Peer Review of New Zealand Speed Management Guide 2022

AUSTRALASIAN COLLEGE OF ROAD SAFETY

A review completed for Waka Kotahi NZ Transport Agency

Authors

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Summary

The Guide is a comprehensive document that provides a well framed approach to the management of speed on New Zealand's road networks. The Guide is a function of the Land Transport Rule: Setting of Speed Limits 2022, and speed limits are a primary mechanism through which the safety of the road traffic system is regulated. The approach taken is no blunt regulatory tool, however. The Guide demonstrates a sophisticated understanding of the technical safety limitations of the existing road network, and the social, environmental, and economic context within which safety needs to be significantly improved. The Guide is well aligned with the vision and principles underpinning New Zealand's national road safety strategy *Road to Zero*. It is prepared with a keen eye on both the technical and community support that Territorial Authorities and Regional Land Transport Committees may require to deliver on the ambitions and targets of *Road to Zero*. This is critical, as both technical and community leadership is required in speed management.

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Peer Review of New Zealand Speed Management Guide 2022

In October 2022, the Australasian College of Road Safety (ACRS) was asked by Waka Kotahi to undertake an independent peer review of *Speed Management Guide: Road to Zero Edition*. The College was asked if the information provided in the Guide aligns with international experience of best practice speed management, and invited to comment on:

- The principles that guide Safe and Appropriate Speed limits
- The alignment of the Setting of Speed Limits Framework with Safe System principles
- The alignment of the Setting of Speed Limits Framework with *Road to Zero*
- Any other related matters such as the end-state versus transition framework.

The Land Transport Rule: Setting of Speed Limits 2022 specifies that when proposing changes to speed limits, road controlling authorities (RCAs) must have regard to guidance and information developed and maintained by Waka Kotahi, which must include the Agency's assessment of what is the safe and appropriate speed limit for roads in New Zealand. RCAs must have regard to the principles and outcomes of any government road safety strategy. The national road safety strategy *Road to Zero* has a vision that no one is killed or seriously injured on the road.

In August 2022, ACRS published a policy position statement on speed management.[1] While some may see speed management as a trade-off between mobility and safety, ACRS is of the view that safety must always be the priority and primary focus. A comprehensive approach for addressing the problem was put forward in a 2005 report for the Organisation for Economic Co-operation and Development (OECD) and European Transport Ministers, and promoted eight steps which ACRS considers relevant in all road traffic contexts:

1. Determine the function of the road including the types of road users allowed
2. Determine the safe and appropriate speed for road lengths and intersections
3. Set a speed limit that reflects the safe and appropriate speed
4. Apply road engineering measures where low speeds are crucial for safety
5. Make sure people know the speed limit in force
6. Inform and educate drivers about speed and speed management
7. Police enforcement to control the speeder
8. Incorporate vehicle technologies where appropriate and available.

The ACRS is the region's peak membership association for road safety professionals, advocates, and members of the public who are focused on saving lives and reducing serious injuries on our roads. College membership includes experts from all areas of road safety including policy makers, academics, community organisations, researchers, federal, national, state, and local government agencies, private companies, and members of the public. Waka Kotahi is one of several government agencies which is a member of ACRS. The College vision is to eliminate fatal and serious injuries on the road.

None of the authors have been involved in the preparation of the Speed Management Guide.

[1] https://acrs.org.au/wp-content/uploads/2022/08/ACRS_SpeedManagement_PPS.pdf

General Comment

The Guide is directly supportive of, or sets out guidance and practice that supports, the steps set out in the OECD report, and ACRS is pleased to see this alignment.

The Guide is a comprehensive document that provides a well framed approach to the management of speed on New Zealand's road networks. However, it is much more than simply a practitioner guide to the setting of speed limits. The Guide:

- Sets out the principles for moving towards a future of zero fatal and serious injuries on public roads
- Presents the case for change in the way roads and streets should be viewed
- Establishes a framework for RCAs to plan, consult, and engage with their communities on road safety and speed, and
- Identifies how road infrastructure should support the adoption of a safer and appropriate speed limit regime.

The Guide is focused squarely on establishing safe and appropriate speed limits, which is an integral part of the overall speed management equation. This is understandable, because the Guide is a function of the Land Transport Rule: Setting of Speed Limits 2022, and speed limits are a primary mechanism through which the safety of the road traffic system is regulated.

The approach taken is no blunt regulatory tool, however. The Guide distinguishes itself by clearly addressing speed limits within the context of both:

- The physical road network for which speed limits are required, and
- The impact of speed limits on community understanding and behaviour.

That is to say, the Guide demonstrates a sophisticated understanding of the technical safety limitations of the existing road network, and the social, environmental, and economic context within which safety needs to be significantly improved.

The Guide is well aligned with the vision and principles underpinning New Zealand's national road safety strategy *Road to Zero*. It is prepared with a keen eye on both the technical and community support that Territorial Authorities and Regional Land Transport Committees may require to deliver on the ambitions and targets of *Road to Zero*. This is critical, as both technical and community leadership is required in speed management.

