

Position Snapshot

Slow Motion: Why reducing speed will promote walking and cycling

Increasingly cities and towns both in Australia and overseas, have adopted 40 km/h or lower speed limits to reduce traffic injuries and improve health, transport efficiency, the environment, economy and community liveability. In addition, traffic calming treatments have been used to slow down traffic where the speed limits have been lowered, or have been used to slow traffic in the absence of a speed limit change.

At a collision speed of 30 km/h pedestrians have some chance of surviving a crash but this rapidly decreases with higher speed, with the majority killed if hit by a car at 50 km/h or above.¹ In South Australia, the speed limit around some schools has been set to 25 km/h in recognition of pedestrian vulnerability. In Unley, a 40 km/h limit on all local streets has been in place since 1999 as well as in numerous other suburbs in Adelaide such as Bowden/ Brompton and North Haven. In some Melbourne suburbs and also on main roads through shopping precincts a 40 km/h speed limit has been applied. Brisbane CBD is now a 40 km/h zone. European cities such as Sweden, Germany and Britain are implementing 30 km/h speed limits on residential and shopping strips as world's best practice.

The Heart Foundation (SA) works towards creating places that encourage more people to walk more often.

Initial indications of the effectiveness of the Swedish 30 km/h speed limit suggest that average speeds and traffic flow remain relatively unaffected while the maximum speed has decreased notably.²

In South Australia councils are considering reducing speeds in order to make their shopping precincts and mainstreets more attractive to pedestrians, cyclists and public transport users and to add value to the local economy.²¹ Slower speeds add to the amenity of the area, by improving street environments. Currently vehicle speeds are a threat to safety of these road users. Councils are also considering reducing speeds in built-up neighbourhood areas.

CALL TO ACTION

The Heart Foundation (SA) is calling for 30 km/h in residential areas and 40 km/h on busy roads where there is high pedestrian and cyclist activity.

There has been some reluctance to undertake this effective public health measure because of community concerns that it will increase congestion, travel times and pollution; negatively affect public transport services and impact on the surrounding neighbourhoods. In isolation, speed reduction schemes could cause driver confusion.³

This position statement provides evidence for the positive benefits to health and wellbeing from reducing vehicle speeds.



Arguments for and against speed limit reductions

Opponents say	Response
Lowering speed limits will cause congestion and increase travel time	<p>In busy urban environments the average journey speeds are considerably less than the set speed limits.⁴</p> <p>Data shows that lowering speed limits in built up urban areas has a minimal impact on drivers' travel time.⁵</p> <p>Lower speed limits reduce delays – meaning smoother progression of traffic flow⁴ or harmonic traffic rhythm² – under medium congestion levels.</p> <p>Adjusting traffic lights in slower speed areas will minimise delays, generate smoother traffic flow and relieve congestion.^{4,6}</p> <p>Drivers assume that driving faster will reduce overall travel time – not true in urban environments! Travel time is mostly influenced by frequent stopping or slowing down, such as at intersections and rail crossings.²</p> <p>In Unley, travel time has decreased only slightly since the 40 km/h speed limit.⁷</p> <p>Traffic congestion in urban areas is a major consideration for assessing various modes of transport. Lowering speed limits will encourage more walking and cycling, and this shift will add capacity to our roads and reduce the strain on public transport services.⁸</p>
Changing speed limits will cause driver confusion	Speed limits should be one part of an overall strategy to calm traffic and improve the walking and cycling environments. ⁹
Cars are more fuel efficient at higher speeds – fuel consumption and emissions will be higher	<p>Reducing speeds is not just about reducing pollution it's about driver safety, pedestrian and cyclist safety, improving health and increasing trader business.</p> <p>Emissions may be reduced under a 40 km/h speed limit compared to a 60 km/h.⁷</p> <p>If people shift from cars to active transport there will be reduced noise and air pollution.¹⁰</p> <p>Lower speed coupled with signal coordination can actually reduce emissions and fuel consumption.⁴</p> <p>Aggressive driving such as accelerating hard from traffic lights and lane changing is a much bigger factor in fuel consumption than vehicle speed.²</p>
Reducing speed limits are just about raising revenue through speeding fines	<p>No, it's about putting people and their safety first.</p> <p>It will improve the walkability and liveability of the city.</p>

What is the problem?

