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Road Safety and cycling – a view from the handlebars

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Pedal Power ACT is a not-for-profit organisation founded in 1974 to act as a rallying point for people who ride bicycles in the Australian Capital Territory and Queanbeyan regions. It represents the interests of people who ride bicycles and who potentially would ride bicycles. It promotes the activity of cycling for transport, recreation and sport as well as the benefits of improved fitness and the positive contribution cycling makes to the community and a sustainable environment.

Road safety and cycling

How timely! The ACT government has just provided a response to a series of recommendations identified to address vulnerable road users – motorcyclists, cyclists and pedestrians - as a result of an inquiry to address the concerns in the ACT. This comes after similar inquiries in Queensland, NSW and Victoria.

The aim is to address the issues surrounding the vulnerability of those that choose to ride a bike on the road and identify the key platforms by which one would suggest the safety of all road users is improved.

Pedal Power ACT in its submission to the inquiry identified that there is no silver bullet – not one means (by itself) will be sufficient to see an increased level of safety for vulnerable road users. However there are some key platforms that address the safety of the cycling community on the road including;

- effective urban planning and road infrastructure
- the reduction in speed at conflict areas
- the increased use of cycling in itself leads to a reduction of incidence of injury
- education, training and increased awareness in the broader community
- policy development and legislative changes
- funding to implement the changes and the savings that such an investment makes.

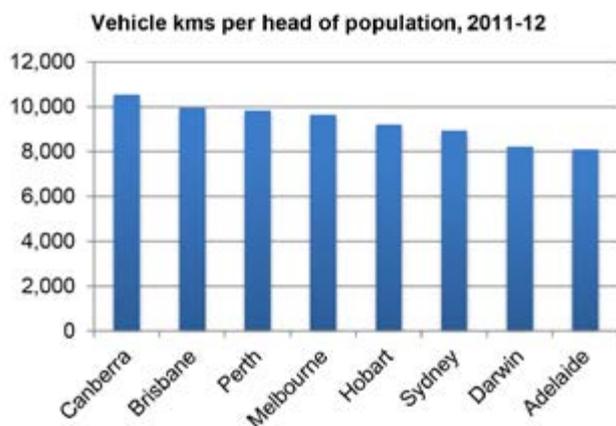
What is the case for increased safety measures?

This requires a review of the links between cycling infrastructure, cycling participation, injury rates and wider public health. Pedal Power ACT proposes that governments should invest in safe, convenient cycling infrastructure in order to encourage cycling by the large number of people (especially women and children) who would like to ride but currently don't because of the perceived risk. This in turn would reduce accident rates because of safer conditions and the 'safety in numbers' effect. The ultimate benefit would be a reduction in lifestyle illnesses, leading to major savings in public health budgets.

An unfit society

Canberra has the highest rate of car use of any city in Australia [7, 4].

ABS Census data show that for travel to work, four out of five Canberrans use cars — one of the highest rates in Australia and this has been unchanged for the last 30 years. Bus usage is declining, and is currently around 7%. Cycling and walking to work were 2.8% and 4.9% respectively at the 2011 Census. The ACT government realise this as well, noting in the ACT Budget Paper 2 in 2014 that "Our Healthy Weight Initiative goes hand in hand with additional walking and cycling infrastructure ..."



The health benefits are being recognised across the world with the UK recognising an increased focus on the health benefits of cycling citing that “*The NHS could save more than £1 billion (A\$1.75b) a year if the Government matched Dutch levels of spending on cycle provision, health experts have claimed...*” with health experts telling the Get Britain Cycling parliamentary inquiry this year that “... *the NHS spent about £5 billion (A\$8.75b) a year on obesity-related conditions, adding that health services could make £4 of savings for every £1 invested in cycling.*” It was interesting to note that Reindert Augustijn, a Dutch transport director, said to the same inquiry “*In the Netherlands, we used to invest in cycling to reduce the number of accidents, but now we do it for economic and health reasons*”.

