



Case Study: Virginia DOT Uses Probe Data to Track Excessive Speeds



When COVID restrictions went into effect, transportation agencies worldwide experienced a drop in traffic volume, an uptick in excessive speeding, and a shockingly high (24%) increase in fatal crashes.

In Virginia, at the request of the Virginia Commonwealth Board, the state was already working to address the excessive speeds issue - specifically, where, when, and how frequently the percentage of people speeding and the percentage of people driving more than 10 mph over the posted speed limit.

Challenge: Track Excessive Speeds

Using INRIX XD Flow Data based on vehicle probes, VDOT gathered and organized the most actionable granular speed data available to deliver the most detailed picture of the problem.

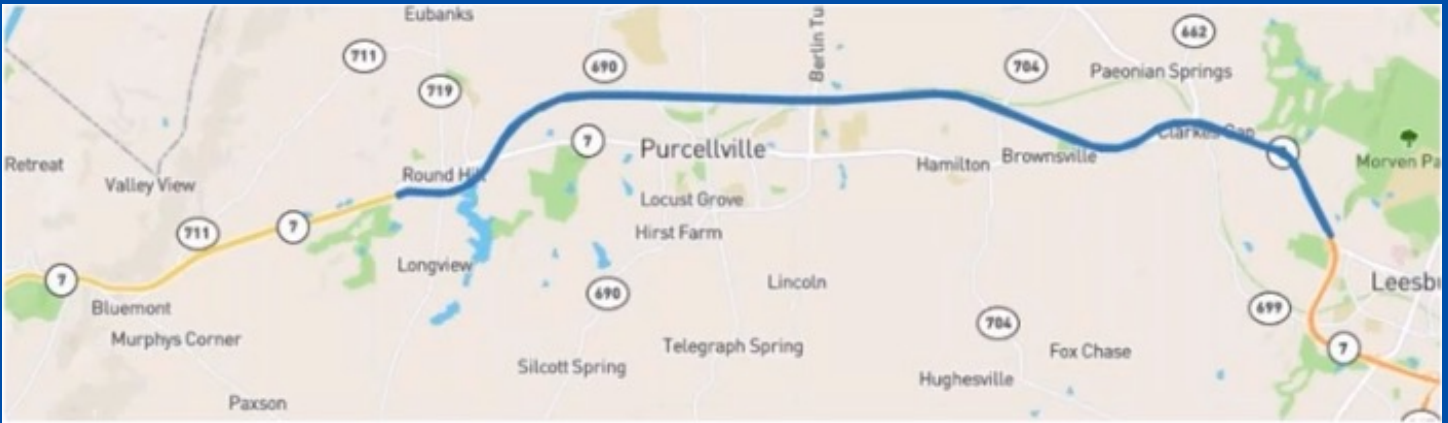
Challenge: Choose the Location

Using the VDOT Crash Analytics Tool to identify high-speed crash areas, engineers chose an 11-mile segment of VA-7, a well-traveled and a well-traveled commuter corridor in Loudon County that changes from a rural to suburban area west of Washington D.C. with a posted speed limit of 55 mph. (map 1)

The Virginia Department of Transportation (VDOT) is responsible for building, maintaining and operating the state's roads, bridges, and tunnels. Virginia has the third-largest state-maintained highway system in the country at 57,867 miles – just behind Texas and North Carolina. Northern Virginia is home to many Washington D.C. employees.

“The level of extreme speeding is really shocking. What we're seeing here—the fact that there's less traffic and more speeding—I think that's evidence that traffic is a great controller of speed.”

