

2019 ACRS Auckland Transport Speed Limit Proposal Submission



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 Sir Peter Cosgrove AK MC (Retd), Governor-General of the Commonwealth of Australia.

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1. Introduction

The Australasian College of Road Safety (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 serious injuries on our roads. The College provides a rich, collaborative environment promoting communication, networking, professionalism & advocacy across all spheres of road safety – including policy, advocacy, research, application & dissemination.

ACRS membership includes experts from across all areas of road safety: policy makers, academics, community organisations, researchers, federal, state and local government agencies, private companies and members of the public (www.acrs.org.au). The College has Chapters in New Zealand, Queensland, New South Wales, the Australian Capital Territory, Victoria, South Australia and Western Australia.

The College strongly supports Auckland Transport's proposal to introduce the proposed Speed Limits Bylaw 2019, which proposes that the speed limit of 10% of the Auckland road network, excluding NZ Transport Agency roads, will be reduced.

2. Background

2.1 The Safe System Approach

The Safe System approach is enshrined in the national strategies of both New Zealand and Australia with the ultimate goal of achieving zero road fatalities and serious injuries. The way the key elements of the transport system interact is crucial to achieving a favourable safety outcome.

The approach recognises that road users make mistakes and, therefore, if zero fatalities is ultimately to be achieved, the traffic system must be capable of accommodating those mistakes. Key determinants of the traffic as a system are safe vehicles, safe roads and environment, safe road users and safe speeds, together with the ways in which they interact. Their relationships are shown diagrammatically here from New Zealand's road safety strategy.

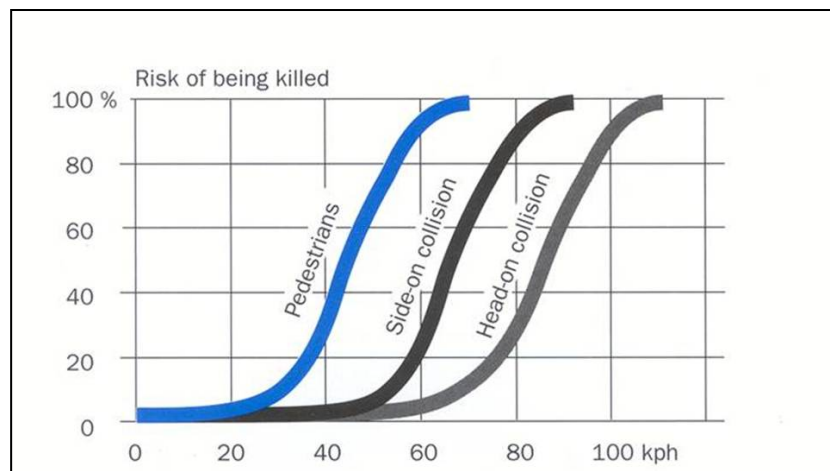


Regrettably, there have been significant problems implementing the strategy and New Zealand's road trauma problem has significantly worsened in recent years. The College is delighted to see that, amidst this road safety disaster, Auckland Transport has taken the leadership position it has – recognising its failure to provide Aucklanders with a safe road network, and tackling the issue in a variety of ways, including this speed management initiative.

2.2 Vehicle Speed

Vehicle speed represents a key element of the traffic system. It is speed together with vehicle mass that determines the amount of energy to be dissipated. Speed is especially important as if it is doubled, the energy to be dissipated increases fourfold, trebled – nine-fold. Aligning speed zoning with road function and infrastructure together with the likely crash types to occur under those circumstances is a key development in achieving an error-tolerant traffic system.

The diagram below is approximate only but represents pictorially the relationship between impact speed and the risk of death for differing crash configurations.



Wramborg, P. 2005, 'A new approach to a safe and sustainable road structure and street design for urban areas', *Road safety on four continents conference, 2005, Warsaw, Poland*, Swedish National Road and Transport Research Institute (VTI), Linköping, Sweden

The diagram is highly instructive, and points to the following:

- Critical impact speeds differ markedly across differing crash circumstances
 - Pedestrians are highly vulnerable at impact speeds of about 30 km/h or higher
 - Vehicle occupants in side-on collisions (for example at an intersection) at impact speeds of about 50 km/h or higher, and
 - Vehicle occupants in head-on collisions (for example, on the open road) at impact speeds of about 70 km/h or greater
- Beyond the critical impact speed, the risk of death rises rapidly; small increases in impact speed translate into large increases in the risk of death.

