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# Australia's National Road Safety Strategy 2021-2030

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*Personal Feedback, Discussions, Suggestions*

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1.1	<ul style="list-style-type: none"><li>• Minor spelling corrections /alterations.</li><li>• Change to wording of suggested opening statement on page 3.</li><li>• Added citation for Austroads Document on page 3.</li><li>• Added wording for clarification on page 8 and 18.</li><li>• Changed order of questions pages 18-19 for better flow.</li><li>• Clarification of federal and state government roles on page 36.</li></ul>	██████████	05/April/2021

# Thanks

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Thank you for providing the opportunity for the public to participate in the consultation period for National Road Safety Strategy 2021-30 (NRSS).

This document contains my thoughts on various road safety issues, discussion points and questions for the draft strategy. I acknowledge the NRSS is a high-level strategic document, and some of the issues I raise herein will be too granular or small scale for the NRSS to address directly. However, I believe that each of the issues raised are important enough to warrant falling under a strategic direction in the final NRSS and hope to see these issues considered for the NRSS Action Plans.

This document is intended for a wider audience and goes into additional detail for many aspects which is unlikely to be necessary for all readers within the Australian Office of Road Safety. I have provided summaries where appropriate.

Regards,

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# Executive Summary

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Australia has made significant strides in reducing national road trauma, but we have a long way to go. In any given year, an average Australian has a 1 in 1,000 chance of succumbing to a serious injury due to a road related crash, or a 1 in 22,000 chance of being killed. Increasingly, these deaths and injuries are pedestrians and cyclists. Road transport crashes are the leading cause of accidental death for Australian children aged 1 - 14. Australian urban areas are so dangerous for our children due to the presence of motor vehicles that parents are becoming increasingly reluctant to let their children explore their own neighborhoods, contributing to Australia's childhood obesity epidemic, and potentially a decline in the life expectancy of our children. Thanks to the way we use our motor vehicles, Australia's neighbourhoods and urban built environments are so uncondusive to our children independently exploring and taking part in society, that Australia is at risk of breaching the United Nations Convention on the Rights of Children. Despite the significant progress we have made, Australian road related areas are still a battle ground, and increasingly the victims are those who are not driving.

In this submission, I attempt to draw attention to systemic issues resulting in counterproductive safety situations on the ground, which I believe the National Road Safety Strategy for 2021 to 2030 (NRSS) must address if Vision Zero is to be achieved. We must take into account Australia's car culture and our systemic, toxic attitudes harboured for vulnerable road users. I believe the National Road Safety Strategy must also consider the mammoth resources used by motoring interest groups to influence discourse and push their interests when road safety systems are discussed. We must understand that Australian politicians at all levels of government who push for genuine road safety improvements at the expense of motorist convenience, will be putting their political careers at risk.

I also raise some granular road safety issues which I believe are important enough to be addressed, even briefly, in our National Road Safety Strategy.

# 1 Opening Statements

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The draft NRSS includes an opening statement in emboldened text:

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Driving and road use is a significant part of the Australian way of life and business. Australia is a large country and many of us rely on private road transport to get to work or play, and on trucks to deliver our produce and consumer goods. However, this road use currently does not occur without causing considerable harm.

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This statement establishes a false narrative for the NRSS; it implies that reducing the amount of driving that Australians must do will be difficult because of the size of our country. While this may be true to an extent for those who commute into and out of regional areas, for those who live in cities this does not need to be the case. Almost 90% of Australians live in Urban areas (ABS, 2019), making Australia one of the most urbanized countries in the world. ABS data shows that 40 to 50% of employed Australians commute less than 10 km to work (BITRE, 2015). This distance is easily achievable by many non-motorized forms of privately owned transport which pose less of a hazard to their users and others than the privately owned motor vehicle, but only when infrastructure exists to support those means of transport.

For decades, Australian governments have focused on building infrastructure for mass automobility, at the expense of all other forms of transport. Most car trips in Australia are not due to Australia being a large country. Most Australians rely on private road transport to get to work and play because we have built our urban environments in a manner that ensures no other form of transport is safe, practical, or appealing to the majority. I acknowledge that the NRSS is not intended to be a place to discuss public or active transportation uptake, that the strategy is intended to make the road systems we have as safe as possible. However, relevant to NRSS discussions, ensuring multimodal streets exist in Australian cities and regional towns not only provides infrastructure for those who do not want to or should not be driving, it is a viable way to reduce road trauma (Marshal & Ferenchak, 2019). We do not need to force

Australian's out of their cars, we just need to build transportation infrastructure to ensure that human powered and public transit options are practical, safe and appealing.

I note that immediately after this opening statement, the Draft NRSS goes on to discuss the concepts of place and active streets as developed by Austroads (Austroads, 2020). The inclusion of these concepts in the NRSS a fantastic and essential step, however; setting the tone of the document by suggesting that Australians must drive because we live in a big country is counterproductive to a vision zero goal.

If this statement must remain, may I suggest the following wording:

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"Driving and road use is a significant part of the Australian way of life and business. Many of us rely on privately owned motor vehicles to get to work or play, and on trucks to deliver our produce and consumer goods. However, the way we use our roads is unsustainable and does not occur without causing considerable harm.

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## Summary for Section 1

A difficult fact to accept is that key for Australia to achieve Vision Zero, will be implementing systems which ensure Australians are less reliant on their privately owned cars than we are today. Motor vehicles are heavy and fast appliances, the more Australians are required to use them, the more deaths and injuries we are likely to see on roads and in road related areas. While it may not be the intention of the NRSS to address built environment, mixed use development and quality public transport in detail, it is entirely appropriate that the NRSS state that our unnecessary reliance on the private motor vehicle contributes to Australia's road trauma.

## 2 Goals

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Relates to; •All Priority Focus Areas

The goals of the NRSS include a reduction in road injuries and deaths. I believe this target is not ambitious enough and propose that a true "Vision Zero" approach is immediately necessary for every NRSS moving forward. Per discussions in the virtual consultation, I accept that achieving zero deaths and injuries immediately is an unrealistic target, though maintain that this should be a goal Australia must reach for from the outset.

My reasoning is this: The uninterrupted, unhindered operation of motor vehicles is a politically sensitive issue for all state and territory leaders in Australia. Decades of prioritising motor vehicle movements has led to motorists (voters) becoming accustomed to Australian roads being built with an intended level of service (LOS) at the expense of safety (See Sections 4 and 5 of this document for examples). Safety compromises particularly impact vulnerable road users, a likely contributor to the increasing rate of pedestrian and cyclist deaths observable in Australia.

While the NRSS proposes a reduction of deaths and injuries of at least 50 and 30 percent respectively, I am concerned that failing to adopt an immediate target of zero deaths and injuries will see state and territory decision makers continue to compromise safety to achieve an intended LOS for motorists which falls within the 50/30 percent guidelines, as doing otherwise will genuinely put their political careers at risk. IE: Under 50/30 percent trauma reduction targets, state/territory decision makers may continue to ensure a target LOS is achieved whilst willfully compromising safety, as long as they're achieving the targets listed in the NRSS.

