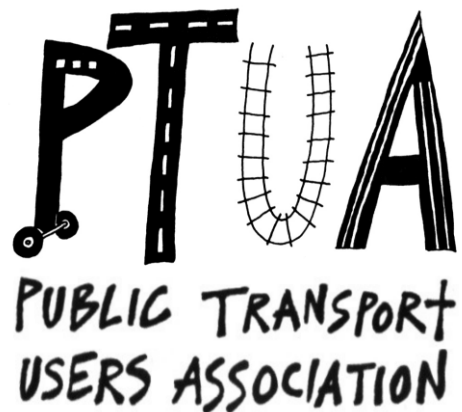


# Step Onboard, Stay Alive

Response to *Victoria's Road Safety Strategy – Have Your Say*

October 2012



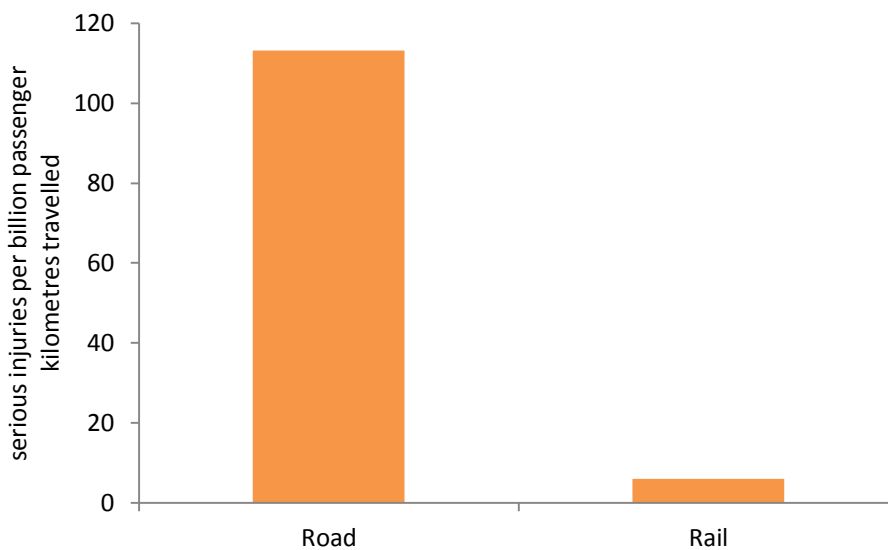
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# 1 Introduction

The Victorian Government’s directions paper, *Victoria’s Road Safety Strategy – Have Your Say*, notes that the risk of being involved in a crash is much greater in a private car than when travelling by rail or bus (Victorian Government 2012, p.34). While the risk of death is over five times greater in a private car (PTUA 2011, pp.6-7), the risk of serious injury when travelling by car – the ‘hidden’ road toll – is far higher than even this substantial safety difference (see Figure 1-1).

