

**Submission  
No 42**

## **SPEED LIMITS AND ROAD SAFETY IN REGIONAL NSW**

**Organisation:** Australasian College of Road Safety

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# **ACRS Submission**

## ***Staysafe Inquiry into speed limits and road safety in regional NSW***



### ***About the Australasian College of Road Safety***

The Australasian College of Road Safety was established in 1988 and is the region's peak organisation for road safety professionals and members of the public who are focused on saving lives and serious injuries on our roads.

The College Patron is His Excellency General the Honourable David John Hurley AC DSC (Retd), Governor-General of the Commonwealth of Australia.

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## Introduction

The Australasian College of Road Safety (The College) is the region's peak membership association for road safety with a vision of eliminating death and serious injury on the road. Our members include experts from all areas of road safety including policy makers, health and transport professionals, academics, community organisations, researchers, federal, state and local government agencies, private companies and members of the public. The purpose of the College is to support our members in their efforts to eliminate serious road trauma through knowledge sharing, professional development, networking and advocacy. Our objectives include the promotion of road safety as a critical organisational objective within government, business and the community; the promotion and advocacy of policies and practices that support harm elimination; the improvement of relative safety outcomes for vulnerable demographic and user groups within the community; the promotion of post-crash policies and practices; and the promotion of a collegiate climate amongst all those with responsibilities for and working in road safety.

The College believes that we should prevent all fatal and serious injuries on our roads; the road traffic system must be made safe for all road users; system designers should aim to prevent human error and mitigate its consequences; life and health are not exchangeable for other benefits in society; and that all College policy positions must be evidence based.

Speed management is a critical component of eliminating fatal and serious injuries on our roads. A comprehensive and holistic approach is required that is appropriate to the context. The principal tenets of this approach are that: the nature and function of roads and speed limits must be consistent; as far as possible roads should be designed to explain the appropriate speed to road users; and speed limits and enforcement should be credible to drivers.

In 2019, there were 4.4 road deaths per 100,000 people in NSW.(1) This places NSW, and Australia (4.7 deaths per 100,000) as one of the better performing places. Not quite as good as countries such as Norway and Sweden, but better than our New Zealand neighbours, some European countries, and the United States. However, regional roads, part of the Terms of Reference for this Inquiry, do not fare so well in terms of safety. The snapshot highlighted how country NSW has a fatality rate of 8.8 deaths per 100,000 people. This is higher than New Zealand and more in line with developing countries.

According to Transport for NSW (TfNSW), 401 people were killed in crashes where speeding was a factor in the three years from 2018 to 2020.(2) In percentage terms, speed was a factor in 41% road deaths.

In many cases, the involvement of speed is accompanied by other adverse road user behaviours. TfNSW data (2018 to 2020), indicates that where speeding is a factor in a fatal crash:

- Fatigue was also a factor in 13% of fatalities
- Illegal alcohol was also a factor in 29% of fatalities
- The presence of illicit drugs in the system of a controller was also a factor in 29% of fatalities

It has been estimated that drivers travelling at 65 km/h have approximately double the risk of being involved in a casualty crash as those travelling at 60 km/h.(3)

Authorities can point to the failures and mistakes made by individuals, in which case, fatal and serious injury crashes will continue to occur. However, this 'blame culture' is inconsistent with the Safe System Approach to Road Safety, which aims to make the network more forgiving, so mistakes and human errors do not result in death or serious injury. Conventional thinking has sought to strike a balance between mobility and safety. Safe System thinking maximises safe mobility.(4)

ACRS applauds the recently launched *NSW Road Safety Plan 2026*. The vision of the plan is to achieve zero fatalities and serious injuries by 2050. In line with the National Road Safety Strategy, the targets of the NSW plan are to half fatalities on NSW roads and reduce serious injuries by 30% by 2030.

