



TPB Safety Subcommittee Presentation: Evolving Efforts in Data & Analysis

September 2026



Agenda

1. Introductions
2. Crash Data Analysis
3. Prioritization Modeling
4. Before & After Studies
5. Looking Forward



Crash Data Analysis: Tasks & Timelines



Weekly

Active Crash Tracking
Identify Trends and quality check data

Monthly

Update Public Facing Dashboard
Monthly data updates

Quarterly

Critical Crash Reviews
Collaborate with Police and other teams to discuss details and next steps for all severe and fatal crashes

Annually

Action Spots
Refined the process added weighting to locations, weed out locations with active projects

Crash Report
Analyze trends of the previous year

Every Three Years

High Injury Network
Standard protocol for each audit (review crashes, multimodal data, community reports, upcoming projects)

Weekly Active Crash Tracking

- 2024- Present
- Has evolved over time to be more in depth and look at more data points
- We look at every crash that happened each week – specifically looking for Pedestrian, Bike, Scooter, E-bike, E-Moto and Serious Injury crashes
- Used to identify trends, recurring locations
- Clarify E-devices in dataset
- A way to quality check our data set

E-moto crashes are on the rise in Arlington. When choosing a vehicle for yourself or your teen,

KNOW THE DIFFERENCE.



E-Bikes

- Class 1: Up to 20 mph, pedal-assist
- Class 2: Up to 20 mph, throttle-assist
- Class 3: Up to 28 mph, pedal-assist



E-Motos

- Maximum speeds up to 30-65+ mph
- Can be falsely advertised as e-bicycles
- Require a motorcycle driver's license



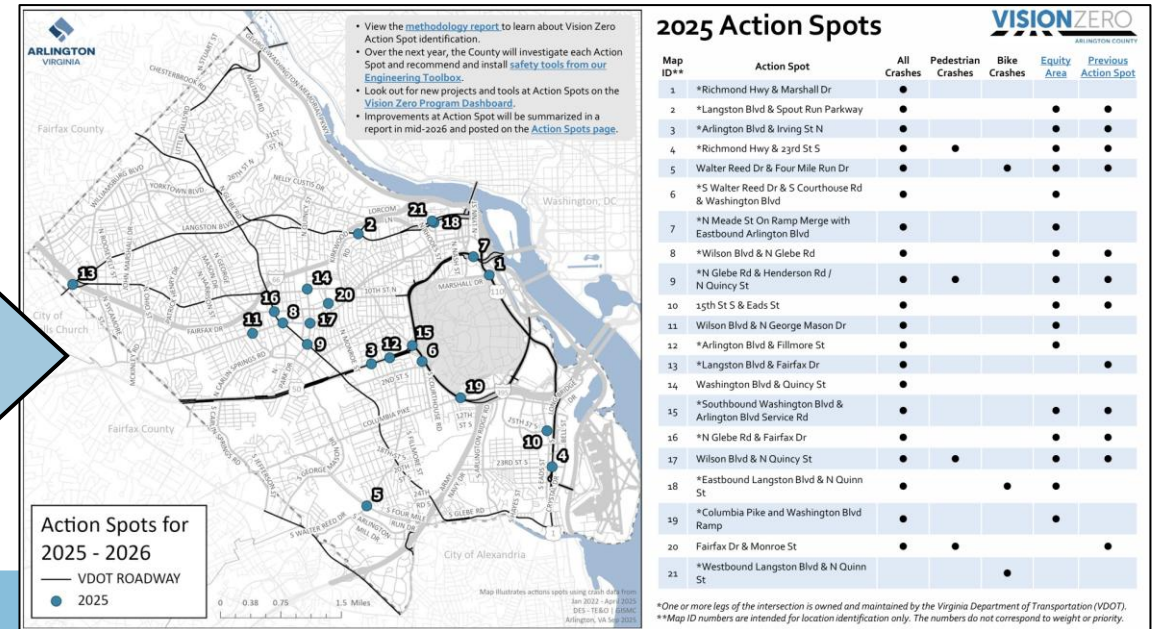
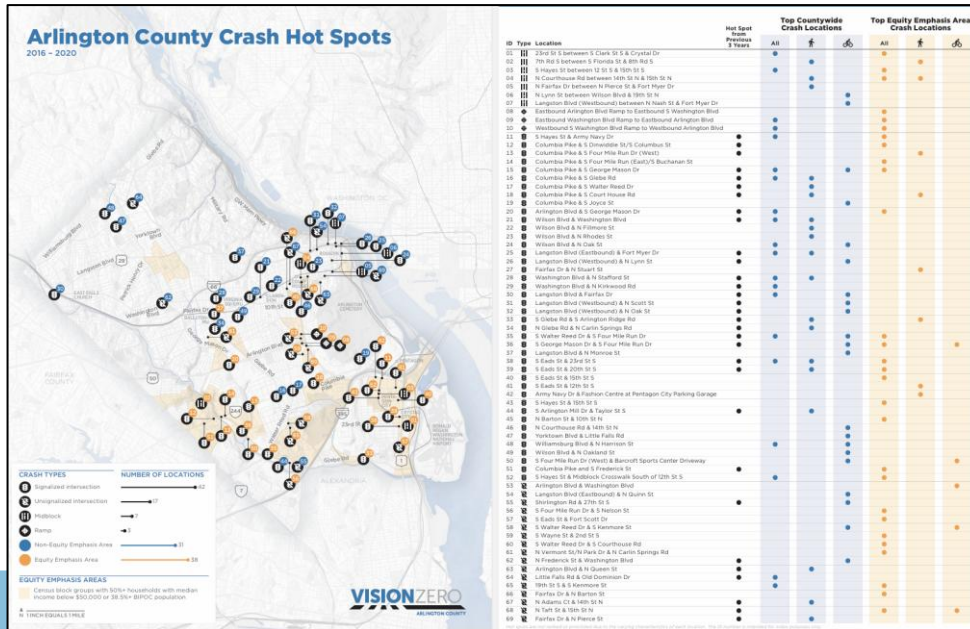
What You Can Do:

