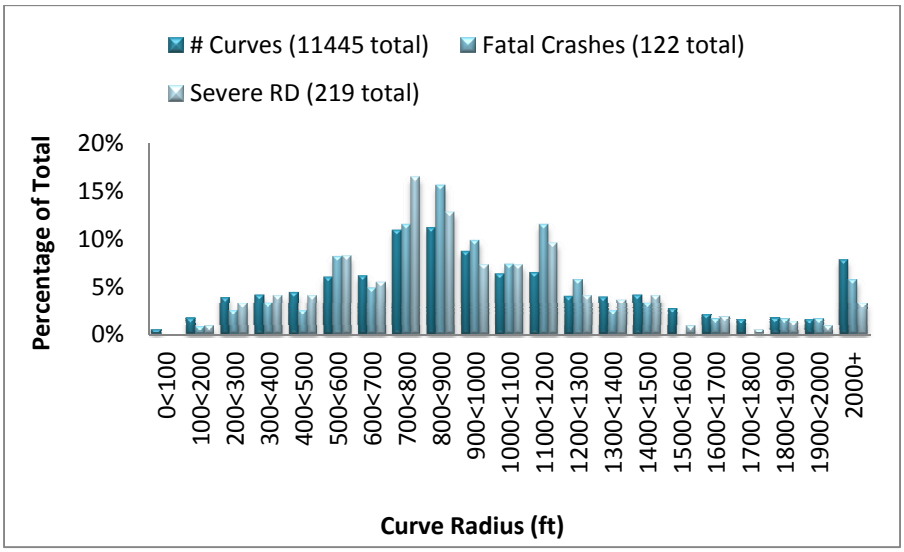
Practice – Minnesota

Minnesota DOT (Mn/DOT) is another example of a state implementing a systemic approach. While Missouri's approach is focused on state-maintained roadways, Minnesota has taken a different approach through the development of safety plans for each of state's 87 counties. The safety plans disaggregate the severe crash types by each of the AASHTO SHSP emphasis areas to identify emphasis and target crash types at the regional level. Mn/DOT has selected crash surrogates for various facility types to use in the risk assessment. Locations identified and included in the plans can be submitted for project funding through the HSIP.

To date, in addition to crash presence, Mn/DOT has selected surrogate risk factors for four facility types:

- For rural segments, they use ADT (average daily traffic), curve density, access density, and edge rating.
- Rural curves are evaluated based on ADT, radius, proximity to an intersection, and visual trap.
- Rural intersections are evaluated based on ADT, geometry (Skewed minor leg approach and on/near horizontal curve), proximity to a railroad crossing, or presence of commercial development.
- Urban signalized intersections are evaluated based on operating speed, geometry, and presence of commercial development.

This is an example risk assessment based on curve radius. The darkest bar on the left represents the percentage of curves with the specified curve radius out of a total of 11,445. The middle bar represents the percentage of fatal crashes occurring on the specified curve radius, and the lightest bar on the right represents the percentage of severe roadway departure crashes occurring on the specified radius.



Evaluating the data in this manner helped Minnesota identify curves with 500-1,200 foot radii to consider for systemic improvements.

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