In the ACT Chief Health Officer’s Report 2014 (a biennial Report that covers the period July 2010 to June 2012) lifestyle factors (including physical activity) are implicated as major preventable causes of chronic disease. A third of all men, almost half of all women and three-quarters of all children were insufficiently active. Almost two-thirds of all adults and a quarter of all children were overweight. “Urgent, sustained, inter-sectoral action is required to address this problem at the societal level”.

The proportion of ACT people with heart, stroke and vascular disease is the highest in Australia, and 27% higher than the national average. A total of 15.5% of the ACT population had mental and behavioural problems; the highest proportion of all states and territories (Australia: 13.4%) and an increase from previous years. People reporting mental health problems were more likely to be current smokers and to be undertaking inadequate physical activity. The report indicates that car use and inactivity are making us increasingly sick.

Cycling is one of the best medicines for physical and mental health. Other cities are recognising the benefits. For instance, San Francisco has embarked on a program to reduce car use to half of all trips, by increasing public transport usage and active travel (cycling and walking).

Cycling injuries

According to the ACT Chief Health Officer’s report, the ACT had the highest rate of high threat to life injury among pedal cyclists of all the jurisdictions (8 per 100,000 as against the Australian average of 4.2).

“ACT Government Territory and Municipal Services data show that in 2012 there were 110 casualties from pedal cycle accidents, including one fatality, 26 hospital admissions and 83 people receiving medical treatment. Pedal cyclists accounted for 12.3% of all on-road casualties in 2012. Most of the reported injury from crashes involving cyclists and vehicles occurred in the city and inner suburbs. In 2012, 15% of these crashes occurred in the CBD, 12% in Turner and 10% in Braddon.

The June 2014 report of the inquiry into vulnerable road users for the ACT Legislative Assembly found that between 2007 and 2012, cycling casualties admitted to hospital remained constant at 12 per year. Those receiving other medical treatment increased from 40 to 83 per year, with the largest increases in 2010-12.

The inquiry recommended action to:

- improve road rules, road user behaviour and driver licensing
- mandate minimum separation between bicycles and motor vehicles
- improve data on accidents
- reduce speed limits
- increase legal protections.

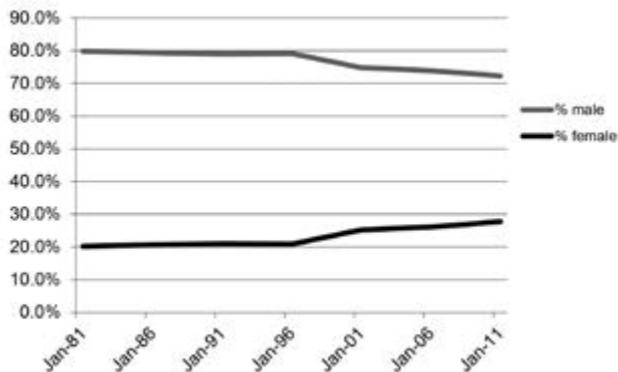
Pedal Power ACT has urged the ACT Government, in its response to the inquiry report, to pay more attention to funding quality cycling infrastructure, especially segregation of cycle lanes in areas of heavy traffic. At present, many people are deterred from cycling by the perceived danger of motor traffic.

Pedal Power ACT considers that cycling injury rates are also influenced by:

- the narrowness and poor condition of many shared paths and on-road lanes;
- poor quality intersection design;
- the number of ‘missing links’ in the cycle network, leading to rapidly changing riding conditions; and
- the primary focus of the ACT transport system on private motor vehicles.

The perception of safety – why women don't ride

Historically, men have outnumbered women three to one in the ACT cycle commuting statistics from the five-yearly Census. Men appear more willing to accept the risk of riding in adverse road conditions suitable only for the 'enthused and confident' or the 'strong and fearless' categories.



