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INQUIRY INTO ASPECTS OF ROAD SAFETY IN AUSTRALIA

Submission by Victoria Walks

Introduction

Victoria Walks is a walking health promotion body largely funded by VicHealth and the Victorian Department of Health to get more Victorians walking every day. Our vision is for vibrant, supportive and strong neighbourhoods and communities where people can and do choose to walk wherever possible.

Improving the safety of people moving around by foot will assist more people to walk more often and more safely; including children walking to school, and older adults walking for recreation or to get to places in their local neighbourhoods. Improving pedestrian safety has the dual benefits of reducing road trauma, and improving health by supporting active living at a time when 67% of Australian adults are at increased risk of a range of chronic illnesses because they are insufficiently active (Australian Bureau of Statistics 2013).

The focus of this submission is on improving road safety in Australia by addressing the safety needs of pedestrians and other active transport users. The submission addresses the five aspects of road safety identified in the Inquiry guidelines, though some in more detail than others due to the focus on improving pedestrian safety.

1 The social and economic costs of road-related injury and death

This section includes a brief summary of (i) road traffic casualty rates in Australia and associated economic costs; (ii) direct (injury) and indirect (ie other) health costs associated with relatively high rates of injuries among vulnerable road users (pedestrians and cyclists); (iii) future trends that highlight the importance of action to improve the safety of pedestrians and cyclists; and (iv) the dual vulnerability associated with being an older pedestrian.

1.1 Road traffic casualty rates in Australia

The individual and social costs of road-related injuries in Australia are considerable. On average, each day in Australia:

- Three people are killed[1].
- 93 people are seriously injured[2].
- 169 people experience minor injuries[3].

Road traffic injuries are a major public health issue. The associated economic costs are also high:

- The economic costs of road deaths and injuries in Australia are estimated to be $27 billion per annum (Bureau of Infrastructure Transport and Regional Economics [BITRE] 2014).
- The cost of road deaths and injuries is equivalent to 18 per cent of health expenditure and 1.8 per cent of Gross Domestic Product (2012-13) (BITRE 2014).

1.2 Direct (injury) and indirect health costs associated with relatively high rates of injuries to pedestrians and cyclists

Vulnerable road users are at greater risk of death and serious injury than motor vehicle occupants (relative to traffic exposure):

- One in six road deaths is a pedestrian or cyclist (13% pedestrians, 4% cyclists in 2014).
- One in four serious road traffic injuries is a pedestrian or cyclist (7.9% pedestrians, 15.4% cyclists in 2008-09) (AIHW 2012).
- 26% of all serious injury cases present a high threat to life; with pedestrians (35%) more likely to sustain a high threat to life injury than any other road user group (AIHW 2012).
- Pedestrians have the longest episodes of care, with a mean length of stay of 7.6 days in hospital (compared with 5.1 days for car passengers and 4.8 days for car drivers (AIHW 2012).

[1] Based on a total of 1156 deaths in 2014 (BITRE 2015).
[2] Based on 34,116 people seriously injured (admitted to hospital) in road vehicle traffic crashes (ie on a public road, including footpaths) during the 2008-09 financial year in Australia (AIHW 2012).
[3] Based on 61,583 minor injuries in 2010 (based on police-reported injuries) (Bradshaw et al. 2015).

- Pedestrians (particularly older adults) are often 'blamed' for their injuries (for not taking sufficient care while walking). However, a Victorian TAC survey of pedestrians aged between 16 and 39 years (n = 110) and pedestrians aged 60 years plus (n = 90) injured in crashes in 40, 50 and 60 km/h speed zones in Victoria in 2008 found that pedestrians aged 16-39 years were at fault in only 34% of crashes, and pedestrians aged 60+ years were at fault in only 12% of crashes (Nieuwesteeg and McIntyre 2010). Findings such as these shift the pedestrian safety focus from the pedestrian and his or her behaviour to the wider 'Safe System'.

