

Will more walkable communities be our future?

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Abstract

Walkability is a key ingredient in the mix that is a healthy community as acknowledged by many experts. But what is walkability, what does better provision for walking mean, and how do we measure it?

To get more healthy communities we need to understand the fundamental importance of walking and to understand more about who is walking. Who will benefit from a walkable community?

This presentation looks at what we mean when we talk about walkability and who is walking, to provide a starting point for discussion. Overseas and New Zealand examples show how more walkable communities can support particular groups of people.

It is possible to further 'normalise' walking even though it is already the human way to move. What needs to change in New Zealand to support walkability?

Will more walkable communities be our future?

Introduction

Walkability is a key concept in developing healthy liveable cities. Health is created and lived by people within the settings of their everyday life; where they learn, work, play, and love. This focus on the everyday urban area is recognised by the World Health Organisation

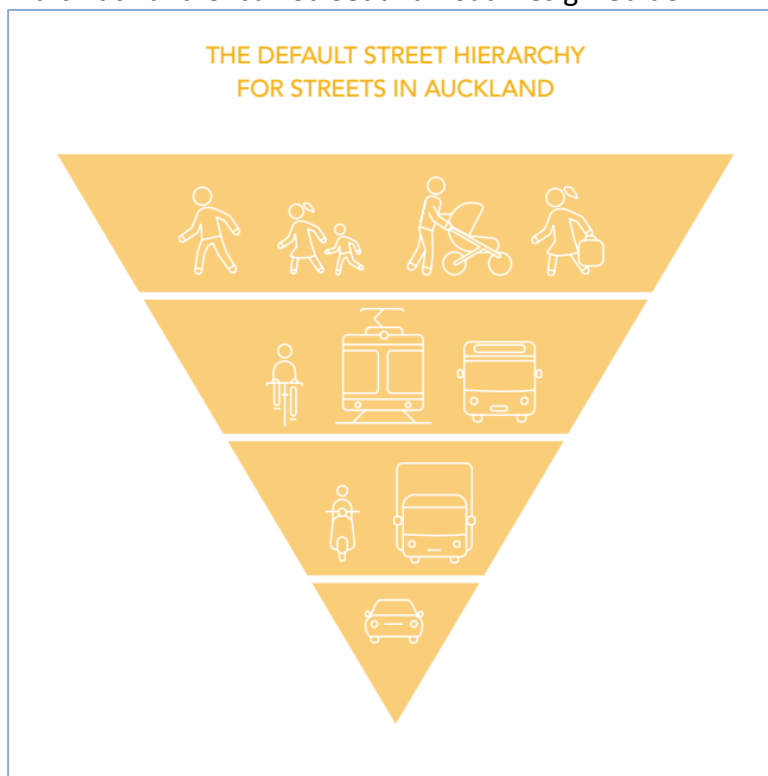
A healthy city is one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and developing to their maximum potential. (WHO, 1998)

Walkability has benefits for health, environment, community, economy and to reduce the negative impacts of transport as described below. Improvements to walkability however are rarely included as measures to improve these domains.

Transport

One of the transport paradigms used and widely promoted has been the sustainable transport hierarchy with its priority on the more physically active ways of getting around. Walking is the essential transport mode connecting all others. Improving walkability will prioritise pedestrian movement. The following proposed Auckland hierarchy has a strong focus on creating the public transport link with pedestrians, thus extending the walk trip and a plus for walkability.

Draft Auckland Urban Street and Road Design Guide



Auckland Transport 2017 p13

Transport has many impacts. Improving the negative and enhancing the positive will improve walkability. Transport impacts typically focus on a subset of all impacts:

