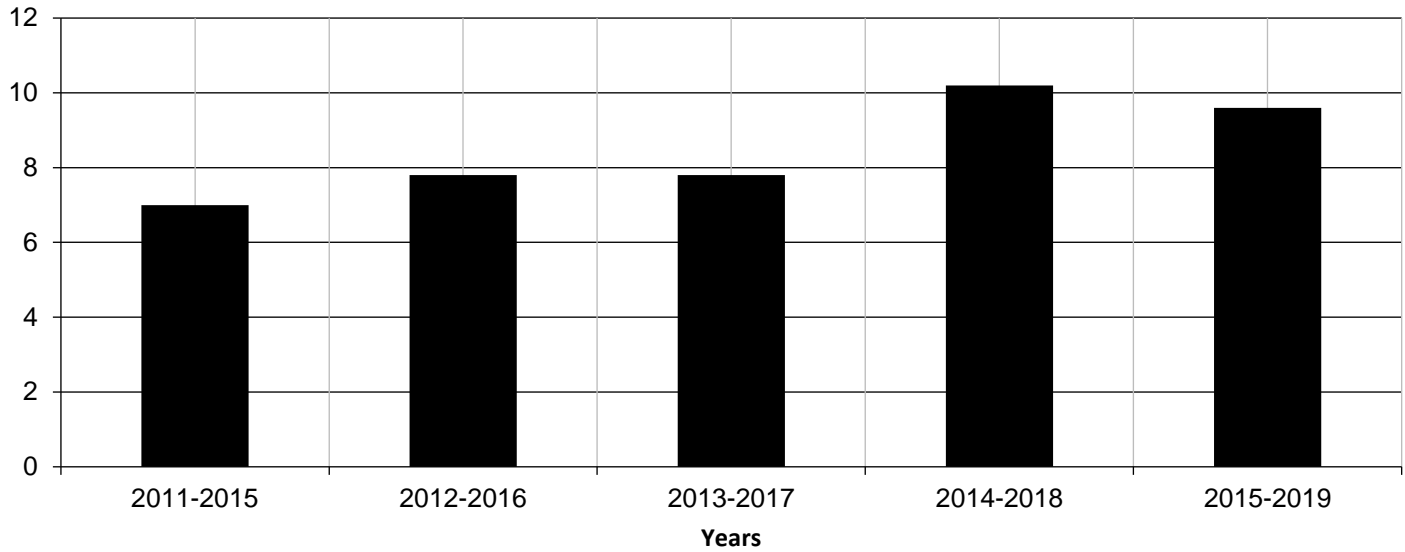
**Input data on a variety of performance measures.**

<b>PERFORMANCE MEASURE</b>	<b>2011-2015 (5-yr avg)</b>	<b>2012-2016 (5-yr avg)</b>	<b>2013-2017 (5-yr avg)</b>	<b>2014-2018 (5-yr avg)</b>	<b>2015-2019 (5-yr avg)</b>
Fatalities	1.40	1.60	1.80	2.40	3.20
Serious Injuries	7.00	7.80	7.80	10.20	9.60

**Fatalities at Railway-Highway Crossings  
5-yr avg. Performance Measure Data**



### Serious Injuries at Railway-Highway Crossings 5-yr avg. Performance Measure Data





## Project Metrics

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

PROJECT NUMBER	LOCATION	USDOT CROSSING NUMBER	LAND USE/AREA TYPE	FUNCTIONAL CLASS	PROJECT TYPE	CROSSING TYPE	SECTION 130 FUNDS (\$)	NON-SECTION 130 FUNDING TYPE	TOTAL PROJECT COST (\$)
N/A	N/A	N/A							

The RHCP funds were dedicated to a state priority grade separation project in the City of Suffolk of which funds were obligated in 2020, but outside of this reporting period. The City of Suffolk grade separation project funds were obligated by the Federal Program Management (FPMD).

Enter the crash data that is used to measure project effectiveness for both the before and after period.

