

## **Low Cost Approaches to Reduce Speeding: Effectiveness of Optical Speed Bars**

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Fatal crashes are more frequent in rural areas of the United States, even though the number of vehicle miles travelled and the total number of crashes remain low in such areas. Meanwhile, speeding is a major concern in small towns in rural areas, where high-speed highways pass right through. The situation requires considerable speed reductions and drivers seem to have a difficult time controlling their speeds at the reduced levels. Due to limited resources available and the difficulties in maintaining high levels of enforcement in such areas, it is necessary to identify low cost and effective countermeasures to properly manage speeding.

Accordingly, this study evaluated the effectiveness of optical speed bars in reducing speeds on five different approaches to small towns in Kansas in the United States. Each approach had one lane and speed drop was either from 65 mph to 45 mph (4 sites) or from 55 mph to 30 mph (1 site). Speed data were collected at the test sites before and after painting the transverse optical speed bars, using automatic traffic data recorders. The speed data were analysed for all vehicles, and also based on vehicle classification, time of day, and day of week. Before-after speed data were compared for statistically significant differences, using F- and t-tests. The analyses considered both the treatment direction where the optical speed bars were available and opposite direction, which was considered as the control direction. The results of the study showed significant reductions in speeds and speed variation at the end of the optical speed bar treatment at four of the five sites, with one site showing no statistically significant changes in speeds. Analysis of speeds in the opposite or control direction indicated reductions in speeds at some locations. Daytime speeds and speeds of two axle vehicles decreased the most at almost all test sites. However speeds analysed downstream of the treatments indicated that speed reductions were not maintained for a long distance.

This type of low cost countermeasures might have practical applications in developing countries like Sri Lanka. Once tested and evaluated, these simple pavement markings might help slow down Sri Lankan drivers under low traffic volume conditions.