In recent years, progress in addressing road trauma in Australia has been mixed:

- Road traffic deaths in Australia are slowing declining, but serious (hospitalised) injuries appear to be increasing (Lydon, Woolley et al. 2015).
- Motor vehicle occupants have accounted for most of the reduction in road traffic deaths for the period 2008-2013, with little change in total fatalities involving vulnerable road users, and fatalities of motorcyclists and cyclists rising over the period (Lydon, Woolley et al. 2015).
- Analysis of hospital separations data indicates increasing injuries among cyclists (Lydon, Woolley et al. 2015).

These trends reflect current priorities and investments in road safety in Australia; and identify gaps that need to be addressed. The focus of the *National Road Safety Strategy 2011-2020* is mainly on motor vehicle occupant safety, with little specific attention to pedestrian and cyclist safety. The recent review of the *National Road Safety Strategy 2011-2020* concluded that "The Safe System philosophy for vulnerable road users is not as well developed as for vehicle occupants", and "There is also a need for research to better understand what constitutes a Safe System for vulnerable road users". Vulnerable Road Users and Older Road Users were two of the 13 recommended priority areas that were identified for greater emphasis in the *National Road safety Strategy* (Lydon, Woolley et al. 2015).

In addition to the high social and economic costs of injuries outlined above, there are also substantial indirect health and economic costs associated with people being deterred from walking and cycling due to safety concerns. Traffic safety is a key barrier to active transport in Australia, including for the many parents who do not allow their children to walk or cycle to school (Carver, Timperio et al. 2008, Garrard, Crawford et al. 2009, Hume, Timperio et al. 2009).

Active transport among adults is associated with reduced all-cause mortality (28% and 34% reduction in two large cohort studies) (Andersen, Schnohr et al. 2000, Matthews, Jurj et al. 2007); and reduced risk of cardiovascular disease (11% - 31%) (Hamer and Chida 2008a, Hamer and Chida 2008b), colon cancer (40%) (Hou, Ji et al. 2004), and type 2 diabetes (36%) (Hu, Qiao et al. 2003).

These benefits are foregone when pedestrian and cyclist injuries are high and the road network is perceived to be too risky for walking or cycling.

1.3 Importance of action to improve the safety of pedestrians and cyclists: future trends

A number of future trends highlight the importance of increased action to prevent death and injury among vulnerable road users such as pedestrians and cyclists:

- Walking, cycling and public transport use are now actively promoted by many local, state/territory and commonwealth governments and health organisations as a means of improving health and community liveability, and reducing traffic congestion, air and noise pollution, fossil fuel use, and greenhouse gas emissions (Department of Infrastructure and Transport 2012).
- Consistent with these policies and strategies, a shift is occurring from car travel to travel by public transport, bicycle and walking for trips in many Australian capital cities (Delbosc 2015; Loader 2015; Loader 2014; Loader 2013a).
- Public transport trips usually involve a substantial walking component (Loader 2013b). Analysis of Victorian household travel survey data (VISTA) found that private vehicle users average 10.0 minutes of active travel per day; while public transport users average 35.2 minutes of active travel per day (mostly walking) (Beavis 2012).
- Australia's population is rapidly ageing. In 2014, 15% of the population were aged 65 years and over, with the proportion projected increase to 23% in 2055 (Commonwealth of Australia 2015).
- Walking for recreation and transport is the most important source of physical activity for older Australians. For people aged 75 years and over, walking for fitness and transport comprises 77% of the total time spent on physical activity (ABS 2013), and as senior Australians (60 years and over) age, an increasing proportion of their total physical activity comes from walking for transport.

1.4 Dual vulnerability associated with being an older pedestrian

- Remaining physically active is important for the health, mobility and social engagement of older Australians (Garrard 2013). However, older adults are at greater risk of death and injury while walking than younger adults (AIHW 2012). For the two most recent years (2013- 2014), 310 pedestrians were killed in Australia, 128 (42%) of whom were aged over 60 years (BITRE 2015) (see Figure 1).
- Age-specific rates, based on data for the period January 2006 to December 2008, indicate that older Victorian pedestrians experience a fatality rate five times that of the overall population (4.04 per 100,000 for 75+ years compared to the all-age pedestrian fatality rate of 0.8 per 100,000) (Cassell, Kerr et al. 2011).