A NRSS which adopts an immediate vision zero philosophy will appropriately set the narrative that not a single road death or injury is ever acceptable on Australian roads. Hopefully, this will make it easier for state/territory politicians and decision makers to implement what are going to be politically unpopular decisions.

## Question for section 2

**This question was answered in the virtual consultations:**

What is the reasoning behind adopting a reduction in deaths and injuries of only 50 and 30 percent respectively? What is stopping Australia from immediately adopting a vision of zero road deaths or injuries? If we can identify what is preventing us from immediately adopting a Vision Zero culture, how do we address these issues?

**I'd like to rephrase the last sentence in the question as I believe it remains relevant:**

Can we identify what barriers may exist which are preventing state and territory politicians from implementing genuine vision zero goals. If so how do we address and eliminate these barriers?

### 3 Perceived Risk

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Relates to; •All Priority Focus Areas

I believe that understanding how perceived risk and risk homeostasis (aka risk compensation) theory may affect Australia's road safety systems, then adjusting said systems to suit, is important enough to be its own priority focus area in the National Road Safety Strategy.

Every activity undertaken by every human being includes an element of risk. What is an acceptable level of risk varies from person to person, which goes some way to explaining why some people will never go near an aeroplane, some are happy to jump out of them daily, and most people will fall somewhere in between these two extremes. Risk homeostasis/compensation theory is simple on the surface: if a scenario or system is made safer, people who use the system will unwittingly take additional risks, until they've reached a level of risk they're comfortable with.

Risk homeostasis theory is hotly contested in scientific circles. Unfortunately, there are those who use the theory to conclude there is no point to mandating any road safety improvements, claiming that all safety benefits will be offset by additional risk taken. Thankfully, one only needs to inspect the gradual decline in road trauma that the Anglosphere has experienced over the last few decades to conclude that this is not the case. Net improvements in road safety can always be attained with appropriate safety standards and legislation.

While risk homeostasis theory itself may be contested, how people respond to perceived risk and actual personal risk is more observable.

When Sweden switched from driving on the left-hand side of the road to the right, social and official discussions included ample talk about inevitable collisions from motorist confusion. When the switch occurred, road users were wary and cautious due to the perceived risks of the switch over. The result: In the three years after switching from left to right hand drive, Sweden saw a statistically significant **decrease** in road deaths. The increase in perceived risk saw motorists take more care, leading to a net positive road safety effect. Unfortunately, as motorists became used to

driving on the right-hand side of the road, the perceived risk decreased, and Sweden's road death rate returned to previous levels (Wilde, 1998).

Australia too has an example of a net road safety improvements likely due to increases in perceived risk. Long weekends in Australia are met with a large increase in vehicle kilometres travelled as we all travel to see family and friends, though in recent years, this increase in driving has not been met with a increase in road trauma which cannot be explained by natural statistical fluctuations.

While I am yet to find a study which has investigated why this may be, perceived risk could offer some explanation. Holiday periods in Australia have become so synonymous with death and injury that a common phrase to hear over Christmas is "have a **safe** and happy holidays". News media outlets provide extensive reporting on road deaths during holiday periods. State and territory governments increase penalties for driving offences, whilst also ramping up road safety advertisements and police resources. Several factors combine to see an overall increase in perceived risk whilst driving on long weekends in Australia. Drivers believe the roads are more dangerous, and also understand that additional police and additional penalties, mean that anti-social driving is more likely to be detected and will be more severely punished. The increase in perceived risk on long weekends leads to motorists being more careful on long weekends.

I believe that for Australia to achieve Vision Zero, we must take steps to better understand perceived risk, then strategically use it to adjust motorist behaviour. I have deliberately not suggested perceived risk be tactically employed to adjust "all road user behaviour", as to be explored in section 10, a significant imbalance of perceived and actual risk exists between Australian road users at present, with vulnerable road users already bearing extraordinarily high levels of risk compared to motorists.

## 4 Penalties

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Relates to: Perceived Risk & Risky Road Use

One area where perceived risk must be considered, is Australia's extraordinary lenience towards motorists who injure or kill others. The NRSS must address the systemic perception that road trauma caused by motorists is the result of unfortunate “accidents”, rather than the result of criminal negligence. The NRSS must address that decision makers, politicians, police, judges, and magistrates are typically motorists, and can view the actions of motorist who have killed as the result of a mistake that they could make themselves. This perception leads to insultingly lenient penalties for those who kill, injure or endanger others whilst driving in Australia, meaning the risk of legal retribution as a consequence of dangerous driving is not a significant deterrent for Australian motorists. For example:

- A motorist fined less than \$400 for deliberately swerving into cyclist (Evans, 2021)
- A motorist sentenced to 200 hours of unpaid community work and fined \$2000, after spending most of her journey using her mobile phone, then killing a cyclist. Likely influencing the lenient sentence, the judge suggested the deceased cyclist had contributed to his own death due to “the apparent focused manner of his cycling” (Croxon & Costelo, 2019). Apparently in Australia, vulnerable road users are blamed for causing their own death when not paying enough attention (SBS, 2018), or when paying too much attention to the task at hand.
- A motorist who was legally drunk, who hit and killed a cyclist, who failed to call emergency services at any stage, rather called his sister and asked her to find him a good lawyer, failed to provide assistance to his victim, told one person who stopped to render assistance to "F\*\*\* off ... he's dead." Sentenced to 18 months prison before being eligible for parole and banned from driving for 8 years. (Cooper, 2019)
- An unlicensed truck driver, with detectable quantities of methamphetamines in his system, drove through two red lights, drove past a crossing guard wearing high visibility clothing, hit Willow Griffiths, then a 17 year old child, leaving

her with life changing injuries and requiring 24/7 hospital care. The truck driver sentenced to 33 months in prison, eligible for parole after 18 months and banned from driving for only 8 years (Mourad, 2021).

- A motorist who endangered the lives of 8 children by allowing them to sit in the ute tray of his vehicle as he sped along a beach, fined \$1300 (Tomevska, 2021), or \$162.50 per child's life endangered.
- A driver who failed to clear his frosted windscreen, hit a cyclist causing life changing injuries, including a brain injury and post traumatic amnesia. During the hearing, the court heard that the driver's actions were "an error any of us could make". The driver was placed 12-month good behaviour bond, with the magistrate not wanting to ruin the driver's future opportunities (Williams, 2018).
- A motorist who became angry at another motorist for what he perceived as her driving too slowly, overtook her vehicle, waved rude hand gestures to her, pulled back in front and slammed on his brakes. The truck driver behind the vehicle he'd just passed was unable to stop in time, resulting in a collision and the death of a 10-year-old child. The man received a 6 year prison sentence, and a 10 year driving ban. The lack of a permanent driving ban in this instance of culpable driving causing death is particularly curious, given the man's history of road rage incidents and deliberately using his vehicle as a weapon (Cooper, 2016).

