

AusRAP rates highways in New South Wales and Queensland for safety

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This article was contributed by the SaferRoads Program



Traffic and crash data used in this report was supplied to AAA by Queensland Main Roads

Introduction

During December 2007, Australian Automobile Association clubs, RACQ and NRMA Motoring and Services, published Australian Road Assessment Program (AusRAP) reports which explore the role of roads in road safety. They used differing, though complementary, methods of identifying risky sections of highways. The results of these reports are summarised in this article.

Prior to examining the results of the reports, it is instructive to consider how Queensland and NSW are performing overall in road safety. Perhaps the broadest measure of performance is the number of deaths per population against the National Road Safety Strategy target.

The Strategy was released by Commonwealth, State and Territory Governments in November 2000 and came into effect in January 2001. The target of the Strategy is to reduce Australia's road fatality rate per 100,000 population from 9.3 to no more than 5.6 in 2010 — a 40 % reduction (see Figure 1).

Seven years after the Strategy was introduced, Australia is well behind target. Between January 2005 and December 2007, the national road fatality rate did not fall below 7.6 deaths per 100,000 population, and in fact the fatality rate in Queensland increased from 7.8 to 8.6 in that period.

New South Wales however, is fairing much better than Queensland and is ahead of the national average, with a fatality rate of 6.4 in December 2007. We are not entirely sure of the reason for the relatively good performance compared with Queensland, but it is no doubt the result of a combination of factors.

Nonetheless, the fact remains that the prospect of reducing Australia's overall road fatality rate by 40% by 2010 is now very slim. Greater efforts are needed to address the significant social and economic costs of road trauma.

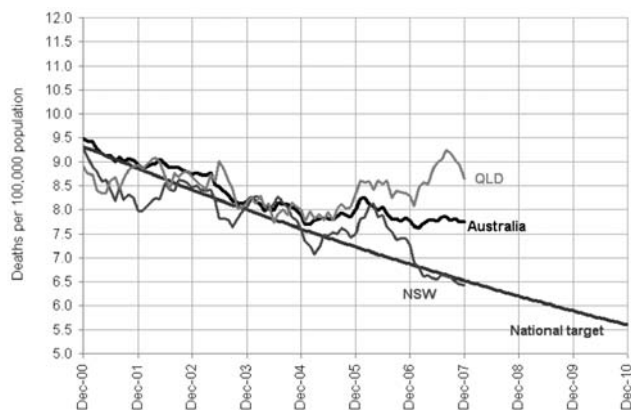


Figure 1 Australian, Queensland and New South Wales road fatality rates versus the National Road Safety Strategy target

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How safe are Queensland's highways?

The Queensland report presents risk maps for 7,561km of the State's rural road network, comprising 4,784km of AusLink national network and 2,777km of selected sections of State highways. The risk maps are based on casualty crashes (where at least one person was killed or injured) on rural highways generally zoned at speed limits 90km/h or higher¹.

The length of roads analysed for the risk maps represented 4% of the total road network in Queensland, yet carried some 40% of the state's traffic and experienced 442 road deaths (28% of all Queensland road deaths) for the period 2001-05.

During that period 5,083 casualty crashes and 315 deaths occurred on the AusLink national network while 2,321 casualty crashes and 127 deaths occurred on the selected State highways.

Results are reported using two types of risk maps: collective risk (average annual casualty crashes per kilometre of road) and individual risk (average annual casualty crashes per 100 vehicle kilometres travelled).

The maps are colour-coded to denote relative levels of risk across the range of low, low-medium, medium, medium-high and high. Figure 2 below shows the collective risk map for Queensland. (See Figure 2 below)

Road links are classified as 'best' or 'worst' according to how each road link scored when looking at both risk map types in combination. There were no best links in the low or low-medium bands but 41 could be classified as worst links by falling into the high or medium-high risk category for both

collective and individual risk.

Overall, these worst links represented 1% of Queensland's total road network but carried 20% of the state's traffic and experienced 16% of the state's road deaths.

Of all the roads analysed, the section of Bruce Highway from Caloundra to Cairns accounted for 44% of deaths and 35% of casualty crashes. It rated medium-high or high for both collective and individual risk along much of its length. The worst section of Bruce Highway was the 40km section between Cooroy and Gympie.