PROJECT NUMBER	LOCATION	USDOT CROSSING NUMBER	LAND USE/AREA TYPE	FUNCTIONAL CLASS	PROJECT TYPE	CROSSING TYPE	SECTION 130 FUNDS (\$)	NON-SECTION 130 FUNDING TYPE	TOTAL PROJECT COST (\$)	BEFORE CRASH DATA (YEARS)	FATAL INJURY [K] (BEFORE)	SUSPECTED SERIOUS INJURY [A] (BEFORE)	ALL INJURY CRASHES [K + A + B + C] (BEFORE)	NO APPARENT INJURY [O] (BEFORE)	TOTAL ALL CRASHES [K + A + B + C + O + U] (BEFORE)	AFTER CRASH DATA (YEARS)	FATAL INJURY [K] (AFTER)	SUSPECTED SERIOUS INJURY [A] (AFTER)	ALL INJURY CRASHES [K + A + B + C] (AFTER)	NO APPARENT INJURY [O] (AFTER)	TOTAL ALL CRASHES [K + A + B + C + O + U] (AFTER)
86587	City of Winchester	139450K	Urban	Major Collector	Active Grade Crossing Equipment Installation/Upgrade	At-Grade Active Warning Devices	204215	State	226926	3	0	0	0	0	0	3	0	0	0	0	0
105101	City of Staunton	224764N	Urban	Major Collector	Active Grade Crossing Equipment Installation/Upgrade	At-Grade Active Warning Devices	177719	State	197465	3	0	0	0	0	0	3	0	0	0	0	0
105102	Rockbridge County	224816D	Rural	Minor Arterial	Active Grade Crossing Equipment Installation/Upgrade	At-Grade Active Warning Devices	122729	State	136365	3	0	0	0	1	1	3	0	0	0	0	0
105509	Town of Gate City	734292C	Urban	Local Road or Street	Active Grade Crossing Equipment Installation/Upgrade	At-Grade Active Warning Devices	190353	State	211503	3	0	0	0	0	0	3	0	0	0	0	0
105567	City of Charlottesville	224672B	Urban	Local Road or Street	Active Grade Crossing Equipment Installation/Upgrade	At-Grade Active Warning Devices	269245	State	299161	3	0	0	0	0	0	3	0	0	0	0	0
105615	City of Newport News	224160J	Urban	Major Collector	Active Grade Crossing Equipment Installation/Upgrade	At-Grade Active Warning Devices	170393	State	189325	3	0	0	0	0	0	3	0	0	0	0	0
105619	City of Norfolk	465206K	Urban	Minor Arterial	Crossing Approach Improvements	At-Grade Passive Warning Devices	228470	State	253856	3	0	0	0	0	0	3	0	0	0	0	0
107027	Frederick County	868163J	Rural	Local Road or Street	Active Grade Crossing Equipment Installation/Upgrade	At-Grade Active Warning Devices	131956	State	146618	3	0	0	0	0	0	3	0	0	0	0	0

2020 Virginia Railway-Highway Crossing Program

PROJECT NUMBER	LOCATION	USDOT CROSSING NUMBER	LAND USE/AR EA TYPE	FUNCTIONAL CLASS	PROJECT TYPE	CROSSING TYPE	SECTION 130 FUNDS (\$)	NON-SECTION 130 FUNDING TYPE	TOTAL PROJECT COST (\$)	BEFORE CRASH DATA (YEARS)	FATAL INJURY [K] (BEFORE)	SUSPECTED SERIOUS INJURY [A] (BEFORE)	ALL INJURY CRASHES [K + A + B + C] (BEFORE)	NO APPARENT INJURY [O] (BEFORE)	TOTAL ALL CRASHES [K + A + B + C + O + U] (BEFORE)	AFTER CRASH DATA (YEARS)	FATAL INJURY [K] (AFTER)	SUSPECTED SERIOUS INJURY [A] (AFTER)	ALL INJURY CRASHES [K + A + B + C] (AFTER)	NO APPARENT INJURY [O] (AFTER)	TOTAL ALL CRASHES [K + A + B + C + O + U] (AFTER)
107030	Frederick County	517960G	Rural	Local Road or Street	Active Grade Crossing Equipment Installation/Upgrade	At-Grade Active Warning Devices	243419	State	270465	3	0	0	0	2	2	3	0	0	0	0	0
105620	Northampton County	530765M	Rural	Local Road or Street	Active Grade Crossing Equipment Installation/Upgrade	At-Grade Active Warning Devices	119377	State	132641	3	0	0	0	0	0	3	0	0	0	0	0
107005	Orange County	225185H	Rural	Minor Arterial	Active Grade Crossing Equipment Installation/Upgrade	At-Grade Active Warning Devices	141049	State	141049	3	0	0	0	0	0	3	0	0	0	0	0

## Optional Attachments

### 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.

**HMVMT:** means hundred million vehicle miles traveled.

**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.

**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.