In Australia, penalties for motorists who have killed others are so lenient, that a person who wishes to deliberately end someone's life has every incentive to choose a motor vehicle as a weapon. As long as the scene is crafted to look like a genuine "accident", a person who uses a motor vehicle to kill has a realistic chance of proceeding through our legal systems without seeing the inside of a prison. Even under the influence of drugs or alcohol, a motorist may only see very short periods of prison time for killing while driving. The lack of serious penalties for criminal negligence resulting in death whilst driving, and authorities who are quick to relate to the perspective of motorists, results in the perceived risk of harsh legal retribution for dangerous motorists being low. This must be addressed if Australia is to achieve Vision Zero.

Examples of legislation changes which could be employed to increase perceived risk for motorists could include:

- Introduction of assumed and strict motorist liability for damages in collisions with vulnerable road users (Explored more in Section 10).
- Introduction of equal assumed liability for damages in collisions between motorists (all motorists assumed equally at fault. Onus on all parties to prove they could not have reasonably done anything more to avoid a collision), and;
- Where a motorist is involved in a collision where any other person has died, a driver's licence suspension should immediately commence until crash investigations have concluded, and;
- Where a motorist is found wholly or partially at fault for the death of any other road user, a lengthy minimum licence suspension must immediately be imposed (ie: 25 years or more), and;
- In instances where a motorist is found guilty of culpable driving causing death, their licence must be cancelled for life without conditions, and;
- Where a motorist has had their licence suspended or cancelled after causing death, and are caught driving without reasonable justification (eg: medical emergency) they will be sentenced to prison.

Of course, no matter how severe penalties for causing death and injury to others may be, there will be a minority of people who demonstrate a tendency to repeatedly engage in unjustified, intentional, risky activity while driving. Where a person demonstrates that they may not have the cognitive ability to interpret risk and act appropriately while driving, their right to drive must be removed, with psychological evaluations required before a licence is returned.

## WHO WILL DRIVE MORE CAREFULLY?

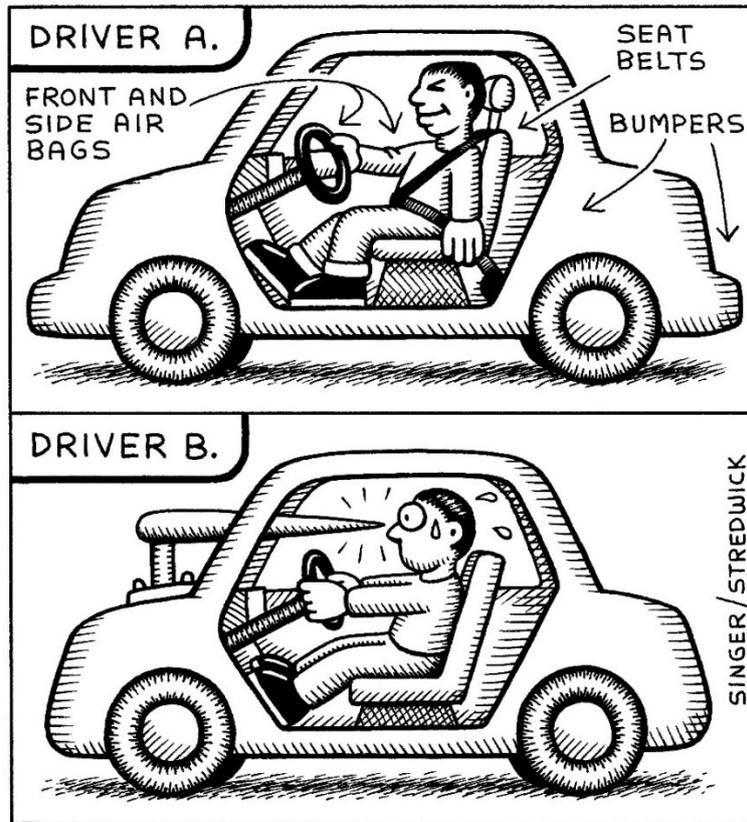


Figure 1: The pointy stick in this picture could represent harsh penalties for motorists who injure or kill others.

### Summary of Sections 3 & 4

Risk homeostasis theory is contested in scientific circles, in part due to those opposed to any government regulation using the theory when attacking mandated safety improvements.

However, the perceived risk element of the theory holds more weight. Strategic changes to road safety systems which increase immediate perceived risk to motorists, including harsh penalties for causing death and injury, must be a priority focus area while striving to achieve Vision Zero.

## 5 Default Urban Speed Limits

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Relates to; •Movement and place and speed management.  
•Vulnerable Road Users

Data from studies around the world have shown that when a motorist hits a pedestrian at 60 km/h, the chance of the pedestrian being killed or receiving severe, life changing injuries (LCI) from the collision, is guaranteed. Hit at 30 km/h, the chance of either death of LCI occurring are reduced to under 10%. These statistics were included in the National Road Safety Strategy 2011-2020, page 60, and in the draft documentation for the new NRSS. As part of "Vision Zero" campaigns around the world, a default urban speed limit of 30 km/h is being rolled out in many jurisdictions. Speed limits in Australian residential areas continue to be 50 and 60 km/h, reducing the chance of survivability for vulnerable road users, and making our residential/urban environments more dangerous, noisy, and generally hostile. I note that in the Draft NRSS 21-30 and associated consultation papers, there is mention of reducing speed limits to 30 km/h in high pedestrian and vulnerable road user activity areas, however, am concerned there is no mention of reducing default urban speed limits to the same.

Australia's default urban speed limits remaining at 50 km/h translates to Australian decision makers being content with the level of risk motor vehicles moving at these speeds causes to vulnerable road users. It means that new streets built in Australia's urban areas will continue to be designed to cater for motor vehicle speeds of up to 50 km/h. It translates to Australia being comfortable with the public realm in our residential areas being so dangerous, that many parents will not let their children out of their homes, a factor most certainly contributing to Australia's childhood obesity epidemic.

If Australia's new National Road Safety Strategy does not include a strong direction for states and territories to immediately adopt 30 km/h default speed limits for local access streets; it means that Australia is happy with all the above. It means that that regardless of who has made a mistake, when a vulnerable road user is struck by a motorist travelling at a legal speed, a mere 15% chance of that vulnerable road user

surviving is acceptable according to Australia's National Road Safety Strategy. This is not good enough.

Perhaps my wording above is superfluous, but I am a genuine loss as to how 50 km/h is still a default urban speed limit in a country which is otherwise extremely risk averse. 50 km/h default urban speed limits have no valid or justifiable place within a Vision Zero road safety strategy.

### Question for section 5

Will the NRSS21-30 action plan(s) direct states and territories to adopt a default speed limit of 30 km/h on all urban access streets, as well as those streets with higher levels of pedestrian activity?

## 6 State & Territory Compliance with National Road Safety Strategies

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Relates to; •Tracking Performance.