1. Check the laws before you ride
2. Don't allow children or young teens to ride e-motos

Crash Data Analysis: Changes Over Time

During the first years of our Vision Zero program...

- Intersection Analysis: From “Hot Spots” to “Action Spots”
 - From five years of data to three years of data
 - From assessment every two years to now every year
 - Weed out intersections that already have incoming projects
 - Updated severity weights, added/removed normalization, removed hard-braking data



During the first years of our Vision Zero program...

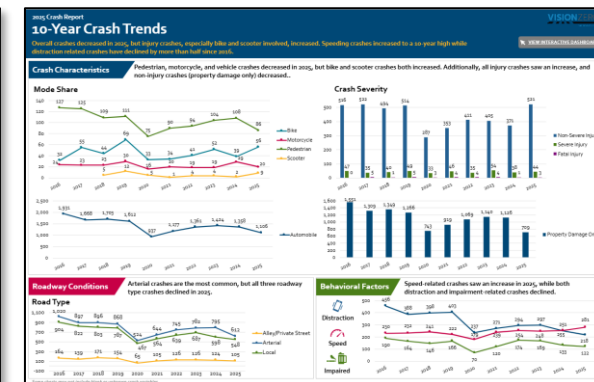
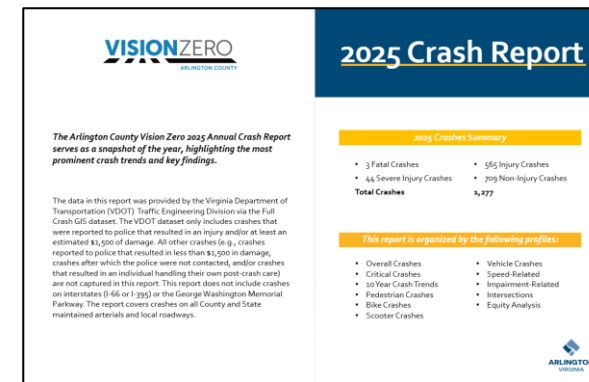
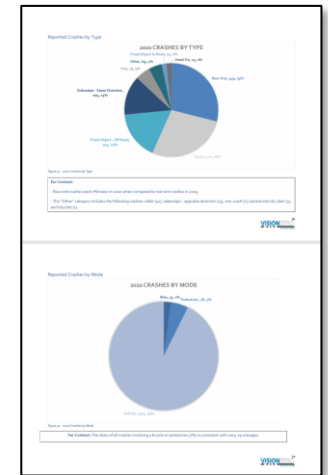
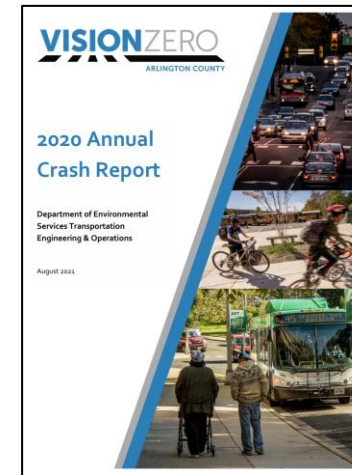
- High-Injury Network
 - Updated every three years
 - From three years to five years to three years of data
 - From pure density to weights by severity
 - From 1-mile window segments to 0.5-mile window segments