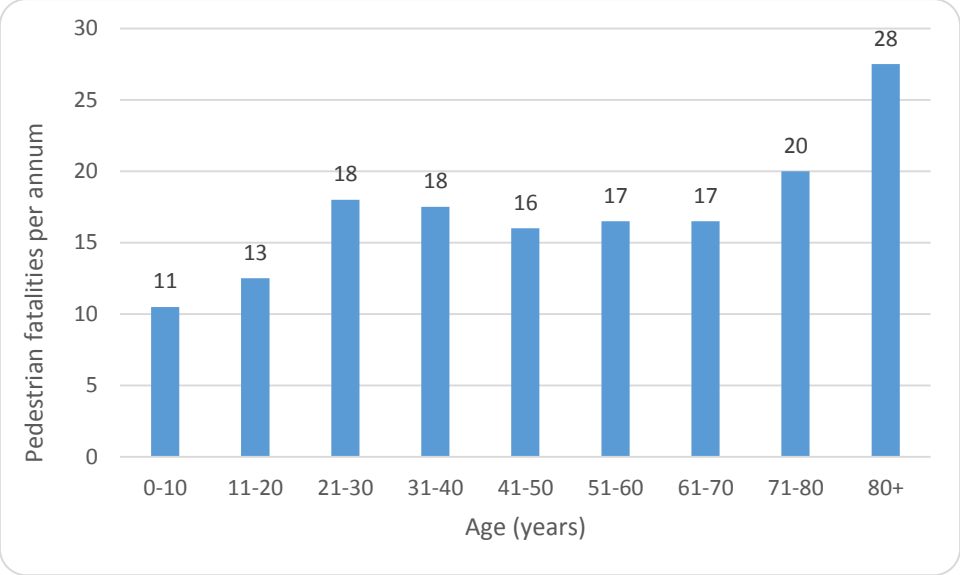

Figure 1: Pedestrian fatalities per annum by age, Australia 2013-2014
(Source: BITRE [2015])

- In addition to increased prevalence of injuries, the severity of outcomes (fatal and serious injury compared to other injury outcomes) increases with age (Bradshaw, Turner et al. 2015). For all road user groups, the proportion of fatalities and serious injuries relative to all injuries increases steadily with age from around 60 years onwards (eg 30% at age 61 and 59% at age 91) (Bradshaw, Turner et al. 2015).

- In Victoria, for the 10-year period between 2002 and 2011, the Victorian Transport Accident Commission (TAC) reported 6167 claims for pedestrian injuries requiring hospitalisation (TAC Online Crash Database 2012). Nearly a third of these (29%) were for pedestrians aged ≥60 years. Of the 6167 claims, 1818 (29%) were for hospitalisation for more than 14 days, and pedestrians aged ≥60 years had the highest proportion of severe injury claims, with nearly half of their injuries (48%) requiring more than 14 days hospitalisation (see Figure 2). The average annual number of pedestrian injuries requiring more than 14 days hospitalisation was greater for adults aged 70+ (207) than for young people aged 0-25 years (189).

