



COMMONWEALTH of VIRGINIA

Office of the

SECRETARY of TRANSPORTATION

Transportation Performance Management Safety Measures

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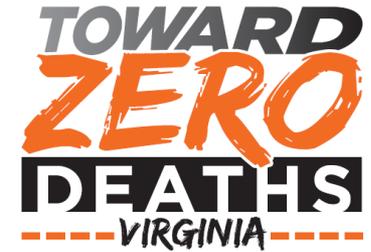


Safety Performance Management

2020 Safety Targets

- Completed an analysis of behavioral programs and other external risk factors
- Updated prediction model with observed 2018 results to determine future baseline conditions
- Continued 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
- Developed draft policy for Board consideration

DMV Highway Safety Office Spending (2019 Dollars)



HSO Behavioral Programs

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

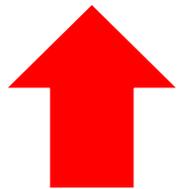


* Includes statewide spending applied proportionally by annual population in each District.

Findings from Fatality Model Refinement

Increases fatal crashes -

- District Monthly VMT growth
- Increasing local functional class percent of VMT
- Increasing young population (15-24)
- Increasing aging population (75 plus)



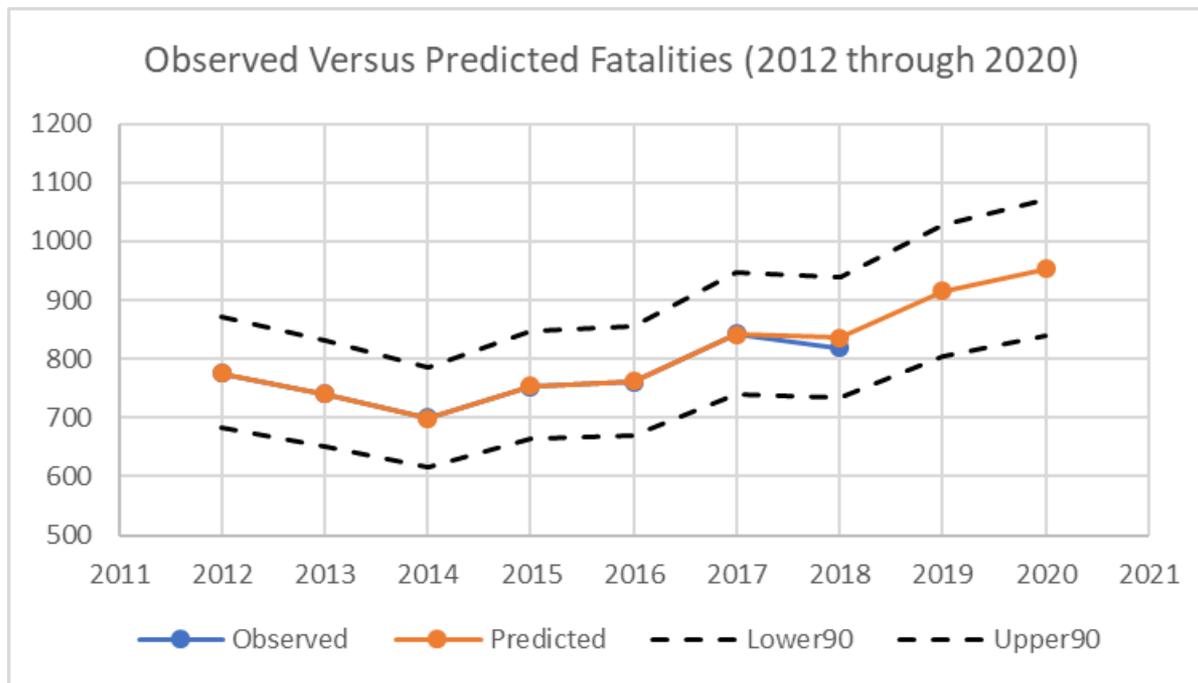
Decreases fatal crashes-

- Increased Emergency & Incident Management Spending
- Increased Highway Maintenance Spending
- Increased Behavioral Program Spending



Baseline Prediction – Fatalities

- Compares predicted to observed crashes
- 2019 prediction – 915 fatalities
- 2020 prediction – 954 fatalities



Expected Benefits of Projects

Analysis of Spot and Corridor Projects

- Reviewed 119 SMART SCALE and HSIP projects constructed or to be completed between January 2018 and March 2020
 - 37 SMART SCALE projects = \$193.7 M
 - 30 + 52 = 82 HSIP* projects = \$170 + 71.1 M = \$241.1 M
- Project influence areas consistent with SMART SCALE safety scoring methodology
- Crash years 2010-2018**

Projects	F+SI Crashes	F People	SI People	F Ped/Bike People	SI Ped/Bike People
119	426+547=973	76	1,196	9	57

*Several HSIP projects are larger corridor projects with a small portion of HSIP funds

