HOME SAFELY PODCAST

Q&A with Jeff Pulver

Jeff Pulver, the Assistant State Traffic Engineer for MaineDOT. In his current position, he contributes to several areas including traffic operations, speed management, safety, traffic studies, and ITS

Jeff Pulver

Q: What makes Maine's transportation system and rural road safety challenges unique?

A: We are very rural. We're spread out across a large area, with a lot of small communities built around our arterial and collector system. We have a lot of trees close to the road, a lot of rural, unlit areas, and a lot of two-lane rural roads. As a result, a high percentage of our fatal and serious injury crashes are lane-departure crashes on rural two-lane roads. The snow, salt, winter road salting, seasonal variability in temperature, and our rural nature really define us from a transportation perspective. We're very vehicle-driven because our population is so spread out, but we always have to consider all the modes.

Q: Why did Maine need a different way to identify and prioritize high-risk rural intersections?

A: When we looked at crash counts and crash rates, the systems we had were not identifying as many rural high-crash, high-risk locations as we knew were actually out there. We were finding high-speed angle crashes where you might have 15 or 20 crashes over five years, but if you looked at total crashes, it didn't add up to something that would immediately stand out. When you start to consider how fast people are going, those locations become much more serious. We started to build a system that could put all of those factors together so they could be compared and prioritized and give us a complete understanding of the risk of fatal and serious injuries happening.

Q: How does crash speed and angle affect the severity of a crash?

A: Rural areas generally have higher speeds. When you have that, there's more energy and more force in collisions, which leads to higher injury percentages. We've been able to go into the data in Maine and show that it's actually happening; it's not just theoretical. As those collisions get closer to a right angle or a T-bone, they are more likely to lead to someone dying or someone getting seriously injured. We were able to quantify that and aggregate it with different severities from other types of crashes.

Q: How has this new approach changed Maine's safety investments?

A: We're able to acknowledge that there actually is some very real risk at locations that might only have one crash or one and a half crashes per year that might have been overlooked before. In the town of Waldeborough, there were two locations with only about one crash per year, but they were always the town's greatest safety concerns. We were able to acknowledge the safety concern, install all-way stops, improve the safety, and now you go through there and it's a completely different feel at the intersection. Without new methods that adjusted our thinking based on speed and these other factors, we may never have gotten to the point where those improvements went into place.

Q: What would you tell other states that want to apply this approach but think it is too complicated?

A: I'd say don't wait for perfection. We had the speed limit of the road, the type of crash, and the injury severity over several different years, and we just added it up in a different way. We separated everything by intersection control, primary road speed limit, and type of crash, and then we applied the trends we found to the data we already had. It only took two to three weeks to get a rough first version of this, and about 80% of the work the first time around was done in two to three weeks of one person's time. It sounds complicated, but it's pretty easy to implement and start going. I encourage other people not to wait. Take an afternoon, run some calculations, see what you come up with, and build off that. Take small wins that you can get quickly rather than trying to get it perfect.

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National Center for Rural Road Safety
A Federal Highway Administration Center for Excellence