COMMONWEALTH of VIRGINIA

Office of the

SECRETARY of TRANSPORTATION

Virginia Highway Safety Improvement Plan Overview

VADMV

VIRGINIA DEPARTMENT OF AVIATION

DRPT

VIRGINIA DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION

Office of INTERMODAL Planning and Investment

MVDB

Motor Vehicle Dealer Board

COMMONWEALTH OF VIRGINIA

THE PORT OF VIRGINIA®

VDOT

VIRGINIA SPACEPORT AUTHORITY

Goal for Presentation: Prepare you to vote in October on VHSIP

Dec 2019: HSIP Project Prioritization Policy

- Data-driven strategy focusing on low cost high potential crash reduction infrastructure (systemic and hybrid) safety improvements. Restricted investment in spot improvement projects

2020 GA Session: Establishing Virginia HSIP § 33.2-373 & § 46.2-818.2

- Provided funding: 54 % for infrastructure, 29% for behavioral strategies, remainder for purposes eligible pursuant to Boad strategy with required development of 5-year investment strategy: Established hand-held ban.

2022 Virginia Highway Safety Investment Strategy

- VDOT developed plans for deployment of systemic/hybrid countermeasures & DMV developed more focused behavioral safety program

Mar/Apr 2026

- CTB Presentations – Updating on Past 4 Years

September 2026 (today)

- Presentation of Va Highway Safety Investment Plan (VHSIP) for 2026-2032

October 2026

- Vote - Adoption of VHSIP within budget

Nov/Dec 2026

- Presentation and adoption of Virginia State Highway Safety Plan (SHSP) which is broader than VHSIP, and federally required

Traffic Safety – A Critical Issue for Virginia

Last year, every single day on Virginia roads …

2

people died

18

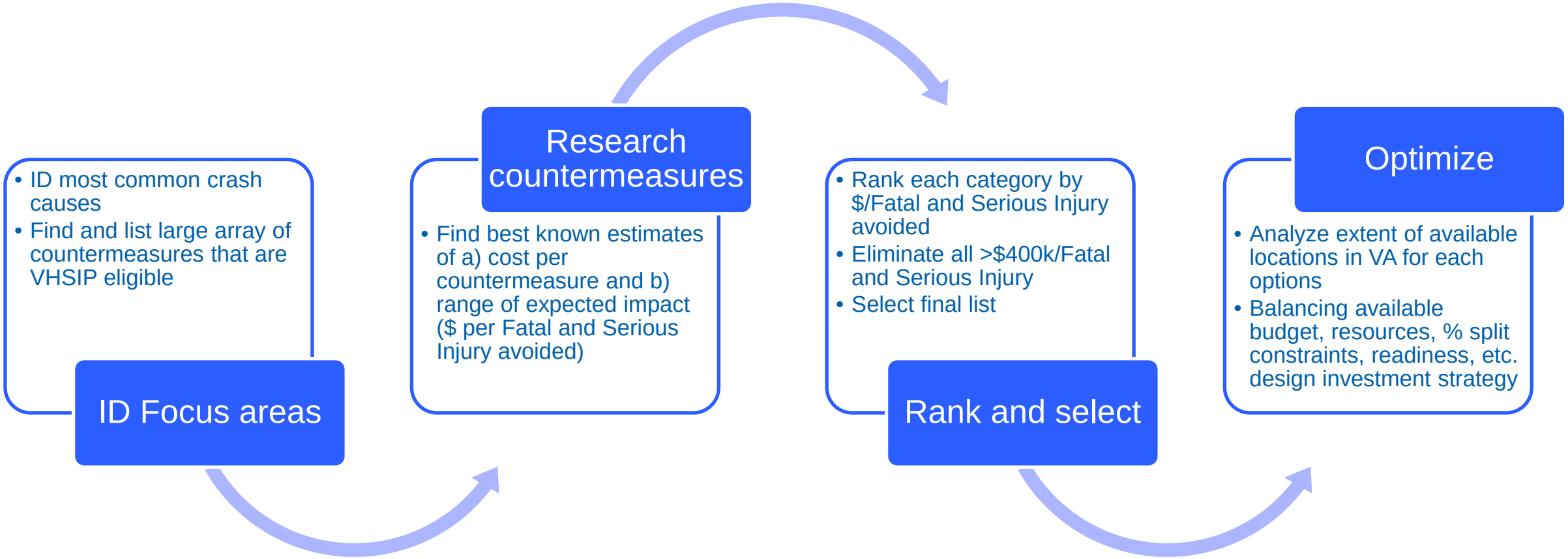
people suffered life-altering injuries

… in crashes that are almost always preventable.

Philosophy – Collaboration to Tackle the Hardest Problems, Focus on High ROI

Theme	What's New in "Phase III"	What's the Same as Prior VHSIP plan
Collaboration	• Integrated working group across agencies, pairing behavioral and infrastructure where possible	• Each agency focuses on what they're best at.
ROI-focus	• More rigorous comparison of 'systemic' fixes, inclusion of select 'hybrid' techniques. • Fewer focus areas to allow for more effective execution.	• Direct spending to 'systemic' fixes that have highest ROI.
Innovation	• Allow specific budget early in process to test new ideas – if they pay off, we'll expand. • More rigorous impact measurement	