**January 2018 – March 2019 projects used 2010-2017 crash data

Spot and Corridor Projects Expected Reductions

Description	F People	SI People	F Ped/Bike People	SI Ped/Bike People
2010-2018 Totals	76	1,196	9	57
Final Projection (w/ Factors)	65	1,067	6	46
Reduction	11 (1.2 / Yr)	129 (14.3 / Yr)	3 (0.3 / Yr)	11 (1.2 / Yr)
Percent of Total	14%	11%	31%	18%

Expected Benefits of Projects

Analysis of Hybrid Projects

- Reviewed 18 hybrid projects constructed or to be completed between January 2018 and March 2020
 - 1 SMART SCALE project = \$4.1 M
 - 11 + 6 = 17 HSIP projects = \$9.8 + 11.9 M = \$21.7 M
- Project influence areas consistent with SMART SCALE safety scoring methodology
- Crash years 2010-2018*

Projects	F+SI Crashes	F People	SI People	F Ped/Bike People	SI Ped/Bike People
18	295+35=320	57	361	1	9

*January 2018 - March 2019 projects used 2010-2017 crash data

Hybrid Projects

Expected Reductions

Description	F People	SI People	F Ped/Bike People	SI Ped/Bike People
2010-2018 Totals	57	361	1	9
Final Projection (w/ Factors)	51	333	1	8
Reduction	6 (0.7 / Yr)	28 (3.1 / Yr)	0 (0 / Yr)	1 (0.1 / Yr)
Percent of Total	10%	8%	0%	8%

Expected Benefits of Projects

Analysis of Systemic HSIP Projects

- Low cost improvements systemically spread on network at intersections and curves or on the pavement
 - 14 + 26 HSIP projects = \$16.5 + 25 M = \$41.5 M
- HSIP projects constructed between January 2018 and March 2020
- Crash years 2010-2018*

Projects	F+SI Crashes	F People	SI People	F Ped/Bike People	SI Ped/Bike People
40	1,649	128	2,241	15	114

*January 2018 - March 2019 projects used 2010-2017 crash data

Systemic Projects Expected Reductions

Description	F People	SI People	F Ped/Bike People	SI Ped/Bike People
2010-2018 Totals	128	2,241	15	114
Final Projection (w/ Factors)	113	1,986	13	86
Reduction	15 (1.7 / Yr)	255 (28.3 / Yr)	2 (0.2 / Yr)	28 (3.1 / Yr)
Percent of Total	12%	11%	13%	25%

All Projects Expected Reductions

Description	F People	SI People	F Ped/Bike People	SI Ped/Bike People
Spot/Corridor (w/Factors)	76	1,196	9	57
Reduction	11 (1.2 / Yr)	129 (14.3 / Yr)	3 (0.3 / Yr)	11 (1.2 / Yr)
Hybrid (w/Factors)	57	361	1	9
Reduction	6 (0.7 / Yr)	28 (3.1 / Yr)	0 (0 / Yr)	1 (0.1 / Yr)
Systemic (w/Factors)	128	2,241	15	114
Reduction	15 (1.7 / Yr)	255 (28.3 / Yr)	2 (0.2 / Yr)	28 (3.1 / Yr)
Total Expected Reductions	32 (3.6 / Yr)	412 (45.8 / Yr)	5 (0.6 / Yr)	40 (4.4 / Yr)

Results - 2020 Data-Driven Targets

Combining the baseline predictions with the expected project benefits to establish data-driven targets

Description	F People	F Rate	SI People	SI Rate	F & SI Ped/Bike People
2020 Model Target	954	1.08	7,520	8.52	714
Expected Project Reductions	3.6	---	47.4	---	3.4
Proposed 2020 Targets	950 ↑	---	7,473 ↓	---	711 ↓
Current CTB Approved 2019 Targets	840	0.94	7,689	8.75	714

Highway Safety Improvement Program Investment Policy – Key Points

- **VDOT in consultation with OIPI to develop Implementation Plans to include:**
 - **Prioritized categories of systemic/hybrid safety improvements with established goals and schedules for completion**
 - **A process for selection of projects**
 - **A process for distribution of funds**
- **Approximately 80% of funds be allocated to systemic/hybrid safety improvements to advance established goals**
- **Remaining approximately 20% available annually beginning in FY2025**