An important value of the Speed Management Guide lies in the process that was followed to develop and publish it, to inform and engage RCAs on how to implement it, and ultimately the actions taken by RCAs to deliver a safer road environment for their community. The Guide recognises this will take time with short (three year) and long-term (ten year) planning horizons embedded in a process that is clearly defined in the Guide.

Good practice speed management

The control of kinetic energy within the road traffic system lies at the heart of good practice speed management and is a major component of good road safety practice. Control of kinetic energy can also be significantly impacted by the safety quality of the road environment through, for example, the use of roadside and median barriers on rural roads, or roundabouts at intersections, or separated cycle lanes. However, speed limits provide the essential means for regulating the safety experienced by the community through compliance mechanisms such as speed cameras and, now in Europe, intelligent speed assist

– this technology allows the vehicle to regulate its own speed. Looking further ahead, speed limits will be a primary means of regulating the safety of automated vehicles.

The best performing countries in road safety tend to have the best practice speed management settings. The Guide recognises that New Zealand is a relatively poor performer in road safety amongst high-income countries and that addressing speed limits is a means of improving this.

Principles adopted that guide safe and appropriate speed limits

From the outset, the Guide presents the four guiding principles for speed management that underpin the approach:

1. Safety – Set speed limits that minimise the risk of fatal and serious injury to all road users by reducing impact speeds and crash forces
2. Community wellbeing – Set speed limits to enable equitable access to a variety of safe and healthy transport options, and generate public health, accessibility, environmental, and amenity co-benefits
3. Movement and place – Set speed limits in accordance with the One Network Framework street categories, design, and infrastructure
4. Whole of system – Support speed limits with other speed management activities such as regulation, enforcement, communications, engagement, and monitoring.

A key strength of the Guide is the interconnectedness of these guiding principles.

Good practice speed management provides the primary connection between safety and other issues that need to be addressed in order to deliver a much more sustainable mobility system. Lower speed limits provide support, for example, to health outcomes (by supporting walking and cycling through the creation of safer road environments), and environmental outcomes (by supporting reduced fuel consumption and related emissions). Speed limit reductions can deliver strong net economic benefits and are an important means of supporting and reinforcing principles associated with the planning, design, and management of the road network.

The interconnectedness could be further reinforced in discussion between principles 3 and 4. Reductions in speed can be achieved by assigning limits as well as by designing infrastructure, especially where non-motorised activities occur. Speed limits alone may not achieve full compliance, but compliance, and therefore improved safety, will be much more likely with appropriately designed infrastructure. Infrastructure design is an influencer of behaviour, and it is important to ensure that safe behaviour is not only framed around compliance with speed limits but reinforced by correct messaging to road users about appropriate driving speed.

Nevertheless, the One Network Framework (which categorises all roads and through this applies a safer and appropriate speed limit range to all roads) provides an essential reference point throughout the Guide, which grounds the guidance provided on speed limit setting within an overall approach to managing the road network and surrounding land use. Another essential reference point is Mega Maps, which takes the One Network Framework, applies an infrastructure risk rating analysis, and calculates a “safe and appropriate” speed for each road. The technical implications of the analysis embodied within Mega Maps are clearly expressed in the supporting material which states that “90 percent of the country’s speed limits are higher than the safe and appropriate speed”.

This is critical public safety information, backed by a systematic analysis using the best knowledge and understanding available. It provides an opportunity for the community to understand more about its exposure to death and disability during daily routines, and about actions which can be taken to significantly reduce these tragic outcomes on the road.

Regrettably this information is not typically provided by safety regulators or by road authorities in other jurisdictions, although it is easily attainable for any agency giving priority to the safety of their community on the road. For road controlling authorities in New Zealand, the Guide information makes clear their responsibilities for delivering a safe road environment through effective regulation of speed limits, and assists their decision making about the review and setting of speed limits, and the type of road infrastructure to support safer outcomes. For the community, this information helps explain the basis for the decision-making process.

Alignment of the setting of speed limits framework with safe system principles

The framework is well aligned with the principles of what is considered a safe road traffic system. Two features stand out in this Guide that help push forward the understanding of what a safe road traffic system requires:

- The Guide promotes speed limit setting which reinforces safer user choices. The application of the One Network Framework in the Guide supports the notion that the road network must first be designed in such a way that increases consistency for and understanding by all users, and so reduces the potential for human error and the risk of a fatal or serious crash occurring.
- The Guide promotes organisations assuming responsibility for the safety of the communities that use the infrastructure services they provide. The preparation of a systematic set of tools and guidance to support RCAs to implement the Setting of Speed Limits Rule provides a detailed mechanism through which RCAs can and are required to improve road safety.

While the application of speed limits appropriate for the road form and function is without doubt core to road safety, reference to “safe and appropriate” speed limits may suggest that safe speed limits will result in a safe road traffic system – that is, a road traffic system that is free of fatal and serious injuries. The approach to speed limit setting set out in the Guide will result in a much safer road traffic system, but the risk of a fatal or serious injuries will remain. Other strategies will also be required to realise the vision of *Road to Zero* where no one is killed or seriously injured in road crashes.