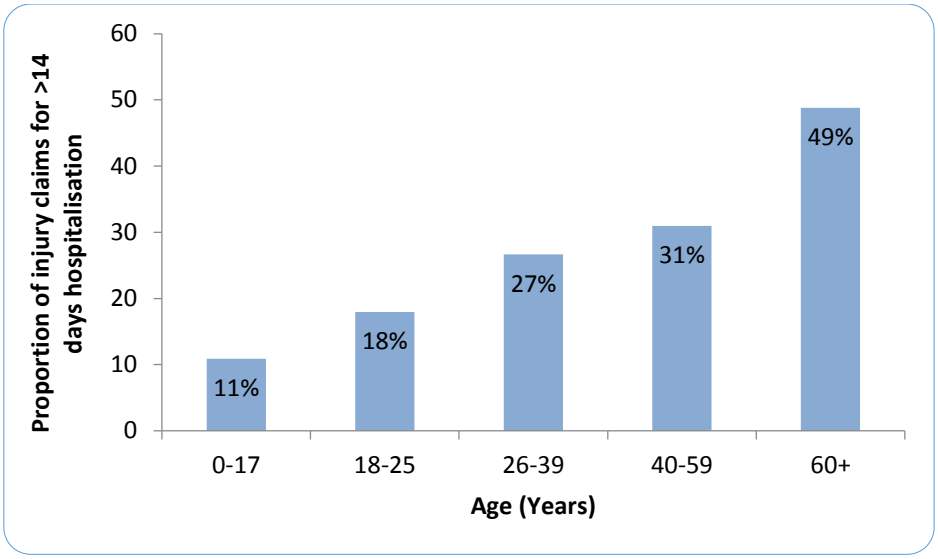

Figure 2: Injury severity by age - proportion of TAC pedestrian injury claims involving >14 days hospitalisation
(Source: TAC Online Crash Database 2012)

Historically, many road safety measures in Australia have focused on young drivers. The data described above indicate that improving road safety now and into the future will require an additional focus on people who are vulnerable due to their mode of transport (walking and cycling) and, also, increasingly, older age.

In summary, the road traffic casualty data and future trends outlined above have important implications for Australia's road safety strategy, which currently focuses on the safety of motor vehicle occupants, with additional emphases on young drivers and rural roads:

- Under a 'business as usual' scenario, vulnerable road user deaths and serious injuries will continue to increase as active transport increases and the population ages.
- If current trends in vulnerable road user deaths and injuries continue, the *National Road Safety Strategy 2011-2020* is unlikely to achieve its target of a 30% reduction in fatalities and serious injuries.
- Australia was once considered a world leader in road safety, but Australia now has an 'average' road fatality rate among OECD counties; Australia is currently 16th out of 33 OECD countries for road deaths per 100,000 population, and the fatality rate is declining more slowly than the OECD average (BITRE 2014b).
- One of the reasons for Australia failing to match the road safety performance of a number of other OECD countries is likely to be Australia's relatively high death and serious injury rates for pedestrians and cyclists. Table 1 shows that despite having walking rates approximately double that of Australia, a number of European countries have lower pedestrian fatality rates (per population). Pedestrian fatality rates are associated with overall road traffic fatality rates.
- Cyclist fatalities and serious injuries show a similar pattern, where, once again, countries with low overall road traffic casualty rates have lower cyclist injury rates (Garrard, Greaves et al. 2010).

- Pedestrian fatality rates are also declining more slowly in Australia than in countries such as Sweden and The Netherlands, which already had lower rates than Australia (see Figure 3 which includes Victorian data)[4]. It therefore appears that Sweden's *Vision Zero* road safety strategy and The Netherlands' *Sustainable Safety* strategy are effective in improving the safety of vulnerable road users such as pedestrians and cyclists.

Table 1: Road traffic fatalities and walking share of transport trips, 2007[5]
(Sources: WHO 2009; BITRE 2012; AIHW 2012)

	Pedestrian fatalities (per 100,000 population)	Road traffic fatalities (per 100,000)	Walking share of transport trips (%)
Norway	0.50	5	22
The Netherlands	0.58	4.8	22
Sweden	0.62	5.2	23
Germany	0.84	6	23
Victoria	0.79	6.4	12
Australia	0.97	7.6	NA

[4] Higher population growth in Victoria than in Sweden and The Netherlands in the decade from 1999 to 2009 may also have contributed to these trends. However, it is also important to note that the populations of Sweden and the Netherlands are about double and treble (respectively) that of Victoria, and their citizens walk about twice as much per person as do Victorians (see Table 1).
[5] 2007 data are used to enable comparison with available European data.