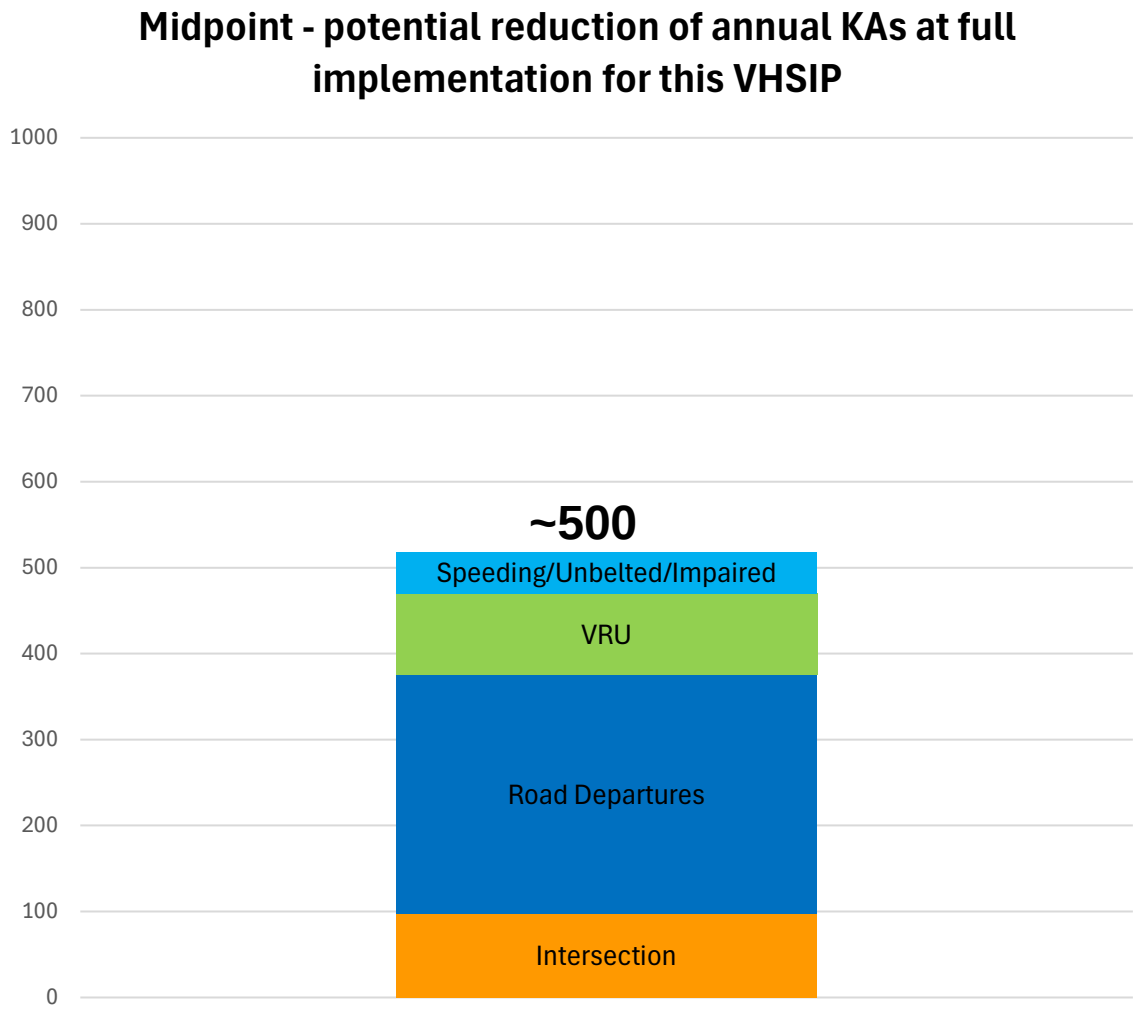
Methodology for ROI-Focus



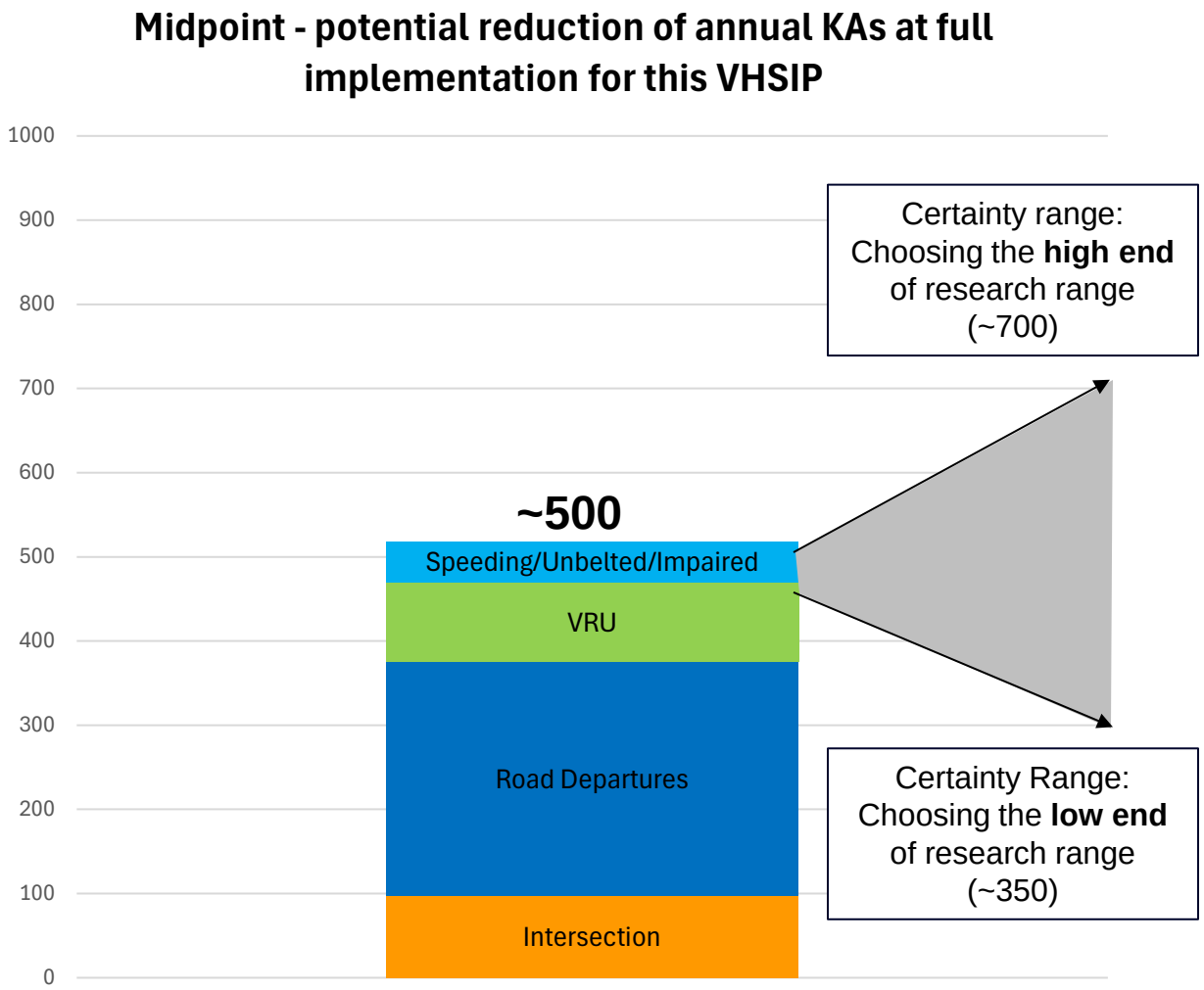
What made the cut for this VHSIP?