Alignment of the setting of speed limits framework with *Road to Zero*

The framework is also well aligned with New Zealand’s national road safety strategy *Road to Zero*. The Guide promotes a major step towards the ultimate vision of safe road traffic systems. It is well aligned to the seven guiding principles set out in *Road to Zero*, upon which some comment is added below:

1. We promote good choices but plan for mistakes – good choices about appropriate speeds are easier when legal limits better reflect the characteristics and perceived safety of the road infrastructure
2. We design for human vulnerability – safe and appropriate limits provide better protection for the most vulnerable users

3. We strengthen all parts of the road transport system – the Guide fits neatly alongside other key elements such as the One Network Framework
4. We have a shared responsibility for improving road safety – the responsibilities of each RCA are clearly articulated throughout the Guide
5. Our actions are grounded in evidence and evaluated – the overall Guide is backed by evidence and the approach is able to be evaluated
6. Our road safety actions support health, wellbeing and livable places – implementation of the guide directly supports these other community outcomes
7. We make safety a critical decision-making priority – safety is placed at the centre of speed limit setting, along with other principles.

Page 8 of *Road to Zero* summarises the *Case for Change*, and the Guide is an entirely appropriate response to this. *Road to Zero* sets out a target of reducing deaths and serious injuries by 40% by 2030, and implementation of the Guide will play a critical role in achieving this target.

Leading change

The Guide provides detailed technical processes and requirements for giving effect to the Setting of Speed Limits Rule. In doing so, it recognises the primacy of institutional responsibility (road controlling authorities must prepare a public Speed Management Plan which will improve the safety of road users) and local governance (Regional Land Transport Committees must assume political responsibility for ensuring that these plans are prepared and implemented). That said, the detailed legal mechanisms connecting the plans with the wider land transport planning and funding systems have not been reviewed.

The Guide is a significant document that articulates a new approach to managing speed on New Zealand's road network. It seeks a fundamental change to business as usual and in doing so discusses the "why", and addresses underlying principles, community engagement, and planning for change. The Guide provides critical guidance in support of the ultimate goal set out in *Road to Zero*.

There appears to be an intentional move away from a prescriptive approach to the setting of speed limits. While there is some technical guidance and additional technical information for RCAs, there could be more "how to" guidance to address any professional hesitancy to embrace change. Each RCA needs the technical capacity to critically analyse its existing speed management settings, prepare technically strong options for change, engage with the community over how the change will be managed, and then implement.

The ultimate test of the Guide is how effectively it is implemented by RCAs, and the Guide sets out a monitoring and evaluation framework, which is certainly a part of any best practice process. This could be clearer in the Guide by differentiating between the technical and the community, the interaction between the two, and what the focus of the RCA should be. For example, "local monitoring" refers to public perception and awareness surveys, and it is useful for RCAs to investigate community understanding and support before, during, and after change. RCAs should, however, have a strong focus on, and report back to the community about, the number of interventions (e.g. schools treated), the safety performance (e.g. proportion of the network aligned with safe and appropriate speed limits), and outcomes (e.g. levels of compliance as well as changes in deaths and serious injuries). It may be useful to indicate how Waka Kotahi reflects implementation of the Guide in the overall *Road to Zero* monitoring framework.

The Authors

Martin Small is Immediate Past President of the Australasian College of Road Safety, Principal of Martin Small Consulting, and non-Executive Director of RAA (the mobility club of South Australia). He has over 25 years leadership experience in road safety across a variety of technical, executive, consulting and board roles. He is a former Chair of New Zealand's National Road Safety Management Group, Director of the Australasian New Car Assessment Program and Chair of Austroads' Registration and Licensing Taskforce. He has delivered a wide range of successful speed management projects, including the largest set of speed limit reductions in Australia in the last 15 years, and the longest complete average speed enforcement network in Australia. He has also consulted widely in the area across Australia and New Zealand including a prize-winning evaluation of 40 km/h limits in New South Wales, and an audit of South Australia's speed camera program, and most recently Austroads guidance on speed management, enforcement and community engagement.

David McTiernan is a Councillor of the Australasian College of Road Safety and the National Leader Transport Safety at the Australian Road Research Board (ARRB). He joined ARRB in 2007 as Team Leader Road Safety after 16 years in New South Wales Local Government, where he gained valuable experience in a diverse range of local government engineering areas at metropolitan and rural councils, working in both project and senior-management levels. David's experience during this time included road design, construction, asset management, road safety and traffic engineering, as well as input to strategic and development land use planning. David has undertaken speed limit reviews for local councils, Transport for NSW and Queensland Department of Transport and Main Roads and he led the preparation of the NSW Speed Zoning Guidelines (2011), which remain the reference document for setting speed limits in NSW.

Ann Williamson is President of the Australasian College of Road Safety and Emeritus Professor at the University of New South Wales Sydney (UNSW Sydney). Up to the end of 2018 she was Director of the Transport and Road Safety (TARS) Research Centre, and Professor of Aviation Safety at the University of New South Wales. Ann has a track record spanning over 35 years of research and publication on human factors and injury especially in the areas of transportation and workplace safety. She has been an invited technical expert on advisory committees in Australia and internationally for a wide range of transport, road and workplace safety authorities.