Crash Data Analysis: Changes Over Time

During the first years of our Vision Zero program...

- Annual crash reports
 - From 50+ pages to about <15 pages
 - Crash data is now organized into different “profiles”
 - Overall Crashes
 - Critical Crashes
 - 10 Year Crash Trends
 - Pedestrian Crashes
 - Bike Crashes
 - Scooter Crashes*
 - Vehicle Crashes
 - Speed-Related
 - Impairment-Related
 - Intersections
 - Equity Analysis



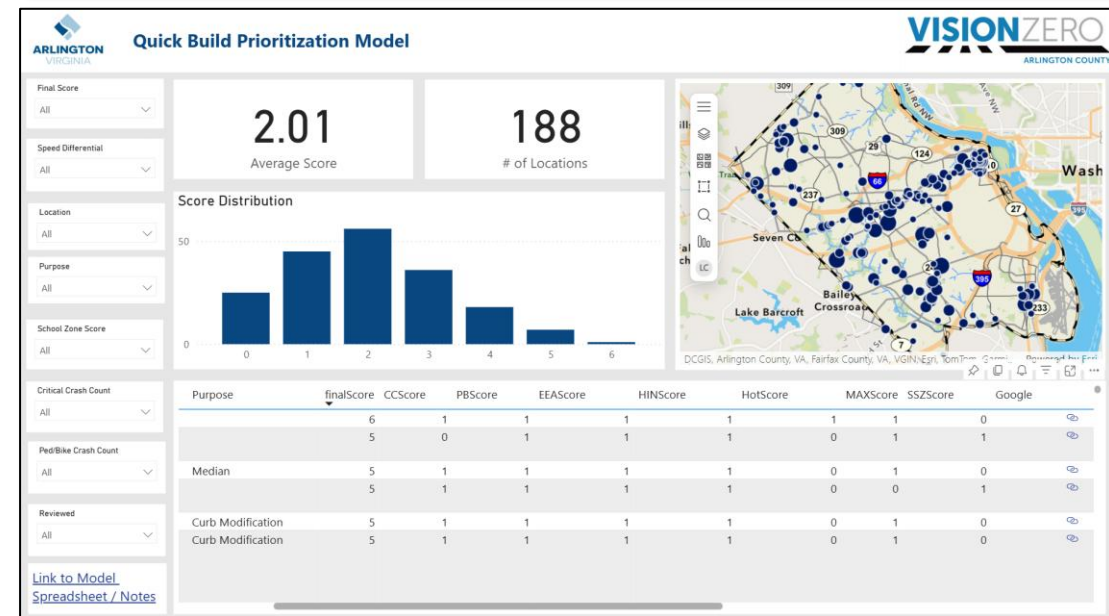
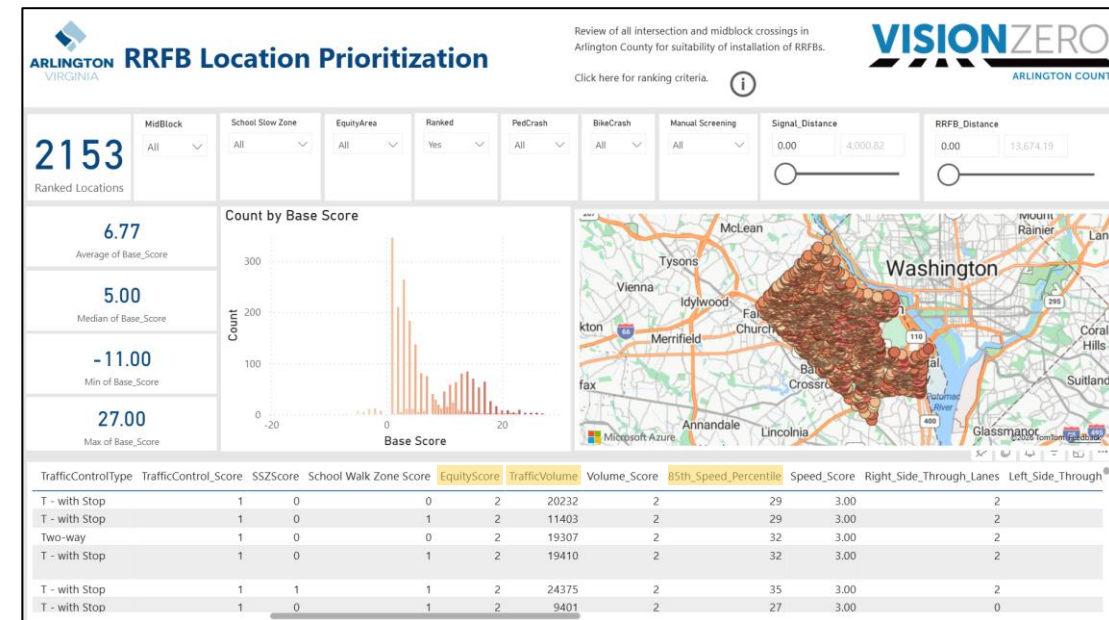
Prioritization Modeling