Focus Area	Infrastructure * Also supports another focus row	Education * Also supports another focus row	Law Enforcement / Administrative	Average $ per FSI Avoided
Vulnerable Road Users	• Rapid Flashing Beacons • VRU – other enhancements at intersections* (ped countdown, high vis markings, lightings, etc) • Pedestrian hybrid beacon* • Transit-stop design, signal priority improvements	• Research-Based Behavior Campaigns*	• Modified TREDS*	**$114k / FSI avoided**
Intersections	• Targeted 4-way stop* • Pavement Friction Intersections* • Dynamic all-red extensions*	• Digital crash scene*		**$35k / FSI avoided**
Roadway Departures	• Construction-ready rural roads, rumble strips • New miles rural roads, rumble strips • Pavement friction on curves • 2, 4 Lane enhanced pavement markings	• Research-Based Behavior Campaigns*		**$84k / FSI avoided**
Speeding		• Thought provoking actions	• Law enforcement challenge • Safe Speed Limit and Design Speed Setting (pilot)	**Needs more research to estimate**
Impaired + Distracted Driving		• Research-Based Behavior Campaigns	• Sobriety check points	**Needs more research to estimate**
Unrestrained driving		• Grassroots campaign* • Behavioral outreach*		**Needs more research to estimate**

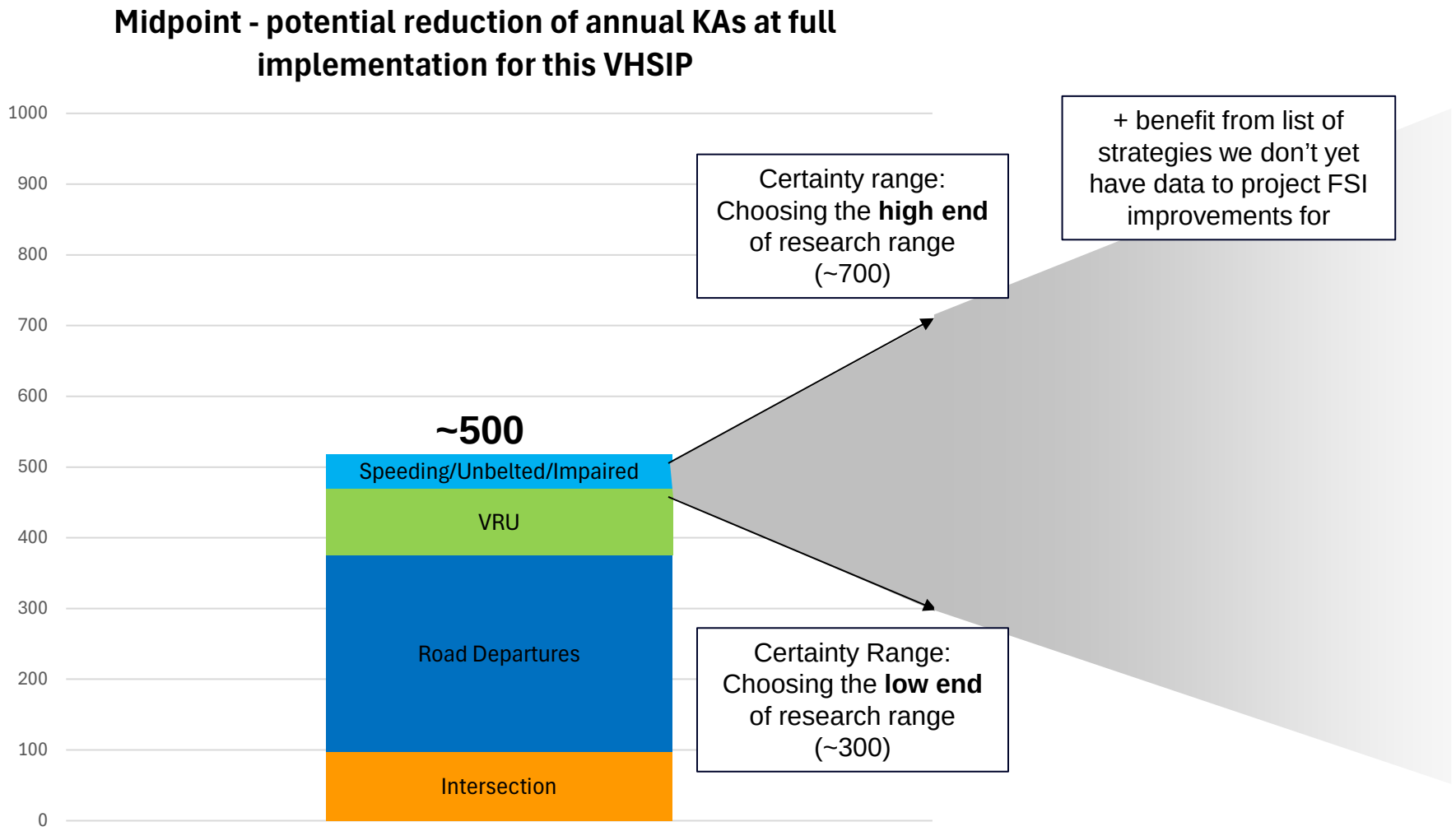
How do we “predict” the impact of our investment?