The Heart Foundation and Cycling Promotion Fund *Women and cycling survey 2013* found that:

- The overwhelming majority of respondents agreed that riding a bike is a good way to get fit and that it is important for children to learn how to ride. Similarly, the majority of respondents also agreed that road traffic makes people afraid to ride.
- Three in five respondents reported they would like to cycle more than they currently do, with 78% of respondents who reported cycling in the past six months indicating they would like to cycle more. Furthermore, more than 50% of respondents who hadn't cycled in the past six months would like to do so.
- Whilst traffic speeds was a prominent factor that prevents women from cycling and was also a safety concern, very few women felt reducing the traffic speeds would entice women to cycle. The overwhelming majority of women agree that government should improve cycling facilities by providing more bike paths and/or lanes. This is consistent with having more bike lanes and off-road cycling paths that would entice more women to ride.
- When asked to nominate all reasons that prevent women from cycling, traffic and aggression from other road users featured prominently. The main safety concerns amongst women associated with cycling (aside from personal safety) involved traffic and cars, with speed and volume of cars/trucks, and distracted drivers being the major safety concerns.

The lack of safe, convenient infrastructure is clearly holding back large numbers of people in the '8 to 80' age cohort, especially women, who would otherwise like to be able to cycle as part of their daily activities.

The perception of safety – why children don't ride

The Heart Foundation and Cycling Promotion *Active travel to school 2012* survey found that:

- Close to 60% of parents surveyed drive their children to school.
- Whilst seven in ten parents surveyed think it is important for children to be able to independently ride a bike, close to half do not believe that it is safe for children to ride a bike to school.
- There are some clear barriers to children riding a bike to school. Eight in ten parents surveyed agreed that there is too much traffic on the roads and there are not enough bike paths for children to cycle safely to school.
- The reasons parents do not allow their children to ride a bike to school are centred around safety and the dangers posed by traffic and other road users.
- Parents surveyed indicated that they would be more likely to let their children ride a bike to school if safety, and the dangers posed by traffic and other road users was changed or improved.

Clearly there is a common theme holding back Australia's and Canberra's cycling participation rate: cycling in and around traffic is seen as inherently unsafe. The logical consequence is that to reap the community benefits of mass cycling, governments will have to invest in quality cycling infrastructure which is protected from vehicle traffic.

The 'safety in numbers' effect

The theory has gained currency in recent years that (paradoxically) the more people cycle, the lower the injury rate. This is because other road users are more used to seeing and coping with bicycles, and adapt their behaviour accordingly.

"A motorist is less likely to collide with a person walking and bicycling if more people walk or bicycle. Policies that increase the numbers of people walking and bicycling appear to be an effective route to improving the safety of people walking and bicycling." PL Jacobsen, [12]. Such policies also help overcome the 'them and us' stereotyping that can characterise mutual perceptions between people in cars and people on bikes.

Garry Brennan of Bicycle Network (Victoria), quoted in Matt de Neef, [9] identified that

“The reason that [some motorists] do show aggression on the road towards cyclists is because they think we’re a different species. They’ve framed us as an edge group so we’re not worthy of respect. We need more women, more school kids, more elderly people — we need a full cross-section of society on our streets riding bikes, not just super-fit roadies or super-brave commuters.

That’s what’s going to deliver us the huge benefits in safety because bike riding will be normalised; it will be socially acceptable, social empathy will be driving a much greater understanding and respect for people on bikes and that will be a net gain for everybody.”

Cycling in the ACT is on a very good platform to increase its cycling numbers even more. The Australian Bureau of Statistics survey [5] estimated that 44,200 Canberrans cycled for recreation at some point in 2011-12. The 2011 Census found that 4,671 Canberrans cycled to work on census day. The latest cycling participation survey by the Australian Bicycle Council [3] confirms that ACT has the highest cycling rate - just under 40% higher on average.

‘Build it and they will come’

The evidence from around the world shows that better cycling infrastructure leads to greater cycling participation, and in turn leads to fewer cycling injuries and better public health outcomes. Greater participation creates a feedback loop leading to even better infrastructure, greater community acceptance of active travel, and greater community benefits. The initial investment requires political leadership, but is essential to trigger the process.