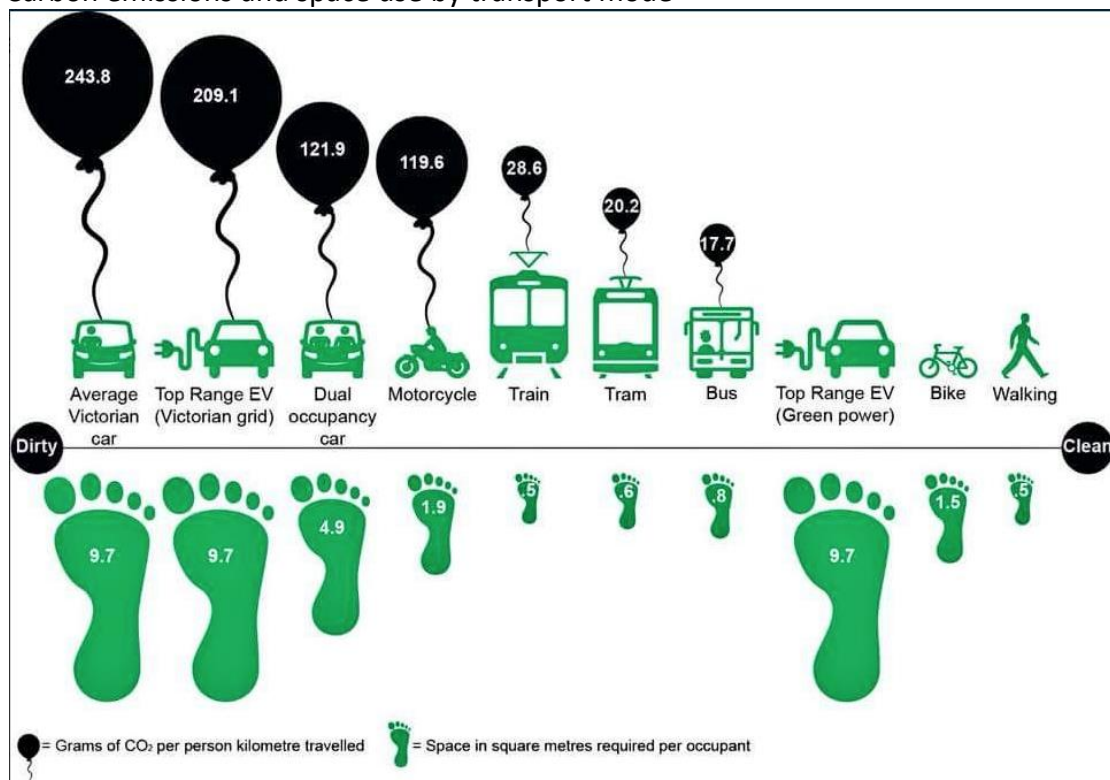
- Accidents between motor vehicles, bicycles and pedestrians (particularly children and young people).
- Pollution from burning fossil fuels such as particulates and ozone.
- Noise from transportation.
- Psychosocial effects such as severance of communities by large roads and the restriction of children’s movement.
- Climate change due to CO2 emission
- Loss of land
- Improved physical activity from cycling or walking
- Increased access to employment, shops and support services
- Recreational uses of road spaces
- Contribution to economic development

The recent Business Case for Walking (Auckland Council, 2018) highlighted a gap in understanding transport impacts, with its focus on the important place of walking in the economy.

Environment

Walking is clearly a very environmentally friendly way of moving. Diagrams such as this Australian one show that walking uses less space and creates the least carbon emissions compared to any other mode, even before embodied carbon is considered. Improved walkability and more people out walking is good for the environment.

Carbon emissions and space use by transport mode



Based on Australian energy production profile. Fishman, 2018

Health

Transport impacts on health in many ways (Khreis et al, 2017). Dr Tedros Adhanom Ghebreyesus, WHO Director-General, says “Being physically active is one of the most important ways to stay healthy and prevent disease” (WHO, 2018). Walking is the easiest way of adding physical activity to everyday life.

Yet the amount of walking done in New Zealand has been steadily declining from 72 minutes in 1989 to 53 minutes per week in 2014 (Ministry of Transport, 2015). There has been an increase in obesity and preventable diseases including mental health issues (Kingham, 2018). This indicates an urgent need to improve walkability from a health policy perspective

The New Zealand research in this area has predictable results showing that being more active is better! Shaw *et al* conducted research into what modes of travel had higher net physical activity levels in New Zealand (Shaw *et al*, 2017). Unsurprisingly walking and cycling do well.

Valuing the health benefits of active travel has even quantified the per kilometre health benefits value for active travel, and this can be included in the usual economic models for transport projects (Genter *et al*, 2008).

The BEATS Study investigates the built environment and active travel to school habits of high school students living in the Otago region (BEATS, 2017). The importance of school proximity on how actively teenagers travel is just one result of this work.

