Planning for Walking and Cycling in New Zealand

Contents

About the author

Roger Boulter is a transport planner with over 40 years' professional experience.

With an honours degree in Urban and Regional Planning, Roger initially worked in various local planning roles in Birmingham, UK, then became the City Council's first full-time 'Cycling Officer' for five years before migrating to New Zealand in 1995. In Britain he contributed to nationwide cycling policy, including a lead role in a national working party and contributing to several cycling policy documents.

In New Zealand his 2000 *Into The Mainstream* report, culmination of his *NZ Cycling Strategy Foundation Project,* set a strong foundation for government strategy on cycling in the years which followed. He co-authored or contributed to several documents and working parties, and has won several awards, including one international award.

Roger has been a Member or Chartered Member of several urban planning and transport professional bodies. Since 2003, he has worked as a consultant and is now based in Carterton, Wairarapa.

Author's Foreword to the Draft Edition

This book will not tell you how to design a cycleway!

That's because dedicated 'cycling facilities' are not the main way to help cycling. Design, important though it is, is secondary.

The book will tell you why, after over half a century of focusing on 'building cycleways', cycling persistently remains a minor New Zealand form of transport.

Underlying values and motivations behind transport planning need to be faced – and these go back over more than a century. They are still strong today, but have faced influential, and in some ways successful, 'fight-backs'. The Netherlands' flatness isn't the reason it has high cycling levels. New Zealand's hardly flat, yet high cycling levels could happen here.

Although I have lived through, and sometimes contributed to, much of the history recounted here, this book isn't a nostalgic 'memory lane' trip. Part of my reason for writing is the old maxim that those who don't learn from history's mistakes are destined to repeat them.

Attitudes to different forms of transport have changed majorly over the last 20-30 years. A more central place for walking and cycling is not unrealistic in New Zealand.

Walking suffers from a lack of appreciation that it's less about 'getting from A to B' and more about community life. The opportunity to interact face-to-face is the reason cities arose, and the crucial factor in their prosperity. And that won't change even under 'social distancing' to guard against infections, a topical issue at time of writing.

This draft book version lacks footnotes, references, illustrations or graphics (which would be added in a formally published version) and any book can always be improved. Many topics are touched on briefly and could merit further material. I've tried to keep length down – best since this is a general overview and introduction to a topic which has not, to my knowledge, been covered in this way before.

For the same reason, I have focused on some examples when a host of others could have been mentioned. Examples include the Netherlands when much can also be learnt from Denmark, and Jan Gehl (at least he's from Denmark), when many other urban designers have said similar things. I've aimed in the examples I have covered to represent and illustrate the issues we need to face, rather than itemise all relevant detail.

Happy reading!

Roger Boulter

THE ISSUE

Chapter 1

Why plan for walking and cycling?

Professionals used to regard planning for walking and cycling as a huge joke.

Values are sometimes embedded so deeply that we aren't aware of them. Transport planning, and related public discussions around it, has roots which embed priority attention to technical complexity, and to cars over other forms of transport.

I'm not advocating banning or restricting cars. I'm asking us to recognise the strength of the underlying priority given to technological transport, then suggesting a more central priority for walking and cycling, because the human scale is important.

I'm not the first person to raise this. There are historically precedents, with major tangible benefits.

Two particular examples are 1960s New York, and 1970s Netherlands. In both cases, the fruits of reversing the centrality of big-scale provision for cars have given role-model planning outcomes in lifestyle quality, health, economic prosperity, community development and responsible environmental stewardship.

What is good planning?

The test of good urban and transport planning should be how well outcomes work for ordinary people who have to live in with planners' 'solutions'. Never mind technical theory: does it work for people?

By 'people' I mean those other than the professional planners and engineers who play such a large part in defining our towns, cities and transport systems. No matter our technical skills (I'm a professional planner myself), we are accountable to the lay public. In many cases, their taxes or local body rates pay our salaries or fees.