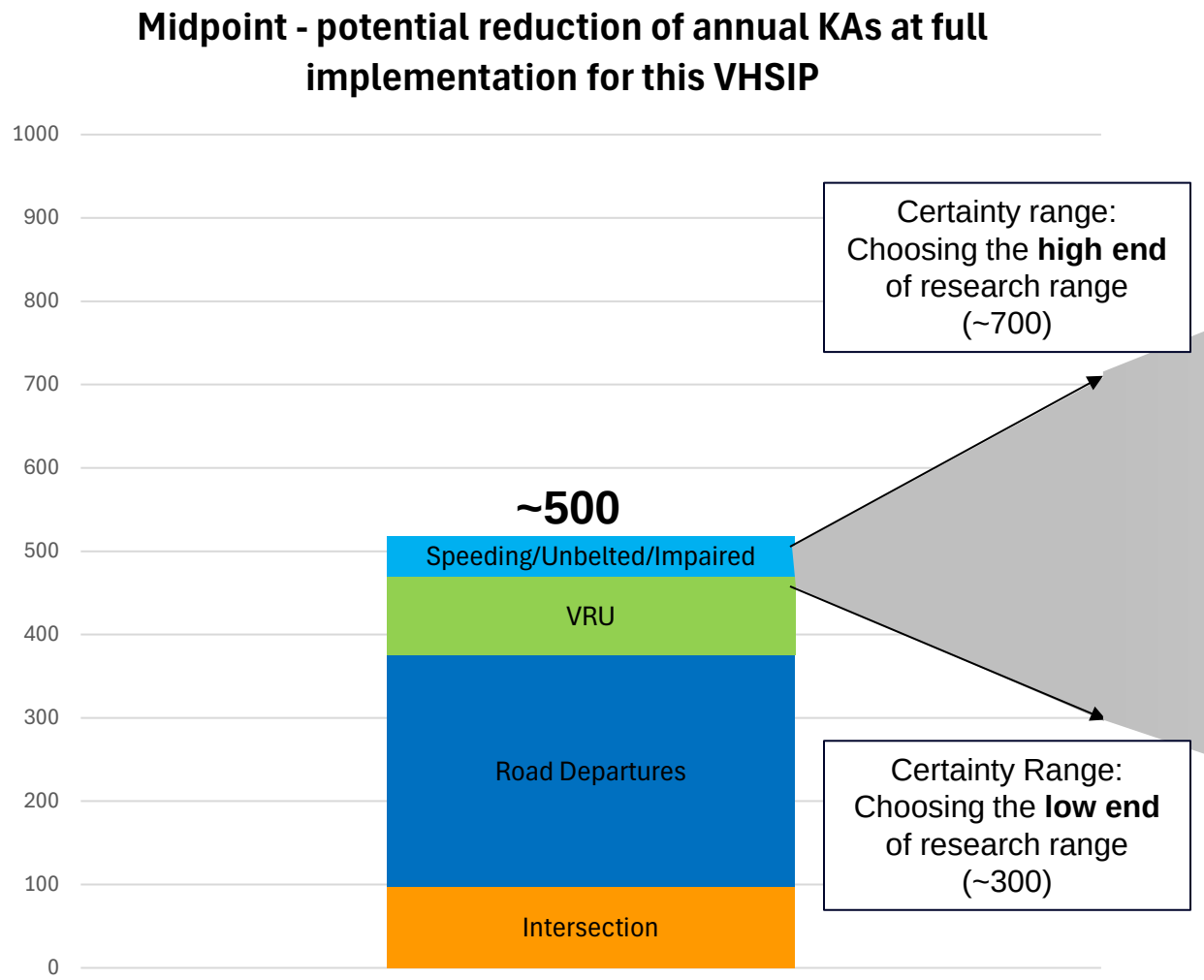
How do we “predict” the impact of our investment?



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How do we “predict” the impact of our investment?



Certainty range: Choosing the **high end** of research range (~700)

Certainty Range: Choosing the **low end** of research range (~300)

+ benefit from list of strategies we don’t yet have data to project FSI improvements for

Macro-society factors that can improve actual outcomes:

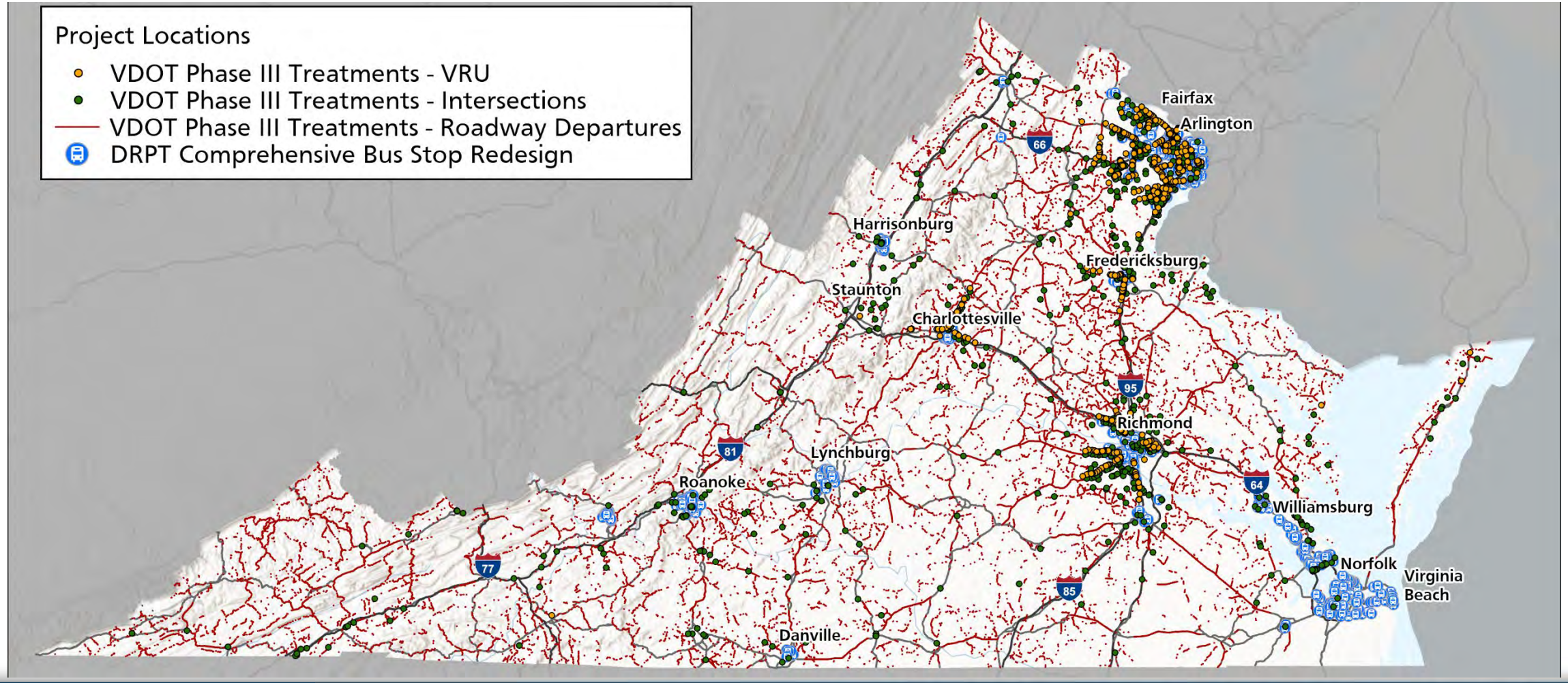
- Safer car design
- Safety-positive uptake of autonomous features and vehicles
- More conformance with seatbelt, speeding, distracted, drunk driving laws (possibly because of ASEs)
- Less overall alcohol/drug use
- Less driving (mode shift, WFH, etc.)