**Figure 1-1: Serious injury rate by transport mode - 2009**



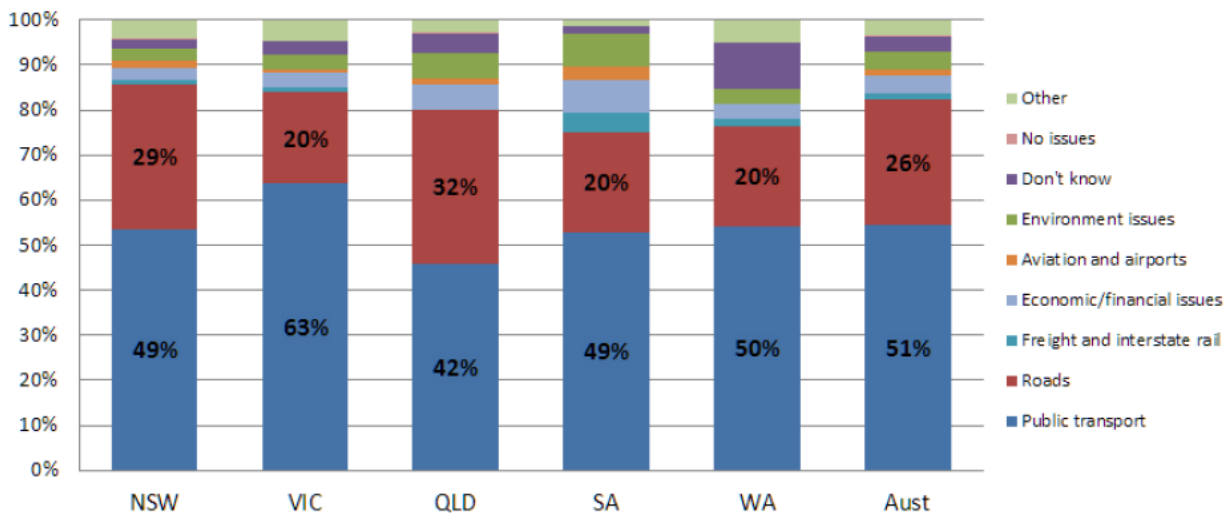
Source: BITRE 2012, p.114

Best practice risk management recognises that the foremost measures to deal with risk are avoidance of the risk and removal of the risk source. Applied to road safety, this translates to encouraging mode shift away from private motor vehicles and instead enabling greater use of public transport and rail freight (PTUA 2011, pp.6-15).

With concerted effort to support mode shift and provide a safer environment for vulnerable road users, a growing population need not result in increasing motor vehicle use and exposure to the risk of road trauma. For example, if Australia reduced the number of road deaths per 100,000 population to the levels achieved by countries such as Sweden and the Netherlands, Australia’s population could double without a significant increase in the road toll. Given a doubling of population is not envisaged, Victoria could realistically pursue a large reduction in road trauma by encouraging people out of their cars and offering safe and attractive transport alternatives.

Investment in making public transport more convenient, together with creating a safer environment for walking and cycling, should therefore permeate right throughout Victoria’s road safety strategy. Doing so would be consistent with community priorities identified in regular opinion surveys (see Figure 1-2).

**Figure 1-2: Highest priority transport issue by state, Sep 2012**



Source: Institute of Transport and Logistics Studies 2012

## 2 Road safety priorities

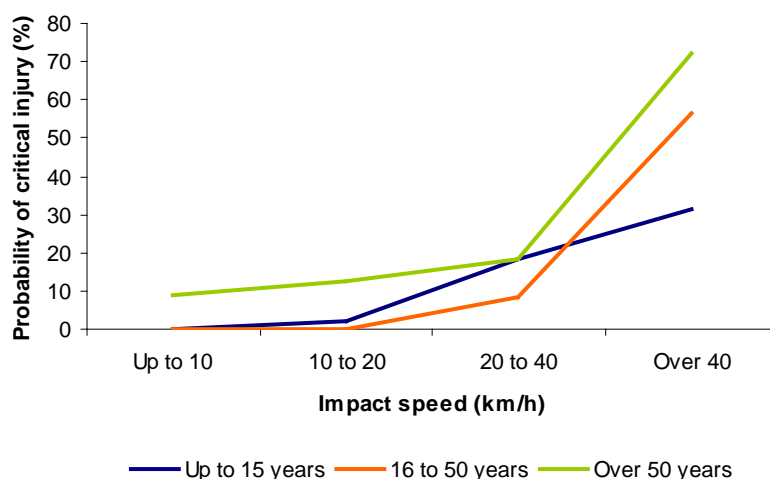
In addition to recommending an overarching strategy of reducing risk exposure by shifting journeys to public transport and freight to rail (see section 1), we make the following comments on the directions discussed in the directions paper (Victorian Government 2012).

### 2.1 Speed and speeding

Excessive speed is a major factor in both the incidence and severity of road crashes. In risk management terms, reducing speeds can reduce the likelihood of crashes occurring, and minimise negative consequences when crashes do occur. This is particularly important given the inevitability of human error noted in the directions paper (Victorian Government 2012, p.5).

Road trauma could be reduced significantly by setting speed limits that recognise the rapid increase in the probability of severe injury and death in impacts above 30 km/h (PTUA 2011, pp.21-23). Existing Australian speed limits are comparatively high by world standards, and limits closer to 30km/h are common in residential and high pedestrian areas of Europe.

**Figure 2-1: Probability of critical injury by speed and victim age**



Source: McClean et al. 1994

Safe speed limits will however be meaningless without adequate enforcement. The Victorian Auditor-General's recent report (2011) joins a range of other studies confirming the effectiveness of speed cameras in reducing road trauma (PTUA 2011, p.12). The use of unmarked mobile road safety cameras should therefore be continued and expanded. This should also be backed up with licence suspension for non-payment of fines and compliance measures to address demerit point fraud. Road treatments such as traffic calming should also be used to encourage compliance with speed limits in residential areas and activity centres.