RRFBs, Quick-Build Projects, PhotoSPEED,

- Streetlight data
 - Speeds/volumes for vehicles
- Use Cartegraph for assets
 - Ex: converting tactical Quick-Build projects to permanent concrete build-outs
- Equity metrics
- *Need more exposure data for ped/bike/scooter activity*

Asset and volume data can also be used to screen candidate for:

- Tactical speed humps
- Right turn hardening across bike lanes
- Centerline hardening
- Speed management pilot



Before & After Studies

- Crash Based: looking at an intersection or area and comparing crashes that happened before a change and after a change
- Tool Based: for every pilot project we will conduct a before and after study to see how conditions have changed

Before/After Speed Data

We collected speed data at various points along each corridor before and after speed humps were installed.

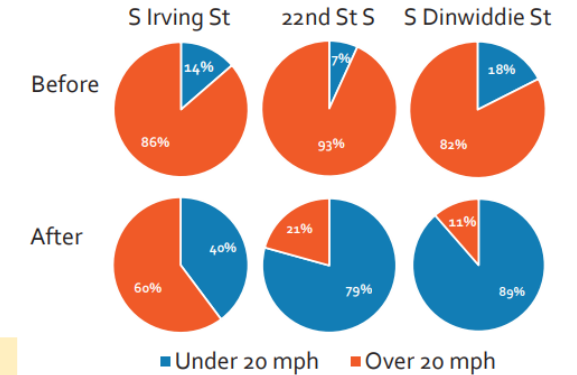
Traveling speeds decreased along all corridors.

- -33.36% reduction in average speed
- -32.67% reduction in 85th percentile* speed