It carried around 12,700 vehicles per day and experienced 181 casualty crashes and 27 deaths between 2001 and 2005. This highlights that drivers should exercise extra care when travelling the Bruce Highway and road authorities should immediately look at implementing remedial upgrades to reduce the risk to road users. Accordingly, other links of major concern which rated high for both collective and individual risk and thus deserve attention include:

AusLink roads

- Bruce Highway – Innisfail to Cairns
- Warrego Highway – Helidon to Toowoomba State Highways
- Brisbane Valley Highway – Ipswich to Forest Hill – Fernvale Road
- Captain Cook Highway – Cairns to Port Douglas

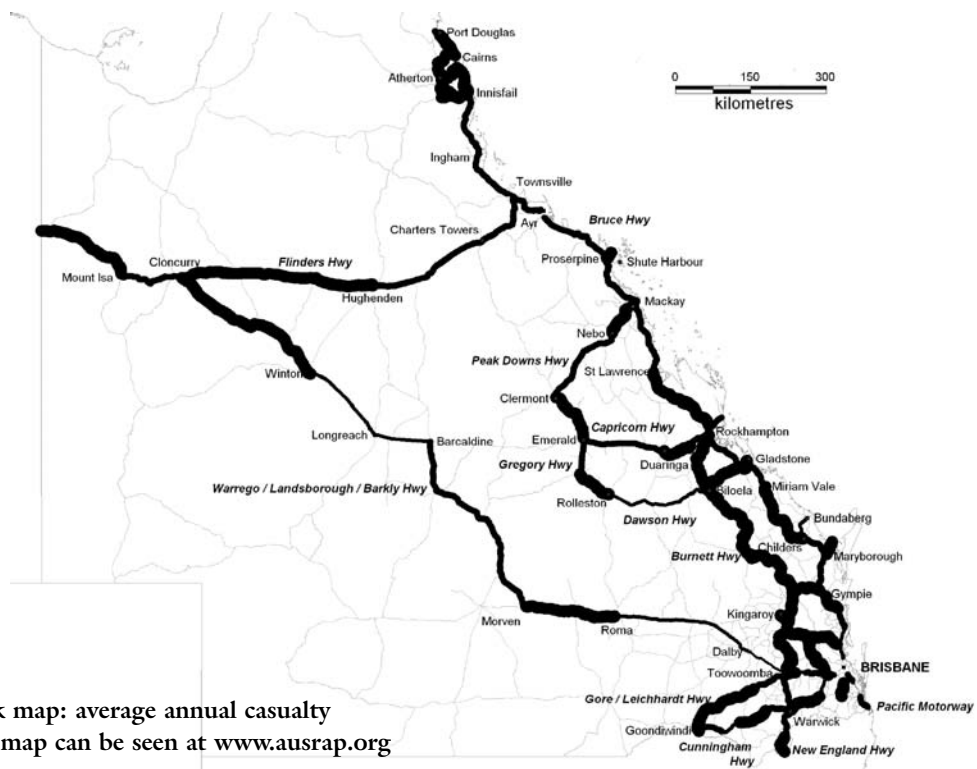


Figure 2 : Collective risk map: average annual casualty
A colour version of this map can be seen at www.ausrap.org

¹ Traffic and crash data used in this report was supplied to AAA by Queensland Main Roads

- D'Aguilar Highway – Caboolture to Kilcoy, Harlin to Kingaroy
- Gillies Highway – Gordonvale to Atherton
- Kennedy Highway – Barron Falls to Mareeba
- Maryborough to Hervey Bay Road
- Mount Lindesay Highway – Park Ridge to Beaudesert

Star Ratings for the AusLink National Network in NSW

Where the Queensland report focuses on the rates at which crashes occurred, the NSW report rates roads according to their design and layout. Star ratings involve an inspection of a number of design elements such as lane and shoulder width and the presence of safety barriers, which are known to have an impact on the likelihood of a crash and its severity. Between 1 and 5 stars are awarded to road links depending on the level of safety which is 'built-in' to the road.