- Less than 30% of South Australians are meeting their recommended daily physical activity levels for health gain.¹¹
- Sedentary behaviour is believed to be associated with the rise in overweight and obesity, and has been shown to increase an individual's risk of cardiovascular disease, and type 2 diabetes.¹²
- For many older people a sense of not having enough time to cross a road safely can result in a loss of confidence which leads to a loss of mobility.¹³
- Pedestrians and cyclists struck by a motor vehicle travelling at 50 km/h have about an 85% chance of being killed, while at 30 km/h this drops to 10%.⁹



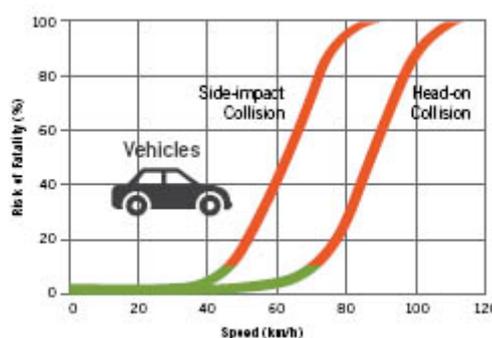
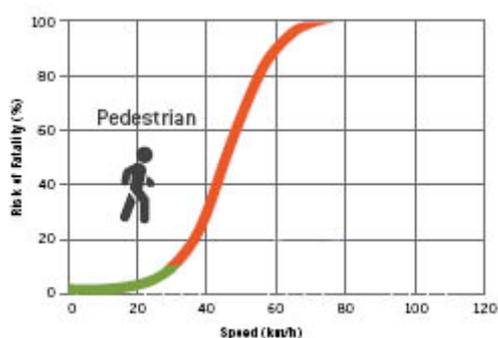
How reducing speeds will improve health

Reducing speeds in neighbourhoods and shopping precincts makes the road system safer, or perceived to be safer, for all users.⁹ This perception of safety removes a major barrier to people walking or cycling, and can encourage increased physical activity levels. In addition, the community's health and wellbeing improves through more active living, and results in environmental improvements such as less air and noise pollution and safer, healthier neighbourhoods.



“...research showed that lower vehicle speeds strongly correlate to the pedestrian's chance of surviving a crash”

1. Increase the number of people walking and cycling every day
 - Lowering speed limits in busy pedestrian areas will make these streets more walking and cycling friendly.
 - It's a good way to get kids back on bikes and riding to school. Evidence has shown that traffic calming measures such as speed reductions increase the number of children allowed to walk, cycle and play outside¹⁴.
 - Pedestrians and cyclists are legitimate road users but their needs for safe journeys are often over-looked by car-orientated transport systems.
 - Application of speed limits is often considered a traffic management issue – however it can also be part of wider improvements and initiatives to improve the walking environment.
2. Increase safety for drivers, cyclists and pedestrians
 - Lowering speed limits offers significant road safety benefits¹⁵.
 - Studies have found that speed reduction schemes improve people's perception of safety and increase involvement in regular physical activity.
 - Lowering speeds will lower fatal accidents, especially involving children.
 - In the UK it is considered that 30mph (48 km/h) is often too fast in many residential areas, particularly where there are a significant number of pedestrians, especially children, the elderly, the disabled and cyclists.



Source ¹⁷

The Impact of Speed on Pedestrian Survival

Research into the capacity of the human body to absorb crash energy indicates that speeds would ideally be less than 30km/h in where conflict with people walking and cycling is possible, less than 50km/h where vehicle side-impacts are possible and less than 70km/h where head on collisions are possible. ¹⁷

In 2004 road safety research showed that lower vehicle speeds strongly correlate to the pedestrian's chance of surviving a crash. The figure here compares international and historic data to illustrate the increased likelihood of a pedestrian surviving a motor vehicle crash in lower motor vehicle speed environments.¹⁸ A 2010 paper showed that school speed zone reductions were associated with a significant reduction in child pedestrian trauma in the identified school zones.¹⁹

Do slower speeds mean longer travel time?