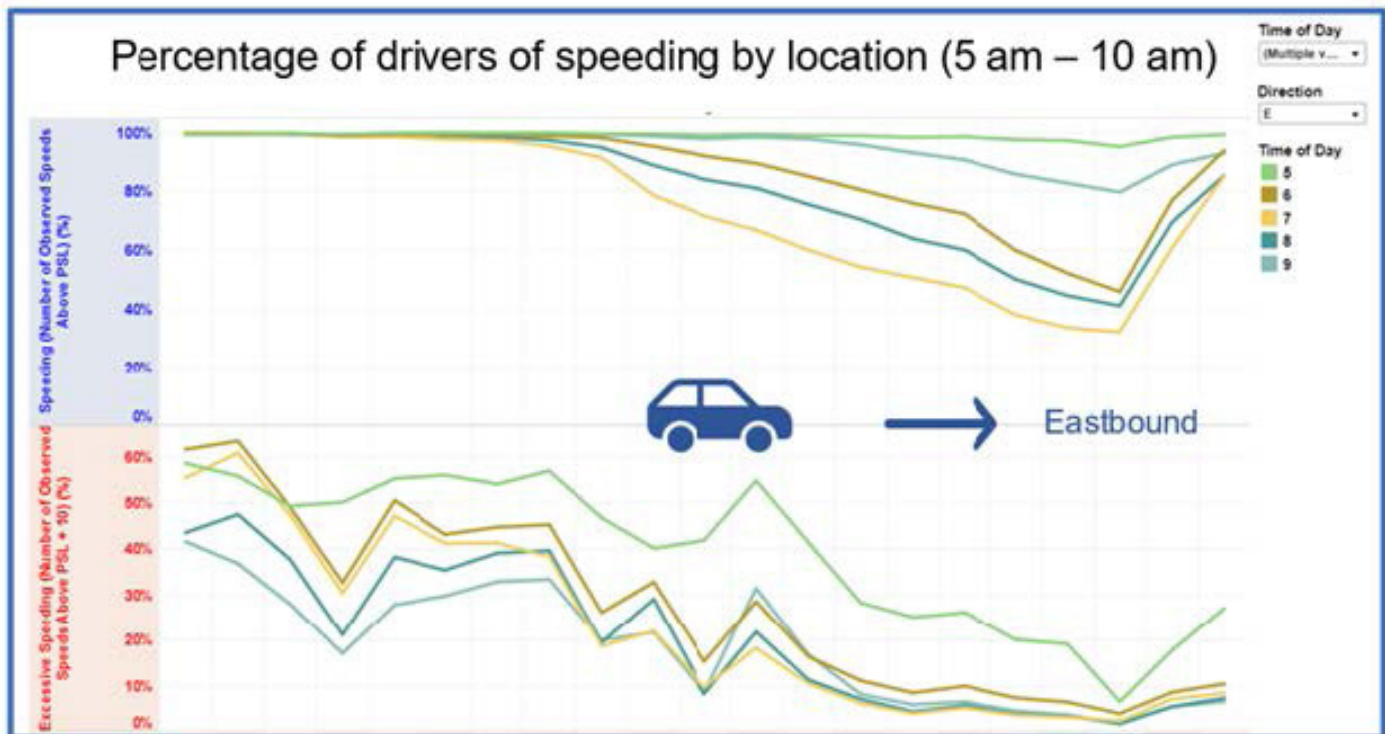
Harvey Miller, director of the Center for Urban and Regional Analysis at The Ohio State University