The NSW report is the second star rating report for the AusLink National Network. The first, published in October 2006, contained an analysis of AusLink in all States and Territories except New South Wales. At the time, data for NSW had not been made available, though the NSW Roads and

Traffic Authority (RTA) has since provided AAA with the necessary data.

In NSW, 13 AusLink National Network highways totalling 4,637km in length were star rated. Of this total length, 8 per cent of the network is rated 2 star (red), 68 per cent is 3 star (yellow) and 24 per cent is 4 star (light green). There are no significant lengths of 1-star (black) or 5-star (dark green) highway.

Overall, NSW has a higher proportion of 2 star roads, and lower proportion of 4 star roads, than the national average. Australia wide, 3% of the network is 2 star, 55% is 3 star and 42% is 4 star.

One of the more risky sections of road identified in the study was on the Pacific Highway north of Woolgoolga, which received a 2-star rating. This section of road is undivided — meaning head-on crashes are possible; has severe roadside conditions — if a vehicle runs off the road, it is likely to hit a tree or pole; and it has a large number of intersections — where brutal side impact crashes are a risk.

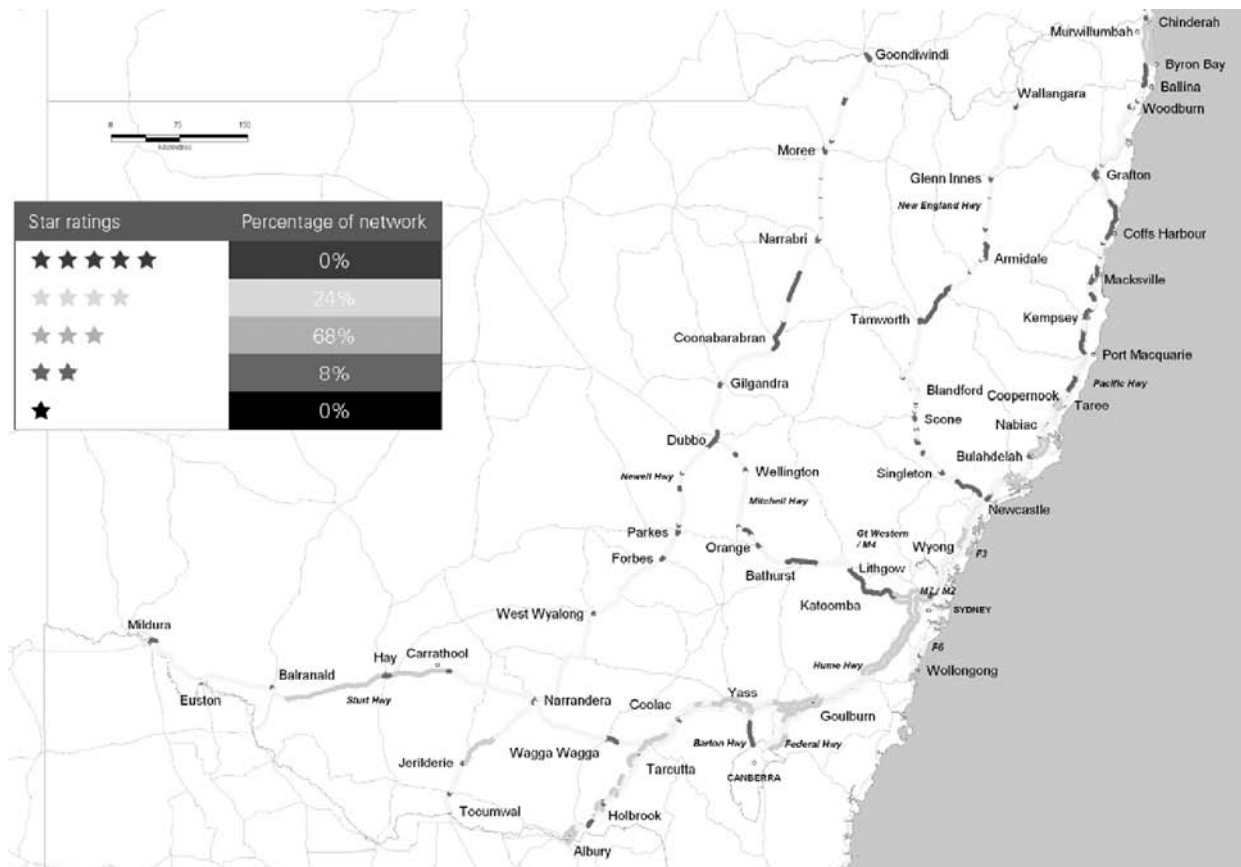


Figure 3 Star ratings for the AusLink National Network in NSW

A colour version of this map can be seen at www.ausrp.org

The study also enabled a demonstration that increased road investment can help reduce this risk. A good example of governments working together and investing to improve safety is the Brunswick Heads to Yelgun section of the Pacific Highway, where major work was completed in July 2007. The Federal and NSW Governments split the \$256 million price tag for this project.

Before the upgrade, it rated just 2 stars. Today, it rates 4 stars — it is now divided, has wide lanes, overpass and underpass intersections and has much improved roadside conditions.

The report calls on Federal and State Governments to continue to invest in completing high standard freeway links between Sydney, Melbourne and Brisbane, and between the M2 and F3, the M4 and Sydney Port / Anzac Bridge, and between the F6 and Sydney Port.