Well-being starts with the individual and their relationship with those closest to them. This inherently gives a geographically localised aspect. That is one reason I am focusing on walking and cycling.

The most local forms of transport

Walking and cycling are the most local of all forms of transport. They bring people into social contact. You see and meet people face-to-face on foot or on a bike, in a way you do less comfortably by public transport, and do not at all by car.

Face-to-face social contact helps build community cohesion (there is a wealth of social science literature on that), and this has other spin-off benefits. Among the latter are crime prevention (natural surveillance, 'eyes on the street'; '*CPTED'* or '*crime prevention through environmental design'*) and economic prosperity (shop owners will tell you that numbers walking past their shop makes a world of difference). Not to mention what urban designers call 'place-making'.

Old ideas are stubborn

Readers may think we have moved away from the thinking of the 1960s, when the primacy given by engineer-planners to the private car was at its most full-blooded, obvious and 'in your face'. We haven't moved as much as we might think.

We have embraced right-sounding words since the 1980s, and in recent years seemingly more holistic transport planning processes, such as *Network Operating Plans/ Frameworks* and the *One Network Road Classification*, but we need to look more deeply than words and planning processes.

Positive moves we have made (since recognising the need for a changed approach) have failed to shift the underlying value that planning for other forms of transport can only take place if travel by car does not suffer too much.

Car users would reap benefits from the approach suggested in this book as much as anyone else would. Roads would flow more freely as other forms of transport are made more attractive.

It has to work for people

It doesn't hold that the more technically advanced something is, the better it is for us. Autonomous vehicles are a current example.

The term 'disruptive' is sometimes used (of autonomous vehicle technology) in a positive sense – implying technology will 'disrupt' our lives but we must still embrace it (like a bitter-tasting medicine). We need to ask whether something delivers benefit for people who have to live with what is suggested – and trust that ordinary people often know what is good for them better than 'experts' do.

I find an un-nerving similarity between today's autonomous vehicles hype and some enthusiastic 1960s talk (which I remember as a child) about how motorway-building was going to deliver light, fresh air, free movement and an exciting future, despite its 'disruptive' nature. We should never implicitly trust a technical expert if we have a hunch that something is not right.

Transport planning's birth, and the push-back

Public transport planning had a heyday in the late 19th and early 20th century, but this was relegated to a residual role by 20th century transport planning. Formative ideas came from the 1930s, followed in the 1950s by analysis of demographic, economic and geographical data in some seminal American studies of major centres. The full flowering of 'classic' transport planning, throughout the developed world, was from this period onwards.

And the counter-reaction also started during the 1950s and 1960s.

Far from bringing improvement, this 'classic' approach devastated lives of whole communities, especially low-income communities.

As well as pointing to generally adverse social and economic effects, this reaction had a strong political and social justice aspect. Areas devastated tended to be where the poorest, and sometimes ethnic minority, people lived, while economic benefits were delivered to parts of cities already better off.

Planning for walking and cycling comes to New Zealand

Interaction on foot was central to the reaction against 'classic' transport planning – even though the latter was not consciously about walking.

Walking is more about community life than about getting from A to B; something maybe hard to grasp with an approach based on analysis of motor traffic flows. Positive planning for walking came to New Zealand, in the 1990s, in the form of dedicated advocacy groups, conferences and professional expertise; before this walking had been seen more as a road safety problem.

Planning for cycling came to New Zealand from Australia in the late 1970s, in the wake of a very influential Victorian Government 'bike plan' of 1977. This set the template for much cycle planning at least until the turn of the 21st century. This approach, however, sought to accommodate cycling, rather than pro-actively plan for it.

The mid-1970s 'oil shocks' (major and sudden increases in imported oil prices), followed by popular 'green' movements, induced Victorian road safety professionals to bring the 'green-minded' cycling advocates into helping steer their 'bike plan').