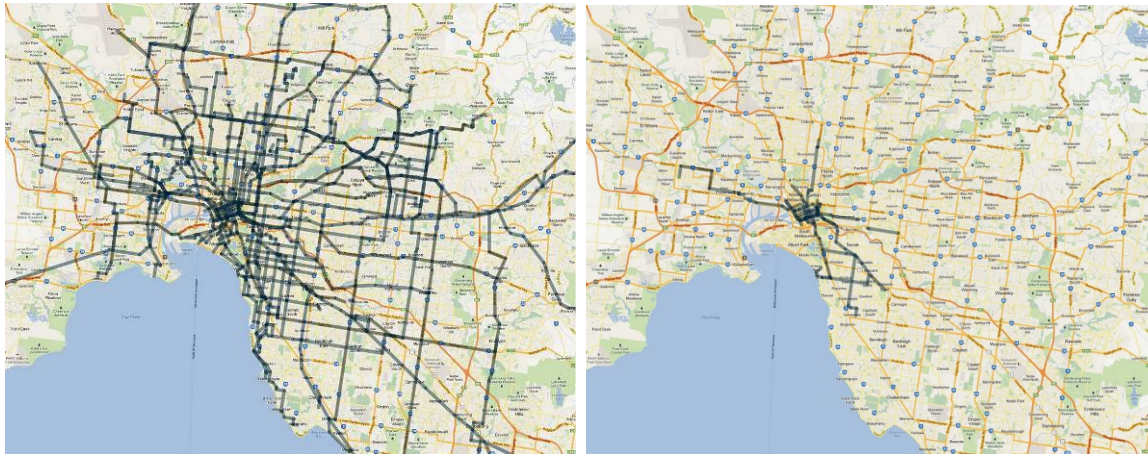
## 2.2 *Driving under the influence of alcohol or drugs*

Driver impairment by alcohol or other drugs (including prescription drugs) is another avoidable but common factor in road trauma. Roadside testing has been a key measure in reducing this form of high risk behaviour, however complementary measures are warranted.

Public transport can be a much safer alternative to driving after one or two drinks, provided adequate services are available. Unfortunately much of Melbourne suffers from poor evening and weekend public transport (see Figure 2-2), which can increase the temptation to drive when “only a little bit over”. Although Night Rider services are offered on some nights, their coverage is sparse and does not always correspond to the alignment of regular services used earlier in the day or evening.

Off-peak and evening public transport should be improved to act as a “carrot” to complement the “stick” of random alcohol and drug testing. This should include cross-town and feeder services so that passengers are not left to drive home from railway stations while under the influence, and people socialising outside the CBD also have a safe alternative to driving. Staff should also be on-hand at all stations to offer customer assistance and security.

**Figure 2-2: Routes offering 15 minute frequencies or better - peak and evening**



*Note: Evening public transport services (right) are very sparse compared to peak services (left).*

*Source: PTUA 2012*

A small core of repeat offenders, often driving unlicensed and therefore less concerned by demerit points and disqualification, presents a particular challenge for road safety enforcement. In addition to consideration of impoundment and destruction of repeat offenders’ vehicles, measures could extend to mandatory purchase of a registered Myki with a non-refundable, pre-paid pass covering the period of disqualification (up to 365 days) to shift financial incentives in favour of more responsible travel behaviour. Drug and alcohol counselling and substance addiction treatment should also be among the measures available to address repeated driving under the influence.

## 2.3 *Rural and regional road use*

Fatigue can be a major factor in road trauma on regional and rural roads. Where available, regional rail and coach services offer safer alternatives to long drives. Rail freight also offers a safer alternative to long haul road freight. These transport alternatives should be prioritised in transport funding over measures that encourage use of private vehicles and road freight.

See also sections 2.7 - Heavy vehicles and 2.8 - Roads.

## **2.4 Active transport**

Walking and cycling are important access modes for public transport, so the safety of pedestrians and cyclists is of great concern to the PTUA.

Research shows that drivers are largely at fault in most crashes involving cyclists and motor vehicles (Johnson *et al* 2010; Walker 2009). This highlights the importance of focussing on driver awareness and behaviour if road trauma among vulnerable road users is to be reduced. One key measure is to ensure speed limits minimise the risks faced by people walking and cycling near traffic (see Figure 2-1), and that these limits are enforced.