Economic

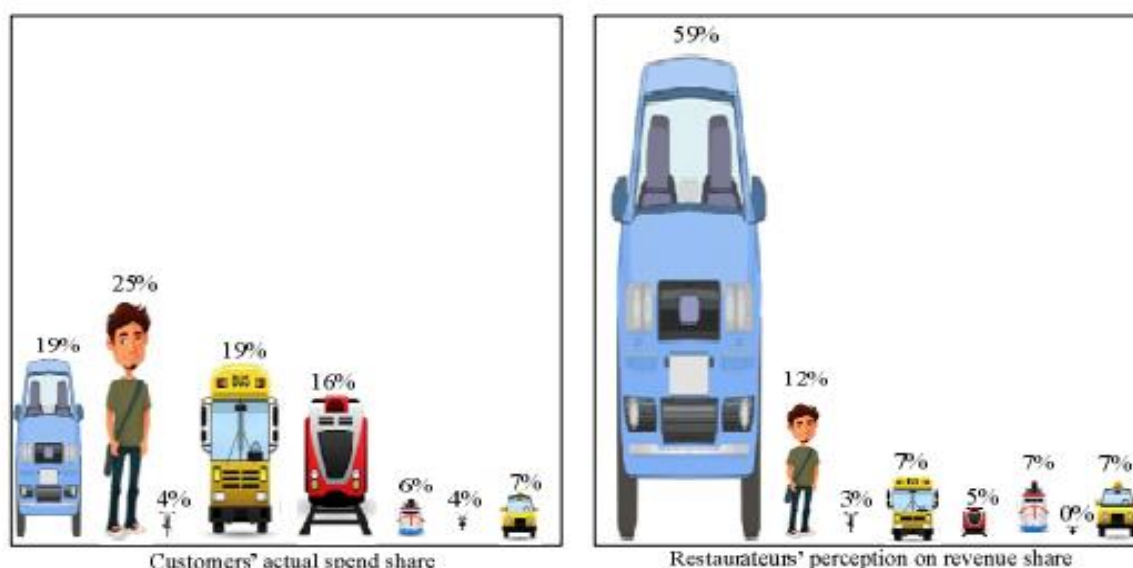
Recent work on the economic cost of pedestrian delay in Auckland has clearly shown the importance that walkability plays in the economic engine of a job rich downtown (Auckland Council, *ibid*). Pedestrian delay is costing Auckland money. A strong economic case for improved levels of service for walking has been made.

Other recent research has shown the significant cost benefit of 11:1 for improvements for walking or cycling from the model communities projects in New Plymouth and Hastings (Chapman *et al*, 2018).

Walkability is now one of the range of factors that affect house prices, with Walk Score often added to real estate advertising in the USA (Cortright, 2009). A high score is seen as very desirable.

Top rents are paid by traditional retailers on high footfall shopping streets such as Wellington’s Golden Mile, while other businesses have been slow to recognise the importance of their customers who arrive on foot. This diagram shows a Brisbane study that compared how much customers spent at restaurants compared to what the business assumed, and this pattern is repeated in many other studies. k rd

Revenue from public transport users and walkers is more than restaurateurs think.



Yen *et al*, 2015

Community

The impact of walkability on community has significant effects. The ability to easily cross the street in your community can significantly impact on the number of social interactions that occur in a community as Appleyard and more recent studies show (Kingham, 2018).

The presence of a diversity of pedestrians on our streets is another measure of how healthy and walkable our communities are. A Hamilton study (Burdett, 2015) showed that people with disabilities are less likely to find public transport easy to use than non-disable people, and footpaths can be so poorly designed they become a barrier. So people with disabilities may not be out as part of their communities.

Streets often function as the most frequented public space people use, so the ability to sit or shelter from sun or rain, and to linger greatly contribute to walkability. Age friendly design requires these elements (WHO, 2007). These walkability factors need to be measured and targets set.

What is walkability?

Being out on foot is the human way of moving about, it is so natural that it doesn't need conscious thought. In fact, it is so natural that walking is frequently overlooked. The walkability concept is important as a way to focus on the only non-vehicle mode and prevent it being overlooked.

Walkability has no standard accepted definition. Jeff Speck of the Walking Cities movement has a definition that is a useful start (2012). He says 'walkable' has four simultaneous aspects that all need to be present. They are:

- A reason to walk, the mixed use neighbourhood idea where a person can walk to a food shop, a school, a workplace, a park and other activities that occur every day

- Walking needs to be safe and feel safe – safe from vehicle harm, and from criminal harm. Speck is one of the proponents of car parking as a means to protect pedestrians from moving vehicles
- Walking needs to be comfortable
- Walking needs to be interesting, there are a number of measures to determine interest including the active street front.