Pucher and Buehler [13] argue the key reason cycling is so successful in many Dutch, Danish, and German cities relative to other places (not just Australia) is due to:

- extensive systems of separate cycling facilities;
- intersection modifications and priority traffic signals;
- traffic calming;
- bike parking;
- coordination with public transport;
- traffic education and training; and
- sympathetic traffic laws.

They also point to the positive way cycling is promoted.

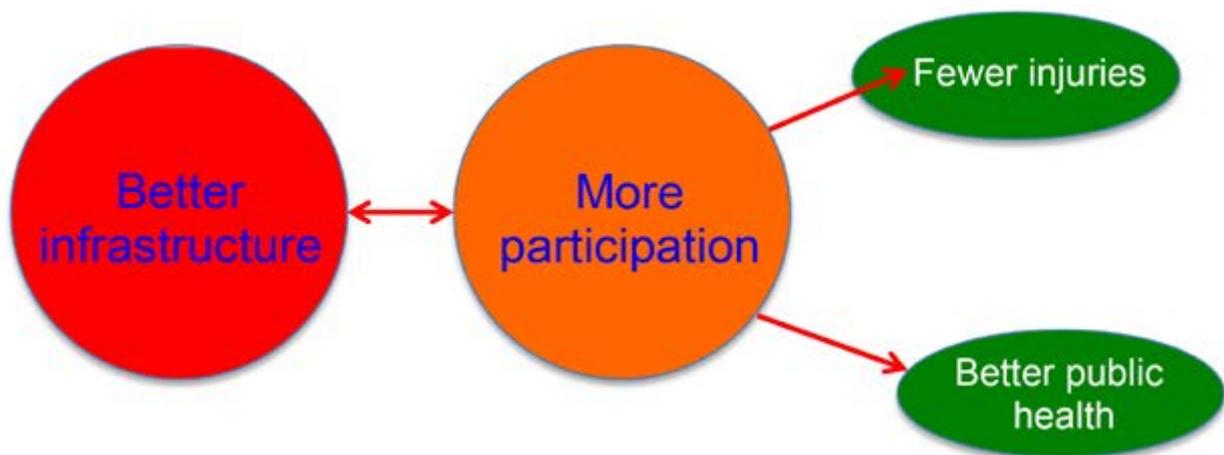
Community acceptance

Greater cycling participation by a wide cross-section of the community, together with a broad framework of government policies supporting active travel, will help create a cultural climate in which cycling is not just tolerated but is enthusiastically adopted as a normal means of daily transport.

Road user attitudes

‘Sharing the road’ has become a mantra of traffic authorities around the world. It is recognised that this will involve attitudinal changes especially on the part of motor vehicle drivers, who occupy the highest position in the road ‘pecking order’. There has been a focus on the need for improved driver education, particularly in the initial licensing phase.

The need for changed attitudes is evident with the trend to introduction of ‘shared space’ in inner urban areas, where most markings and signs are removed and all road users have to negotiate a safe passage with everyone else. Some drivers feel threatened by this phenomenon, and not just because of the loss of parking spaces.



As a community, with the rise of active travel we will need to progress beyond ‘defensive’ road use to ‘supportive’ road use. For some years, ‘defensive’ driving has been portrayed as the safe approach characterised by:

- being able to stop within the distance you can see to be clear;
- being alert and anticipating risk;
- covering the brake on approach to hazards; and
- assuming that other road users will do the wrong thing, and preparing to deal with it.

Bicycle riders habitually practice defensive road use as their main form of protection in traffic. As a community, we need to build on this approach and move beyond it to ‘supportive’ road use, characterised by:

- extending and acknowledging courtesy;
- being aware of other road users’ situation and needs;
- letting others merge ahead; and
- anticipating difficulties for other users and helping them out.

Where to from here?

