

FISHERINSIGHT

Rural Road Safety

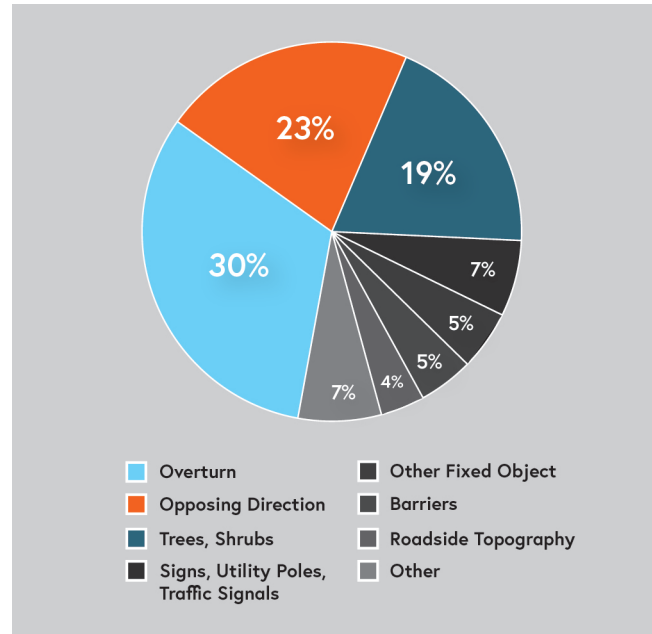
Improving the safety of our roadways is a responsibility we all share. An area of safety that we can improve on is traveling on rural roads. Data from the Fatality Analysis Reporting System (FARS) shows in 2016 that 50% of all traffic fatalities occurred in rural areas even though only 19% of the population live in those areas. Two-thirds of those accidents involve Roadway Departure (RwD) crashes where a vehicle leaves the travelway. Three type of accidents account for over 70% of all roadway departure accidents: overturning crashes, opposite direction crashes and tree/shrubs crashes.

Addressing these accidents in rural areas is difficult due to the vast amount of infrastructure. Limited resources are available to the agencies operating these facilities combined with the difficulty in deciding where to apply treatments to address safety often times results in spot treatment of problem area. A data-driven systemic approach can prioritize locations and treatments to reduce crashes. A systemic approach will

reduce the potential for a crash to occur and the severity of departure accidents. Identified treatments can be applied proactively throughout the roadway system.

Developing a systemic plan and approach to reducing RwD accident should focus on the three major areas of accidents. Countermeasures chosen should address keeping vehicles in the roadway, allow for safe recovery and reduce the crash severity. Available countermeasures that address these accidents include:

- Improved Horizontal Curve Delineation – these treatments alert drivers in advance of the curve
- Increase Friction on Curves – these treatments provide higher friction at curves where the available pavement friction is not adequate to support operating speeds
- Install Rumble Strips on Edge and Center Lines – these treatments are designed to address those crashes caused by distracted, drowsy, or otherwise inattentive drivers who drift from their lane.
- Install Safety Edge Treatments – this treatment eliminates the vertical drop-off at the pavement edge, allowing drifting vehicles to return to the pavement safely
- Improve Clear Zones Particularly on the Outside of Curves – proper clear zones increase drivers' ability to keep the vehicle stable, regain control of the vehicle, and avoid obstacles
- Provide Traversable Roadside Slopes in Clear Zones – similar to safety edge and proper clear zones these treatments allow errant vehicles to come to a controlled stop.



- Provide Barriers to Shield Fixed Objects and Non-Traversable Slopes – installing roadside barriers to shield unmovable objects or embankments lessens the severity of accidents
- Increase Separation or Provide Medians Between Opposing Lanes, particularly in a curve – these treatments significantly reduce the severity of cross-median crashes

Implementation of a systemic approach on a road system can provide the benefits of safer roads, faster implementation and greater flexibility to address future safety concerns. Developing even a simplified systemic data approach can allow agencies to apply safety treatments in areas analyzed as high risk, without actual crashes occurring. Preliminary efforts have shown it is possible to implement countermeasures to address problematic zones based on even limited data and increasing safety in the road network. Properly identified countermeasures provide a wide range of tools to select the best fit at each location.

Fisher Associated looks to implement these countermeasures on roads projects for our clients. The countermeasures are proven methods for reducing crashes and improving the safety of the transportation system.

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