One of the key principles Speck proposes is that we must think about our own cities and about how to fix places in our cities that are not well designed. This is the idea of observing best practise in other countries and then adapting the useful bits to use in our own places.

Walkability is an important concept if we are to promote the paradigm shift needed towards use of the sustainable transport hierarchy. Pedestrian priority will only be achieved if transport professionals and decision makers use the language of walking. It is impossible to conceive of, never mind achieve, walkability if we do not speak of walking, pedestrians and footpaths.

Every transport decision requires an answer to the question, how does this improve walkability? Walkability is not the preserve of the wealthy or inner city suburbs – it needs to be available everywhere. This puts pedestrians at the front of the line of needs for everyday movement, a key element in a healthy community, and essential to making the sustainable transport hierarchy a reality.

How do we measure walkability and monitor progress?

Walking is more than just a transport means, although most measurement of walking is of the narrow transport function. It plays a part in every aspect of our daily lives and in our interactions within our communities.

There are many data limitations with measuring walkability. Basic safety and crash data for pedestrians isn't robust for New Zealand. Crash and fall data on footpaths is very limited, with only a 2010 study on falls (Thomas and Frith, 2010) and a 2017 review of footpath crash data (NZTA). There appears to be significant underreporting even where motor-vehicles are involved in on-road crashes and a reluctance to involve the police. Footpath surface monitoring is a subjective exercise so many walkability measures of footpaths are not consistently assessed. Good design features such as seating are not measured or targets set. The level of service measures are underdeveloped for pedestrians, for instance pedestrian crossing wait and cross times are dependent on vehicle priorities.

A 2015 review of local authority plans for walking also looked at the performance measures used (Blake and Cheyne, 2015) and recommended a nationwide trial of standardised comparable measures. The International Walking Data Standard (Walk21, 2015) provides a consistent set of metrics for measuring walking that would allow a national set to be developed and performance to be measured against.

Walking is often treated like a vehicle transport mode as a linear journey with narrow purpose and tightly defined criteria to pass as a 'walk trip.' However walking is not only a transport mode, it is human movement that we use all the time to do much of

our daily activity. It is the main recreation of New Zealanders, it is an essential element in community building – places with people out strolling make for a comfortable community, it is a social activity in itself – walking to and from school is the favoured travel for teenagers. For instance, only walks longer than 100 metres or that cross a public road are measured in the Household Travel Survey, and only the journey to work recorded in the Census. This misses those journeys for instance, around supermarkets that have been surveyed as long as a one kilometre walk. We rarely measure these aspects of walking as we should – we are only viewing a small part of walkability. Since we only manage what we measure this is a key area to improve.

Who is walking and who benefits from more walkability?

There are about 4.7 million New Zealanders who are pedestrians everyday (over a lifetime we all achieve pedestrian status), more than any other means of getting around most people are out walking or using a wheelchair. Improvements to walkability will benefit all of us.

Some people walk more than others and it would be valuable to research why they do this, and how to maintain and encourage it in others. Women (Blake, 2017), poorer people, those over 75, children under 16, some people with disabilities, Maori and Pacific, those in urban areas and of course those 10% of New Zealanders without vehicles, all walk more.

Recreational activity is another measure of healthy communities. Walking is the most popular recreation of New Zealanders by a healthy margin at 59% of us taking a walk every week (Sport NZ, 2018). Once again women are much more likely to walk for recreation and running also had about 20% of New Zealanders regularly taking part. However the priorities and funding in the recreation sector are not focused on the popular, high participation women-friendly walking activity, although some organisations do support tramping and running.

This is the briefest view of who is walking in New Zealand. To really make transformative changes we need to delve into the data much more and find out why men don't walk as much, or why the middle-aged reduce their walking. What we do to change this (assuming we want to) requires better evidence. Research depth is required to develop creative responses to increase walking rates, and to make targets to improve walkability.

Our country faces many challenges that improved walkability would help address, including:

- Keeping our ageing population active and part of the community for as long as possible
- Reducing the serious health impacts of physical inactivity, particularly for children and their lifelong activity patterns
- Addressing poor infrastructure injury, and vehicle crash injury, estimated to result in about the same number of pedestrian casualties each.