While the critical impact speeds depicted above are approximate only, it should be noted that threshold speeds will vary with vehicle design factors and road user size, weight and health status. For example, the critical impact speed may well be lower than 30 km/h for crashes involving very frail or young pedestrians.

A key challenge in configuring a Safe System is to manage travel speeds and, therefore, impact speeds such that the vehicle safety performance, the road and roadside safety infrastructure combine to ensure that no road user is killed or severely injured.

For example, higher speed limits are justified on high-quality, high-volume roads where flexible barrier systems in centre median and on both roadsides dramatically reduce the risk of serious head-on or hit-fixed-object crashes occurring.

On lower-quality roads where barrier treatments cannot be justified, lower speed limits are appropriate together with road furniture such as tactile edge and centre-lines to reduce the risk of lane excursions.

Similarly, at locations where vulnerable road users such as pedestrians or cyclists congregate, very low speeds are justified.

Experience indicates that a speed limit reduction of around 10 km/h will lead often in the first instance to a travel speed reduction of about 2-4 km/h. Lower travel speeds translate into lower impact speeds. Lower impact speeds, as noted above, translate into significant reductions in serious road trauma. Reductions are likely to be further enhanced if supported by traffic calming measures or bolstered police enforcement programs, both of which can be very effective in reducing travel speeds. In the longer term, acclimatisation to the new speed limits can lead to further gradual speed reductions.

3. Conclusion

Speed limits commensurate with the function and safety infrastructure supporting a road type are an important influencer in reducing death and serious injury on the road network.

Auckland Transport has recognised the substantial increase in serious road trauma on the road network over recent years and, as a consequence, has actively sought evidence-based solutions to reverse recent trends. To this end, we understand a number of rural roads, local streets and town centres have been identified where either crash risks are high, or crash numbers are significant and travel speeds inconsistent with safe outcomes. We understand that the biggest savings in road trauma are expected in peri-urban and rural residential areas.

The Australasian College of Road Safety is not in a position to comment on the specific speed limit change in each individual street or road identified as per Schedules 2 to 8 of the proposed Bylaw. However, the College can state firmly that:

- based on the strong scientific evidence underpinning the decision making, and
- based on the judicious selection of criteria adopted to identify candidate sites – namely, crash numbers, crash risk linked to travel speeds and road function.

Addressing unsafe speed limits in Auckland can also be expected to generate wider health and environmental benefits, as it directly supports goals to promote walking, cycling or public transport use.

Enactment of the Speed Limit Bylaw 2019 by Auckland Transport should lead to an appreciable drop in serious road trauma on the affected roads.

4. Attachments

Attachment 1 – ACRS Membership

The Australasian College of Road Safety membership consists of the following:

- All Australian and New Zealand road safety research agencies
- Australian and New Zealand universities
- Injury prevention, brain injury and neuroscience research organisations
- Australasian medical representative groups
- Australian federal government road safety & health promotion agencies
- State and Territory road transport agencies
- Local government agencies
- Policing agencies (both federal and state)
- Emergency services agencies
- Road safety research funding organisations
- Medical associations
- Safety promotion and training agencies
- Carer advocacy groups and associations
- Independent road safety consultants
- State vehicle and personal insurance agencies
- Driving schools and instructor associations
- Road safety advocacy groups, including motorcycles, children, youth, pedestrians, cyclists
- Road industry groups, including vehicles, trucks, roads
- International road safety consultants, agencies and advocacy groups
- Fleet safety associations
- Independent economist consultants and companies
- Engineers & engineering associations
- Legal firms
- Trucking companies
- Vehicle manufacturing companies
- Vehicle safety advocacy and testing organisations
- Other public or private companies interested in or working in the field of road safety
- Secondary, tertiary and post-graduate students currently studying in the road trauma field
- Interested members of the public