## **ACRS response to the Terms of Reference**

### **a) The impact of speed limits and travel times on driver behaviour and safety**

In 2003, when speed limits in South Australia were reduced on 1,060km of rural roads from 110km/h to 100km/h, there was a reduction in casualty crashes of 12%, saving \$9.5 million per year (in 2004 dollars).(5)

Dutschke and Woolley (2010) challenged the perception that the 10% reduction in the speed limit would result in a 10% increase in travel times. They found that actual increases in travel times were as low as 4%, equating to an increased travel time of as little as 2.2 minutes for a 100km journey. This is mainly because drivers travelling at a 110km/h speed limit are more likely to catch slower moving vehicles and spend more time behind them waiting for a safe opportunity to pass.(5)

A good example of this relates to heavy vehicles. On economic, social responsibility, road safety, and environmental grounds, the broader transport industry would be unlikely to support higher heavy vehicle speed limits as their vehicles achieve maximum efficiency in the 88-97km/h (55-60mph) speed band.(6)

Grzebieta (2021) also pointed to the presence of towns, intersections, hills, and other traffic interactions that prevent a vehicle from travelling at the maximum sign-posted speed limit for entirety of a journey.(7)

It is important to distinguish between different types of roads. ACRS does not propose a reduction to 110km/h speed limits on rural freeways or other high-standard divided roads such as the Hume Highway between Berrima and Albury, but nor do we support an increase.

In the United States, rising speed limits over the past 25 years have cost nearly 37,000 lives, including more than 1,900 in 2017 alone:

*A 5 mph (8km/h) increase in the maximum speed limit was associated with an 8% increase in the fatality rate on interstates and freeways — the roads most directly affected by changes*

to the maximum speed limit — and a 3% increase on other roads. In total, over the 25-year study period, there were 36,760 more deaths — 13,638 on interstates and freeways — and 23,122 on other roads — than would have been expected if maximum speed limits hadn't changed over that time.



Insurance Institute for Highway Safety (8)

The Insurance Institute for Highway Safety works closely with the Governors Highway Safety Association ([www.GHSA.com](http://www.GHSA.com)), who believe speeding remains a publicly accepted driving behaviour that is reinforced among motorists, policymakers, and transportation stakeholders.

### b) The impact of improved vehicle technology and road infrastructure

The following photographs were taken by ACRS-NSW on 6 June 2022 between Lockhart, Urana, and Jerilderie in the Riverina region of NSW. They highlight how improvements to road infrastructure are not uniform, especially on routes stretching over multiple local government areas.

	<ul style="list-style-type: none"> <li>• 100km/h, undivided single carriageway</li> <li>• Lingering presence of floodwaters makes it difficult to identify the edge of the sealed road surface</li> <li>• Large, unprotected trees line both sides of the road</li> <li>• No edge line markings, centre line marking is fading, guidepost placement inconsistent</li> </ul>
	<ul style="list-style-type: none"> <li>• 100km/h, undivided single carriageway</li> <li>• Advance warning sign indicates a school bus stop is located on the other side of a sweeping left-hand bend</li> <li>• In spite of this bend, overtaking is permitted</li> <li>• Vegetation of varying size line the road</li> <li>• Centre line marking and edge line marking is present, as are guideposts with reflectors</li> </ul>

	<ul style="list-style-type: none"> <li>• 100km/h, undivided single carriageway</li> <li>• Absence of centrelines, edge lines and guideposts for several kilometres</li> <li>• There is a good clear zone to the side of the road with no trees or other objects</li> <li>• Photo illustrates heavy and light vehicle use</li> <li>• Evidence of collisions with wildlife along the route (not shown)</li> </ul>
	<ul style="list-style-type: none"> <li>• 100km/h, undivided single carriageway</li> <li>• Of the four photographs, this image depicts the road in its best condition</li> <li>• Guideposts and line marking (standard centreline treatment) in excellent condition</li> <li>• Overtaking is permitted with good visibility</li> <li>• Unprotected wooden (non-frangible) telegraph poles are situated within the road reserve</li> </ul>

Modern vehicles are increasingly equipped with Advanced Driver Assistance Systems (ADAS) that can prevent crashes or reduce crash severity. The effectiveness of these systems, as well as future connected and autonomous vehicles (CAVs), is related to the standard of road infrastructure, such as lane markings and signposting. In previous series of photographs, ADAS such as lane keeping assistance would work best in the second and last photographs.