How do we do it better? Examples from overseas

Using Speck's approach we can look to other countries to inform the fixes we want in our cities and towns. There is no one country or city that stands out as the walkability champion as while issues are similar in different places the priorities are not always the same.

"Society's mistake," argues child-friendly city advocate Tim Gill, "is that our planning systems are geared around cars, housebuilding and the economy – rather than the environment, health and quality of life," all critical to walkability (Gill, xxx). City leaders in particular need to take action, and this brief review of examples show that they can lead the way.

Reasons to walk

- Cities that have focused on children include Tirana, Albania, where the main Skanderbeg Square went from occasionally car free for play space to a permanent closure, and with more streets added to the car free network every year, PM10 air pollutants have declined 15% already. New playgrounds on 40,000 square metres of repurposed space and a city forest of birthday trees are turning children into great advocates for getting out for a walk. ARUP have recently produced guidance on designing for child friendly cities (ARUP, xxx).
- At the other end of the lifecycle Geneva has implemented age-friendly design approaches.

Walking feels safe and is safe

- Vienna, Austria, has for many years had a focus on designing a woman friendly city.
- Sweden has its very successful approach to improving road safety with Vision Zero. The minimum requirement for walkability is a safe place to walk.
- Edinburgh, UK, is banning A boards, or sandwich boards to reduce footpath clutter, important for access for all.
- London, UK, is forging ahead with Ultra Low Emission clean air zones which will improve air quality to meet EU standards. Initiatives include new, tighter exhaust emission standards or pay a daily charge to travel within the zone, combined with lower public transport fares in the zone and green freight delivery and cleaner bus.

Walking needs to be interesting

- In the USA, New York's Times Square transformed this iconic place in 2009 using a trial and then do it approach to remove vehicle access. It was so successful that now issues arise of pedestrian crowding in the Square. This was followed by 49 other New York places becoming pedestrianised.

Walking needs to be comfortable

- Superilles or Superblocks in Barcelona, Spain, create new pedestrian friendly urban units with limited vehicle access. These will gradually spread out across the city and not just confined to wealthier areas. They are larger than a block, but smaller than a neighbourhood and design underscores what is already in existence: public spaces as a common asset; protecting neighbourhoods from through traffic; reducing pollution and accidents; motor-vehicles are limited to service vehicles and residents, and travel at 10km hour; strengthening pedestrian rights and social cohesion. Superblocks also re-naturalise the new public spaces with planted elements (tactical urbanism) and soft (permeable) surfaces. The project does not involve major physical changes, but rather promotes measures that are often low-cost and easy to adapt. Implemented in three neighbourhoods already it is underway in two more, Superilles are flexible enough to adapt as they include more of the city. Some of the goals were to reduce private car use by 21% and reduce the excessive vehicle noise.
- The BMW culture of Seoul, South Korea – or bus metro walk – as Mayor Park Won - Soon of Seoul advocates, is the normal way to get around his city. It has helped reduce carbon emissions and increased sustainable mode travel in Seoul.

What can we learn from these projects? These cities have adapted the best from elsewhere to address the local issues they face. They have done this largely by great city leadership, people who have a vision and then follow through. Many places have significant issues to address and have made targets for action and acceptable levels of service. They use and adapt best practise standards like speed limits, green plantings and park space, seating and pedestrian crossing designs. They have often addressed walkability issues with a low cost experimental approach to find the best solutions.

New Zealand next steps

What initiatives in New Zealand would improve walkability? There aren't any projects on the same scale as these overseas examples. While the priority issues may be different with less focus on air pollution, the health impacts of inactivity and social isolation from road barriers are the same.

1 Leadership

Leadership is the most important factor required to get the changes that our communities want. All of the overseas examples have had a strong and persistent leadership. The draft 2018 Government Policy Statement on Transport (GPS) has shown this government capable of taking decisive steps with some firsts for walkability. There has been a shift in New Zealand towards what is called a multi-modal and mode neutral transport approach as signalled in the GPS. What this means in practise, and how the shift from previous models will occur remains to be seen.

