

“Towards Zero” on a bicycle

On behalf of people riding bicycles on West Australian roads, the Bicycle Transportation Alliance recommends the following measures to make the implementation of the “Towards Zero” road safety campaign more relevant to vulnerable road users:

- 1. Legislate a safe distance when a motor vehicle overtakes a person riding a bicycle.**
- 2. Reduce car speeds on the roads that form part of the “Perth Bike Network” to 30 kmh**
- 3. Make new and existing car drivers bicycle aware by changing licensing requirements**

Introduction

What do a 43 year old father of two, a young man and a 59 year old woman have in common? It could be lots of things, but unfortunately for them, and for all people riding bicycles on West Australian Roads, they were all killed as the result of a crash with a car that was travelling in the same direction as they did. Or, to put it bluntly, they got run over from behind¹.

Their injuries and death reminds us that using a bicycle on West Australian roads is a dangerous way to go to work. If we want to shift significant numbers of commuters from cars to bicycles, a safer road environment is needed. The long term solution is to have dedicated cycling infrastructure complementing the existing road network to get cyclists off the road. This is a generational aspiration. But right now we need to make the roads safer for vulnerable road users, and this is a task for the Road Safety Council as part of the “Towards Zero” strategy.

Background

The Road Safety Council has embarked on an ambitious program, originally aimed at halving the number of killed or seriously injured people (KSI) on West Australian Roads by 2020. The pillars of the strategy are safer roads, safer cars, safer drivers and safer speed. The program “Towards Zero” was based on extensive research conducted by Monash University Accident Research Centre (MUARC). Community consultation showed broad acceptance of the strategy, except for safer speeds. Politicians quickly agreed with road users (and special interest groups) that lower speeds were not necessary if we had safer roads, cars and drivers. The political decision overlooked the low cost of avoiding death or serious injury by lowering the speed limit (\$6000 per KSI avoided) compared to engineering safer roads and roadsides (\$544’000 per KSI avoided).

¹ Darren Strudwick, a 43 year old experienced bicycle rider was riding his bicycle home from work in November 2010, and was killed by a car travelling in the same direction. In Secret Harbour, in December 2010, an 18-year old cyclist was run over by a four-wheel drive travelling in the same direction and dragged along for 75 metres. He had to be air-lifted to Royal Perth Hospital with serious injuries. In March 2011 a 59-year old women who was killed whilst cycling in a marked cycle lane along Tonkin Highway.

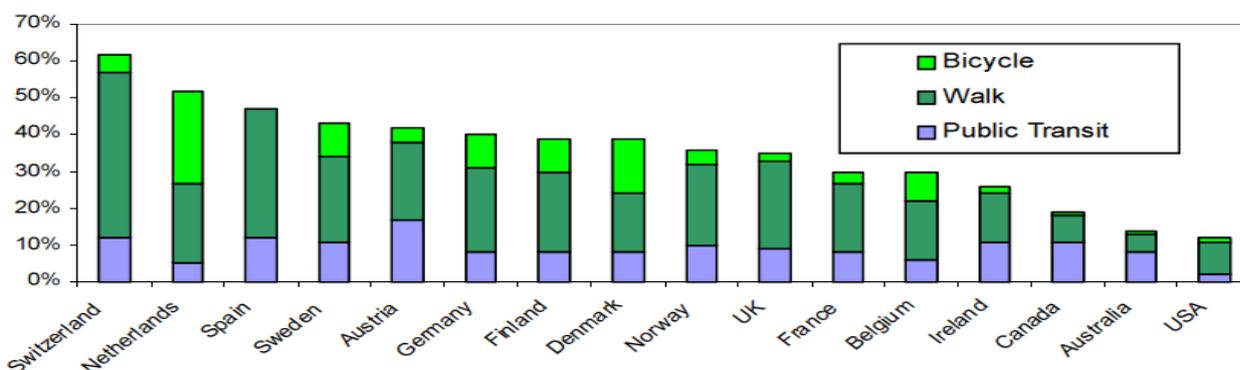
Also ignored were vulnerable road users. The Road Safety Council suggested that eventually a road environment that was safer for cars would somehow benefit pedestrians, people on gopher cars and cyclists. Darren Strudwick would disagree. And so would the nearly 8000 cyclist admitted to hospitals as the result of traffic crashes in Australia ². Safer road sides or airbags don't benefit vulnerable road users.

Context

Australia, and Perth, uses cars as the main mode of transport for and leisure work³.

Non-motorized transport activity varies widely between different countries and cities, as illustrated in figures 2 and 3.

Figure 2 Mode Split By Country (Bassett, et al. 2008)



Non-motorized travel varies significantly between wealthy countries.