To reduce fatal and serious injuries on our roads, safety must be fully incorporated into the engineering design and management processes. The road system should be predictable and easy to use for road users to enhance safety. Star ratings provide a simple and objective measure of the level of safety which is 'built-in' to the road for vehicle occupants, motorcyclists, bicyclists, and pedestrians. A person's risk of death or serious injury is halved for each incremental star rating of a road.(9)

Country/rural roads were voted as the least safe to drive on by a 2021 survey of 1,000 Australians.(10) In 2019, the last full year not impacted by COVID-19 movement restrictions, country roads accounted for 37% of casualty crashes but 67% of fatal crashes. Also, 46% of fatal crashes on country roads occurred where the speed limit was 100km/h. Significantly, 61% of fatal crashes involve vehicles who either left the road, where they hit objects and/or rolled or struck another vehicle travelling in the opposite direction.(11)

The Australian road network consists of almost 900,000km of road. Sealed roads make up 46% of all roads but represent 95% of the system's total value.(12) Engineering treatments will take time to fund and deliver, and as the previous photo series shows, improvements to road infrastructure are not uniform.

As such, whilst 100km/h (default) speed limits might be appropriate on some parts of the network, they are not appropriate over the whole of the network. The same applies for unsealed roads. Tasmania has already reduced the default speed limit on unsealed roads to 80km/h.(13)

Finally, Intelligent Speed Adaptation (ISA) - where drivers are alerted or limited in real time through in-vehicle technology to drive within the posted speed limit is a technology that has been proven over the last 20 years by various researchers, locally and internationally, to reduce speed and speeding.(14)

### **c) The use of variable speed limits**

Austrroads has published a summary of the circumstances where Variable Speed Limit (VSL) can be used on smart motorways. 'Smart motorways' is the term used to describe motorways that have information, communications and control systems incorporated in and alongside the road. These technology-based systems are deployed to actively manage traffic flows and improve road capacity and safety, as well as deliver other important outcomes for road users such as better travel reliability and real-time traveller information.(15)

The Austrroads Guide to Smart Motorways contains a table summarising the available range of VSLs on smart motorways. In summary, VSLs can be used for:

- Queue protection and congestion management
- Traffic flow control
- For safety during inclement weather
- To meet environmental regulations

VSLs are best used in partnership with other technologies known as Lane Use Management Systems (LUMS). These systems allocate and manage the available road space through display of VSL and lane control signals (LCS).

Although not specifically mentioned in the terms of reference, roadwork speed limits could be considered a form of VSL. Undertaking roadworks is not without risk and the successful management of speed is crucial to work health and safety as well as road safety, as not all roadwork can be carried out behind concrete barriers. Roadworks require reduced speed limits, changes of direction, stop/slow controls, the queuing of traffic, and alternating traffic. Crash risk at roadwork sites increases by as much as 400-500% over normal traffic conditions.(16)

In regards to unplanned incidents on the road network, NSW Parliament has already enacted legislation, also in response to tragedy, to "*improve the safety of emergency services personnel, tow truck operators and breakdown assistance providers working on the road, as well as the people they are helping*".(17) In short, drivers are required to slow down, move over, and give space to *such workers*.

Roadwork speed limits as well as planned/unplanned incident management provide examples where motorists are legally required to reduce speed. They also show how speed management must be viewed through the lens of *movement and place*.



Where a road, particularly a rural highway, is operating freely, its function prioritises the *movement* of vehicles from A to B. However, where roadwork or an incident is occurring, motorists are still using it for movement, although now, it has become a *place* for (vulnerable) workers operating on foot with limited protection. The function of the road determines the applicable speed.

'Movement and Place' is discussed further in Part D of this submission.