Adequate infrastructure for people walking and riding is also important to enable physical separation from traffic (PTUA 2011, pp.16-17). This is further discussed in section 2.8 - Roads.

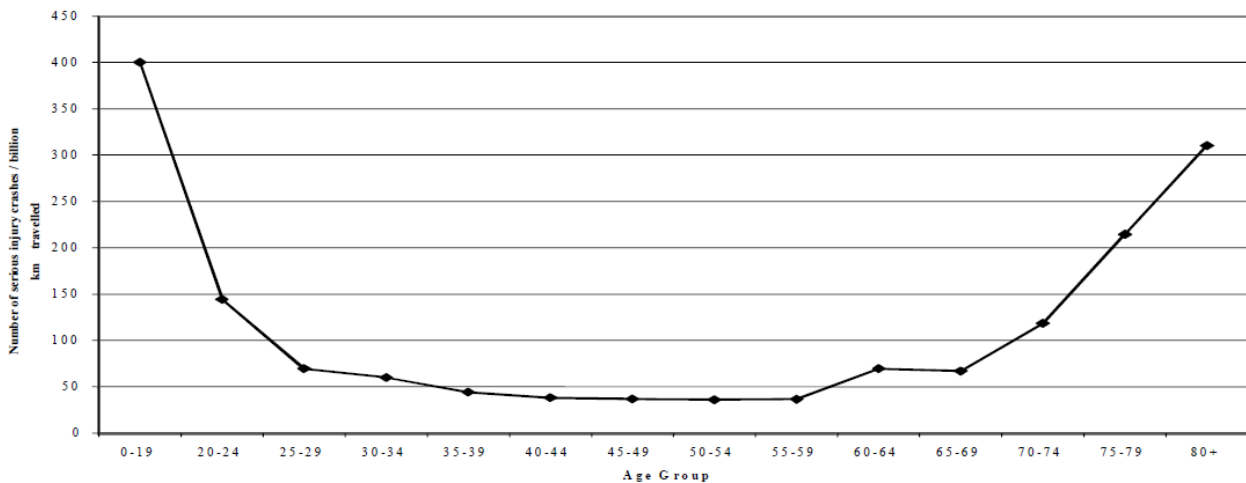
While there is a clear pathway of training, testing and probation for drivers, it is neither practical nor desirable to replicate this for cycling. However, bike education programs can be effective at improving bike skills and knowledge of road rules (McLaughlin & Glang 2010). In light of this, there should be practical support for universal bicycle education (e.g. Bike Ed) programs to improve bike handling skills and knowledge of road rules & etiquette among cyclists.

Public transport users are frequently endangered by drivers failing to give way at stops. Given the widespread non-compliance with these rules and serious injuries that sometimes result, the previously proposed program of tram cameras should be implemented in some form, and other enforcement measures investigated to ensure greater compliance.

## **2.5 Older drivers**

Older drivers face rapidly increasing crash risk above around 60 years of age (see Figure 2-3). An aging population points to the need for improved public transport alternatives to offer safe mobility. Some older Victorians also face worsening mobility impairments. These people, along with younger Victorians with disabilities, would enjoy improved mobility if streets were designed for universal access instead of reinforcing car dependence with car-centric transport infrastructure and resulting land use patterns. This is further discussed in section 2.8 - Roads.

**Figure 2-3: Age of driver and serious injury crashes per distance travelled, Australia, 1996**



Source: Fildes et al. 2001 cited in Langford 2006

## 2.6 Young drivers

Road trauma is the leading cause of death among 15-24 year olds in Australia and there is an extremely high risk of serious injury crashes among drivers in this age group (see Figure 2-3). Research into brain maturity also shows potentially large safety benefits from restricting driving among some people under 25 years of age (Ockham's Razor 23 August 2009).

The weakening attraction to driving that is being observed among young people (Zabarenko 2012) may therefore have positive road safety side-effects. These positive spin-offs could be maximised by ensuring alternative transport options such as active and public transport are actively improved to meet a diverse range of transport needs.

For young people who do wish to drive, their safety may be improved by allowing them access to their parents' car rather than buying a less-safe car of their own (Blackburn 2010). This access could be conditional upon Safe Driving Agreements which appear to have achieved some success in other jurisdictions. Parents can also play a vital role by setting a positive example for their children to follow once they reach driving age.

In contrast, some forms of driver training can have counter-productive safety outcomes and should not be encouraged (PTUA 2011, p.15).

