



COMMONWEALTH of VIRGINIA

Office of the

SECRETARY of TRANSPORTATION

Transportation Performance Management Safety Measures

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Safety Performance Management Measures and Targets

- **Board challenged staff to develop a new rigorous data-driven methodology to establish targets**
 - **Understand how the system is working**
 - **Identify and examine trends**
 - **Determine the impact of current investments and strategies**
 - **Provide targets to Board**
- **Board will use information to determine degree to which current policies and investments are meeting goals**

Safety Performance Management

On-going Work

- Continued to analyze impact of behavioral programs and other external risk factors
- Updated prediction model with observed 2018 results to determine future baseline conditions and development of 2020 targets
- Completed an initial evaluation of project investments for consideration of changes and modifications to current proposed projects included in SYIP and future investment strategies resulting in policy recommendations

Safety Performance Management

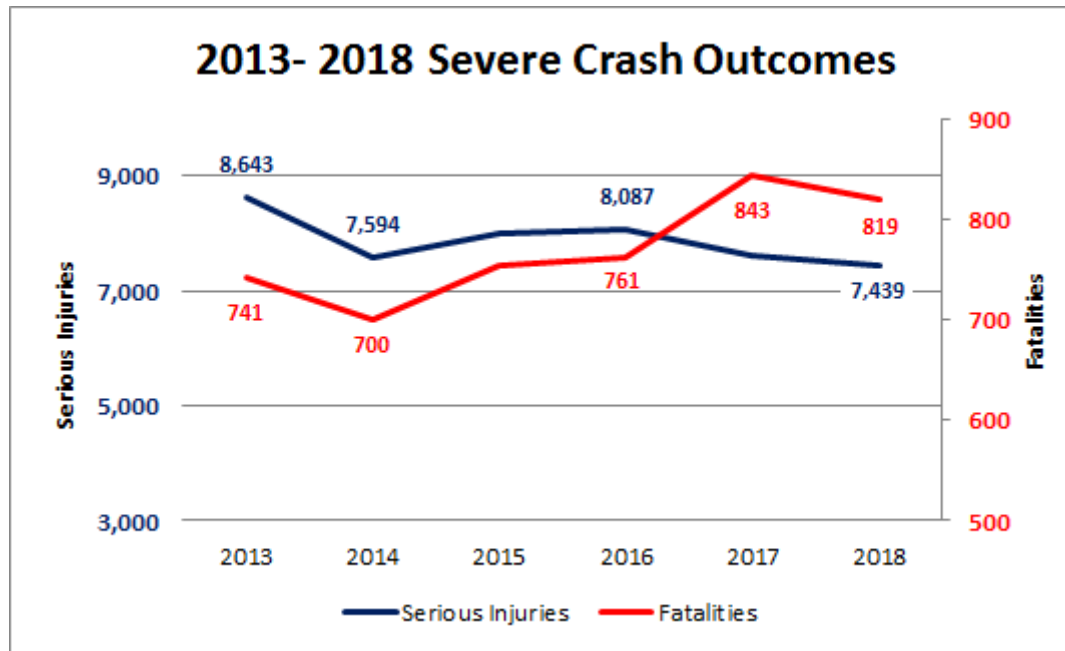
Refining Target Setting

Safety Performance Measures:

- **Number of fatalities**
- **Number of severe injuries**
- **Rate of fatalities per 100M vehicle miles traveled**
- **Rate of severe injuries per 100M vehicle miles traveled**
- **Number of non-motorized fatalities and severe injuries**

Safety Performance Management 2018 Observations

- Fatalities were lower than model predictions
- Serious injuries continued to decline
- Observed results will be included baseline model conditions



Assess Additional Factors to Predict 2020 Baseline

Assessed model performance for Fatalities and Serious Injuries, adding combinations of the following external risk factors:

District Based Risk Factors

- ABC Stores – Gallons Sold
- Average Gas Price (2019 Dollars)
- VDOT Infrastructure Programs Spending (2019 Dollars)
- DMV Highway Safety Office (HSO) Behavioral Programs Spending (2019 Dollars)

Factor data compiled by VDOT District and, when available, by month.

Assess Spending Programs to Understand Current Investment Impacts

DMV Highway Safety Office Spending – Behavior Programs

- Impaired Drivers (Alcohol)
- Occupant Protection
- Speed Control
- Pedestrian and Bicyclist
- Young Drivers
- Training and Education
- Statewide (Proportional)
- All Behavioral Programs (Total)

VDOT Infrastructure Spending (by Category)

- Capital Projects
- Operations and Maintenance

Benefits of SMART SCALE and HSIP Projects

Assessing projects anticipated to be completed in 2019 and early 2020:

- 30 SMART SCALE Corridor, Interchange and Intersection
- 95 HSIP Spot, Systemic, Combination (Hybrid)

Determining the number and degree to which crashes can be influenced with infrastructure