For communities overall, the small increase in travel time will be far outweighed by the reduced risk of car accidents associated with lowering speeds. This is a difficult argument to make to people who are concerned about their individual travel time. However, speed limits and speed travelled are not the major factors in travel time in urban environments. Of more significance are signal timings, number and type of intersections, or trouble finding parking. At rush hour in Adelaide CBD and feeder roads, the average travel speed is significantly slower than the speed limit. In addition, lower speeds mean fewer crashes, and fewer crashes means less delays. Improving intersection safety and function and coordinating signal timing are better ways to improve flow than increasing traffic speed.¹⁶

Resources

Streets for People. A Compendium for South Australian Practice. 2012.
<http://saactivelivingcoalition.com.au/>

Terminology

Congestion: Also known as high traffic volume. Congestion occurs when preceding vehicles prevent the adoption of a discretionary free-flow speed. It Regular/cyclic congestion occurs at peak travel times such as early morning and late-afternoon, when car users are travelling to work, home or school. Irregular congestion occurs due to incidents such as break-downs and traffic accidents and impacts us more because of its random nature.

High density urban areas: city areas with pedestrians, especially children, the elderly, the disabled and cyclists.

Mainstreet: A street or street section that contains mixed-uses that enable social interaction and attract custom of the local and wider community.

Traffic calming: A general description of the methods used to physically enforce lower traffic speeds and to reduce traffic volumes.²⁰

Vulnerable users: Pedestrians, especially children, the elderly and the disabled.

References

1. Scully J, Corben B, Lenne M, Fotheringham N, Clark A, Verdoom A, et al. Expert consensus on the likely effect on different types of impairment on driver reaction time. Report prepared by Monash University Accident Research Centre for the TAC (unpublished). 2007.
2. Archer J, Fotheringham N, Symmons M, Corben B. The impact of lower speed limits in urban and metropolitan areas. Melbourne: Monash University Accident Research Centre, 2008 Contract No.: 276.
3. Adelaide City Council. Hutt Street - Proposal for Trial Reduction of Speed Limit from 50km/h to 40km/h. City Design & Character Policy Committee. 2011.
4. Taylor MAP. Network modelling of the traffic, environmental and energy effects of lower urban speed limits. Road and Transport Research. 2000;9(4):48-57.
5. Fildes B, Langford J, Dale A, Scully J. Balance between harm reduction and mobility in setting speed limits: a feasibility study. Sydney: Austroads Inc, 2005.
6. Taylor M. The effects of lower urban speed limits on mobility, accessibility, energy and the environment: trade-offs with increased safety. Final report for the Federal Office of Road Safety. Canberra, Australia: 1997.
7. Dyson C, Taylor MAP, Woolley J, Zito R. Lower urban speed limits - trading off safety, mobility and environmental impact. 24th Australian Transport Research Forum; Hobart2001.
8. Department of Infrastructure and Transport. Walking, riding and access to public transport. Draft report for discussion. Australian Government, 2012.
9. Garrard J. Safe speed: promoting safe walking and cycling by reducing traffic speed. Safe speed interest group, 2008.
10. Queensland Department of Transport and Main Roads. Benefits of inclusion of active transport in infrastructure projects, prepared by SKM and PWC. 2011.
11. ABS. Physical Activity in Australia: A snapshot 2007-08. Canberra: ABS, 2011.
12. Ford ES, Caspersen CJ. Sedentary behaviour and cardiovascular disease: a review of prospective studies. Int J Epidemiol. 2012;41(5):1338-53. doi: 10.093/ije/dys078. Epub 2012 May 26.
13. Frye A. Safe, accessible pedestrian environments: The key to mobility in ageing populations Walk21; The Hague2010.
14. Living Streets. Making the case for investment in the walking environment. 2011.
15. McLean J. Vehicle travel speeds and the incidence of fatal pedestrian collisions. Canberra: Federal Office of Road Safety, 1994 Contract No.: CR146.
16. America Walks. Why we're stuck at high speed, and what we're going to do about it. 2012.
17. Department for Planning Tal. Towards Zero Together. Safer Speeds. <http://dpti.sa.gov.au/towardszerotogether/saferspeeds>. 2012.
18. Premier's Council for Active Living. Walking for travel and recreation in NSW. What the data tells us. 2011.
19. Graham A, Sparkes P. Casualty reductions in NSW associated with the 40 km/h school zone initiative. Australasian Road Safety Research Policing Education Conference; Canberra 2010.
20. OECD. Traffic Management. 2006.
21. National Heart Foundation of Australia, Tolley R. Good for Busine\$\$: the benefits of making streets more walking and cycling friendly. Adelaide: Heart Foundation 2011.