I need to illustrate the next question with following example of non-compliance with NRSS11-20 by state/territory authorities:

In 2013, the "greenfield site development code" for an Australian jurisdiction I am familiar with, **increased** the **required** design speed of residential local access streets, from 50 km/h back up to 60 km/h. This action directly contravened all steps in the directions statement on page 67 of the NRSS11-20, and with apparent disregard to the Crash Risk Evidence on pages 59-61 of the strategy. The amendment demonstrates that systemic, pro motoring culture is still rampant within Australian state government departments. It demonstrates that despite all evidence pointing to how dangerous 60 km/h roads are for vulnerable road users, decision makers are still more concerned about LOS for motorists than they are about reducing road trauma. Road design is an extraordinarily important consideration when trying to achieve motorist compliance with speed limits. If a road is built to a design standard of 60 km/h, many otherwise responsible, law abiding motorists will inadvertently travel at 60 km/h regardless of the posted speed limit.

Fortunately, the same code has since been amended to require a design speed of 50 km/h on some local access streets, but not others. New suburbs built in this jurisdiction in the last 3 years continue to have some residential roads posted with 60 km/h speed limits. This is not a matter of; "fixing older infrastructure to achieve vision zero goals will be a gradual process due to difficult and expensive retrofitting", to this day, Australian decision makers are still willfully building brand new roads in residential areas, facilitating speeds which we have known for decades will kill vulnerable road users.

Perhaps the above was also unnecessarily wordy, but in a country as risk averse as Australia, the actions of decision makers when it comes to road safety vs motorist

priority, demonstrates a deep set, systemic, pro motorist culture which must be eliminated in order for Vision Zero to be attained.

### Question for section 6

Will the NRSS21-30 include discussions around how to ensure state and territory authorities are forced to follow directions listed in the final strategy?

In the early 1990's, the Australian Federal Government threatened road funding for local jurisdictions if they did not implement compulsory bicycle helmet laws. Could similar threats be relayed in the event that states/territories appear to be making decisions which directly contradict the directions of the NRSS?

# 7 Holding Decision Makers to Account for Bad Decisions

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Relates to; Vision Zero and the Safe System

The questions in this section were answered in the virtual consultations. I have included the question and related examples again as a matter of record.

The following question also needs illustration with another real-world example:

In 2016-2017, a major road infrastructure project was completed in an Australian jurisdiction I am familiar with. Adjacent to this project was existing segregated bicycling facilities. Experts worldwide consider segregated facilities to be the gold standard in safety for vulnerable road users. As part of the infrastructure upgrade, a turnoff was installed on the segregated facilities which lead back up to an arterial road, with directional signage installed indicating to cyclists that they could arrive at a list of destinations via "on road cycling". Less than 50 metres from this new turn off, cyclists are fed into an on-road cycle lane on an arterial road which is also an approved B-Double truck route. This cycle lane then forms part of the turning space for large trucks at a major intersection. Please see figure 2 for further illustration.

As such, in 2016-2017, this Australian jurisdiction implemented new cycling infrastructure, which through directional signage and painted road markings, encourages cyclists to position themselves on a section of road which was principally designed to be run over by truck trailers. All parties involved in designing and building this infrastructure have created a dangerous situation where no dangerous situation existed before. Even more curious, the existing segregated facilities allow cyclists to arrive at all destinations advertised by the "on road cycling" route. There was no need to encourage cyclists to leave the safety of the segregated facilities. Multiple professionals will have signed off on this dangerous infrastructure. Even if the infrastructure followed all relevant standards, a basic risk analysis or even a moment's thought would have revealed that the design was grossly inappropriate.



Figure 2: New Australian infrastructure feeding vulnerable road users to a section of road where risk of being run over by a truck trailer is possible. Note the bicycle symbol painted on the road near the stop line has been run over so often, it is now barely visible.

### Question for section 7

It is not just road users behaving badly that contributes to death and injuries in Australian roads; poorly designed infrastructure also plays a part, especially for pedestrians and cyclists. Should the NRSS21-30 include direction for state and territory governments to hold those who design and build our road networks to account, when dangerous infrastructure is completed and opened to the public?

## 8 Regional & Remote Area Speed Limits

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Relates to; • Regional and Remote Road Safety  
• Social Model Approach to Road Safety

The NRSS11-20 identified that the survivability of head on collisions between motor vehicles decreases significantly at speeds above 70 km/h. Unfortunately, reducing default rural speed limits from 100-110 km/h in Australia is likely to have other negative consequences, such as increased driving time and an associated increase in fatigue related crashes. Such an action by local agencies would require a careful approach with serious consideration of negative externalities and unintended consequences. While it may not be immediately appropriate to reduce speed limits on all rural two-way roads which are not equipped with center barriers, a national discussion around the appropriateness of implementing 100-110 km/h speed limits on Australia's rural roads by default is entirely appropriate. Currently, many Australian rural roads in all states and territories have 100 km/h or higher speed limits when they are not warranted.

### Questions for section 8

- Based on personal observations; when local authorities are deciding on a speed limit for any given Australian rural road, they are likely to start with their state limit, then lower the speed limit as required. This practice leads to many lower quality rural roads in Australia being posted with 100 km/h or higher speed limits when such speeds are not warranted or safe. Is the NRSS an appropriate place to direct states/territories to adopt a rural speed limit setting framework, where 70 km/h is considered the default speed limit, which is then increased as warranted by infrastructure upgrades and/or class of road?
- Is there scope within the NRSS21-30 to encourage state/territory authorities to implement 70 km/h maximum speed limits on all rural two-way roads that are not classified as major highways and do not have center barriers?
- Should the NRSS21-30 include a direction for state/territory authorities to immediately consider any single carriageway, two-way road, sans

center barriers, currently posted with an 80 km/h speed limit, as candidates to have their speed limits reduced to 70 km/h?

- Should the NRSS21-30 include a direction for state/territory authorities to implement a default 70 km/h speed limit on all unsealed rural roads?

## 9 Motorway Misunderstandings

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Relates to; Regional Road Safety & Speed Management

Based on personal observations, many Australian drivers do not know the difference between a limited access freeway/motorway, and a rural dual carriageway. This leads to Australians routinely calling for higher speed limits on lower quality rural dual carriageway roads, based on many European countries having speed limits of 120 km/h to 130 km/h on their high-quality, limited access motorways. It also leads to motorists simply exceeding posted 100 and 110 km/h limits on dual carriageways, as they believe it is likely safe to do so. It leads to motoring journalists driving large lengths of these roads at 20 km/h over the posted speed limits, reporting that it was perfectly safe to do so (Oliver, 2016), fueling further misunderstanding and general disrespect for speed limits in regional Australia.

This is in part due to a failing of Australian driver education, but it is also due to Australian signage, route labelling and road naming conventions blurring the line between the very different classes of roads.

Dual carriageways in Europe typically have speed limits of 80 km/h to 120 km/h, so with a typical speed limits of 100 km/h to 110 km/h, Australian's regional dual carriageway speed limits are at the higher end of European scales. European limited access motorways, however, typically have speed limits of 120 km/h to 130 km/h. Australia's limited access motorway limits remain at a relatively low at 100 km/h to 110 km/h, matching the limits found on lower quality regional roads.

Suggesting an increase in allowed speeds to improve safety will appear counterintuitive, though I believe it is appropriate to at very least, hold discussions about raising the speed limit on limited access sections of Australia's rural motorways from 100 and 110 km/h to 120 km/h, primarily to draw attention to the fact that speeds higher than 110 km/h are not appropriate on roads without grade separated intersections. Even if higher limits are not implemented, facilitating discourse around the issue may help to achieve the same.