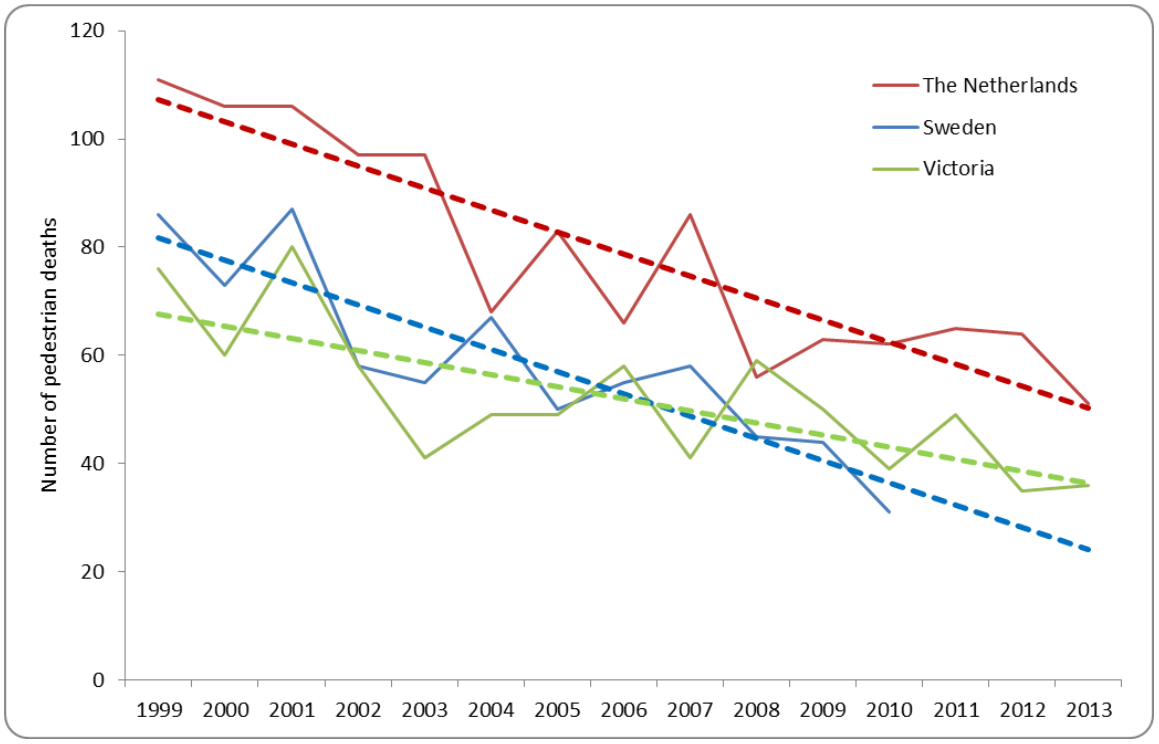

Figure 3: Pedestrian deaths, 1999-2013, The Netherlands, Sweden and Victoria
(Sources: BITRE 2013; http://ec.europa.eu/transport/road_safety/pdf/statistics/historical_country_transport_mode.pdf)

The *Vision Zero* (Sweden) and *Sustainable Road Safety* (The Netherlands) strategies of countries who are among the world leaders in road safety are a reminder that (a) all road deaths and serious injuries are unacceptable and potentially preventable, (b) further improvements in road safety can be achieved, even from a relatively low base rate, and (c) there is considerable potential to improve the safety of pedestrians and cyclists in Australia.

Australia can learn, and benefit from the strategies, experiences and achievements of several countries which enjoy the win-win situation of low pedestrian and cyclist casualty rates and high rates of walking and cycling (Buehler and Pucher 2012).

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

'Safer vehicles' is one of the four key components of the *Safe System* framework which provides the foundation for the Australian road safety strategy. The *Safe System* framework also incorporates the principle that the transport system should be 'forgiving' of user errors. In Australia, the concept of creating a system that protects road users in the event of mistakes or errors has been widely applied to motor vehicle occupants (eg in the form of seatbelts, airbags, crumple zones, safer car interiors, etc) rather than unprotected road users such as pedestrians and cyclists. Motor vehicle design has a substantial impact on

pedestrian injury following collision with a pedestrian, with older pedestrians at greater risk of severe injury due to their increased frailty.

Pedestrians and cyclists pose few risks to other road users, but are exposed to life-threatening risks from them. Minimising these risks is an important public health, personal mobility, justice and equity issue.