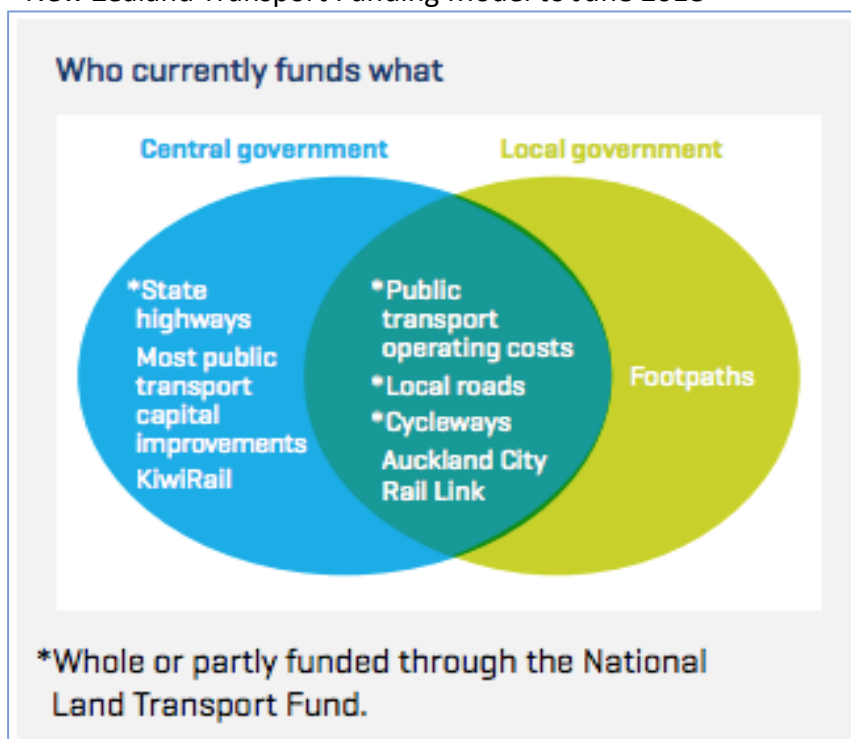
This must be followed through with innovative programmes to promote walkability, development of pedestrian friendly legislation, and use of the standards available. An improved data set that can measure change in walkability indicators and national targets for improvement are needed. There are no programmes to increase walk mode share or targets to improve pedestrian space evident as yet, so it remains to be seen if the changes signalled will lead to improved walkability.

The stand out advance in walkability has been the Auckland Council work on the Business Case for Walking which valued the public realm and space for pedestrians, and counted and valued pedestrian delay at crossings (Auckland Council, *ibid*). This provided robust evidence to show there are economic benefits of a more walkable environment in a New Zealand setting.

2 Funding

Funding at a national level has been a serious shortcoming in previous New Zealand transport policy. Footpaths were the only transport infrastructure to be solely local government funded, despite walking being the most ubiquitous form of transport, and walking was not progressed despite the funding for a walk-cycle activity class.

New Zealand Transport Funding Model to June 2018



Briefing to Incoming Minister, Ministry of Transport 2017 p28

The draft 2018 GPS has now included funding for footpath maintenance for the first time, and there is a 116% increase in the walk – cycle activity class. This activity class still represents only about 3% of the total funding available and how the money will be allocated, what the funding assistance rate will be, and what projects will be funded is still unclear. The footpath maintenance funding is part of the local road maintenance activity class but not explicitly referenced in the GPS. Walkability programmes for funding from the walk – cycle activity class have not been proposed

either, although walkability will also be addressed in the safety initiatives. A bold vision and programmes to use this significant funding shift for walking is essential and would be welcome.

3 Policy, legislation and consistent standards

- **Policy**

The GPS is the national policy to promote walkability but has yet to comprehensively address this despite the new transformative approach. A walkability vision is needed to steer funding allocation, targets, national legislative efforts, local policy, and use of appropriate national standards. An alternative national policy that will help improve walkability will be through development of accessibility legislation.

Many local authorities have produced walking policies and plans but most date from over 10 years ago. These plans need revising to take advantage of the GPS funding expected. Walking can become a more visible part of the transport network but will require robust use of performance measures in policy and plans (Blake and Cheyne, *ibid*).

The recent Cabinet Paper on road safety (MoT 2018) proposes some changes that will significantly improve safety particularly the speed management approach with lower speeds in urban areas. But these on-road safety improvements are not carried through to on-footpath safety improvements. Proposals to take pedestrian space for vehicle users, such as the footpath cycling proposal, have no place in a safety plan. Meta-studies have found no improvement in safety for cyclists on footpaths (Reynolds *et al*, 2009, Grziebeta), and there is very limited study of the loss of safety for pedestrians (Victoria Walks, 2015). One review of New Zealand data shows the serious crash injury from footpath cycling but only up to 2014 (Abley, 2017). The poor quality of evidence to support this proposal for, in effect, shared paths should have seen it removed from the Government agenda.