The limitations of this 'Australian school' became apparent, however, through comparison with the Netherlands. Like in Australia (and New Zealand and other places), the Netherlands had adopted plans for cycle route networks avoiding the busier roads, together with engineering techniques to deliver dedicated engineering in the form of 'cycling facilities'.

Why were the Dutch so successful?

As the years went by, however, questions were asked as to why cycling had become so ubiquitous in the Netherlands (instances of more than half of all journeys in some Dutch cities being by bike) while remaining very much minority transport in countries following the Australian approach (e.g. Australia, New Zealand and Britain); even in places (such as late 1980s Christchurch, New Zealand) where cycle planning initiatives were at their most ambitious.

Early suggestions that "*Holland's flat*" or "*the Dutch have a cycling culture*" were easily debunked by serious analysis (especially since the Dutch had been embracing car-based transport planning just as much as any other country until the late 1960s).

In 1996, after much research, the secret was out that the high Dutch cycling uptake (and much safer cyclist crash and injury record) crucially derived from the Dutch placing their main focus on reducing motor traffic volumes and slowing motor traffic speeds (through various types of practical measure).

Plan for all transport together

The highest cycling levels were delivered by policy approaches which were not, actually, anything to do with 'cycle routes' or 'cycling facilities'! This illustrates a major problem: planning for different forms of transport separately from each other.

We will never make real progress if we aim to meet the needs of the private car by building roads, the needs of public transport users by putting on trains and buses, and the needs of cyclists by building 'cycleways'. All these done at the same time work against each other.

This is also why, despite nearly half a century of official 'green' rhetoric, even our multi-modal or integrated transport planning exercises continue to deliver roads which are clogged with traffic; train and bus services which are crowded, late, and not good enough to become people's preferred transport choice; and dedicated cycling infrastructure not direct or comfortable enough to attract those "*interested but concerned*" people who don't cycle but would like to.

On the right side of history

The last 20 years, though, have seen major changes in public attitudes.

Gradually but steadily, more and more urban space has been turned over from (parked or moving) motor traffic to people on foot (despite land areas devoted to car parking remaining high).

The car is no longer seen as passport to higher status and a better lifestyle; instead it is more likely to be seen as a liability. Some people would rather use a car as a service than actually own (and garage) one.

Public transport is gradually losing its 'loser cruiser' image. Although the humble bus has some way to go in this, some other public transport has a distinctly high status feel, and emphasises comfort, punctuality and quality. Rail use has especially grown, steadily and substantially both internationally and in New Zealand.

Cycling has changed from being seen as for the poor and the nutty to "*the new golf*" for high-status business people. So putting walking and cycling central in transport planning, as I am suggesting, may be 'on the right side of history'.

Walking gets sidelined

The real test of success, however, is how things are for that most localised form of transport, walking. The situation here, in New Zealand just now, is far from pretty.

Although walking and disability advocates continue to lobby, their political power is (so far, at time of writing) tiny compared to that of the cycling lobby, which has attracted ears of senior officials in recent years. This repeats an old truism. When walking and cycling are conflated (as they are in official grouping of 'walking and cycling' together) walking comes to be eclipsed. Cycling is iconic, and walking by comparison is too 'pedestrian' (pun intended).

The years since 2014 have seen a surge of government attention to cycling, including a Cycling Safety Panel, and a doubling of dedicated government money. This bypassed people on foot, for whom there was no dedicated money (other than for paths shared with cyclists). Cycling advocates came to be pitted against walking advocates on turning roadside urban footpaths over to cycleways or 'shared paths', or changing Land Transport Rules to legalise some footpath cycling and 'low-powered vehicles' (e.g. e-scooters) on footpaths.

Footpaths, previously recognised as a safe haven for people on foot – and particularly valued by people with impaired sight or other disabilities – have been opened up to more and more forms of motorised traffic, including 'low-powered vehicles' (e.g. e-scooters) and postal delivery Paxsters. The cumulative effects of several individual additions of 'non-walking' footpath users may not have been fully appreciated.

