

This topic is “practice ready.”  Yes  No

## CRASH MODIFICATION FOR THE SAFETY EDGE IN IOWA

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### Abstract

The Safety Edge is a relatively low-cost countermeasure that can be applied during both asphalt and concrete paving operations. Safety Edge has been promoted to reduce the frequency and severity of rural roadway departure crashes. However, little information is available regarding the actual effectiveness of Safety Edge. Although the treatment only adds a small amount of additional material to a paving project, agencies are still interested in understanding the safety impacts in order to better justify programming of safety funds.

The safety impact of the Safety Edge on rural 2-lane roadways in Iowa was evaluated. A total of 659 treatments (418 miles) were constructed during the 2010 and 2011 construction season and 1031 control sites (662 miles) were identified and used to conduct before and after crash analyses. Safety Performance Functions (SPFs) were developed to predict before period crashes on control segments using negative binomial generalized linear models. The Empirical Bayes (EB) method was then used to develop crash modification factors (CMFs).

For all non-intersection crashes results indicated:

- across all severity types, a CMF of 0.87,
- for injury crashes only, a CMF of 0.84, and
- for unknown and Property Damage Only (PDO) crashes, a CMF of 0.90.

All were found to be statistically significant at the 90% confidence level

For Run-Off-Road (ROR) crashes results indicated:

- across all severity types, a CMF of 0.88,
- for injury crashes only, a CMF of 0.92, and
- for unknown and Property Damage Only (PDO) crashes, a CMF of 0.86.

However, only the first of these was found to be statistically significant at the 90% confidence level.

**Keywords: Safety Evaluation—Safety Edge—Empirical Bayes —before-after crash analysis—  
Total and Target Crashes**