The implications of high car usage permeate our society, and the high spending on road infrastructure is one of the results. There is a strong inverse correlation between volumes and speed of traffic and levels of cycling (Jacobsen, Racioppi, & Rutter, 2009). The traffic mix on the road has safety implications; countries with the highest car usage have a highest rate of cycling fatalities (Jacobsen, 2003) ⁴. The most frequent explanations why people do not cycle involve the danger when cycling on roads, and the lack of infrastructure to cycle on⁵. Because most single vehicle bicycle crashes are not reported (Elvik & Mysen, 1999), it is difficult to know how dangerous cycling really is.

We know that 14.6% of all road users admitted to hospitals as a result of road vehicle crashes in Australia in 2006-7 were cyclists (Henley & Harrison, 2009), but only 1.5% of people indicated they were using the bicycle to commute to work at the last census. We also know that the most common crash in which cyclists

² 14.6% of all road users admitted to hospitals as a result of road vehicle crashes in Australia in 2006-7 were cyclists. Serious injuries for cyclists increased by 47% from 2002 to 2007 (Henley & Harrison, 2009)

³ Car use in European countries is about 40% to 60% of all trips, whilst in Australia it is about 90% (Bassett, Pucher, Buehler, Thompson, & Crouter, 2008). Based on figures by the Australian Bureau of Statistics, cycling as a means of getting to work is about 1.2% to 1.5% of total trips to work, with a possible slight decline in the last few years (depending on jurisdiction).

⁴ Netherlands has about one cycling fatality per 100 million km travelled vs. USA with five cycling fatalities per 100 million km travelled.

⁵ A recent study by the Department of Transport in Queensland indicates 42% of respondents to a survey indicated that a safer environment would encourage them to cycle (Marsdon_Jacob_Associates, 2009)

are fatally injured is the result of being hit by a car travelling in the same direction (Australian_Transport_Safety_Bureau, 2006).⁶ And not surprisingly, pedestrians fare worst when they are injured in road vehicle traffic crashes, with a mean length of stay of 8.1 days in hospital, compared to car drivers who spend 4.8 days (Henley & Harrison, 2009).

The benefits of active travel substantially outweigh risks due to accidents or inhaled pollution (Yang, Sahlqvist, McMinn, Griffin, & Ogilvie, 2010). In a large Danish cohort followed over 15 years a 39% reduction in all-cause mortality was observed in those who cycled to work (Baumann & Rissel, 2009). Regular exercise also improves mental health and academic achievement,^{7 8 9} and countries with high cycling participation tend to have lower obesity rates (see appendix).

In Perth it was found that about a quarter of people who drive to train stations would walk or cycle if a safe and attractive environment was to be provided (Batini, 2010)¹⁰. Providing a safe road environment to get to public transport would free expensive car park spaces for people who live too far away to walk or cycle, and it would alleviate in a small way some of the traffic congestions, which is estimated to cost the Perth economy \$1.1 Billion per year (Tallentire, 2010).

Whilst the Road Safety Council does not fund infrastructure, it is in a position to make the existing roads safer for vulnerable road users. In line with the National Cycling Strategy¹¹, signed for West Australia by the Hon Rob Johnson MLA (Minister for Police, Emergency Services and Road Safety) and the Hon Simon O'Brien (then Minister for Transport), the following measures would be useful first steps:

- "A metre matters" aims to increase the safety of people riding bicycles when they use the normal road network. It is a campaign seeking to legislate that one metre of clearance is mandatory when a motor vehicle overtakes a person riding a bicycle.
- The Perth Bicycle Network (PBN) is network of roads recommended for the use of cyclist to move from locality to locality, in contrast to the Principal Shared Paths (PSP's) which are meant to follow rail lines and freeways, and generally lead to the CBD. The roads that make up the Perth Bike Network should be safe for all people riding bicycles irrespective of skill level. They should conform to the research that formed the basis of the "Towards Zero" strategy, with a speed limit of 30 kmh.
- Users of motorised vehicles need to behave in a safer way, and become more aware of bicycles.

The Bicycle Transportation Alliance and the West Australian Community of Cycling are available to support implementation of the above suggestions.

⁶ To counter the common belief that cyclists are risk takers and thus "deserve" to have crashes, Schramm (2010) shows that traffic violations are recorded against 85.4% of drivers that were at fault in bicycle-motor vehicle crashes.