#### **d) Any other related matter**

On 17 May 2022, ACRS-NSW held a seminar, *Speed through the lens of movement and place*.<sup>(18)</sup> The purpose of the event was to educate viewers on the issue of Movement and Place with the three speakers bringing their unique perspectives to the subject. 'Movement and Place' is a critical component of the new National Road Safety Strategy 2021-2030, endorsed by all Australian roads and transport Ministers.<sup>(19)</sup>

The speakers and some key points are:

- **Ms Lena Huda**, Co-founder of 30Please and safe-streets-to-school.org & Vice President of WalkSydney
  - 80% of all cars are on 20% of the roads (arterial roads)
  - For the remaining 20%, lower speed limits are good fit
- **Mr Garth Collins**, Director Centre for Urban Design Transport for NSW
  - The principles of Urban Design, Road Design, and Street Design are related to the energy (speed) of vehicles
  - The movement (speed) must match the place
- **Mr Dave Hunter**, Design Officer Eurobodalla Council
  - Eurobodalla Council recently introduced a 30km/h speed limit for the Moruya CBD (high pedestrian activity area)
  - Good communications with the community, businesses, and councillors

#### **e) ACRS Speed Management Policy Position**

ACRS is developing a policy position statement on speed management. The policy is underpinned by the following principles:

- The road traffic system must be made safe for all road users
- It is never acceptable that people are killed or seriously injured in the road traffic system
- The unacceptability of fatal and serious injuries means that safety and health are more important outcomes of the road traffic system than efficiency or cost
- Safe and legal speeds should be obvious to drivers to reduce speed management errors
- Speed limits should be set to match the road function, characteristics, and design
- Speed management strategies should be comprehensive in scope and not rely primarily on setting and enforcing speed limits.

## **Conclusion and Recommendations**

The NSW Road Safety Action Plan 2026 makes the following assessment on 100km/h roads.

*Over 80 per cent of the rural network has a default 100km/h speed limit whether they have safety protection features or not. This includes lower quality roads that give motorists limited chance to correct the vehicle if it veers from its lane. Given the low chance of surviving a crash at higher speeds, safe speed settings are needed to reduce crashes on these roads, especially on narrower roads where retrofitting of safety infrastructure is challenging.*

NSW Road Safety Action Plan 2026, p.16

By applying Safe System approach and Movement and Place principles, road authorities should be able to risk assess urban roads and regional routes of travel. In many cases for example, existing 100km/h speed limits would be retained.

Currently, speed limits tend to be set high and risk assessed down. This position should be reversed, with the onus placed on proponents of higher speeds to demonstrate they are safe. This is the approach taken in New Zealand's new speed management system.(20)

It is noted that speed limits are a maximum speed – not a target speed. For example, slower speeds are appropriate on narrow winding roads, when the road is wet or icy, at night or in low light conditions and when the roads are busy and congested. There should be an active effort to change the mindset of motorists, and to encourage them to always drive to the conditions, rather than reach a speed limit.

### **ACRS recommends:**

1. Implement a comprehensive and holistic approach to speed management such as the OECD/European 8-step approach that matches road function and credible speed limits:
  - a. in all new road developments.
  - b. in any reviews of existing roads. The same approach should be used to set credible speed limits and identify where road engineering solutions are needed to achieve sustainable safety.
2. Develop an investment strategy on a rolling ten-year basis to support the implementation and evaluation of this speed management approach.
3. As speed limits will still be required on many roads, regulatory impact statements should be conducted on lowering default urban and rural speed limits and conducted in a manner which recognises the significant change leadership task required in speed management.
4. Introduction of assistive technologies for speed management should incorporate world best practice vehicle safety regulation and standards which are requiring application of evidence-based technologies such as intelligent speed adaptation technology which restricts vehicle speed to legal limits.
5. Promote improved road users understanding of the effects of speeding and the reasons for safe speeds.

ACRS appreciates the opportunity to make a submission to this Inquiry and contribute to improving road safety in NSW. We acknowledge Mr Michael Timms, Deputy Chair of the ACRS-NSW Chapter,

for the preparation of this submission. Please let us know if you have any queries or need any further information.



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