People do not necessarily use 'low-powered vehicles' instead of driving cars. Data is scarce, but such as there is shows a significant proportion use them instead of walking.

A bigger issue, not substantially covered in analysis in support of footpath cycling or 'low-powered vehicle' footpath use, is whether people are deterred from walking because they feel under threat. If fewer people walk, we have a problem (regardless of crash or injury numbers). Benefits of walking go beyond transport planning and also include place-making, community development, crime prevention, preventive health and economic prosperity.

Our very most vulnerable groups, such as frail elderly or disabled people, may rely more on footpaths than do other groups, and may be more likely to be deterred from walking by fear of being hit. So to the above we could add isolation, loneliness, social exclusion and mental health issues.

Clear criteria, not mediation

Problems always arise when planning for a particular form of transport is turned over to advocates for a sectional interest, because these will necessarily be biased – their role as advocates, consciously or not, excludes them from working impartially in a wider public interest.

We can help avoid these problems by moving away from planning for each form of transport separately, each with its own dedicated budget and programme (even though, for practical reasons, budgets may still be allocated this way).

Planning for one form of transport often – in fact, usually – disadvantages other forms of transport, with which they compete for attention, budget and road space.

We then need to face conscious choices, which should be led by clear and explicit criteria. Otherwise, decisions may come to be governed, even unconsciously, according to the relative 'political' power held by respective lobbies and interests.

Reverse the old-time hierarchy

Attitudes have changed massively since the mid-20th century view of car ownership as the passport to status and improved lifestyle. More likely nowadays, we may see it as something we wish we didn't need – even if it still very much part of day-to-day life.

This may make it more realistic to give walking and cycling a central place in transport planning – as the most localised and people-friendly forms of transport.

This would reverse 1930s thinking and be a win-win for everyone – including almost all of us who currently use cars as our main means of transport (and no doubt will continue to do so).

This reversal has been done before (e.g. Netherlands since the 1970s). Benefits include in areas of lifestyle prosperity, crime deterrence, social cohesion and more.

Chapter 2

The problem: wrong transport planning priorities

Rise of the 'Uebermensch'

Transport planning can only be understood by going back to 19th century German philosophy.

Ideas from this still underpins transport planning, and are behind the reason why, despite half a century of attempts to broaden transport planning, the car stays as central as it always has been.

In the late 19th century the Industrial Revolution spread from Britain to Germany and the United States, which over this period were emerging as globally significant nations. A revived German Empire – the 'Second Reich' – was founded in 1870 (the 'First Reich' had been the Holy Roman Empire).

Prussia had dominated the rise of the Second Reich over the previous century, and had always been militaristic with roots in the mediaeval Crusader Teutonic Knights. Someone said that whereas most countries had an army, in Prussia an army had a country. In the Second Reich, the King of Prussia became German Emperor.

This, together with then-thriving Industrial Revolution, gave the impression that prosperity derived from machine-like processes. This was fertile ground for some innovative thinkers.

Charles Darwin, just before this in Britain, had formulated his theory of evolution, with its suggestion that the natural world's species had 'evolved' without the previously-held-to involvement of a pro-active creator God.

Friedrich Nietzsche in Germany built on the evolution theory by saying humankind was still evolving, and would in time evolve to a higher, improved form of humanity, the "*uebermensch*" or 'super-human'. What is more, he said, we could help hasten this.

So began the science of eugenics, the idea that the human race could be improved. Coupled with the 20th century Nazi idea of a master-race, this led on to attempts to eliminate what were considered inferior forms of humanity, such as Slavs, gypsies and Jews.

Even Charles Darwin had suggested that black Africans were less 'advanced' along an evolutionary scale than were white Europeans.

Darwin had suggested evolution took place through 'survival of the fittest', a struggle in which 'inferior' species lost out to 'superior' forms.