It argues that two or three stars are unacceptable on these important, heavily trafficked national highways and upgrades are urgently required to bring them up to 4 stars in the short term and 5 stars in the longer term.

The report also makes a case for improvements in other key highways with sealed shoulders, regular overtaking opportunities, safer intersections and the best achievable level of roadside safety through removal or protection of hazards such as trees, poles and steep embankments.

The bottom line is that safe drivers in safe cars should not die as a consequence of unsafe roads.

Road Safety in Five Leading Countries

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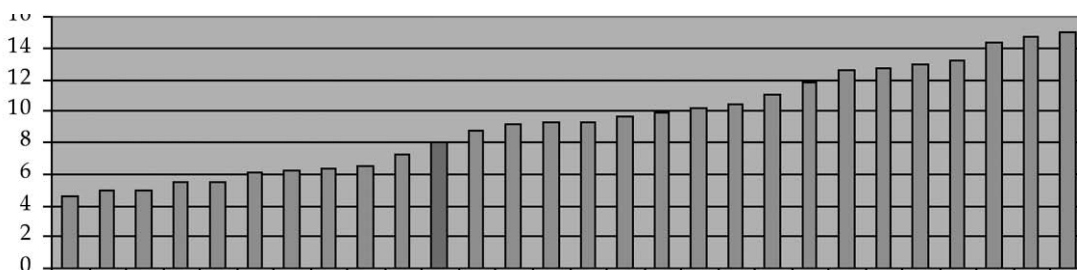
Introduction

Each year, some 600,000 road crashes are reported in Australia killing about 1,750 people and injuring in excess of 200,000. These road crashes cost the community more than \$15 billion every year². Worldwide, approximately 1.2 million people are killed and 50 million people are injured in road crashes each year. The global cost of road traffic injuries is estimated at US\$518 billion each year³.

International road death rates allow Australia's road safety performance to be compared with other OECD nations while taking into account the differing levels of population (a measure of the public health risk associated with road trauma), motorisation and distances travelled (measures of the risk associated with road travel).

Among OECD nations, Australia has the 11th lowest rate in road deaths per 100,000 population; the 9th lowest rate in road deaths per 10,000 registered vehicles and the 7th lowest rate in road deaths per 100 million vehicle kilometres travelled⁴. While these rates, and rankings, change every year, some countries have consistently displayed better road safety records than Australia. The NRMA-ACT Road Safety Trust Churchill Fellowship allowed me to travel to Sweden, UK, Norway, Japan and Denmark to examine the policies and measures in these countries in an attempt to understand the reasons behind their good performance.

Killed per 100,000 population



2. Road Safety Towards 2010 (Australian College of Road Safety, 2004)

3. The global burden of disease (WHO)

4. International Road Safety Comparisons: The 2005 Report (Australian Transport Safety Bureau, May 2007)