## Questions for Section 9

- Could allowing motorists to travel at higher speed on limited access regional motorways, result in more respect for 100 to 110 km/h speed limits on dual carriageway and other regional roads? Would this lead to less instances of uninformed motoring journalists and populist politicians advocating for 130 – 140 km/h for our rural dual carriageways (Mitchell, 2018) (Oliver, 2016)?
- Could directing Australian states and territories to adopt different route marker and naming conventions for limited access motorways and dual carriageways aid in highlighting the difference between the classes of roads? For example, only roads built with grade separated intersections and access control along their entire length may be designated an M route marker and formally be named a motorway/freeway?

# 10 Systemic road safety culture and vulnerable road users

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Relates to; • Perceived Risk.  
• Risky Road Use.  
• Vehicle Safety  
• Vulnerable Road Users.

When a motorist collides with a vulnerable road user, the vulnerable road user who will be injured or killed, regardless of who was at fault. This fact is a result of simple physics and cannot be changed. This fact also results in vulnerable road users bearing significantly more risk than vehicle occupants when present on a road or in a road related area.

To balance risk between road user types, some jurisdictions around the world have implemented assumed liability, or strict liability legislation. Under an assumed liability framework, where when a motorist collides with a vulnerable road user, the motorist is assumed to be completely at fault until proven otherwise by relevant authorities. Where complete fault cannot be established, the motorist is assumed to be at fault.

Under strict liability framework like that in the Netherlands, see figure 3, if a motorist hits a child, the motorist can be held liable for all damages, even if the motorist was found to be not responsible for causing the collision.

Liability frameworks such as this increase perceived risk for motorists.

On the surface, motorists being burdened with responsibility for damages in all collisions with non-motorised users may come across as unfair. However it bears repeating; in a collision with a vulnerable road user, it is vulnerable road users like Willow Griffiths who will be burdened with death or LCI regardless of who is at fault. Vulnerable road users of sound mind have every reason to avoid a collision with a motor vehicle in every circumstance. In the absence of assumed or strict liability legislation, motorists do not bear anywhere near the level of risk as vulnerable road users, and as such have less incentive to behave safely around them.

## Article 185 Wegenverkeerswet; (a.k.a. "Strict Liability" in Dutch Road Law)

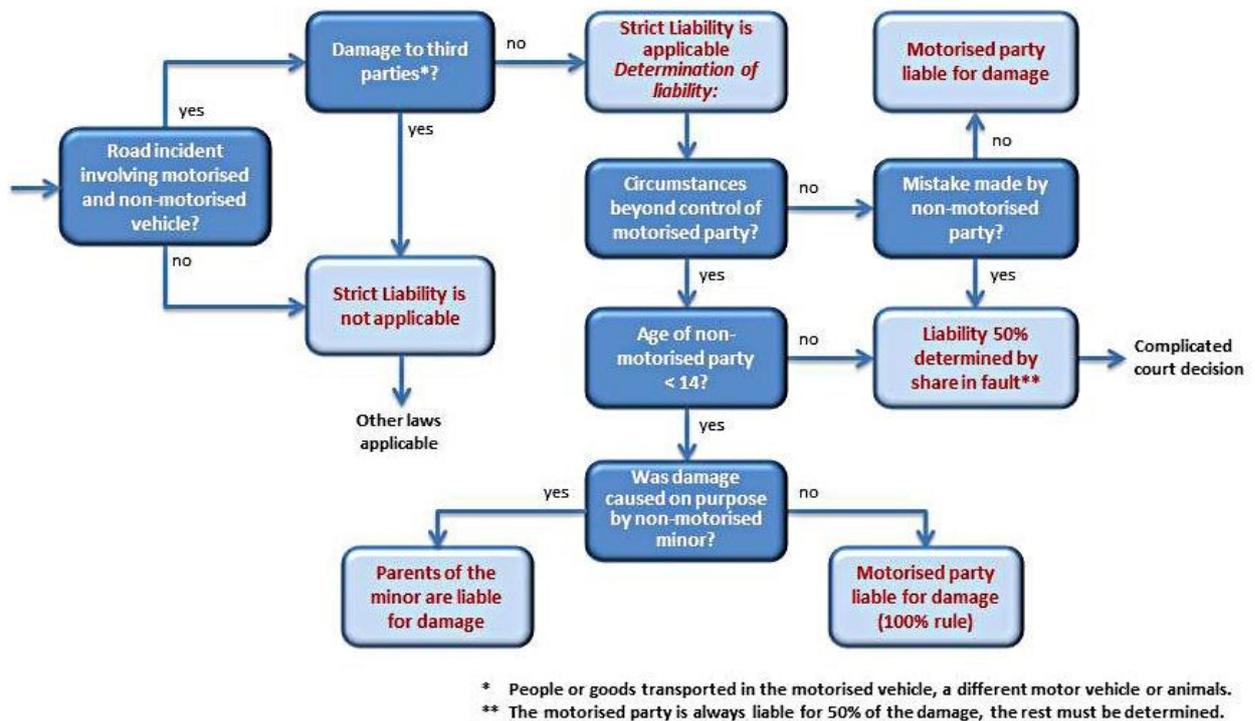


Figure 3: Damages liability framework used in Netherlands for Motorist vs Vulnerable Road User collisions (Bicycle Dutch, 2013).

### A road safety culture problem

Unfortunately, contemporary Australian road safety culture attempts to address vulnerable road user risk by altering behaviour of vulnerable road users, rather than the behaviour of motorists. This is a strange practice, akin to trying to reduce damage caused by gun violence through educating people how to avoid being shot, rather than addressing problematic gun use. This way of thinking is systemic in Australian road safety circles when it comes to vulnerable road users. Several road safety campaigns exist which highlight this culture.

The "Look out before you step out" campaign in New South Wales is a classic example; complete with advertisements depicting hostile city streets, the campaign reminds pedestrians to be scared and be aware, it is their responsibility to not be killed by a motor vehicle user. Recently it has also become common for state leaders and senior police officials to encourage pedestrians not to wear headphones, or encourage cyclists to wear high visibility clothing (SBS, 2018), often in the aftermath of a highly publicized crash involving a vulnerable road user.

Deserving special mention here is the “Driveway Safety” campaign from Transport for NSW Centre for Road Safety (TNSW, 2019), which includes a message to parents to keep their children locked indoors. At all levels of government, Australia has been trying to address an obesity epidemic amongst our children by encouraging more outdoor physical activity, yet the NSW Centre for Road Safety is advising to keep children locked up in their homes. The message to install higher door handles and keep front doors locked so children will not be killed is disgraceful. It is arguably in contradiction of Article 31 in the United Nations Convention on the Rights of the Child, of which Australia is a signatory:

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Article 31 (2): Parties shall respect and promote the right of the child to participate fully in cultural and artistic life and shall encourage the provision of appropriate and equal opportunities for cultural, artistic, recreational and leisure activity.