Nietzsche wrote up his philosophy in a book, "*Thus Spake Zarathustra*". Zarathustra was an Iranian sun-god (also called "*Zoroaster*"), and Nietzsche likened his idea of the human race's 'advancement' to the imagery of the rising of this powerful sun-god.

So popular was Nietzsche's book that Richard Strauss wrote music with the same title, also intended to evoke the idea of the rising of a powerful sun. This music was used in the influential 1968 film *2001: A Space Odyssey*, based on Nietzsche's original idea (the film's plot ends with one character, an astronaut, being morphed into the more 'advanced' 'star-child' and returning to earth).

Nietzsche's idea of advancement through force of strength and pro-active purpose – an 'industrial-strength' version of Darwin's survival of the fittest – also influenced 20th century transport planning.

The car, advancement, 'autobahns' and hierarchies

The internal combustion engine, invented near the end of the 19th century, seemed just the sort of advancement which, Nietzschean-style, should be encouraged.

The idea that 'more advanced' transport should have its own priority provision led to invention of the first motorways, "*autobahns*", planned under the 1920s Weimar Republic and built under the 1930s Third Reich.

Also at this time and for the same reason, the first 'cycleways' were to take cyclists off the roads. These paths tended to be poorly designed – as befitted 'inferior' transport – and were vigorously opposed by cyclists as diminishing their rights.

'Separated' cycleway infrastructure is not a recent ' advance' in cycling provision. On the contrary, the same infrastructure type aimed to get cyclists out of the way of motor traffic in the 1930s.

Max Weber, another 19th century German perhaps best known for his work on origins of capitalism (from Presbyterian/ Calvinist Protestant theology) is also known for theories of social organisation.

Key to the Second Reich's rise was the army, and organisational form was key to this army's success. Ranks and accountabilities were clearly defined. A commander decided, gave an order, and everyone carried it out without discussion or dissent. Prussia's war successes showed how well this worked.

Weber applied lessons from the military to government organisation, and could be credited with inventing 'bureaucracy' (Greek for 'rule by an office'): ranks, lines of command, and a senior staffer's orders carried out by others.

This concept was also applied to manufacturing, resulting in assembly lines. Rather than a craftsman applying skill to a whole product, each worker carried out one task, narrowed to one part of a bigger process, less personally satisfying and perhaps less creative but (so it was argued) efficient in turning out mass volumes of product. So Weberian organisation seemed to work.

Combined with the Nietzschean-derived idea that the motor car was more advanced and superior to other transport, and the thinking behind the 'motorway' concept (only for motor vehicles) Weberian thinking gave us the very influential transport planning concept of the 'road hierarchy'.

The 'road hierarchy': separating through traffic from local access

In a road hierarchy different functions are assigned to different roads to give more efficient movement overall – just like an assembly line gives efficient manufacturing.

This concept was applied in pioneering 1950s work in Chicago and other American centres which set in place 'classic' transport planning's basic concepts.

In a classic road hierarchy, traffic movement is separated from access to roadside property.

Roads defined as for through traffic ('arterial' roads) should have no direct access to roadside property – no driveways, and also no on-road parking.

A purely local-access road, theoretically, would have no through traffic, and this would literally be true for a cul-de-sac. The 'purest' no-property-access road would be a motorway, accessed only from other roads.

Classic transport planning aims to bring existing network roads into conformity with the place assigned them in the hierarchy. This may be achieved through infrastructure changes, land use development controls and access regulations.

Roads with these two functions will be linked with each other through 'collector' or 'distributor' roads.

In the 1950s the car was minority transport, but transport planning focused around mass motor vehicle movement, anticipating that cars would become more widely available – and of course this has happened.

The 1920s German 'autobahn' concept fitted well with a road hierarchy, forming its top level, only for through-traffic.

Today's New Zealand Resource Management Act District Plans generally include a road hierarchy, with tighter control on access to the arterial roads.

