

The crash performance of seagull intersections and intersections with left turn slip lanes

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Abstract

Alternative intersection layouts may reduce traffic delays and/or improve road safety. Two alternatives are reviewed in this research: 'priority controlled Seagull intersections' and 'intersections with a Left Turn Slip Lane'. Seagull intersections are used on roads to reduce traffic delays. However, some do experience high crash rates. Left Turn Slip Lanes allow turning traffic to move clear of the through traffic before decelerating thereby reducing the risk for rear end crashes. Although there is debate about the safety problems that occur at Seagull intersections and Left Turn Slip Lanes there has been very little research to quantify the safety impact of different layouts. In this study, crash prediction models have been developed to quantify the effect of various Seagull intersection and Left Turn Slip Lane designs on the key crash types that occur at priority intersections.

Key Findings

- Larger rural and urban seagull intersections, especially those on four-lane roads and those with wide medians, have higher crash rates (per vehicle) than smaller seagull intersections;
- Distraction to the left of side-roads resulting from road features like parking and movement from nearby accesses/side-roads, and the operation of right turn bays, does increase right turn out versus through vehicle crashes at T-intersections;
- The design of left turn slip lanes, and especially where this restricts visibility to through vehicles, does increase the risk of right turn out versus through vehicle crashes at rural seagulls.

Note: The information in this Abstract is being presented at this 2018 Australasian Road Safety Conference (ACRS2018) being held in Sydney, NSW, Australia. The Abstract and Key Findings are being published in these ARSC2018 Proceedings. However, a full paper was submitted by the Authors, which underwent a peer-review process by three independent experts in the field. The full paper will only be available in the Journal of the Australasian College of Road Safety.