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While some of the messages in the Driveway Safety campaign may hold merit, they are messages intended to address the symptoms of a flawed system and urban environment. Children being killed on Australian driveways is a driveway design problem. Children being killed on residential streets is a residential street design, speed, and motorist behaviour problem. However, Australia’s road safety culture suggests that it is children being present in these areas that is the problem. If Australia keeps blaming children and their parents when a child is killed by a motorist, the true cause of these deaths, the true source of the danger, will never be remedied (Job R. , 2020).

Another case in point is the “Be Truck Aware” safety campaign from New South Wales, which included producing a video (TNSW, 2017) demonstrating how difficult it is for truck drivers to see vulnerable road users in their mirrors, and over the bonnets of their vehicles. This is a serious and dangerous heavy vehicle design flaw. Under a safe system, vision zero approach as being strived for by the NRSS, such trucks would simply be prohibited from city streets or any other places where vulnerable road users are present. However, Australia’s road safety culture does not overtly blame heavy vehicle design, rather we attempt to advise vulnerable road users

now not to be killed. It deserves mention that New South Wales does publish guidance for heavy vehicle owners on how to choose safer vehicles or retrofit dangerous vehicles to make them safer (TNSW, 2020), but these requirements are not compulsory. Therefore, in the absence of forcing operators to make their vehicles safer, the burden of risk remains on the vulnerable road user.

All the above examples are symptoms of a systemic “victim blaming” culture. Australian authorities, media, road safety experts, justice systems, and in turn social circles, are quick to blame vulnerable road users for their deaths after they have died. Academics have theorized that contributing to this bias, is dead vulnerable road users are unable to give their version of events (Job R. , 2020). Also contributing to the cycle of bias is the way media reports crashes involving vulnerable road users, typically using direct or indirect language to suggest vulnerable road users are responsible for their deaths (Goddard, Ralph, Thigpen, & Iacobucci, 2019) (Ralph, Iacobucci, & Thigpen, 2019).

If we blame those who fall victim to the dangerous elements of our road systems, we’ll never fix the dangerous elements of our road system.

### Victim Blaming does not fix the problem. A detailed example.

For example, marked pedestrian areas at Australian intersections controlled by traffic lights can be as close as 60 cm to the vehicle “stop” line, see figure 4. Bike boxes can abut vehicle stop lines, see Figure 5. With induction loops to detect the presence of vehicles located very close to vehicle stop lines, see Figure 6, truck drivers have no choice but to stop their vehicles close to pedestrian areas at traffic signals. This makes it difficult or even impossible for truck drivers to see vulnerable road users who are properly within their designated areas at traffic signals. The google street view snapshot in Figure 7 highlights this issue at a typical Australian intersection.



Figure 4: Space between stop lines and marked pedestrian crossing areas are so inappropriately small, that truck drivers who stop their vehicle at the stop line may not be able to see pedestrians legally crossing in front of their vehicle.

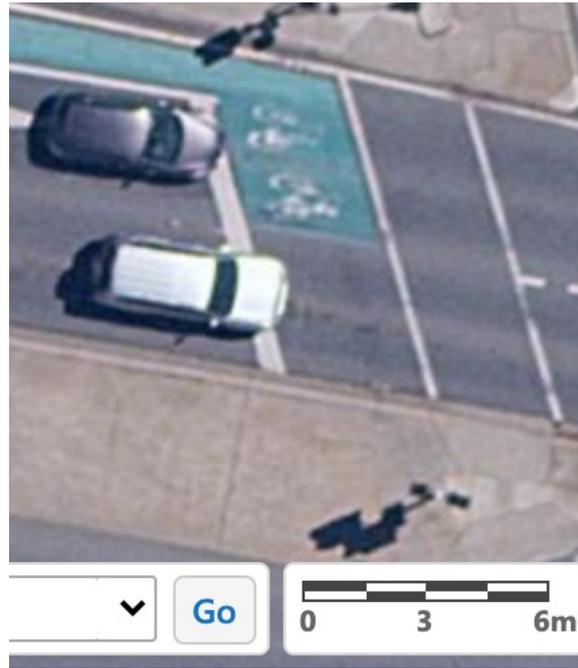


Figure 5: The "bike box" in this intersection encourages cyclists to wait mere centimetres in front of stopped vehicles, a location where truck drivers have no chance of seeing them.



Figure 6: Aerial imagery depicting induction loops placed very close to vehicle stop lines, forcing motorists to stop as close to the pedestrian crossing space as possible in order to ensure their vehicle is detected.



Figure 7: Google Street view image of an Australian intersection. Even if the driver of this truck had correctly stopped before the stop line, it is unlikely they would have been able to keep the entire pedestrian area in front of them in full view.

The image in Figure 8 is an intersection in New South Wales, completed in early 2019. It shows a marked pedestrian crossing area 1 meter from a vehicle stop line. This intersection was completed after the “Be Truck Aware” safety campaign aired. Meaning while decision makers in NSW are aware enough of the dangers that truck blind spots posed to pedestrians to produce a safety campaign about it, they have not taken the basic step of modifying intersection design requirements to ensure infrastructure cannot cause this dangerous situation to happen. As NSW decision makers chose to blame the victims of the dangerous system, they have not fixed the dangerous system.



Figure 8: This intersection in NSW was built after the NSW "Be Truck Aware" safety campaign was released. NSW advises pedestrians not to walk in front of large trucks where the driver cannot see them, yet at the same time continues to build intersections where this is a guaranteed occurrence.

Systemic victim blaming by authorities, by our justice system, at all levels of government, in the media and within social circles, must be abolished if Australia is to achieve Vision Zero. Therefore, eliminating systemic victim blaming must be a key strategic direction listed within Australia's National Road Safety Strategy.

## Reducing dangers of truck blind spots

### *Current Approach*

Educate vulnerable road users on how to avoid being killed by truck drivers.

Encourage truck operators to purchase new and safer vehicles or retrofit older vehicles with additional safety systems, but do not make doing so compulsory.

### *Vision Zero Approach*

Ban large trucks with significant blind spots from city streets, until they're properly retrofitted with newer safety systems.

Ban large, heavy combination trucks from all urban areas.

Address physical design flaws at Australian intersections which create additional risk for pedestrians and cyclists.

Ensure signal phasing eliminates opportunities for larger vehicle movements to conflict with pedestrian and cyclist movements.

Educate vulnerable road users about dangers of truck blind spots, using carefully considered wording that ensures all understand that heavy vehicle operators have burden of responsibility in avoiding collisions with vulnerable road users.

### *Real World Example of Vision Zero approach in action*

London, England, has implemented a Safer Lorry Scheme (TFL, 2021), which bans heavy vehicles with dangerous blind spots from city streets. Heavy vehicles must be fitted with large mirrors, and under run protection which prevents vulnerable road users from being crushed by a trailer.

## Motorist Behaviour at Pedestrian Crossings

Also symbolic of our road safety culture problem, fueled in part by the above systemic issues and victim blaming safety campaigns, is the unspoken social acceptance of motorists approaching pedestrian crossings without slowing. Many motorists have the expectation that a pedestrian approaching a crossing will stop, look, and ensure approaching motor vehicles are stopping before stepping onto the crossing, even though the pedestrian has right of way.

