



**BICYCLE
NETWORK®**

Senator Glenn Sterle
Chair, Senate Standing Committees on Rural and Regional Affairs and Transport
PO Box 6100
Parliament House
Canberra ACT 2600

25 February 2015

Dear Senator Sterle,

An inquiry into aspects of road safety in Australia

Bicycle Network submission

Bicycle Network welcomes the opportunity to provide a submission to the Australian Government's inquiry into aspects of road safety.

Bicycle Network is Australia's largest bicycle organisation with over 45,000 members. Our goal is to make bike riding easy for everyone. We believe physical activity is vital for a happy and healthy life so we want bike riding to be part of every day.

Improved road safety for bike riders is integral to making bike riding easier and for the Australian Government to reach its road safety goal of reducing death and serious injury by at least 30%¹ as well as doubling the number of people cycling in Australia by 2016². The recommended actions in this submission work toward achieving these goals.

¹ Australian Transport Council 2011, *National Road Safety Strategy 2011-2020*,
http://www.infrastructure.gov.au/roads/safety/national_road_safety_strategy/files/NRSS_2011_2020.pdf

² Austroads 2010, *National Cycling Strategy 2011-2016*,
<https://www.onlinepublications.austroads.com.au/items/AP-C85-10>



Bike riding and the National Road Safety Strategy 2011-2020

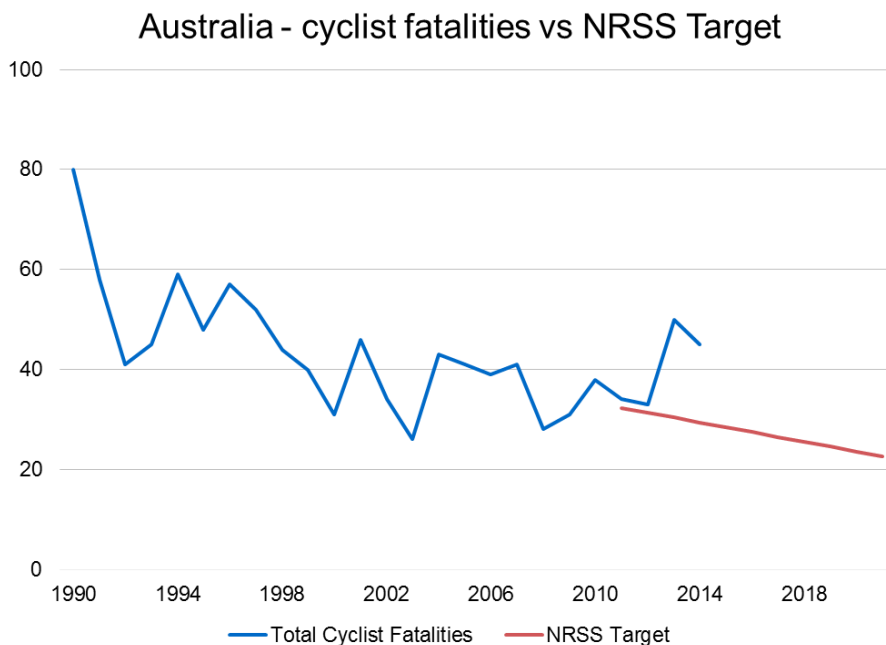


Figure 1: Actual cyclist fatalities in Australia compared with the National Road Safety Strategy 2011-2020 (NRSS) target³

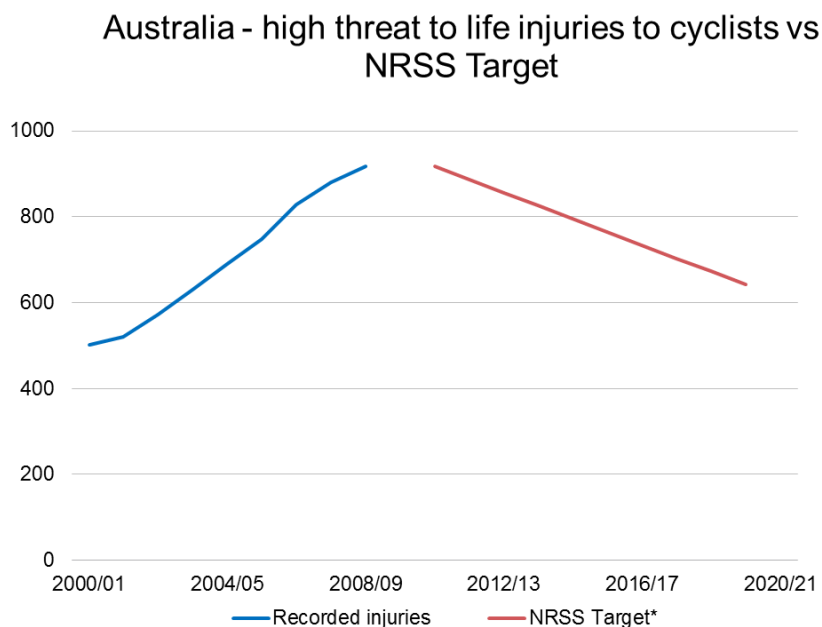


Figure 2: Recorded cyclist high threat-to-life injuries in Australia compared with NRSS Target⁴

