

Preliminary findings of removing filter movements from signalised intersections in Western Australia

Palamara, P.

Curtin-Monash Accident Research Centre, Curtin University

Abstract

This study examined the effect of the removal of filter movements at intersections between 2006 and 2011 in the Perth metropolitan area, as well as the potential of crash migration due to this treatment. A quasi-experimental 'before' and 'after' study design was used to assess the change in crashes due to the removal of filter movements from the loop at 15 intersections between 2006 and 2011. A GEE Poisson model was used to accommodate the inherent correlation of the longitudinal data. The average length of follow up was 945 days. Crashes occurred before and after the treatment at adjacent intersections (within 1km of the treatment site) were also examined to investigate the crash migration effect. The preliminary results found that after removing filter movements from intersections, a significant reduction was found in all reported crashes (11%) and right angle/ right turn through crashes (50%). In contrast, a significant 17% increase in rear-end crashes was observed at treated sites. Of 15 evaluated sites, only 7 sites were eligible to further examine the crash migration effects. A 20-25% significant increase in all-reported crashes, right angle/ right turn through crashes and rear-end crashes was found at adjacent intersections, suggesting crashes migrated by the treatment. This study found that removing filter movements from crashes has been effective in reducing particular right angle/ right turn through crashes, even though the effectiveness is discounted by the crash migration effect. Additional treatments, such as mid-barriers at surrounding intersections, may further improve the intersection safety.