⁷ European Health ministers suggest that the obesity epidemic is caused by physical inactivity (along with unhealthy diet). They see the obesity epidemic "one of the most serious challenges to public health in Europe" (Jacobsen, et al., 2009)

⁸ School Children that are aerobically fit and have a healthy Body Mass Index (BMI) do better in reading and mathematics (Castelli, Hillmann, Buck, & Erwin, 2007)

⁹ Based on a meta-analysis of 37 studies dealing with depression and exercise, Craft concluded that "exercise is a behavioural intervention that has shown great promise in alleviating symptoms of depression (Craft & Perna, 2004)

¹⁰ A Queensland study into the economic benefits of active transport has found that 42% of survey respondents felt a safer environment would encourage more cycling (Fitzgibbons & Hand, 2009)

¹¹ "It is clear that road safety remains a significant concern for many people and more must be done to address these concerns and make people feel safe getting on their bikes" (Austroads & MacColl, 2010)

A metre matters

As a two wheeled vehicle, bicycles are physically unable to travel in a completely straight line. To allow for unexpected directional adjustments, car drivers should leave a meter of clearance when overtaking bicycles.

A Canadian Study confirmed that apart from intersection crashes between bicycles and cars, the second most frequent cause for police reported car/bike collisions was a bicycle being hit by a car travelling in the same direction.¹²

A study in Melbourne that analysed 127 hours of helmet-cam footage concluded that car drivers were at fault in 87% of incidents with cyclists, with sideswiping the most frequent type of incident (Johnson, 2010) . Based on that study a cyclist using public roads would expect some sort of incident every three hours.

The Amy Gillette Foundation is running a television campaign to promote this important safety measure (<http://www.youtube.com/watch?v=sUKGOwEddL0>). This should become part of the road traffic code; it should be a rule rather than a recommendation. Safe passing distance between cars and bicycles are the law in 28 American states, and it is a recommendation in the current edition of the “Drive Safe” handbook (Department_of_Transport, 2010).

We would like the Road Safety Council to fund and support both the television campaign and the legislative process to change the Road Traffic Act, resulting in a mandated safe passing distance between cyclists and motorists. (To achieve this, representation needs to be made to the Australian Road Rules Maintenance Group (ARRMG), who have not yet acted on the need to have a legislated one metre passing distance. It is my understanding that they have been approached by NSW and Queensland to reconsider).

A safe Perth Bicycle Network

The Principal Shared Paths are facilities shared by pedestrians, gopher cars and people riding bicycles. They are built separate from roads, and eventually will run along the urban train lines and freeways. They are the “freeways of cycling”. The Perth Bicycle Network on the other hand identifies less travelled routes that enable cyclists to get to their destination, be that shops, train stations, their place of work or to connect to the Principal Shared Path (PSP) network. The roads that form part of the PBN network are, apart from small directional bicycle signs, indistinguishable from any other road.

It is important to make roads that are recommended for use by vulnerable road users as safe as possible. The severity of accidents between cars and vulnerable road users is directly dependent to the vehicle’s speed, and background research undertaken by MUARC shows that 30kmh is the correct speed in environments where vulnerable road users and cars have to mix¹³. At that speed vulnerable road users have a much better chance to escape permanent injury, demonstrated in London where the introduction of 20 mph (32 kmh) zones has resulted in a casualty reduction of 41.9% - “the percentage reduction was greatest in younger children and greater for the category of killed or seriously injured casualties than for minor injuries”(Grundy, 2009)

¹² The study examined 2572 police reported car/bike collisions in Toronto. 12% of collisions occurred at intersections, 11.9% of collisions were the result of a car overtaking a bicycle.

¹³ “At collision speeds above 35 km/h, the probability that a pedestrian [or cyclist] will be fatally injured rises rapidly, with death almost certain at impact speeds of around 55 km/h or higher” (Oxley, 2010)

The Swedish “Vision Zero” suggests that bicycles and pedestrians should be separated from car traffic, and where this is not possible, the Swedish strategy acknowledges the need to give pedestrians and cyclist priority over car traffic – particularly by reducing speed (WHO Global Status Report on Road Safety, 2010).

We would like the Road Safety Council to fund and support legislation to change all roads that are designated and mapped as part of the Perth Bicycle Network to be clearly marked with on-road signage and have a maximum speed of 30 kmh for cars.

Safe road users

All road users need to understand the rules that govern the use of public space. People riding bicycles suffer daily high risk situations caused by a lack of understanding by car users. For instance many car drivers do not know that it is legal for cyclists to ride two abreast, and as a result some car drivers engage in aggressive behaviour in an attempt to squeeze cyclists when they use their allocated road space. We need to improve the quality and skills of car drivers to make the roads safer for people riding bicycles.