Macro-society factors that can hurt actual outcomes:

- More societal alcohol/drug use
- Less conformance with seatbelt, speeding, distracted, drunk driving laws
- Significantly reduced congestion (like COVID) → higher overall speeds
- More driving

OVERVIEW

VHSIP Phase III and DRPT Planned Safety Treatment Locations



Implementation Plan for VHSIP Projects

Financially Constrained Proposed Projected Funding

Legend: PE/ Planning | PE & CN | CN | Ongoing

Notes: Based on FY 2027 Six-Year Financial Plan
FY33 figures are based on future assumptions

Countermeasures	Emphasis Area	Planned Locations (# or Miles)	Previous FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33
Pilot Investigations	All	-							
VRU Treatments - VDOT	VRU	**432 Intersections**							
All Way Stop Controlled Intersections	Intersection	**375 Intersections**							
Enhanced Pavement Marking	Roadway Departure	**2000 Miles**							
Dynamic All Red Extension	Intersection	**150 Intersections**							
High Friction Surface Treatment	RD/Intersection	**500 Curves/Intersections**							
Rural Roads	Roadway Departure	**2600 Miles**							
Locality VRU and Intersection Systemic	VRU	**1470 Locations**							
Behavioral Campaigns and Interventions	All	**-**							
Law Enforcement	Speeding, unbelted, impaired	**-**							

VHSIP Phase III Pilot Program
For this VHSIP – we hold a special budget for pilots



There are some things that we suspect could be very high ROI for safety – but the data isn't available yet.



Therefore we hold a budget for piloting new ideas with an emphasis on measurement of impact



We will expand implementation of pilot concepts that go very well, and share our results to benefit the community



$6M Total Cost

Example pilot concepts:

- Rail Crossing Monitoring: Technology-based solutions to monitor real time conditions and send alerts of incidents/occupations at high-risk crossings
- Safe Speed Limit and Design Speed: study to consider lower/maximum speeds on urban/suburban arterials and collectors with potential for reduced FSI
- Research-Based Behavior Campaigns: study to assess effectiveness of specific targeted behaviors (both in reduction in FSI and changes in behavior)

VULNERABLE ROAD USERS

Reminder from April Presentation: Pedestrian & Bicyclist Fatalities and Serious Injuries

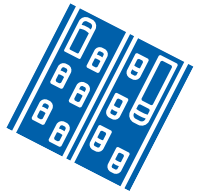
Pedestrian & Bicyclist	Annual Average	% of All
Fatalities (F)	155	17%
Serious Injuries (SI)	585	8%



49% of pedestrians on urban roads are within 500ft of a bus stop



79% of fatalities and 53% of serious injuries on urban roads are at night



89% of fatalities and serious injuries are on urban / suburban roadways



66% on urban roads occurred within intersections*

Note: All numbers are based on 2021-2025 crash data.

* Within 150 feet of intersection

VHSIP Phase III Planned Safety Treatments
VDOT Vulnerable Road Users (VRU)

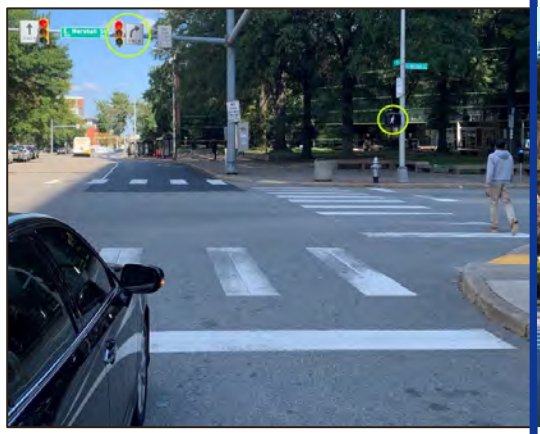
*VRU reductions are broken into two parts – locality and VDOT focused. Thus, $/FSI is different than on opening chart which combines them.

432 Total Locations
Note: Number subject to field reviews.

$60M Total Cost
FY 27-32

8-15 FSI Reduction/Year
$385K Annually per FSI Reduction*

Leading Pedestrian Interval



400 locations

Up to 13%
vehicle-pedestrian crash reduction

Pedestrian Crossing



141 locations

Up to 40%
vehicle-pedestrian crash reduction

Crosswalk Lighting



321 locations

Up to 12%
vehicle-pedestrian crash reduction

Pedestrian Countdown Signal



169 locations

Up to 9%
vehicle-pedestrian crash reduction

DRPT/Locality - Comprehensive Bus Stop Re-Design

*VRU reductions are broken into two parts – locality and VDOT focused. Thus, $/FSI is different than on opening chart which combines them.

420-600 Locations

Note: Number subject to field review and locality support

$75M Total Cost
FY 27-32

50-125 FSI Reduction/Year
$75K Annually per FSI Reduction*

Rectangular Rapid Flashing Beacons



Up to 69%
vehicle-pedestrian crash reduction

Pedestrian Hybrid Beacon



Up to 58%
vehicle-pedestrian crash reduction

Transit Signal Priority



Up to 8%
vehicle-pedestrian crash reduction

Bus Stop Redesign



Up to 20%
vehicle-pedestrian crash reduction

Behavioral Techniques for VRUs

Examples

- Statewide advertising (e.g., “You are Not a Duck” fall campaign and "See and Be Seen" messaging)
- Targeted grassroots outreach (e.g., West Broad Street corridor initiative)
- Localized driver engagement for new infrastructure (e.g., bike lanes)





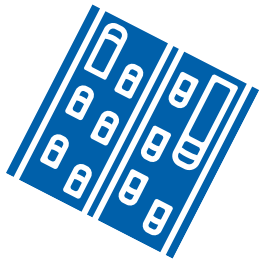
New and Continuing Laws Will Support Our VRU Goals, Though they are Outsight the Purview of the VHSIP

Previous Laws	Laws Added in 2026
• Photo Speed monitoring in school zones (SZ), high risk intersections (@ SZ)	• Photo Speed monitoring in VRU safety red zones in NoVA (PD-8)
• Traffic Signal red light running violation monitoring	• Stop-sign and pedestrian crossing violation monitoring • Passing stopped bus technology and enforcement

INTERSECTIONS

Reminder from April Presentation: Intersection Related - Fatalities & Serious Injuries

Intersection Related	Annual Average	% of Total
Fatalities (F)	312	34%
Serious Injuries (SI)	3,135	44%



76% of fatalities and serious injuries at intersections are on urban / suburban roadways



54% of fatalities and 39% of serious injuries on urban intersections are at night

Note: All numbers are based on 2021-2025 crash data. 0.3% F&SI crashes have speed limit & lane count info unknown.