- **Legislation**

A number of legislative changes are required to redress the imbalance between pedestrians and vehicle users, in rights to use of public road space.

The turning vehicles give way campaign of Living Streets Aotearoa if implemented would see pedestrians having the same rights as vehicle users at uncontrolled intersections. Pedestrians would have right of way to go straight ahead across roads at intersections. The Cabinet proposals however do not go far enough in this direction and propose limitations similar to the USA 'crosswalk' model.

Regulation for road safety should extend to footpath safety, where the focus should be on pedestrian priority on footpaths in the first instance, with vehicle free footpaths mandated nationally, to support such initiatives as the Age-Friendly City (WHO, 2007).

Regulation of vehicle types that are more implicated in on-road safety issues would be useful. Trucks, other heavy vehicles, and SUVs have design issues that should be regulated out in favour of vehicles that are 'blind spot free' and have 'impact kind' designs.

Regulation of recreational vehicles preferably with off-footpath use only, is required. Mobility vehicle use needs review and it would be useful to see these restricted to those with a genuine mobility need, and use of slow vehicle lanes a real option. The exemptions for mail vehicles to use footpaths should be rescinded. The practice of creating permissive national rules that then require local authority consideration and control has not been a good model leading to inconsistent application, and creating a burden for local government with no real benefits.

- **Consistent standards**

A national approach to use of standards for footpaths and pedestrian infrastructure is required to achieve a nationally consistent approach and levels of service. This is particularly important to achieve accessibility across the country. There are three guides or standards for use in New Zealand:

- 1 The NZ Pedestrian Planning and Design Guide (NZPPDG) was developed in 2007 and covers a broad range of activity related to providing for pedestrians. This guide does have a good pedestrian focus and much useful guidance. It has suffered from the lack of national funding for pedestrians, and lack of implementation at a national level. Both of these may soon be addressed
- 2 RTS 14 Guidelines for facilities for blind and vision impaired pedestrians 2015 provides additional much needed guidance for a particular group of pedestrians but has languished in the same way as the NZPPDG
- 3 NZS 4121:2001 Design for access and mobility – buildings and associated facilities.

Many ways to improve walkability relate to urban form and need national consistency so that all areas can be walkable (ie. a footpath in Auckland should look like and be as good as a footpath in Invercargill). Subdivision standards are needed to provide a high design expectation for housing projects. Perhaps density measures would be useful and measures for basic services required including footpaths on both sides of public streets, trees, shade and seats, parks and parklets, meeting space, access to fresh food shops and health and education services. Pedestrian crossing levels of service are required with a national standard maximum wait time to cross an intersection (not merely one leg of it).

Ways to identify issues at a local level and determine local solutions are readily available to supplement the national standards. Living Streets Community Street Review process is one such community led approach (Living Streets Aotearoa,).

Will more walkable communities be our future?

We have definitely turned a corner in New Zealand in the last few months, with a more balanced approach to transport provision apparent. We are seeing leadership taking shape in our transport sector and joined up with other sensible policy areas like housing.

Central funding appears imminent for footpaths for the first time ever and walking projects may now also get central funding. However it may be too early to expect a

vision for walking and the airing of the many issues that have seen a decline in and held this healthy activity back.

We have some national standards and guidance for walkability, there are many best practise ideas from leading countries that we can adapt, and speed management approaches are looking promising in New Zealand with a focus on safety that may include pedestrians.

We need to see nationally consistent measurement of walkability with consistent ambitious targets set. Pedestrian infrastructure must not be traded off against vehicle modes through exemptions and watering down of protections. We need legislation that matches the rhetoric of the sustainable transport hierarchy and that prioritises pedestrians.

There is an urgency in positive action and targets for our most fundamental means of getting around, to provide for our health, to be part of the community, to care for our planet and to undertake our most basic daily economic activities. Being a pedestrian is at the top of our transport hierarchy, and measuring and promoting walkability is the way to make walkable communities a reality. The signs are pointing in the right direction, we've taken the first step, can we keep on the safe, evidence based path to make a more walkable New Zealand.

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Declaration of competing interests

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