



Reducing Speed at Critical Locations on Highways through Temporary Barricading - Experimental and Simulation Studies

Lokesh Singh Thakur¹, Dr. Swati maitra²

^{1,2}Indian Institute of Technology Kharagpur, India

ABSTRACT

Highway safety is a critical issue, especially in high-risk areas such as sharp curves, intersections, school and market area. This research investigates the effectiveness of temporary barricading strategies to control vehicle speeds at critical highway points. With India's high rate of road accidents—resulting in around 150,000 to 170,000 fatalities and up to 600,000 injuries annually—controlling speeding is vital, as it is a major factor in these incidents. Temporary traffic control devices, including cones, barricades, and channelizing tools, play a crucial role in alerting drivers and guiding traffic along modified routes, encouraging slower speeds.

This study combines field experiments and simulation modeling using VISSIM software to evaluate how different barricade configurations influence vehicle speed control. By assessing various setups in both real-world and simulated scenarios, it aims to identify effective designs for speed management and smooth traffic flow. Findings from this research will provide data-driven recommendations for implementing temporary traffic control measures in high-risk zones on Indian highways.

In alignment with international standards from the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA), this study also integrates Indian Roads Congress (IRC) guidelines, aiming to create barricading frameworks that reduce speed-related risks, ultimately decreasing road fatalities and injuries.

Keywords: Traffic calming, vehicle speed reduction, accident prevention, simulation analysis, safety standards compliance, infrastructure safety design, temporary traffic control