To help drivers acting responsibility on the roads, the holding a driver’s licence has to be positioned as a privilege. We suggest these measures as a starting point:

- Drivers must re-sit a written test every time their licence is renewed to ensure they know all the current traffic rules. Drivers who lose their licence must re-enter the system in the same manner as a novice driver so they can benefit from all aspects of driver training (and restrictions) that form part of getting a licence.
- Driving a vehicle in a manner that causes harm to others should be treated as assault.
- School children to be educated as road users, starting at primary school with pedestrian skills, followed by cycling skills. Riding a bicycle is the best way to gain an understanding of road conditions and road users.
- Vehicle and third party property and personal insurance to be attached to the driving licence and not the vehicle.

Using a bicycle on West Australian roads is currently a dangerous way to get to work. By making a network of selected roads safer, legislating passing distance and education car drivers the Road Safety Council can improve the “Towards Zero” program and make it relevant for vulnerable road users.

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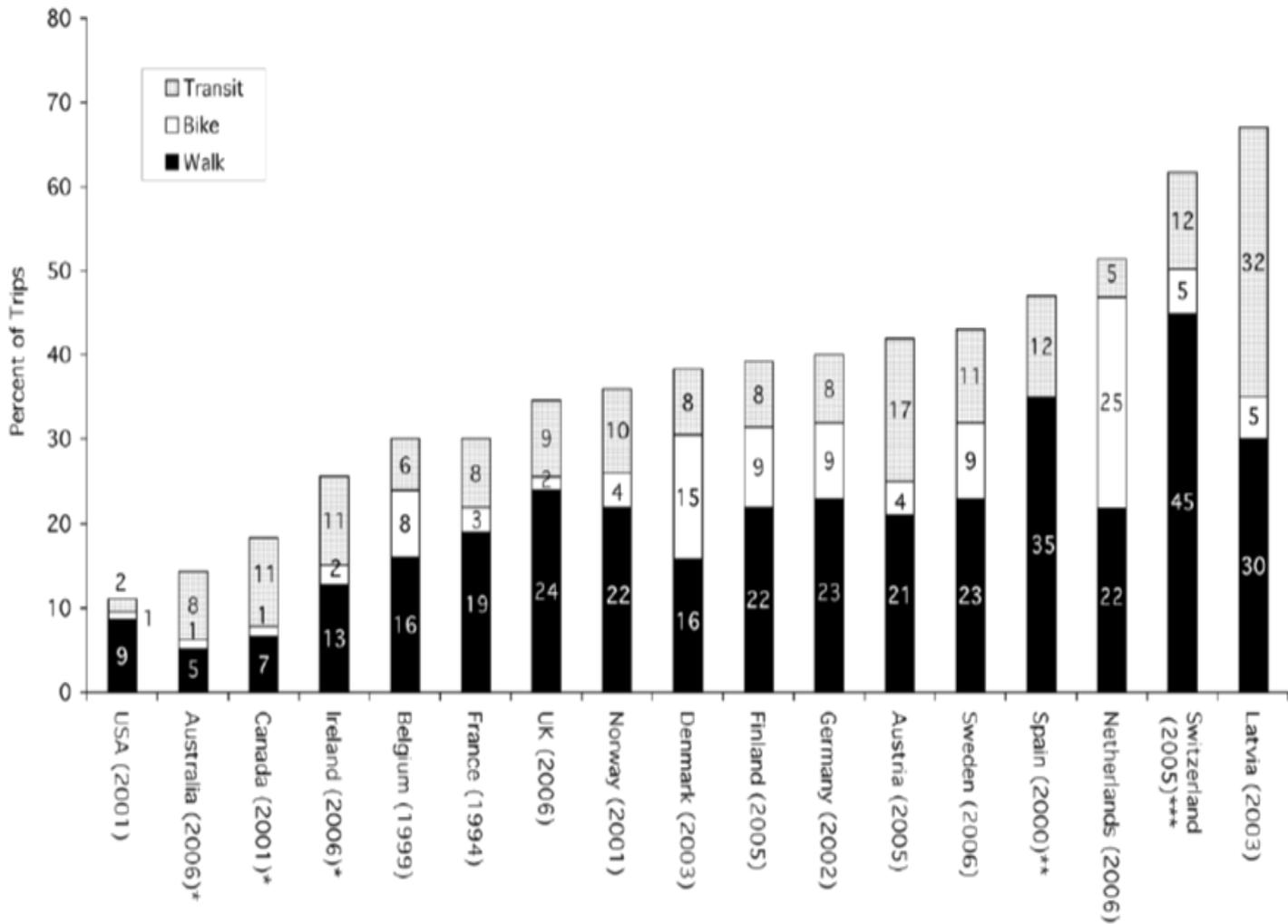


Figure 1 — Percentage of trips taken by walking, bicycling, and public transit in countries of Europe, North America, and Australia. For data sources, see Table I. * Work trips only. ** Walk and bike trips combined for Spain. *** Special focus on short trips for Switzerland (any trip of 25 m or more was included).