Despite these risks, vehicle safety in Australia has been dominated by the protection of people in cars, rather than the protection of people that cars collide with. The ANCAP (Australasian New Car Assessment Program) safety rating system for motor vehicles focuses primarily on the level of *occupant* protection provided by vehicles in serious front and side crashes, and all vehicle purchasers are encouraged by road safety authorities to buy '5-star' vehicles (the maximum rating) (http://www.ancap.com.au/about). ANCAP has only recently (in 2015) moved to adopt the equivalent European agency's (Euro NCAP) criteria of an "acceptable" pedestrian protection rating to earn five stars (previously, "marginal" pedestrian protection was acceptable under ANCAP for a 5-star rated vehicle) (ANCAP 2014).

The ANCAP system promotes the voluntary manufacture and purchase of safer vehicles. Currently there are few Australian vehicle safety regulations specifically aimed at minimising the risk of injury to unprotected road users. Europe and Japan now have vehicle standards specified for pedestrian safety, and this submission recommends that Australia adopts pedestrian-specific vehicle standards.

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

Vehicle design features that impact on the safety of pedestrians include vehicle front design, bull bars, window tinting, and front and side underrun protection for heavy vehicles. More recently developed features to improve pedestrian safety include energy-absorbing bonnets, windscreens and pillars; blind-spot mitigation; and windscreen airbags. New safety assist technologies (such as autonomous emergency braking [AEB]) also have the potential to reduce pedestrian deaths and injuries (BITRE 2014a).

This submission supports the development and implementation of new safety assist technologies, particularly those that improve the safety of pedestrians and cyclists. However, many safety assist technologies are relatively expensive, and given the approximately 10-year average age of the vehicle fleet in Australia, will take considerable time to implement and have a measurable impact on road traffic casualties in Australia (Keall, D'Elia et al. 2014).

The current focus on 'new technologies' also distracts attention from several 'old technologies' that are low-cost, immediately available, and effective in reducing pedestrian and cyclist serious casualties, but have not been adopted or adequately enforced. These include restrictions on bullbars and window-tinting.

While bullbars are now required to comply with the Australian Standard AS4876.1-2002, there are ongoing concerns that the laws are not being vigorously enforced and that bullbars which do not comply with the Australian Standard are available for sale in Australia (https://www.walk.com.au/pedestriancouncil/Page.asp?PageID=130).

The negative effects on visual performance of the decreased levels of visible light produced by window tints are well-established (ITEANZ 2014). Most countries who are leaders in road safety require a minimum of 70% visible light transmittance (VLT) through the driver's side windows, and this is also recommended by the *Australian Design Rules (ADR).* However, largely due to lobbying by the window-tinting industry, after-market tinting is now permitted in Australia down to a VLT level of 35% for the driver's side windows.

In addition to reducing the visibility and therefore compromising the safety of pedestrians and cyclists, particularly in low-light conditions, low VLT levels are of concern to police as they hinder the enforcement of offences relating to distracted drivers (eg using mobile devices while driving) (Institute of Transportation Engineers Australia and New Zealand Section [ITEANZ] 2014).

The 70% VLT requirement for drivers' side windows is supported in Australia by the ITEANZ, TAC, Australian College of Road Safety, Pedestrian Council of Australia, RACV, NRMA, Bicycle Network Victoria, Bicycle Network Australia, the Amy Gillett Foundation (ITEANZ 2014) and Victoria Walks.

'Safer vehicles' is one of the four components of the *Safe System* framework that provides the foundation for the National Road Safety Strategy. The multiple ways in which vehicle design measures can improve pedestrian and cyclist safety (only one or two of which have been touched on above) should be included in the development of a *Safe System* road safety strategy for vulnerable road users that is the key recommendation of this submission (see Conclusions).

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

Another important difference between motor vehicle occupant and pedestrian casualties is *where* they occur. In contrast to motor vehicle occupant fatalities, pedestrian deaths occur predominantly in urban areas on local and arterial roads. There were 3702 pedestrian fatal and serious injury casualties reported by the police in Victoria between 2004 and 2008 (256 deaths and 3446 serious injuries), and 95% occurred in urban areas, including regional centres (Boufous, Senserrick et al. 2010). The majority of these crashes occurred on arterial roads (56%) and local roads (43%) with speed limits between 40-50[6] km/h (37%) and 60 km/h (42%). Crashes that occurred on 60 km/h roads were more likely to result in pedestrian serious injury or death compared to crashes that occurred on roads with speed limits of 40-50 km/h (OR:1.21, 95% CI: 1.10-1.34).

