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Reducing Crash Risk at Intersections with Safety Improvements

Authors : Upal Barua

Abstract : Crash risk at intersections is a critical safety issue. This paper examines the effectiveness of removing an existing off-set at an intersection by realignment, in reducing crashes. Empirical Bayes method was applied to conduct a before-and-after study to assess the effect of this safety improvement. The Transportation Safety Improvement Program in Austin Transportation Department completed several safety improvement projects at high crash intersections with a view to reducing crashes. One of the common safety improvement techniques applied was the realignment of intersection approaches removing an existing off-set. This paper illustrates how this safety improvement technique is applied at a high crash intersection from inception to completion. This paper also highlights the significant crash reductions achieved from this safety improvement technique applying Empirical Bayes method in a before-and-after study. The result showed that realignment of intersection approaches removing an existing off-set can reduce crashes by 53%. This paper also features the state of the art techniques applied in planning, engineering, designing and construction of this safety improvement, key factors driving the success, and lessons learned in the process.

Keywords : crash risk, intersection, off-set, safety improvement technique, before-and-after study, empirical Bayes method
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