In any other situation where a motorist is required to "give way" to another road user, they will slow, stop if necessary, and ensure they will not cause a collision by proceeding. Yet this is not the case at pedestrian crossings. I assume the logic employed by motorists who behave in this manner is the logic embedded in Australia's road safety culture problem. That is: It is in a pedestrian's best interest to ensure they are not hit by a motor vehicle, therefore any pedestrian potentially approaching a crossing has more responsibility to avoid a collision than the road user who is required to give way to them.

This widely accepted practice is dangerous, contributes to a hostile road environment for all vulnerable road users, and most certainly contributes to death and injury on Australian roads. It is easy to illustrate how dangerous this common attitude is by creating a theoretical scenario where the driver of a car becomes the vulnerable road user:

“A driver of a large, 60 tonne B-Double truck approaches a cross-roads intersection in a rural area. The truck is moving at a permitted 100 km/h. The driver of the truck is approaching a give way sign, potential cross traffic has right of way. Flora has grown close to the intersection, so it is not possible for the truck driver to see if any motor vehicles are approaching the intersection. The driver of the truck uses the logic that many motorists use when approaching a pedestrian crossing; **“It doesn't matter who has right of way. It would be stupid for the driver of a small car to simply roll out in front of a fast-moving truck, without checking if that truck is able to stop in time.”** Brimming with confidence, the truck driver blindly barrels past the give way sign and through the intersection without slowing from 100 km/h.”

In the above scenario, no person would argue about which vehicle occupants are likely to be worse off when a passenger vehicle collides with a large truck. However, no person of sound mind would argue this fact is valid justification for the driver of a truck to approach a give way sign without slowing down from 100 km/h. No government would spend money on a campaign advising motorists to stop and look at every intersection in case a truck is about to barrel through. No state government would erect signs at every intersection reminding motorists to "Look Out before you Roll Out." Yet every minute of every day, motorists all over Australia treat their obligation give way to pedestrians with similar logic to that employed by the truck driver in the scenario above. Every day, pedestrians and motorists alike are reminded by state safety campaigns, that pedestrians must "look out" even if they have right of way, because motorists cannot be expected to do the right thing.

## Summary of section 10:

No vulnerable road user of sound mind wants to be involved in a collision with a motor vehicle, but too many Australian motorists are prepared to risk a collision with a vulnerable road user. Many Australian road safety campaigns directly or indirectly suggest vulnerable road users have more responsibility to avoid being killed than motorists have responsibility for not killing vulnerable road users. This leads to Australia turning a blind eye to systemic infrastructure problems, motorist behaviour and cultural problems which create danger for vulnerable road users. I believe that NRSS must advocate for the following in order to reduce victim blaming and in turn road trauma, on Australia's roads:

- Increase perceived risk for motorists through assumed/strict liability legislation.
- Abolish systemic vulnerable road user blaming in government and judicial systems.
- Abolish safety campaigns which directly, or indirectly indicate that it is a vulnerable road users' responsibility to avoid being killed by other road users.
- Direct media to be careful about language when reporting on vulnerable road user crashes/deaths.

Australian Road Safety Culture at present:

Increased **personal risk** = Increased personal responsibility.

Treat dangerous road systems by altering road user behaviour.

What the national culture must change to as guided by NRSS directions:

Increased **risk to others** = Increased personal responsibility.

Treat dangerous road systems by making dangerous systems safe.

## Questions for Section 10

- Can the NRSS include directions for state and territories to implement assumed and strict liability for motorists, in motor vehicle vs vulnerable road user collisions?
- Can the NRSS include a direction for state and territory governments to inquire into and address, systemic victim blaming cultures evident when it comes to vulnerable road user deaths?
- Can the NRSS include a direction for state and territory government to be more careful about wording used road safety campaigns, and the underlying messages about vulnerable road user responsibility these campaigns can send to motorists?
- Will the NRSS include a direction for media outlets to use neutral language used when reporting on crashes?

# 11 Vehicle Sizes & Petro-Masculinity

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Relates to; • Perceived Risk.  
• Safe Systems.

The size of a typical passenger motor vehicle has increased over the past few decades. The increased weight of vehicles has come about largely due systems and vehicle design improvements which increase vehicle occupant safety. The increase in vehicle height, particularly front-end height, I assume has come about for aesthetic reasons, consumer choice, and increasing popularity of North American style utility vehicles in Australia after the departure of local vehicle manufacturing.

The increase in front end height is known to cause more injuries when a motorist collides with a pedestrian (Monfort, 2020) (D'elia, 2014). While increases in vehicle occupant safety systems and associated increase in vehicle weight may contribute to an overall net road safety increase, the increase in vehicle front end height is less justifiable.

Of particular concern is a phenomenon perhaps provocatively named “petro-masculinity.” Researcher Cara Daggett coined the term to describe the phenomenon of individuals, typically men, choosing to drive large, aggressive, fuel inefficient vehicles in response to a perceived threat to the patriarchy (Daggett, 2018). The vehicles of choice are typically large utility vehicles, or “pick up trucks”, modified to have even larger wheels, taller ride heights, noisy exhausts, and other accessories to increase their vehicles presence, making the vehicle appear and sound more aggressive and “masculine.” Thankfully the North American petro-masculinity trend hasn’t entirely caught on in Australia, but a version of it is creeping in.

In Australia it is becoming increasingly common to see aftermarket off-road modifications made to high riding utility vehicles, including further increases in ride height and plastic bumper bars replaced with steel or aluminum bull bars. While bull bars have been a relatively accepted vehicle accessory in Australia for some time, modern bull bars which replace front bumper bars are often designed for off road use, with a higher front end clearance, allowing vehicles to pass over obstacles such as large rocks. Such designs, combined with aftermarket increases in vehicle ride heights, are most certainly more dangerous to vulnerable road users, especially children. With the

front of a vehicle now designed to “climb over” objects, vulnerable road users are more likely to be run over and crushed in a collision.



Figure 9: The aftermarket aggressive front end and increased ride height of this vehicle is dangerous to pedestrians and cyclists. The bull bar is angled down which will force a pedestrian underneath the vehicle during a collision. Vision Zero will not be achieved while Australia's vehicle registration standards continue to allow such vehicles to exist on public roads.



Figure 10: This tradesman's ute above, photographed in an Australian suburban carpark, has many modifications including aggressive bumper bar, increased ground clearance, large wheels which protrude past frame of the vehicle. All of these modifications increase risk to vulnerable road users and have no place being permitted on urban roads if Australia is to achieve Vision Zero.



Figure 11: A North American style pickup truck, so large that a person of shorter stature cannot be seen over the bonnet. When discussing what is necessary to achieve zero road deaths or injuries in Australia, we must decide whether passenger vehicles like this should be allowed on Australia's roads.

As argued by Daggett, many vehicles modified for off road use are arguably modified primarily for aesthetic reasons, to deliberately create an intimidating presence. Even when those vehicles are genuinely modified for practical, regular off-road use, they still pose additional threats to vulnerable road users, and the occupants of regular sized passenger cars when used on public roads.