VHSIP Phase III Planned Safety Treatments
VDOT Intersections

775 Total Locations
Note: Number subject to field reviews.

$45M Total Cost
FY 27-33

86-116 FSI Reduction/Year
$35K Annually per FSI Reduction

High Friction Surface Treatment



250 intersections

Up to 55%
crash reduction

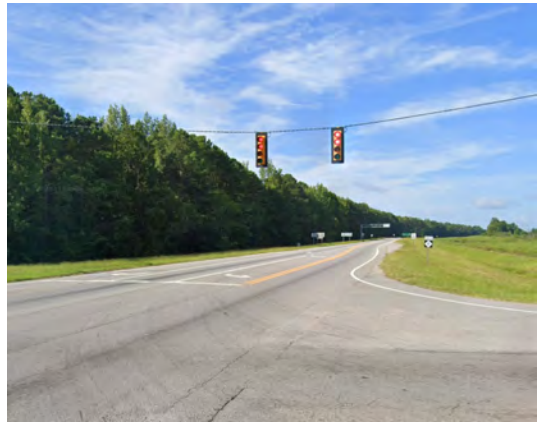
All-Way Stop Controlled



375 intersections

Up to 70%
crash reduction

Dynamic All-Red Extension



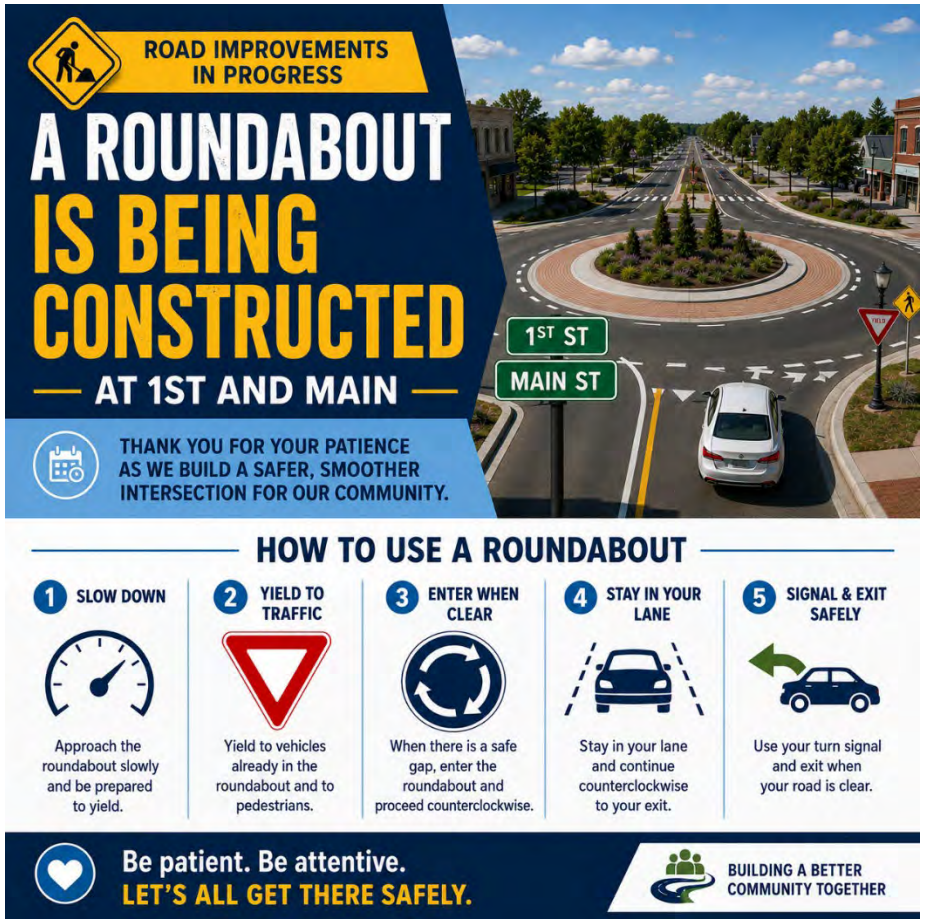
150 intersections

Up to 7%
red-light running
crash reduction

Behavioral Techniques

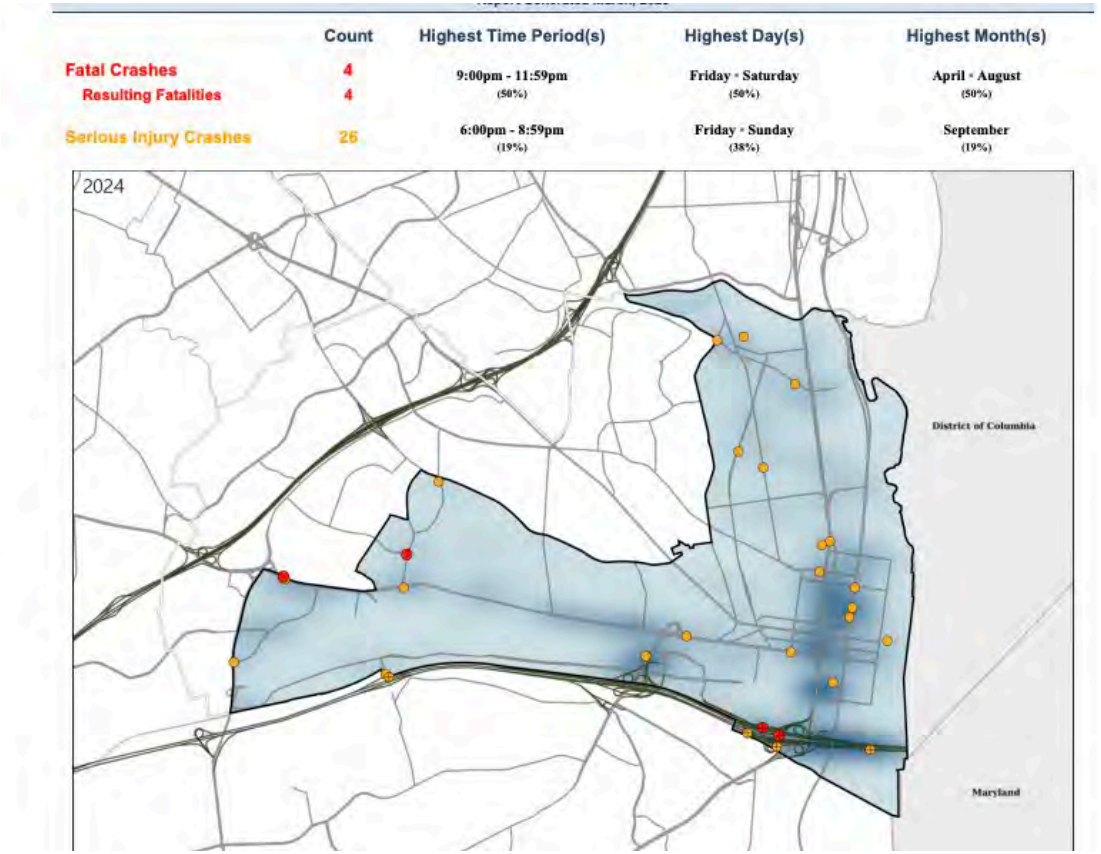
Examples:

- Localized community engagement for new infrastructure (e.g., roundabouts)
- Broader engagement for new systemic fixes being deployed in a region (such as high friction surface treatment)



Legal and Administrative

- We will roll out updates to traffic crash data collection requirements through TREDS (Traffic Records Electronic Data System) to help us better understand crashes and emerging trends



Images of district crash data reports from TREDS

ROADWAY DEPARTURES

Reminder from April:
Roadway Departures - Fatalities & Serious Injuries

Roadway Departures	Annual Average	% of Total
Fatalities (F)	448	48.5%
Serious Injuries (SI)	2,548	35.5%



60% of departure related fatalities and serious injuries are on rural roadways



73% of fatalities and serious injuries involve either impaired driving, speeding, or unprotected occupants

Note: All numbers are based on 2021-2025 crash data. 0.1% F&SI crashes have speed limit & lane count info unknown.

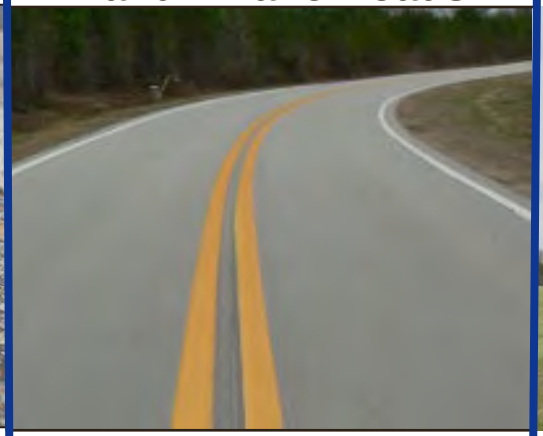
VHSIP Phase III Planned Safety Treatments
Roadway Departures on VDOT Systems

250 Curves and 4,600 Miles

Note: Numbers subject to field reviews.

$245M Total Cost FY 27-33

227-366 FSI Reduction/Year
$81K Annually per FSI Reduction

High Friction Surface Treatment (Curves)	Enhanced Pavement Marking 2 and 4 Lane Roads	Expanded Two-Lane Rural Roads
		
250 curves	2,000 miles	2,600 miles
Up to 55% crash reduction	Up to 37% crash reduction	Up to 48% crash reduction

Behavioral Techniques

Examples:

- Digital alerting system to protect first responders at roadside incidents
- Distracted and drowsy driving prevention campaigns
- Defensive driving training for teens to prevent overcorrecting



SPEEDING, IMPAIRED/DISTRACTED DRIVING, UNBELTED

Reminder from April Presentation:
Reminder on Behavioral Elements of FSI

3 main behavioral factors in crashes on our roadways*		
Speeding – 2,087 fatalities (45% of all fatalities)	**Unrestrained** – 1,643 fatalities (36% of all fatalities)	**Alcohol** – 1,380 fatalities (30% of all fatalities)

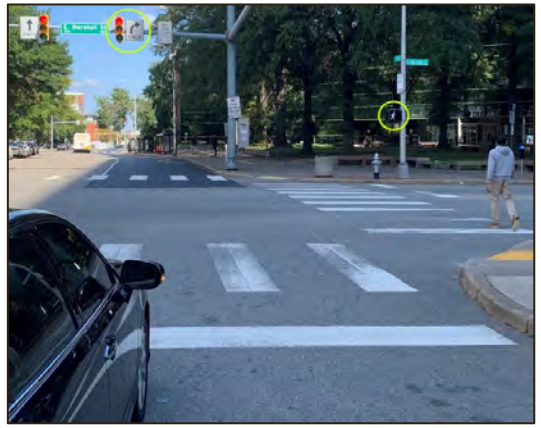
These factors often occur simultaneously	
53% of **unrestrained** fatalities involve **speed** & 35% involve **alcohol**	52% of **alcohol-related** fatalities involve **speed**

75% of fatalities involve at least one of the three – Speeding, Impaired*, Unbelted

Infrastructure Techniques

Many of the infrastructure techniques described before are design to mitigate speeding

- VRU accommodations and traffic control devices indicate context for activity
- All Way Stop intersections reduces speed of potential collisions
- Curve delineation and warning signs for appropriate speeds





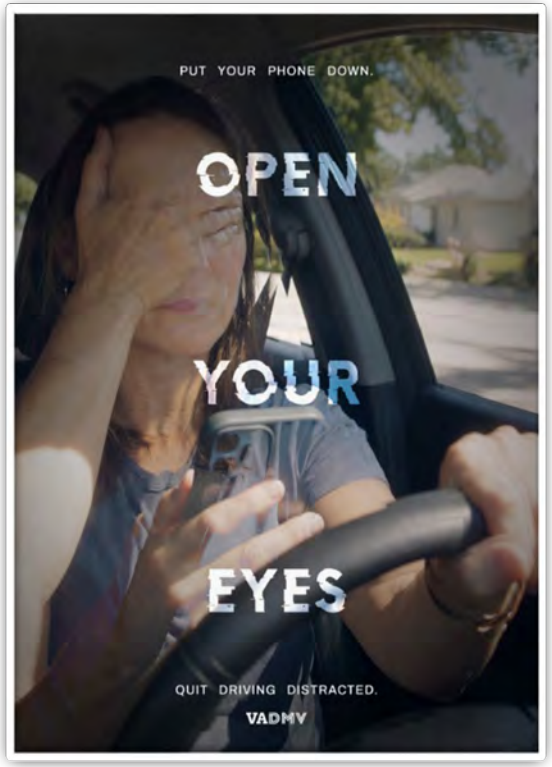


Behavioral Intervention Techniques

Examples:

- Statewide advertising (e.g., “Open Your Eyes” distracted driving prevention campaign)
- High-impact activations (e.g., “Speed Has an Impact ladder)
- Grassroots community engagement (e.g., Community Voices seat belt project)
- Sports marketing (e.g., college and professional athletic partnerships)





Law Enforcement Support Focused on Speeding, Impaired Driving

VHSIP includes:

- Funding for law enforcement support (e.g., overtime funding for sobriety checkpoints and saturation patrols)
- Law enforcement challenge to recognize agencies who meet traffic enforcement goals



BUDGET SUMMARY

Behavioral Funding Strategy for October Vote

Countermeasures	Emphasis Area	Previous FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	SYIP Totals
Marketing & Outreach	All	$33.8	$27.2	$28.2	$30.0	$30.8	$22.5	$22.5	$195.0
Law Enforcement & First Responders	All	$8.5	$8.0	$8.0	$8.0	$8.0	$8.0	$7.0	$55.5
Education	All	$6.0	$7.0	$7.0	$7.0	$7.0	$7.0	$6.0	$47.0
Court & Recidivism Prevention	Impaired	$5.0	$6.0	$6.0	$5.0	$5.0	$5.0	$4.2	$36.2
Sober Ride Programs	Impaired	$1.0	$1.0	$1.0	$1.0	$1.0	$1.0	$1.0	$7.0
Innovation	All	$1.0	$1.0	$1.0	$1.0	$1.0	$1.0	$1.0	$7.0
Program Support	All	$1.0	$1.0	$1.0	$1.0	$1.0	$1.0	$1.0	$7.0
Annual Expenditure Amount		$56.3	$51.2	$52.2	$53.0	$53.8	$45.5	$42.7	$354.7

Implementation Plan for Infrastructure Systemic Treatments

Financially Constrained Proposed Projected Funding

Based on FY 2027 Six-Year Financial Plan

****FY33 based on future assumptions****

Legend: PE | PE & CN | CN | Ongoing

Countermeasures	Emphasis Area	Future Cost ($M)	Planned Locations (# or Miles)	Previous FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33**	SYIP Totals
Pilot Projects	All	**$6M**	~								
VRU Intersection Treatments	VRU	**60.0**	432 Intersections								
All Way Stop Controlled Intersections	Intersection	**15.0**	375 Intersections								
Enhanced Pavement Marking	Roadway Departure	**70.0**	2000 Miles								
Dynamic All Red Extension (DARE)	Intersection	**10.0**	150 Intersections								
High Friction Surface Treatment (HFST)	RD/Intersection	**45.0**	500 Curves/Intersections								
Two Lane Rural Road (TLRR)	Roadway Departure	**150.0**	2600 Miles								
Locality VRU and Intersection Systemic (w/ DRPT)	VRU	**75.0**	1470 Locations								
Total Spending Plan ($M)		**425**		**82.0**	**39.0**	**31.0**	**44.0**	**69.0**	**83.0**	**77.0**	**425.0**

Previous Implementation Plan Phases for Systemic Treatments

Legend: PE | PE & CN | CN

Countermeasures	HSIP Funding Through FY 33 ($M)	Planned Locations (# or Miles)	Delivery Complete (%)	Previous FY27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33
Phase I Original Systemic Plan (2020)										
High-Visibility Backplates (VDOT)	15.0	3,032 Intersections	100%							
Flashing Yellow Arrows (VDOT)	10.0	1,144 Intersections	100%							
Curve Delineation (VDOT)	15.0	1,486 Curves	100%							
Unsignalized Intersection (VDOT)	15.0	1,512 Intersections	100%							
Pedestrian Crossings (VDOT)	25.0	441 Crossings	95%							
Shoulder Wedge (VDOT)	Maintenance funds	27,105 Miles	9%							
CL Rumbles - Primaries (VDOT)	10.0	1,889 Miles	65%							
Edge Rumbles - Primaries (VDOT)	15.0	2,609 Miles	62%							
Total	**105.0**			**105.0**						
Phase II Systemic Plan (2022)										
Locality Systemic Projects (Urban)	125.0	86 UPC's Various	Under Way							
Expanded Flashing Yellow Arrows (VDOT)	10.0	142 Intersections	92%							
Expanded Pedestrian Crossings (VDOT)	20.0	179 Crossings	81%							
Two-Lane Rural Roads (VDOT)- TLRR	90.0	2096 Miles	40%							
TLRR (VDOT) - Shoulder Widen + Rumbles	55.0	104 Miles	Under Way							
Spot Projects (VDOT)	145.0	59 UPC's Various	Under Way							
Total	**440.0**			**320.0**	**65.0**	**45.0**	**10.0**			
Grand Total	**545.0**			**425.0**	**65.0**	**45.0**	**10.0**	**0.0**	**0.0**	**0.0**

KEY RISKS AND MITIGATIONS

Risk and Planned Mitigations

Topic	Local Alignment to Strategy	Project Readiness Coordination	Human Beings
Risk	Localities are required to invest VHSIP $ in VHSIP strategy – but some may prefer other investments, be unfamiliar with these, or have trouble delivering on time.	Thousands of projects must be coordinated and ready to go at the right time across multiple districts. That's hard.	Human beings will keep making choices every moment they drive. Some of those are bad choices.
Mitigation	1. Provide recommended interventions to localities based on geospatial data 2. Strong and maintained outreach and education 3. Reminder that funding for spot improvements for safety exists elsewhere 4. Offer VDOT implementation where appropriate	1. Prescreening of asset inventory to prioritize locations. 2. Deprioritize locations with ROW, utility, etc. to save time. 3. Rigorous milestone tracking.	1. Keep pushing to improve behavioral interventions 2. Engage thoughtfully in hard conversations about the balance of safety vs. other important values.

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Thank you.

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Virginia Department of Aviation

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The Port of Virginia

VDOT

Virginia Spaceport Authority