*Assumes reduction of NRSS target from 2008/09 levels of high threat to life injury

³ BITRE 2015, *Australian Road Deaths Database*, https://www.bitre.gov.au/statistics/safety/fatal_road_crash_database.aspx

⁴ Henley & Harrison 2012, *Trends in serious injury due to land transport accidents, Australia 2000–01 to 2008–09*, <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737421990>



Figures 1 and 2 speak volumes on the failure to seriously address bicycle road safety in Australia. Figure 1 demonstrates that since the commencement of the National Road Safety Strategy 2011-2020 (NRSS) no progress has been made in reducing the number of bike rider fatalities on Australian roads. Figure 2 highlights both the failure to reduce high threat-to-life injuries to bike riders as well as the lack of up-to-date publicly available data on serious injuries to bike riders since the 2008/09 period.

The failures demonstrated in these two figures point to the three main recommendations of Bicycle Network's submission:

- The Australian Government must ensure that infrastructure projects funded through its funding programs demonstrate the consideration of all transport modes – particularly bike riding and walking.
- The Australian Government must fast track the adoption of new technologies and regulations that are proven to improve bike riding safety as Australian Design Rules.
- The Australian Government must make publicly available high quality data on bicycle fatalities and serious injuries.

The remainder of this submission is divided into the parts 'A' through 'E' of the terms of reference.

A. The social and economic cost of road-related injury and death

Willingness-to-pay calculation of road related injury and death

Moving to a willingness-to-pay (WTP) model for calculating the cost of road related injury and death will ensure that the calculated costs will align more closely with societal expectations. Government expenditure and business decisions made in relation to those calculated costs must meet societal expectations.

Austrroads⁵ outlines how a national WTP model can be established. This approach should be adopted by the Australian Government to guide the transition to a WTP model.

B. The importance of design standards on imported vehicles, as Australian vehicle manufacturing winds down

International harmonisation of vehicle safety standards

The Australian Government must continue its policy to harmonise Australian Design Rules (ADRs) with United Nations Economic Commission for Europe (UNECE) regulations.

In addition, the Australian Government must act as an international leader and advocate for the bike riding community by lobbying for new technologies to be adopted through the World Forum for Harmonization of Vehicle Regulations (Working Party 29). This Working Party must focus on, not only the impact of regulation on vehicle occupants, but give particular focus to vulnerable road users such as bike riders. Australia is well placed to lead this conversation.

Using Euro NCAP as a guide for best practice

⁵ Austrroads 2014, Social costs of road crashes in Australia: the case for willingness-to-pay values for road safety, <https://www.onlinepublications.austrroads.com.au/items/AP-R438-15>



Euro NCAP Requirements are a global leader in vehicle safety recommendations.

The ANCAP rating system will align with Euro NCAP requirements by 1 January 2018. This will ensure safety ratings applied in Australia reflect world's best practice. The Federal Government should develop a policy position to swiftly adopt the Euro NCAP (and ANCAP) requirements that are proven to reduce serious injuries and deaths as Australian Design Rules (ADRs). At present, there is a lag between Australia adopting new regulatory requirements compared with other developed countries such as Japan, United Kingdom, and the United States of America.

The Australian Government should also provide ongoing financial support to ANCAP over the forward estimates to ensure independent vehicle safety advocacy. Current funding is due to expire at the end of next financial year⁶.

We also urge the Australian Government to work with ANCAP to lift the 'Minimum Pedestrian Rating' requirement for a 5-Star Rating from 'Acceptable' to 'Good' by 2016.

There is a particular imperative to take action on creating 'safer vehicles' (as per the NRSS) in their interactions with vulnerable road users if Governments are to meet their target of reducing fatalities and serious injury by at least 30% by 2020. This is particularly important given that vulnerable road users have yet to share in the serious injury and death reductions of the first four years of the NRSS.