Strategically, Pedal Power ACT is advocating for:

- top-level political leadership and recommitment to cycling as a mainstream daily transport mode
- a ‘cycling champion’ to drive change
- integrated and efficient governance for active transport
- consideration of cycling mandated in the early stages of all urban planning for city and town centre plans, and for greenfield and redevelopment projects
- a much more substantial commitment to funding as part of the budget process
- building the numbers of the ‘8-80’ group (especially women and children) riding as part of their daily routine
- priority to infrastructure that will make a big difference to participation rates
- recognition of the positive benefit-cost returns on cycling infrastructure and
- action to achieve mode share targets and prevent Canberra falling behind other cities.

Pedal Power ACT see huge potential for savings in the ACT health budget from active travel reform. Our analysis of long-term Census data on travel to work indicates that:

- car mode share has averaged 82% over the last 30 years
- the number of car journeys to work has increased by 89%
- the non-car mode share (bus, walking and cycling) has averaged 15%
- the active travel mode share (cycling and walking) has averaged 6.6%
- women’s active travel mode share has averaged only 2.3%

Other cities worldwide are implementing ambitious active travel plans. Copenhagen is aiming at a 50% mode share for cycling alone. San Francisco is working to reduce the car mode share to 50% by 2018.

If more people cycle and walk to work in Alaska (8.9%) than in Canberra [15], it highlights the need for significant effort and infrastructure funding to reap the benefits of active travel for the ACT community.

The recently proposed ACT government changes look to the diversity of solutions to enhance the safety of the cycling community in the ACT and it is only through a determined and sustained approach in each and all of these areas that Pedal Power ACT believes we will see significant improvement in numbers and safety for those that choose to ride their bikes.

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Cycling on rural roads

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Setting the scene

Providing bicycle facilities on rural roads is challenging due to the high vehicle speeds (generally with speed limits of 70km/h or above) and often physical constraints of the road reserve. International guidelines and practice in ‘cycling’ countries such as the Netherlands and the UK provide cyclists with paths separated from high speed traffic. A summary of international practice is provided in Table 1.

In Australia and New Zealand guidelines and practices for higher speed roads vary between jurisdictions. However, the majority of jurisdictions are providing more off-road paths along urban motorways and generally sealed shoulders along high speed rural roads. The NSW Bicycle Guidelines are focused primarily on providing guidance for the design of cycling facilities in urban environments.

High speed roads present an increased safety risk to all road users including cyclists. There are inherent risks where cyclists and high speed vehicles share road space, primarily due to:

- the high differential in operating speeds between cyclists and vehicles
- increase in crash severity
- often large amount of heavy vehicle traffic.

Providing off-road paths as an alternative to on-road facilities on higher speed rural roads as is done in the Netherlands and the UK is often not feasible in Australia and New Zealand due to the high financial cost, long distances of facilities required and land ownership issues.

As cycling is a legitimate transport mode and cyclists are legally permitted to use roads, there is a need to improve facilities and conditions for cyclists riding on-road in higher speed rural roads environments. Techniques for improving space and conditions for cyclists on high speed rural roads can be infrastructure related as well as non-infrastructure related and can include:

- **Providing an alternative route** – such as using a lower speed route

Table 1. International practice in providing for cyclists on high speed roads

Country	Practice	Reference
UK	Where the 85 th percentile speed is greater than 40 mph (64.4 km/h), segregated bicycle facilities (tracks/paths) should generally be provided. For high speed roads with low traffic volumes (less than 3,000 vehicles per day/less than 300 vehicles in the typical AM peak hour), on-road bicycle lanes may also be considered.	TfL (2005)
Germany and Denmark	Provision of fully integrated off-road paths and bicycle lanes along roads and at intersections in cities and surrounding areas.	Pucher and Buehler (2008)
The Netherlands	Cyclists should always be separated from high speed traffic by providing a separate path or alternative (cycling) route. Consideration should also be given to lowering traffic speeds.	CROW (2007)
New Zealand	On urban roads with a speed limit of 80 km/h or more, cycle paths should be provided. Where speed limits are 70 km/h, sealed shoulders may be acceptable where there are fewer than 2,000 vehicles per day.	LTSA (2004)