[6] The majority of these are 50 km/h roads as there are few area-wide 40 km/h zones in Victoria.

As outlined in Section 1, most fatal and serious injuries among pedestrians and cyclists occur in urban areas. Improving the safety of vulnerable road users will therefore require a greater focus of attention on urban environments and on local and urban arterial roads that mainly have speed limits of 50 – 80 km/h in Australia.

These urban speed limits are high by international standards, as summarised in Table 2, and do not adequately reflect human tolerance to collision with a motor vehicle (WHO 2013). Higher speed limits in Australia are likely to contribute to higher serious casualty rates among pedestrians and cyclists in Australia compared with countries that have lower speed limits in urban areas (see Table 1 and Figure 3).

Table 2: International and Australasian speed limits
(Source: Fildes et al 2005)

ROAD TYPE	EUROPE (mainly)	AUSTRALASIA (mainly)
School areas	30 km/h	40 km/h
Residential areas	30 km/h	50-60 km/h
Built-up areas	60 km/h	70-80 km/h
Urban roads	60-70 km/h	80 km/h or higher
Rural roads	80-90 km/h	100 km/h
'Motor' roads	100 km/h	100 km/h
Motorways	120 km/h	110 km/h

Reducing deaths and serious injuries among pedestrians and cyclists in urban areas in Australia will require speed limit reductions that are consistent with international best practice (WHO 2008; WHO 2013; ITF/OECD 2012). As described briefly in the following section, safer speed is a key component of the *Safe System* approach for reducing road traffic fatalities and serious injuries, particularly for vulnerable road users.

5 Other associated matters

As mentioned above, several OECD countries have high levels of relatively safe walking and cycling, in contrast to Australia which has low levels of relatively unsafe walking and cycling. Reducing pedestrian and cyclist fatalities and serious injuries in Australia will require a greater focus on the safety of vulnerable road users as recommended in the recent Austroads review of the *National Road Safety Strategy 2011-2020* (Lydon, Woolley et al. 2015).

Consistent with the findings of the Austroads review (Lydon, Woolley et al. 2015), this submission recommends a systematic examination of what comprises a 'Safe System' approach for pedestrians and cyclists, as a means of complementing the current focus on motor vehicle occupants. Some measures that improve overall traffic safety also improve the safety of pedestrians and cyclists, but there are also several road user-specific measures that have been relatively neglected in Australia. These measures cut across the four

components of the *Safe System* approach; namely safe roads, safe speeds, safe vehicles and safe road users.

Victoria Walks is currently conducting a study aimed at improving safety for older pedestrians, in conjunction with the Municipal Association of Victoria. Findings from this study could contribute to the development of a 'Safe System' framework for vulnerable road users in Australia.

The study, which is funded by the Victorian Transport Accident Commission, is working with transport consultants to research and identify specific measures that would make it safer for older pedestrians to walk. The project has included a substantial literature review and consultation with local government, subject experts and VicRoads. The findings of the study (as yet unpublished) suggest that key measures to make it safer for older pedestrians to walk include:

- Physical measures to reduce the width and complexity of road crossings, as well as assist in making pedestrians more conspicuous to motorists – examples include kerb extensions and median islands.
- Reduced speed limits and traffic calming infrastructure in areas of high pedestrian activity and frequented by vulnerable road users
- Physical measures that reduce traffic speed at crossing points, such as tighter kerb radii, raised pedestrian crossings and raised thresholds (where the footpath is extended across the road at an elevated level).
- Changes to traffic light settings, including increased controls on right turns – the most common scenario for older pedestrian crashes at signalised intersections is that a motorist turning right fails to give way and hits a pedestrian.
- Driver education and enforcement on requirements to give way to pedestrians. In addition to right turn crashes, another example of the need for this is that in Victoria 15% of crashes affecting pedestrians aged 75+ are on a footpath, driveway or car park.
- Changes to road rules to provide more consistent give way requirements at intersections and to treat car parks as shared zones, where drivers must give way to pedestrians.