C. The impact of new technologies and advancements in understanding of vehicle design and road safety

Global Technical Regulation 9

The Australian Government should immediately adopt Global Technical Regulation 9 on frontal offset impact. Research from 2011 shows that the introduction of an ADR to enforce GTR 9 "would result in net benefits and a number of lives saved of \$185m and 65 respectively, as well as over 3,000 serious injuries saved, assuming that the standard was active for fifteen years"⁷.

Safety assist technologies

With ANCAP ratings to align with Euro NCAP Requirements by 2018 it is inevitable that more vehicles will be fitted with safety assist technologies (SATs) that will subsequently improve safety for bike riders on Australian roads. However, there will not be total application of these technological advancements until they are included as ADRs. The Federal Government should actively pursue the introduction of ADRs that protect vulnerable road users.

SATs that improve bike rider safety include:

- Speed assist systems: This together with setting safer speeds – especially on popular cycling routes – could result in better compliance with speed limits, and therefore reduced impact speeds when motor vehicles and bike riders collide.
- Lane support systems: Can ensure that motor vehicles do not drift into bicycle lanes or road shoulders.
- Autonomous emergency braking (AEB) for motor vehicle-bicycle interactions:
 - Can reduce impact speeds, allow greater time for avoidance manoeuvres and reduce collisions with bike riders altogether.

⁶ Minister for Infrastructure and Regional Development 2014, *Australian Government delivers ANCAP funding for safer roads*, http://www.minister.infrastructure.gov.au/jb/releases/2014/May/jb038_2014.aspx

⁷ Department of Infrastructure and Transport 2011, *Regulation impact statement for pedestrian safety*, http://ris.finance.gov.au/files/2011/01/Pedestrian_Safety_RIS_Part_A.pdf



- Current AEB currently is focussed on car-car and car-pedestrian interactions. The Australian Government should advocate for the advancement of AEB systems that also benefit bike riders.
- Rosen (2013) showed that AEB systems for pedestrians and bike riders had “considerable potential to save lives and mitigate severe injuries for vulnerable road users in frontal collisions with passenger cars.”⁸
- BITRE has modelled a hypothetical scenario in which AEB with vulnerable road user protection would be compulsory in all new light vehicles from 2018. The modelling showed that 597 deaths and 24,100 hospitalised injuries would be avoided by 2033⁹.
- Emergency Brake Assist for motor vehicles: To improve braking power for drivers during an emergency stops.
- Adaptive front lighting systems: Better lights enables improved ability to see vulnerable road users
- Alcohol and drug ignition interlock: Ensures greater compliance of alcohol and drug driving offenders.
- Attention assist / fatigue detection as well as fatigue reminders:
- Automatic headlights.
- Reversing cameras and visual aids. Particularly to assist cars reversing in driveways where children may be riding on footpaths.
- Land Rover and Jaguar are developing SATs that can notify drivers and passengers of dooring risk to bike riders or bike riders who may be in their blindspots.

Heavy Vehicles

The Federal Government should also actively pursue technologies to improve the safety of heavy vehicles on Australian Roads. Electronic Work Diaries should be implemented to ensure compliance with fatigue laws. Phase II of the *National Heavy Vehicle Braking Strategy* must also be actively pursued by the end of 2015 with a view to adopt a new Australian Design Rule by early 2017.

D. The different considerations affecting road safety in urban, regional and rural areas

30 km/h speed limit

Besides the 25 km/h speed limit in South Australia, other states and territories across Australia have yet to broadly apply world’s best practice of 30 km/h speed limit (or less) for roads with high numbers of pedestrian and bike riders and for pedestrian and bike riding priority streets, mainly local streets. 50 km/h default speed limits apply broadly across Australian local streets despite the fact that in a vehicle to vulnerable road user collision with an impact speed of 50 km/h the vulnerable road user will probably die, and if that same collision were to occur with an impact speed of 30km/h the vulnerable road user is unlikely to die.¹⁰

Streets without footpaths

Of particular concern are streets without footpaths where children are forced to ride on the road (and many people walk on the road) at great risk. These roads should have speed limits of 30 km/h until footpaths are provided.

⁸ Rosén, E. 2013, Autonomous Emergency Braking for Vulnerable Road Users, IRCOBi Conference 2013 from http://www.bitre.gov.au/publications/2014/files/report_140.pdf

⁹ Department of Infrastructure and Regional Development 2014, *Research report 140*, http://www.bitre.gov.au/publications/2014/files/report_140.pdf

¹⁰ Global Road Safety Partnership 2008, *Speed management: a road safety manual for decision-makers and practitioners*, p.4 http://www.who.int/roadsafety/projects/manuals/speed_manual/en/



Holiday season and holiday destinations

Holiday season coastal towns and other holiday locations experience walking, biking and traffic densities that require lower traffic speeds for safe road user interaction. The application of 30km/h speed limits in these towns at peak periods should occur.

