TRIAL EVALUATION OF WIDE, TACTILE, CENTRE LINE CONFIGURATIONS ON THE NEWELL HIGHWAY

DJ. Connell, W. Smart, S. Levett, M. Cleaver, RFS. Job, M. de Roos, T. Hendry, J. Foster
New South Wales Centre for Road Safety, Roads and Traffic Authority of NSW
Email: Dylan_connell@rta.nsw.gov.au

INTRODUCTION

Studies into crashes on high speed, rural roads have shown that the installation of a wide tactile centre line may be effective in reducing “head on” (not overtaking) & “run off road to the right” crashes. These two crash types on high speed rural highways are often related to driver fatigue or driver distraction and regularly have severe outcomes.

However, there is currently no Australian Standard wide centre line configuration that allows a vehicle to legally cross over the centre line from either direction while overtaking.

The aims of this study are to evaluate the trial of a number of new wide centre line delineation configurations which have been introduced on the Newell Highway. These markings will cater for all overtaking manoeuvres but will also restrict overtaking where it is prohibited.

This study will investigate driver behaviour in relation to these markings in four ways:
- Site observations;
- Collection and review of speed data;
- Collection and review of RTA camera footage data; and
- Discussion with local road users.

NEWELL HIGHWAY

The Newell Highway is the longest highway in New South Wales, Australia. It runs parallel to the eastern coast about 400 kilometres inland, and is the main inland direct road link from Victoria to Queensland. It runs through Boggabilla, Moree, Narrabri, Coonabarabran, Gilgandra, Dubbo, Parkes, Forbes, West Wyalong, Narrandera and Jerilderie.

The maximum speed limit on the Newell Highway has in recent years been 110km/h but this was reduced to 100km/h on 1st December 2009 as part of the review of that highway (RTA, 2009). The same review also recommended the trial of an audio tactile, wide centre line with the aim of reducing both head-on and run off road crashes (curves and straights), which between them contribute to over 50% of all crashes occurring along the length of the highway.

Vehicle classification counts provided by the Roads and Traffic Authority for the Newell Highway in NSW generally show that the proportion of heavy vehicles (i.e. those defined as Austroads classes 3-12) along the route is 20-50%, with an average of approximately 35%. Caravans corresponding to Austroads class 2 made up approximately 4-12% of all traffic. The proportion of caravans on the route is indicative of the traffic generated by travellers. The Newell Highway is a popular road transport route for retired travellers.

SITE LOCATION

The two selected 5km sites for the study are at the following locations:
- From a point 0.6km south of Coobang Rd Intersection with the Newell Highway, north of Parkes to a point 4.4km north of the intersection, and
- From a point 1.4km south of the intersection of Newell Highway and Bodell’s Lane (Southern Point) to a point 16.5km south of Mid Western Highway (Northern point) on Newell Highway, north of West Wyalong.

PROPOSED ROAD MARKINGS

There is evidence from research undertaken on other routes, (RTA 2009 “Centreline treatment countermeasures to address crossover crashes”) as presented at the 2009 Australasian Road Safety Research, Policing and Education Conference, that the use of a wide centre line can reduce the number of head-on and run off the road to the right crashes as it provides more room for drivers to correct any errors they may make. The wide centre line markings proposed for the Newell Highway, unlike those used elsewhere, will allow overtaking where it is safe to do so. This is aimed at assisting traffic flow along the route as there are a limited number of overtaking lanes provided along the entire 1000km route. The proposed line marking will also have audio tactile properties along both the centre line and edge line, aimed at alerting drivers to the fact they are drifting outside their lane of travel.

The configurations of the proposed line markings are as follows:
A 100mm wide, solid line abutted by a 100mm wide audio tactile line, an 800mm gap to another 100mm wide audio tactile line abutted by a 100mm wide solid line. In total this results in a 1.2m gap (800mm + 200mm + 200mm) provided between the opposing directions of travel. An outline of the line marking configurations can be seen below in Figure 1.1.

The main aim of the study is therefore to observe driver behaviour in relation to the proposed markings. It is therefore necessary to observe both the ‘before’ and ‘after’ behaviour and see if any change resulted from the introduction of the lining. This behaviour can be quantified in 3 ways:-

- On Site Observational Surveys
- On Site Speed Surveys and
- Analysis of 2 weeks of 24 hour camera footage (which was provided by the RTA)
- Discussion with local road users (undertaken after the implementation of the markings).

The behaviour is quantified both before the new centre line configuration and associated signposting was implemented and again after the new centre line configuration and associated signposting was implemented.

REFERENCES


Figure 1.1 Line marking Configuration

Figure 1.2 below shows the unique signage that has been developed for use along the trial lengths, providing drivers with information on how to use the new line marking.

STUDY METHODOLOGY

A ‘before and after’ crash study assessing the impact of markings will take a number of years to complete. Consequently, the proposed study is a means of examining the change in driver behaviour following the installation of the line marking.