

Contributed Articles

State Roads Now Star Rated for Safety

by John Wikman, Executive Manager Traffic and Safety, Royal Automobile Club of Queensland

This article was contributed by the SaferRoads Program



Australia's motoring clubs are drilling further down into Australia's road networks in the development of its star rating road safety program, the Australian Road Assessment Program (AusRAP).

The role that roads play in road safety is more important than most people think. The National Road Safety Strategy, agreed to by the Commonwealth and all State and Territory governments in 2000, shows that nearly half (332) of the targeted reduction in Australia's road toll by 2010 – 700 per annum – could be achieved by improving the safety of roads. This is equal to the combined contribution that improvements to vehicle safety and driver behaviour could deliver (333).

The Australian Automobile Association and motoring clubs have released star ratings of the AusLink national network over the past two years – some 60% the national highway network is rated three stars or less, which is not acceptable according to the motoring clubs.

These AusRAP star ratings provide a snapshot of the state of Australia's major highway network – now the motoring clubs are working with State and Territory road agencies to look at the safety of state roads.

To assist with identification of roads and sections in need of improvement, AusRAP uses two methods to assess their safety:

- risk mapping, based on a road's history of casualty crashes and traffic flow; and
- star ratings, based on an inspection of a road's design elements.

Risk maps highlight road sections where crashes occur. Star ratings highlight poor road sections where engineering treatments have the potential to save lives – together they provide a compelling argument where roads should be upgraded.

RACQ Risk Map Report

In December 2007, RACQ published risk-maps to provide a measure of the safety performance of Queensland's rural road network comprising of AusLink National Network and selected

State highways in Queensland. In this report a number of road sections were identified as being particularly high risk. These included:

- Bruce Highway – Cooroy to Gympie
- Warrego Highway – Helidon to Toowoomba
- Brisbane Valley Highway - Ipswich to Fernvale
- Captain Cook Highway – Cairns to Port Douglas
- D'Aguilar Highway – Caboolture to Kilcoy, Harlin to Kingaroy
- Gillies Highway – Gordonvale to Atherton (see photo)
- Kennedy Highway - Captain Cook Highway to Mareeba
- Maryborough to Hervey Bay Road
- Mount Lindesay Highway – Park Ridge to Beaudesert



2-star, Gillies Highway

Undivided, poor alignment, unsafe roadsides, narrow sealed shoulder width, wide lanes

This report now provides star ratings for 7,917km of rural highways in Queensland zoned at speed limits 90km/h or higher, comprising 5,206km of the AusLink National Network (previously reported on in October 2006) and 2,710km of State highways, similar to those selected for the 2007 risk maps report (mentioned above).

Of the selected State highways assessed, 17% rated 2 stars, 82%

rated 3 stars and 0.4% rated 4 stars (there were no 1 or 5 star roads). This compares to 1% 2 stars, 59% 3 stars and 40% 4 stars for the AusLink network. It is expected that the standard of the AusLink network would be higher than the State Highways, but there is much room for improvement on both levels. Two and three star ratings are unacceptable on important heavily trafficked AusLink network roads.

The RACQ has urged the Federal government to fund upgrades to bring them up to at least 4 stars. Two star ratings are completely unacceptable for the selected State Highways covered in the report. Therefore RACQ urges the State government to focus on upgrades to bring them up to at least 3 stars.

Methodology

There are three crash types which account for almost 75% of all crashes on rural highways. These are run-off road crashes, head-on crashes and crashes at intersections. In Queensland the Department of Main Roads has identified that of all killed and serious injury crashes that occurred on state controlled roads (AusLink and state highways) 36% were intersection crashes, 33% were run-off road crashes and 7% were head-on crashes.

The incidence of these types of crashes and their severity can be greatly reduced by engineering improvements to roads and roadside environments.

The risk scores for road design elements such as lane and shoulder width, road alignment, whether or not the road is divided, and the presence of safety barriers (all of which are known to have an impact on the likelihood of a crash and its severity) were combined to calculate the road protection score (RPS).

Sections of road were awarded a rating between 1 (least safe) and 5 (safest) stars based on this score. These star ratings are displayed on colour-coded maps to show how the level of safety 'built-in' to the road, and the risk it poses to drivers, can change along its length.

The AusRAP report provides an insight into which design elements should best be targeted to improve a road's star rating and thus reduce the risk to road users. There's a particular connection between the condition of roadsides on highways and their overall star ratings.

Safer Roadsides

For instance a major contributing factor towards 76% of the Bruce Highway (AusLink network) between Cooroy and Gympie rating 2 stars was due to it having only 13% safe roadsides. For State highways, 72% of Mt Lindesay Highway rated 2 stars due to it having only 4% safe roadsides.

Similarly, 3% of safe roadsides influenced the proportion of 2 star sections for each of the Brisbane Valley Highway (47%), D'Aguilar Highway (37%) and Maryborough- Hervey Bay Rd (28%). Thirty three percent of the Rockhampton – Yeppoon Road rated 2 stars and only 1% of it had safe roadsides.

Making roadsides safer through removal or protection of hazards such as trees, poles and steep embankments on these roads would provide major benefits in reducing crash costs. Further, RACQ believes the safety of all key highways will benefit from improved sealed shoulders, road alignment upgrades, regular overtaking opportunities, and safer intersections.

The RACQ has compiled the following list of roads urgently requiring attention.

- Bruce Highway – Cooroy to Gympie
- Brisbane Valley Highway – Ipswich to Esk
- Captain Cook Highway – the 28km section south of Mossman
- D'Aguilar Highway – Caboolture to Woodford and sections to Yarraman
- Gillies Highway - Gordonvale to Yungaburra
- Kennedy Highway – Captain Cook Highway to Kuranda and a 13km section south of Atherton
- Mt Lindesay Highway - Park Ridge to Beaudesert
- New England Highway - Crows Nest to Toowoomba
- Proserpine – Shute Harbour Road

The RACQ welcomes the opportunity to work with the respective governments to progress these upgrades. The bottom line is that safe drivers in safe vehicles should not die as a consequence of unsafe roads.

This philosophy underpins the activities of Australia's motoring clubs in developing and refining AusRAP