Active travel to school

In the 1970 66.2% of students in Melbourne walked or rode to school. By 1994 26.1% did. Car travel to school over this period increased from 14.3% to 55.3%¹¹. In the twenty years since there has been no sign of this trend abating. Today the streets in the vicinity of schools are congested and potentially unsafe environments during drop-off and pick-up times. Children who have travelled actively need to contend with many motor vehicles and even the children that have been driven to school still need to walk safely to the front gate.

Significant work has been achieved to reduce traffic speeds outside of schools, but given extensive policies in place to encourage the uptake of active travel, the Australian Government should work with State and Territories to develop design and traffic management policies that will facilitate safer school streets.

Action 13 of National Road Safety Action Plan 2015-2017

The subject areas of the four previous subheadings are potential areas that action 13 from National Road Safety Action Plan 2015-2017 should address. The speed management message needed to be communicated regarding these areas is clear and has strong potential for societal wide acceptance: *drive slow where there are lots of pedestrians, bike riders and children.*

Bike riding on rural roads

The default speed limit of 100km/h on some rural roads is incompatible with their use as popular recreational cycling routes.

Fatalities and serious injury on these types of roads for bike riders are over represented for the number of trips that occur on them.

Some work has been done to include wide road shoulders to accommodate bike riders on these roads, but often the treatment of these shoulders has not meet the preferences of bike riders many of whom continue to ride in the general traffic lane.

The Australian Government should encourage state road traffic authorities to identify popular sports and recreational bike riding routes on 100km/h speed limit roads. The Australian Government should also advise the states that that adequate sized and surfaced road shoulders are in place to make bike riding safer in this environment.

E. Other associated matters

Availability of data

With more publicly available data road safety policy makers and interest groups can more easily take actions to improve road safety that are based on the best available Australian evidence. Without better data road safety policy makers and interest groups are 'in the dark' as to what improvements are needed.

Despite positive progress towards action 19 of the National Road Safety Plan 2015-2017 reported in the Austroads review of the NRSS, the Australian Government should work closely with all remaining

¹¹ Garrad 2009, *Active Transport: children and young people*, https://www.vichealth.vic.gov.au/~/-/media/resourcecentre/publicationsandresources/active%20travel/active_transport_children_and_young_people_final.ashx



States and Territories to link their crash and hospital databases on road injuries. At present, this process is moving too slowly.

A subsequent push to streamline the reporting criteria for road injuries would create a source of consistent data that would inform future road safety actions and decisions. This was outlined in action 55 of the NRSS.

The success of action 56 is contingent on the completion of action 55. Action 56 would provide an invaluable resource to the nation by creating a source of real-time data so that road safety can be closely monitored and actions taken and decisions made in the shortest time possible to improve safety outcomes.

Action items 55 and 56 in the NRSS need to be addressed as a matter of urgency.

BITRE should work with state and federal agencies to provide more comprehensive data on road deaths and serious injury that is publicly accessible. This should also be provided as an annual report that focuses specifically on road trauma among bike riders.

AIHW should also release serious injury data more frequently and commit to annual releases of *Serious injury due to land transport accidents, Australia* reports.

Our recommendation of what the scope of publicly available data should be includes:

Categories	<ul style="list-style-type: none"> • Road Deaths • Serious Injury
Time	<ul style="list-style-type: none"> • Annual (preferably monthly) • Historic (data should be collected for past two decades at minimum, and where available)
Geographic Breakdown	<ul style="list-style-type: none"> • National • State • Local Government • International Comparison • Remoteness (urban, regional, rural, metro etc.)
Demographic Breakdown:	<ul style="list-style-type: none"> • Age • Sex
Other	<ul style="list-style-type: none"> • Total Count • Count per 100,000 • Time of day (Hour) • Day of the week • Weather conditions • Wearing a Helmet • Collision with (vehicle type): car; truck type, bus/van, pedestrian, other bicycle, individual and/or stationary object, train/railway vehicle, etc. • Crash Type: right/left turn across, rear end, head on, dooring, etc. • Alcohol (BAC)/drug involvement • Fatigue • Driver distraction • Speed limit at crash site • Location <ul style="list-style-type: none"> ○ Road type e.g. highway, footpath, etc. ○ Road section: e.g. midblock, intersection, etc.
Downloadable	<ul style="list-style-type: none"> • A full research report of all data that visually depicts road death and serious injury trends • A data cube (or excel file) that can be downloaded of all data at a National, State, and Local level.