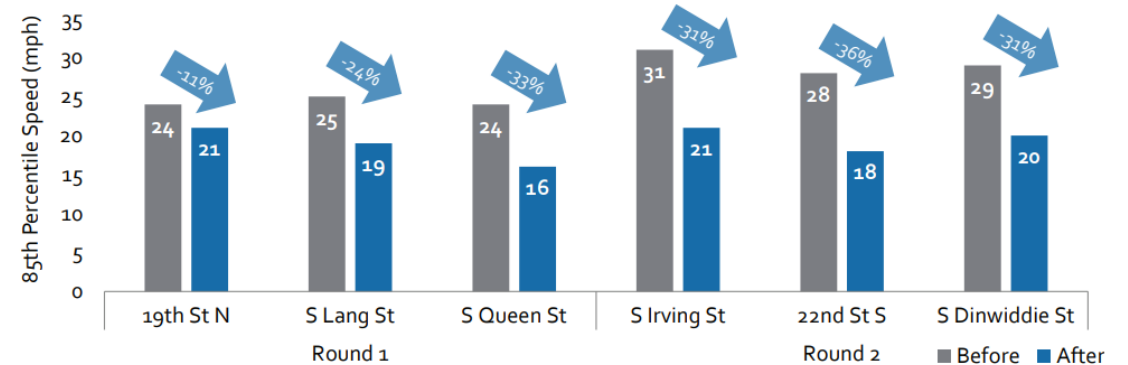
The average reduction in 85th percentile* speeds along project corridors was -22.67% in [Round 1](#) and -32.67% in Round 2.

*The 85th percentile speed is the speed at or below which 85% of drivers travel on a road segment.

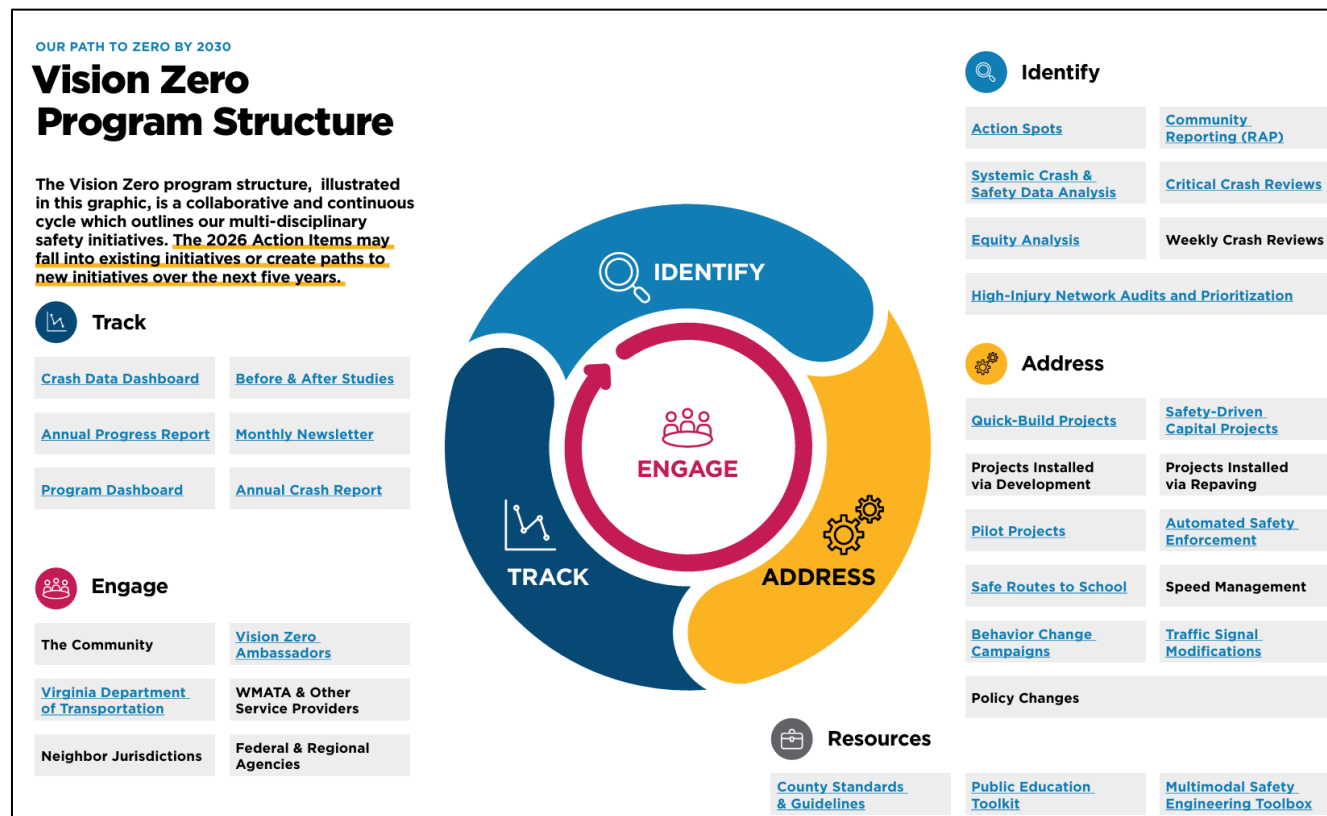
Percent of Drivers Traveling over 20 mph