Australia must decide if the styles of vehicles pictured on the previous pages, have a valid place on public roads as we strive to achieve Vision Zero.

### Question for section 11

Should the NRSS21-30 direct states, territories, and relevant federal government bodies to adopt more stringent vehicle standards, which prevent vehicles which pose additional and unnecessary dangers to other road users, from being imported, or registered for use on public roads?

## 12 Liability in Crashes Between Motorists

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Relates to: •Perceived Risk.  
•Risky Road Use.

The emergence of dashcam footage on public video platforms in the past few years has illustrated a relatively undiscussed issue on Australian roads, that is, drivers who believe right of way = right to crash. It is not difficult to find footage online of motorists who had ample chance to avoid a collision, but instead deliberately contributed to it occurring. Often, such incidents will occur where one driver has simply failed to give way to another in a low-speed situation. Though rather than making reasonable attempts to avoid the collision, the motorist with right of way chooses to accelerate, sound the horn, and deliberately collides with the motorist who has failed to give way. Motorists who behave in such an aggressive manner are so confident in their understanding of their right of way, that they believe they will not be found at fault even if they allow the collision to occur.

While I am not a psychologist and do not fully understand what is likely to be going through the mind of a motorist who is happy to be involved in a collision, I believe perceived risk (See Section 3), significant increases in both perceived and actual safety in modern motor vehicles, and general Australian cultural issues, will go some way to explaining these deliberate crashes. For these drivers, in the brief few seconds they may have to avoid a low-speed collision, the decision-making framework likely follows the following pattern: "That person has cut me off, they're doing the wrong thing, they're targeting me personally, I'll show them I'm no pushover by letting the crash occur, I'll be safe in my modern vehicle, I have right of way, they'll have to pay for damages."

Perhaps such collisions occur so infrequently that they are not worth addressing. However, if a subculture of "I have right of way and am therefore untouchable" does exist, it certainly does need addressing.

I would like to suggest that changing the way fault is found after a collision may curb this and other types of motorist aggression and entitlement. Rather than open and shut cases where a motorist who failed to give way is automatically found at fault,

crash investigations and fault finding should revolve around how the actions of every motorist involved has contributed to the crash.

I am not legal expert, and it may well be the case that authorities in some or all Australian states/territories would already find a motorist at fault when they deliberately choose to let a crash occur, rather than making any attempt to avoid it. However, I can say with certainty that in many Australian conversation circles, the discussion of “fault finding” is often black and white, a motorist who has failed to give way for whatever reason would be considered to be at fault, and the actions of all other parties involved considered inconsequential. While such attitudes are allowed to exist anywhere in Australia, vision zero will not be achieved.

## Summary for Section 12

Risk homeostasis theory and the perceived risk arguments suggest that motorists may be prepared to take more risks when they believe they will not be injured or found at fault in a collision. As vehicles become safer, we can see examples of motorists who are prepared to take riskier behavior, including letting collisions occur. To address "Risky Road Use", and employing the "Social Model" to improve road safety, the NRSS21-30 could direct local jurisdictions implement an assumed liability framework in crash investigations.

## Questions for Section 12

- Should the NRSS direct states and territories to adopt a liability model where all motorists involved in a collision are assumed equally at fault until proven otherwise?
- If/When such frameworks exist, should the NRSS direct states and territories to implement road safety campaigns which remind motorists that right of way does not equal right to crash? Right of way
- To assist crash investigators, is the NRSS an appropriate place to hold serious discussions around black boxes in motor vehicles which keep a rolling log of driver control inputs? – The technology exists to make this happen; black boxes do not exist in private motor vehicles yet due to a culture problem.

# 13 Licensing Requirements

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Relates to; •Safe Systems

In Australia, it is possible for a motorist to obtain their licence, then not be required to re-sit a test or otherwise confirm their road rules knowledge for several decades, despite the Australian Road Rules and state/territory adoption of them, resulting in them being prone to frequent and drastic change.

## Question for section 13

Should the NRSS21-30 direct states/territories to adopt more routine road rules tests for all drivers, to ensure driver knowledge of road rules is kept up to date? Perhaps an online test every 5 years as a licence is renewed, and another driving test ever 10-15 years?

## 14 Holistic Safety Systems

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This short section provides a granular example of a situation, counterproductive to vision zero goals, which has arisen due to lack of holistic road safety response between government departments. This section relates to my personal observations of “green wave” traffic light timing. A green wave is traffic signal phasing which allows a direction of motor vehicle traffic to pass through multiple intersections controlled by traffic signals without stopping, if those vehicles are travelling at a certain speed. When implemented properly, green wave traffic signal phasing can decrease emissions, vehicle operating costs, and improve road safety (Wu, Deng, Du, & Ma, 2014). The green waves I have observed in Australia are typically timed to benefit / reward motorists who are travelling precisely at the posted speed limit.

All Australian jurisdictions have been attempting to address speed related road trauma for some time now. Safety campaigns have encouraged motorists to “wipe off 5”, other campaigns advise motorists to “stick to the limit” or other similar wording. We’ve likely spent hundreds of millions of dollars on road safety campaigns intended to see motorists slow down and respect posted speed limits.

Over 10 years ago Australian Design Rules (ADR) changed so as to prohibit vehicle speedometers from displaying an indicated speed lower than a vehicle’s actual speed. A speedometer conforms to ADR legislation if it meets the following formula where  $V_1$  is indicated speed, and  $V_2$  is actual speed (Australian Government, 2006, p. 10).

$$0 \leq (V_1 - V_2) \leq 0.1 V_2 + 4 \text{ km/h}$$

Under this formula, a motorist travelling on an arterial road at 80 km/h, may see an indicated speed of up to 92 km/h on their ADR compliant vehicle instrumentation. Where green wave traffic light timing on an arterial road has been set at precisely the posted speed limit of 80 km/h for example, a motorist will need to travel at an indicated speed of up to 92 km/h in order to benefit from the green wave. I’m sure why this is a problem is evident; while multiple levels of government are attempting to address general community disregard and lack of respect for posted speed limits, other levels of government are inadvertently contributing to disrespect for speed

limits by rewarding those drivers whose vehicles are indicating to them that they may be travelling at speeds well over the posted speed limit.

This scenario would not happen where all levels of government and all road safety decision makers were properly communicating and working to achieve the same goal. Section 6 of this document outlines another example indicating road safety issues that can arise from disjointed road safety priorities within government.

Under a vision zero approach, to encourage respect for speed limits and taking into account current ADR vehicle instrumentation standards, the formula used to calculate an appropriate “green wave” speed could be the following, where SL equals posted speed limit, at GW equals “green wave” speed.

$$[GW] = (SL - 4) 0.9$$

If green waves were calculated with the above formula, no person with an ADR compliant speedometer would need to travel at an indicated speed higher than the posted speed limit in order to benefit from a green wave.

### Summary for Section 14

I appreciate that this example of “green wave” timing is most certainly too granular for the NRSS to address directly, though I believe it is a simple and adequate example of the need for the NRSS to promote holistic road safety responses within all levels of government to ensure Vision Zero is achieved.

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