These measures would also greatly assist pedestrian safety for younger age groups.

Conclusions

Australia's *National Road Safety Strategy 2011-2020* aims to reduce fatalities and serious injuries by 30 per cent. While some traffic safety interventions benefit all road users and all levels of injury severity, interventions specifically targeting serious injuries and vulnerable road users (pedestrians and cyclists) will be required to meet this target. Australia's ageing population presents an additional challenge in meeting this target, as older pedestrians and cyclists are at increased risk of death and serious injury in collisions with motor vehicles.

In addition to reducing the high individual, social and financial costs of road trauma, there are also substantial co-benefits associated with improving the safety of pedestrians and cyclists. Travel mode shifts from private motor vehicle use to walking and cycling (including to access public transport) are associated with (i) a range of health benefits arising from increased physical activity and reduced car use; (ii) reduced traffic congestion; (iii) reduced air and noise pollution, and greenhouse gas emissions; and (iv) improved community liveability (Litman 2013).

It is therefore important, from a broader public policy perspective, to improve both the safety and the mobility of vulnerable road users.

International experience demonstrates that walking and cycling can be made both safer and more prevalent. Strategies that have been implemented successfully overseas should be reviewed, modified, trialled and evaluated in Australia as part of a new focus on pedestrian and cyclist safety within the *National Road Safety Strategy 2011-2020.*

The key recommendation of this submission is for the development of a *Safe System* road safety strategy for vulnerable road users as a component of the National Road Safety Strategy 2011-2020. As part of this development, this submission recommends conducting a systematic review of road safety strategies and measures for the protection of pedestrians and cyclists that have been successfully implemented in other countries. Several recent documents have summarised these strategies, measures and achievements. These include:

- OECD/ITF (2011). *Pedestrian safety, urban space and health*, Paris, OECD/ITF. (http://www.internationaltransportforum.org/Pub/pdf/11PedestrianSum.pdf)

- OEDC/ITF (International Transport Forum) (2013). *Cycling, health and safety: research report*. Paris, OECD-ITF. (http://www.internationaltransportforum.org/jtrc/safety/cycling.html)

- Wegman, F. (2012). *Driving down the road toll by building a safe system*. Government of South Australia. (http://thinkers.sa.gov.au/wegmanflipbook/index.html)

- World Health Organisation (2013). *Pedestrian safety: a road safety manual for decision-makers and practitioners*. (http://www.who.int/roadsafety/projects/manuals/pedestrian/en/)

- World Health Organisation (2008). *Speed management: a road safety manual for decision-makers and practitioners.* (http://www.who.int/roadsafety/projects/manuals/speed_manual/en/)

A central feature of all these reports is the importance of speed reduction, as vehicle speed is a major factor in pedestrian and cyclist fatalities and serious injuries. Existing (and increasing) speed differentials between Australia and other OECD countries are likely to be contributing to the poorer road safety performance of Australia in recent years relative to many of these countries. Future improvements in road safety in Australia should include

reduced vehicle speeds, including lower speed limits in residential areas, city centres, and local shopping and service areas.

Central to the *Safe System* framework and the road safety strategy derived from it, is that pedestrian and cyclist safety should not be compromised in order to achieve marginal improvements in motor vehicle travel times (Archer, Fotheringham et al. 2008). All community members, regardless of their mode of travel, have a right to complete their journeys safely.

Finally, it is recommended that road safety, transport, urban planning, environment and health sectors work in partnership to develop and implement a *Safe System* strategy for vulnerable road users. A key recommendation in the report "*Driving down the road toll by building a safe system*" developed by leading road safety researcher and practitioner, Professor Fred Wegman, for the South Australian Government was to:

> *"Better understand the synergies between health and road safety and explore opportunities to include road safety in health policies and health in road safety policies."* (Wegman 2012).

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