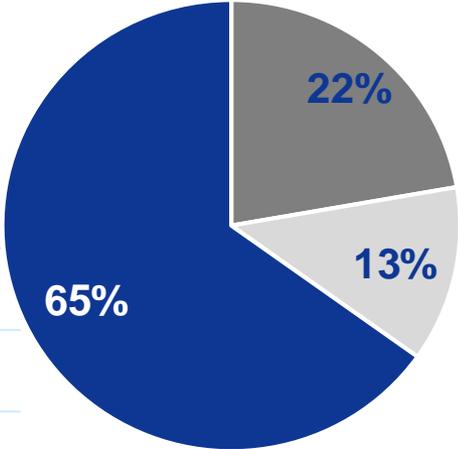
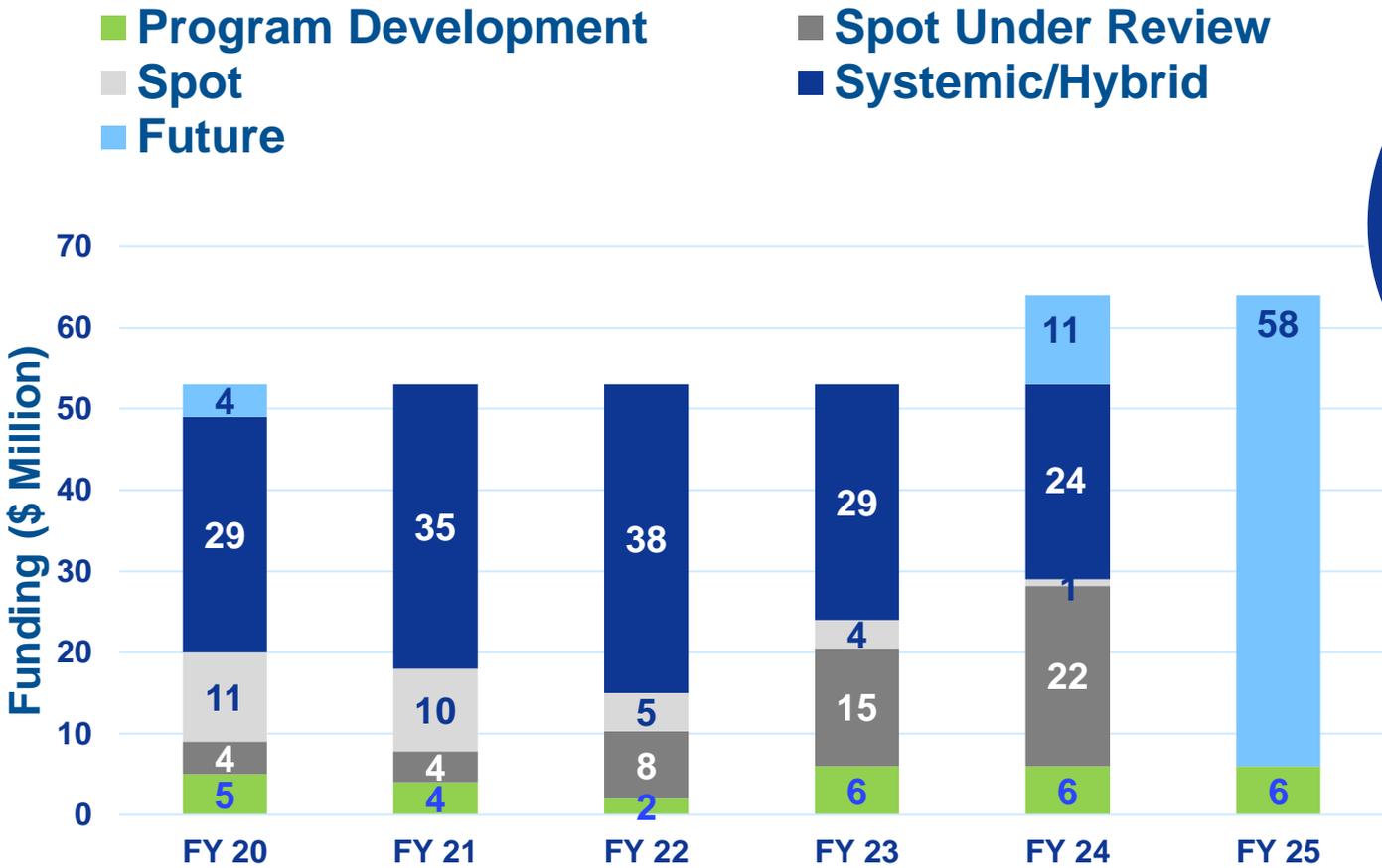
Highway Safety Improvement Program Investment Policy

- **For remaining ~20%, VDOT Commissioner would, based on effectiveness of improvements, recommend whether to:**
 - Use for spot improvements,
 - Use funds to advance completion of systemic safety improvement goals, or
 - Advance a combination of spot and systemic safety improvements
- **VDOT and OIPI will report back to the Board on Implementation Plan progress and if updates to the policy are needed**
- **Open Container, High Risk Rural Roads and Rail Crossings funds are excluded from the Policy**

Highway Safety Improvement Program Investment Policy - Transition

- **Recommend removal of proposed HSIP projects included in draft SYIP**
- **Review existing projects with possible recommendations to:**
 - **Delay or cancel spot improvement projects that have not yet started, and**
 - **Identify opportunities to optimize funding, where possible, in order to accelerate the Policy**
- **Beginning with FY2021 SYIP, reserve ~20% annually in FY2025 and FY2026 for full implementation of the Policy**

HSIP Funding FY20-FY25



Next Steps

- **June: Action item on adoption of CY20 safety performance targets**
- **June: Action item on adoption of HSIP Project Prioritization Policy**
- **Report back to CTB on recommendations for amendment to SYIP if determined appropriate**
 - **Coordinate with individual CTB members and applicant if changes are recommended**