Beneficiaries of Safe System approach

To date most of the beneficiaries of the Safe System approach have been motor vehicle occupants.

The following statistics from BITRE are alarming:

- High threat-to-life injuries to pedal cyclists increased over 80 per cent between 2001 and 2009.
- More than half (55 per cent) of traffic-related hospitalised injuries to pedal cyclists are the result of non-collision crashes
- Over 50 per cent of pedal cyclist deaths occur in a major city. For vehicle occupant deaths, this proportion is 27 per cent.
- Over half of all pedal cyclist deaths occur on local, sub-arterial or smaller roads. For vehicle occupant deaths the proportion is 40 per cent.
- Approximately 35 per cent of pedal cyclist deaths occur at an intersection. For vehicle occupant deaths, the proportion is around 20 per cent.¹²

From a 'safer roads' perspective key infrastructural improvements shown to improve bike rider safety are cyclist-friendly intersection design and the separation of bike riders and general traffic¹³. This is supported by an extensive literature review from the University of British Columbia that demonstrates that dedicated bicycle infrastructure at intersections and mid-block reduces injury risk for bike riders¹⁴.

From a 'safer vehicles' perspective there are a number of SATs outlined above that could provide large benefits to vulnerable road users if adopted as ADRs. Relatively immediate benefits can be realised with the immediate adoption of GTR 9 as an ADR.

Safety in numbers

'Safety in numbers' is an internationally proven phenomenon, which shows that bicycle and pedestrian safety improves as the number of people walking and riding increases¹⁵.

A University of Colorado Denver study investigating the 'safety in numbers' effect demonstrated that the benefits appear once there are 200 or more bikes per day on a route¹⁶. Australian research also supports this concept¹⁷.

Steps toward making bike riding safer in Australia should recognise the 'safety in numbers' effect. This way it can be recognised that steps to encourage bike riding and the subsequent increase in the number of people riding actually makes bike riding safer.

Mainstreaming

The Australian Government must hold States and Territories to account on its policy that active transport infrastructure projects should be mainstreamed alongside major transport infrastructure.

The Ministerial Statement on *Walking, Riding and Access to Public Transport* states:

¹² Department of Infrastructure and Regional Development 2014, *Research report 140*, http://www.bitre.gov.au/publications/2014/files/report_140.pdf

¹³ Austroads 2015, *Review of National Road Safety Strategy*, p. iv
<https://www.onlinepublications.austroads.com.au/items/AP-R477-15>

¹⁴ Reynolds et al 2009, *The impact of transportation infrastructure on bicycling injuries and crashes: a review of the literature*, <http://www.ehjournal.net/content/pdf/1476-069x-8-47.pdf>

¹⁵ Jacobsen 2003, *Safety in numbers: more walkers and bicyclists, safer walking and bicycling*, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1731007/pdf/v009p00205.pdf>

¹⁶ Nordback et al 2014, *Bicyclist safety performance functions for a U.S. city*, <http://www.sciencedirect.com/science/article/pii/S0001457513005137>

¹⁷ Robinson 2005, *Safety in numbers in Australia: more walkers and bicyclists, safer walking and bicycling*, http://www.beezodogsplace.com/wp-content/uploads/2013/06/safeinnumbers_au.pdf



The Australian Government will work with states and territories to ensure that infrastructure projects funded through *Nation Building* and other relevant investment programs:

- reflect consideration of all transport modes – for example, where a project corridor follows, or intersects with, an identified walking or riding route, the project scope should include walking and riding infrastructure as part of the works¹⁸

The implementation of this policy is important to ensure active transport infrastructure captures the value for money associated with the economies of scale that are achieved in major transport projects.

The Australian Government must show leadership through this policy and make mainstreaming a requirement of receiving funds from the Commonwealth, such as being a requirement for funding through the current Investment Road and Rail Programme.

Some of the largest investments in bicycle infrastructure in states such as Victoria and Queensland have been secured due to state mainstreaming policies.

Broad adoption of this policy across all jurisdictions (including the Commonwealth), along with appropriate funding, will be the single greatest measure needed to improve road safety for bike riders through improved separated infrastructure and the ‘safety in numbers’ effect.

Thank you for the opportunity to make a submission. Bicycle Networks expects the Australian Government to take meaningful steps towards making bike riding safer.

Sincerely,

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¹⁸Department of Infrastructure and Transport, *Walking, Riding and Access to Public Transport*, http://www.infrastructure.gov.au/infrastructure/pab/active_transport/files/infra1874_mcu_active_travel_report_final.pdf



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