## 2.7 Heavy vehicles

Heavy vehicles feature disproportionately in Australia's road toll relative to their share of vehicle traffic. This source of risk could be reduced by shifting freight onto rail to the maximum extent possible (PTUA 2011, p.11). Heavy vehicles also cause a disproportionate amount of damage to road surfaces, which can be a contributing factor in some crashes.

Safer freight transport would be enabled by prioritising investment in rail freight infrastructure to ensure it can at least match the speed and reliability of road transport. Given the national market Victoria operates within, the long-standing barrier of inconsistent rail gauges also needs urgent rectification with a program of rail gauge standardisation.



## 2.8 Roads

The provision and nature of road infrastructure have profound impacts on travel behaviour.

Expansion of road capacity is demonstrated to encourage additional motor vehicle traffic, and hence increase exposure to the risk of road trauma. Even road improvements with supposed road safety benefits may actually create new risks due to changes in behaviour (Noland 2003; PTUA 2011, p.12). Road safety outcomes would often be better served by meeting transport demand with improved active and public transport and rail freight infrastructure (see Figure 1-1).

However, road shoulder widening and edge marking may have positive safety benefits, particularly on country roads (Noland & Oh 2004; PTUA 2011, p.18). In the financially constrained environment described in the directions paper (Victorian Government 2012, p.8), this approach would enable road funding to achieve more widespread safety benefits than would be possible by focussing on more costly road duplications.

High capacity roads encourage significant volumes of traffic and act as a barrier to the movement of pedestrians and cyclists. This “barrier effect” harms accessibility and results in more people driving instead of using active transport, or more people taking risks to get across the road as exemplified by the high proportion of mid-block fatalities among older pedestrians (Victorian Government 2012, p.24).

While the expansion of the high-capacity road network would induce further traffic and introduce new barriers to the movement of pedestrians, encouragement of mode shift away from private motor vehicles can reduce the magnitude of the barrier effect. Further, adequate safe crossing opportunities, such as responsive pedestrian lights and zebra crossings, can help to reduce the need for risk taking in crossing roads (PTUA 2011, p.16-17).

Related to the barrier effect, traffic light sensors sometimes fail to detect bicycles and leave cyclists with the option of crossing against the lights or waiting in hope through several cycles of the traffic lights for a car to pull up in the same lane. Deficiencies such as this must be recognised in the setting of laws related to cyclists’ safety.

The design of many residential developments more broadly can hamper access by public transport and either discourage walking and cycling or make them less safe (Ewing *et al* 2003; Carey 2012). This results in higher motor vehicle traffic levels that worsen the risk of road trauma.

Streets should be made ‘walkable’ by mandating both universal access and Crime Prevention Through Environmental Design (CPTED) principles in the planning scheme<sup>1</sup>. Traffic calming treatments, designed to accommodate bicycles and road-based public transport, should also be a standard feature of areas with high pedestrian activity. Prioritisation of active transport will flow through to ‘safety in numbers’ for people on foot and on bikes and contribute to a virtuous cycle of improved road safety outcomes (PTUA 2011, pp.16-17).

## 2.9 Vehicle safety

Research has shown significantly higher crash risk for motor vehicles with low visibility colours (Newstead & D’Elia 2007). If road user visibility is considered worthy of attention, this should extend to motor vehicle colour, and not be restricted to cyclists and motorcyclists.

Window tinting is also becoming a significant issue for road safety compliance and enforcement (PTUA 2011, pp.19-20). With the recent focus on the risk of ‘dooring’ faced by cyclists, it should be noted that

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<sup>1</sup> <http://www.urbandesign.gov.au/protocolframework/principles/walkable.aspx>  
<http://www.urbandesign.gov.au/protocolframework/principles/safe.aspx>

excessive window tinting obscures cyclists' view of vehicle occupants and heightens the risk of a door being opened without any warning.

Current vehicle safety ratings also fail to account for the risk of serious injury to pedestrians and other vulnerable road users (PTUA 2011, p.20). For example, vehicles granted the maximum 5 star ANCAP safety rating may actually offer only poor protection to pedestrians struck by the vehicle<sup>2</sup>. As occupant protection, rather than pedestrian protection, will typically be the main concern of vehicle buyers, more effective pedestrian protection should be mandated in the Australian Design Rules (ADR).

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<sup>2</sup> e.g. <http://www.ancap.com.au/pdf/483.PDF>

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