Finding fewer improvement targeted fatal and serious injury crashes



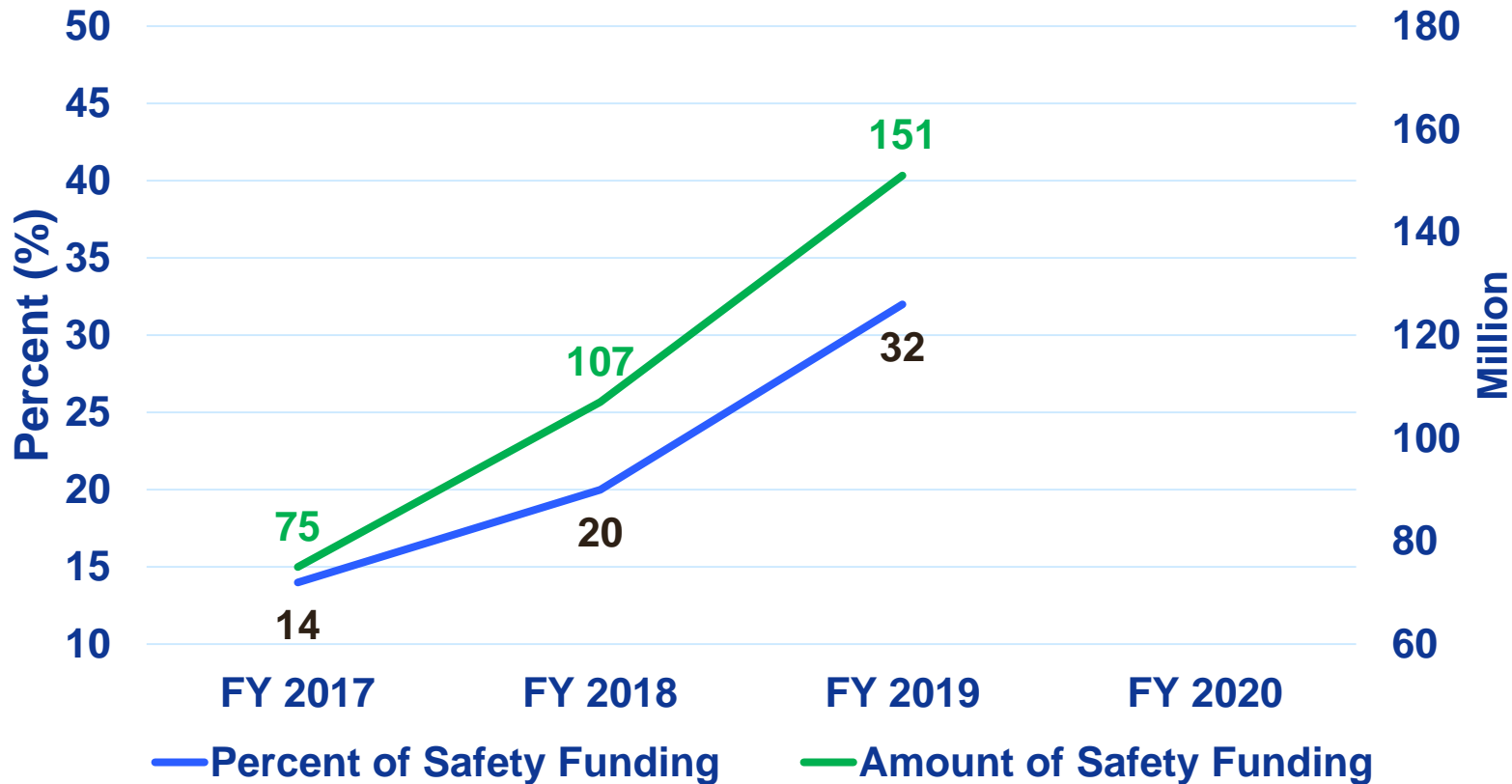
Safety Investment Strategy Analysis

- Model development and target setting exercise highlighted that **Systemic safety projects provide significant expected benefits in reducing fatalities and serious injuries**

Description	F People	SI People	F Ped/Bike People	SI Ped/Bike People
Spot/Corridor (w/ Factors)	128	1,169	4	43
Reduction	10 (1.3 / Yr)	103 (12.9 / Yr)	1 (0.13 / Yr)	4 (0.5 / Yr)
Systemic (w/ Factors)	183	1,807	20	60
Reduction	41 (5.1 / Yr)	448 (56 / Yr)	4 (0.5 / Yr)	13 (1.6 / Yr)
Total Expected Reductions	51 (6.4 / Yr)	551 (68.9 / Yr)	5 (0.63 / Yr)	17 (2.1 / Yr)

- Additional analysis also has categorized “hybrid” safety projects that also provide significant expected benefits

HSIP Funding to Systemic Safety Projects Since FY 2017



Highway Safety Improvement Program Investment Policy

- **Virginia receives ~\$53M annually**
- **VDOT to develop prioritized categories of systemic safety improvements and establish goals for completion**
 - **Edge/Center-line rumble strips on primaries**
 - **Safety Edge**
 - **Flashing yellow arrows**
 - **Chevrons**
 - **High-visibility backplates**
 - **Pedestrian crossings**
 - **Unsignalized intersections**
- **80% of funds be allocated through entire 6-years to systemic and hybrid safety improvements to advance established goals**

Highway Safety Improvement Program Investment Policy

- Remaining 20% would be available annually
- VDOT would solicit potential spot or higher-cost hybrid improvements for competitive award
- VDOT Commissioner would, based on effectiveness of improvements, recommend whether to:
 - Use entire 20% for spot/hybrid improvements
 - Use funds to advance completion of systemic safety improvement goals
 - Combination of spot and systemic safety improvements

Review of Past HSIP Allocations

- **45% of funds FY19-24 SYIP were allocated to spot safety improvements**
- **VDOT to undertake review to determine effectiveness of proposed improvements**
- **Report back to Board on whether HSIP funds should be de-allocated and re-directed towards systemic safety improvements**

Next Steps

- **Finalize model results and proposed CY20 safety performance targets**
- **Adopt Highway Safety Improvement Program investment policy**
- **Adopt CY20 safety performance targets**
- **Review of previous HSIP allocations to determine whether any de-allocation is appropriate**