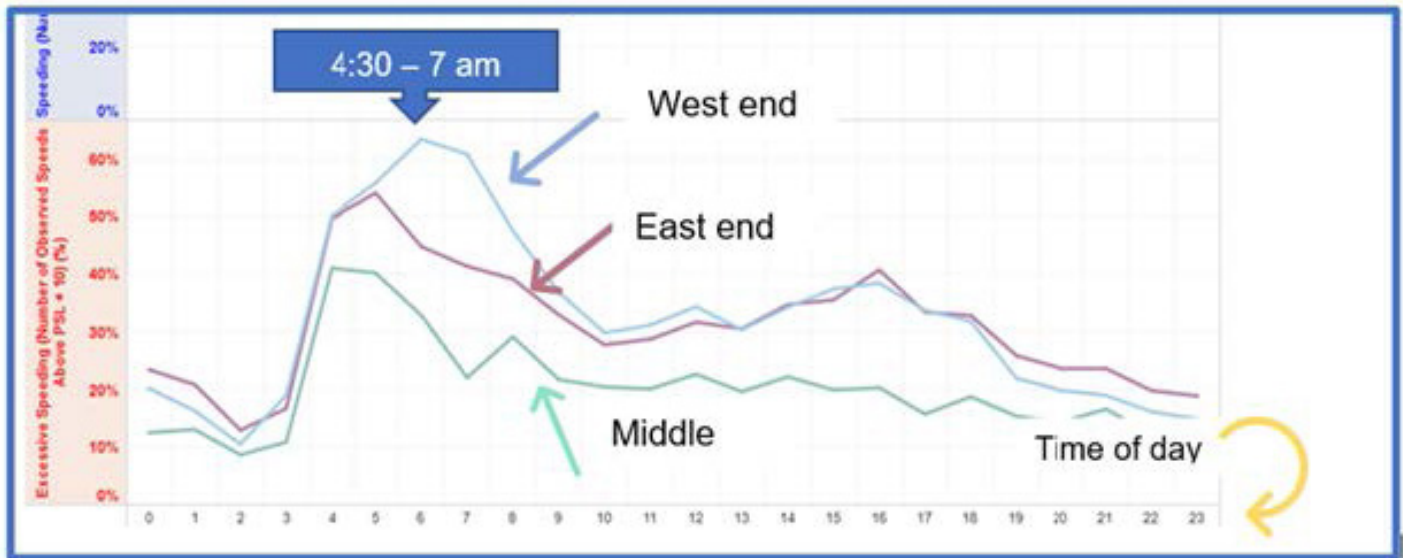
Analysis

- Drivers are speeding
- Speeding is defined as greater than 56 mph; excessive speeding is defined as greater than 65 mph
- Review speeds for 23 miles, 11.5 miles in each direction
- Provide a complete, detailed speed profile in both directions all day, every day on this roadway

Using INRIX Probe Data, VDOT tracked location, time, frequency, and percentages, and communicated the information via heat maps, graphs, columns and rows, and color comparisons.



Percentage of drivers exceeding 65+ mph by time of day

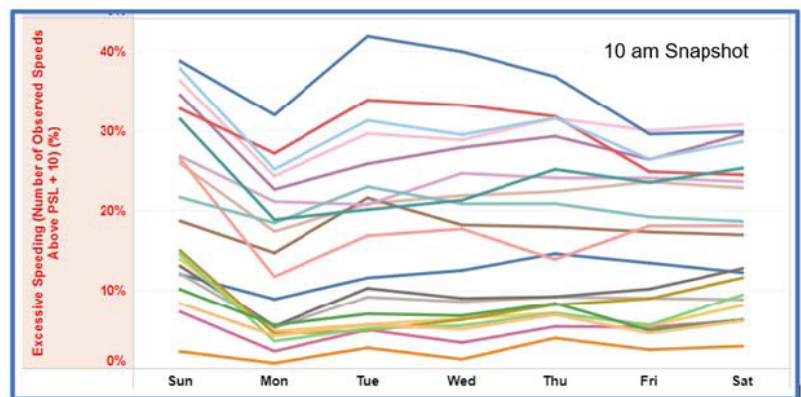


Up to 60% of drivers exceeded the posted speed limit by 10 mph or more between 5am and 10am. Most of the speeding occurred on the more rural west end of VA-7. However, significant excessive speeds were also captured in the middle and east end of the study area.

Speeding by day of the week

The tool also broke speeds down by day, hour, and location.

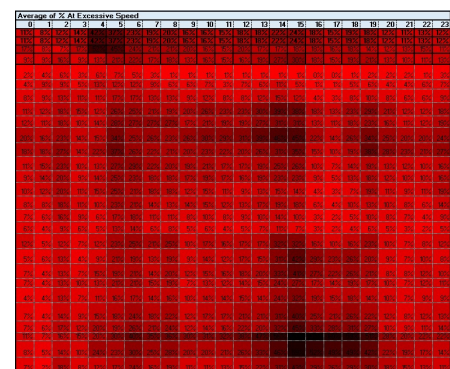
This diagram shows more than 40% of drivers are traveling at 65 mph or faster at 10am on Tuesday.



Outcomes

VDOT leaders were not surprised by the number of drivers exceeding the speed limit, which is 55 mph, but the percentage of drivers who drive at very high rates of speed. They also noticed that excessive speeding had a distinct pattern that broke down by time of day and day of week.

The project was a proof of concept. Since then, the state hired a consultant to develop a web-based tool to provide speeding patterns on a larger scale on Virginia's non-interstate road network.



The graph data translates into a heat map that tracks every segment, every hour. The darker red shows the highest percentage of excessive speeding.

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