EFFECTS OF RUMBLE STRIPS ON DRIVER SPEED BEHAVIOURS AT APPROACHES TO PASSIVELY CONTROLLED RAILWAY LEVEL CROSSINGS

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EXECUTIVE SUMMARY

A trial of rumble strips was conducted at 14 railway level crossings protected by passive signs, of which 11 crossings have Give Way signs and 3 crossings have Stop signs. The crossings are located in the Wheatbelt South and Wheatbelt North regions, seven crossings in each. Two speed surveys were conducted at each of the crossings, before and after the installation of the rumble strips. The rumble strips were installed on each crossing approach. One group of strips was used at the crossings protected by Give Way signs and four groups of rumble strips were used at the crossings protected by Stop signs.

Comparison of the mean speeds before and after installation of the rumble strips indicated that the strips had a significant effect on driver speed behaviours at the crossings with Stop signs, while the effect was negligible, if any, at the crossings with Give Way signs. The installation of rumble strips at the crossings with Stop signs resulted in the mean speed reduction of approximately 5 km/h over the entire section of road of approximately 500 m including the crossing. It appears the effect is strongly associated with the number of groups of rumble strips installed on the pavement at the approach to the crossing. The greater the number of rumble strip groups, the greater the effect is on driver speed behaviours.

Although drivers are not expected to stop or significantly reduce the vehicle speed at the crossings with Give Way signs, a single group of rumble strips used appears to be insufficient to alert the drivers of possible hazards ahead as measured in terms of reduction in speeds along the approach section between the first railway level signs encountered and the crossing itself.

It is recommended an additional trial be conducted at the same sample of railway level crossings protected by Give Way signs with an increased number of rumble strip groups (possibly 2 or 3 groups), similar to the railway level crossings protected by Stop signs. The objective of an additional trial would be to determine the optimum number of rumble strips required for the Give Way sign posted railway level crossings that would result in identifiable effects. This would be measured by the speed indices as an indication of increased driver alertness at the approaches to the railway level crossings.