Combined 85th Percentile* Speeds: Rounds 1 & 2



Looking Forward: 2026-2030 Action Plan Update



Engineering

- Standardize proactive safety
- Manage speeds
- Expedite safety project installation
- Use data to drive enforcement
- Advance safety analytics using technology
- Expand the toolbox
- Assess projects with before/after studies

Engagement

- Bolster VDOT partnership
- Focus Engagement on the HIN
- Expand staff training
- Establish an Ambassadors program
- Host year-round outreach
- Build traffic gardens

Plan & Policies

- Advance construction standards
- Formalize a Safe Routes to School Program
- Secure funding
- Turnaround requests for services in 90 days
- Improve scooter tracking
- Set safety policies for new technology

Behavior Change

- Reduce speeding and aggressive driving
- Reduce impaired driving
- Reduce distraction
- Educate e-scooter and e-bike users
- Educate older adult travelers
- Educate young travelers
- Reduce lane blockages

Looking Forward: New Action Items

	Action Item	Rationale	Program Cycle	Action Item Description	Progress Measures	Outcomes Measures
	1 Standardize proactive safety	To proactively identify and address safety risk factors.	Identify	Institute a systemic and proactive safety analysis initiative that uses crash and environmental data to prioritize safety risks.	# of systemic risk factors analyzed # of projects implemented post analysis	Crashes by severity
	2 Manage speeds	Because speeding is involved in 1 in 5 critical crashes.	Address	Establish a speed management policy that will be used to implement context-driven speed management strategies across all street types, both with historical crash patterns and speed risk factors using tools from the toolbox and pilots.	# speed management projects implemented	85th percentile speeds (% of vehicles traveling 5 mph above speed limit) - Speed-related crashes
	4 Use data to drive enforcement	To focus education and enforcement resources in our highest risk safety issues.	Address	Use crash, speed, and conflict-risk data to identify and prioritize locations for both in-person education and enforcement and automated safety enforcement. Continue to assess automated safety enforcement programs and advocate for expansion or legislation to increase effectiveness of the program.	- Citations by type per year - DMV grant funded enforcement hours per year	- Speed-related crashes - Red-light running related crashes - Impairment-related crashes - Distraction-related crashes
	5 Advance safety analytics using technology	Because unbiased, quantitative near miss data is not currently available.	- Identify - Track	Enhance intersection evaluation by exploring and integrating innovative technology for analysis of conflict risks.	# of studies completed	- Intersection crashes - Crashes by severity - Crashes by mode
	7 Assess projects with before/after studies	To create a formal process for evaluating and publishing findings for capital investments in safety.	Track	Analyze before/after crash data on a set cycle for quick-build and safety-driven capital projects and publish in the Annual Progress Report to understand the impacts of safety investments and provide justification for future project decision-making.	# of before/after studies published per year	- Quick-build project before/after - HIN lookback before/after - Capital project before/after
	5 Improve scooter/e-device tracking	Because crash datasets lack a scooter category, making it hard to understand and analyze trends.	- Identify - Address	Work with DMV and VDOT to advocate for the addition of a dedicated scooter/micromobility column to the Virginia crash dataset or FR300 form to improve scooter-involved crash analysis and action.	Scooter crash reporting incorporated into annual reports and dashboards	Crash by travel mode

Lessons Learned

1. Create Layers

- Making sure that by having different programs we can cover different angles of safety analysis

2. Institutionalize

- Simple, Sustainable, Repeatable

3. Tell the Story

- Dashboards, sustainable reporting structures, Methodologies available