Chicago, mass data analysis, and 'safety'

Integral to classic 1950s Chicago transport planning were various types of statistical data: demographic (household structures, income levels, likely car ownership and car use rates), economic (businesses and where located, numbers employed) and other.

Rather than ideas, or imagined concepts of a future city (such as, for example, Ebenezer Howard's early 1900s '*Garden City*' idea) aggregated mass data was central to this transport planning which (so the theory went) would deliver safe and efficient traffic movement across a whole urban area.

This approach also anticipated new development areas (provided for through town planning land use 'zones') and a hierarchy-based road network to serve it.

Apart from efficiency of movement (any forecast impending congestion would be headed off by road widening or building), minimising arterial side turnings, driveways and on-street car parking would (so the theory went) minimise crashes.

So in theory a motorway was perfectly 'safe' for pedestrians and cyclist crashes – because pedestrians and cyclists were not allowed on it.

This approach did, however, restricting pedestrian movement – and later this led businesses and residents to oppose it.

Classic 'four-stage traffic modelling'

Forecasting where mass car volumes would go – on which roads, in which numbers – was complex.

Classic 'traffic modelling' was a four-stage process, estimating where traffic demand would come from (for this, urban areas were divided into geographical 'cells', typically about one kilometre square); where it would go; a 'modal choice' phase recognising that some would use public transport (generally bus); and finally a stage to give specific traffic forecasts for specific roads.

Computers, essential for such complex data, were clunky in the 1950s, but these became steadily more sophisticated as this '*rational comprehensive'* form of transport planning continued through and beyond the 1970s.

'Multi-modal' or 'integrated' transport planning

Estimating public transport use under the 'modal choice' phase was at first simplistic, and only in the 1980s achieved sophistication in the then-innovative "*integrated*" or "*multi-modal*" transport studies.

Originally, a fixed proportion of people were assumed as likely to travel by bus, and this reduced road traffic demand estimates.

A different agency was often responsible for bus service planning than for roads. Public transport (until '*integrated*' or '*multi-modal*' transport studies, see chapter 7) tended to be seen as a social service for lower-income sectors, '*housewives'* or children, rather than anything to actively plan for.

Build roads out of the problems

Road building programmes were then based on forecasts of congestion likely on specific roads (based on assumptions that traffic would continue to steadily grow). Different road-building scenarios were tested according to a model to identify whether they might successfully mitigate forecast congestion.

Data used tended not to cover public transport, walking or cycling. Cycling, still common in the 1950s, was assumed to be in decline, and in any case roads were assumed to be quite adequate for any cycling demand.

There was no thought that planning should encourage cycling to grow, because no benefits were seen from cycling over driving. Cycling was seen more likely to be a road safety problem, and a potential hindrance to motor traffic movement efficiency.

'Separated' cycleways: born to help the car

The 'separated' cycleway concept originated to get cyclists off the roads so motor traffic could flow more freely, safely and efficiently. It was not primarily to benefit cyclists.

The New Zealand focus on 'separated' cycleway infrastructure since 2014 (see chapter 6) may have led to increasing calls for cyclists to get off roadways. This is consistent with the original motivation behind the concept, so is logical, and in 2014 I did warn that this would likely happen. Although evidence is anecdotal, some 'road rage' attacks questioning cyclists' rights to be on the road may be a sign of this. It may increase further if current suggestions to legalise roadside footpath cycling are followed through in legislation (see chapter 11).

During the 1930s cycling and walking came to be called 'slow modes', and the term is still sometimes heard today, again implying motor traffic is more 'advanced' than cycling. It shows cycling

negatively, and may not always be true. Some urban journeys have been known to be faster by bike than by driving.

Walking and buses?

With geographical 'cells' used in traffic modelling (see above) being about a kilometre square, much walking was not detected in traffic modelling data (because many walking trips would less than a kilometre long and within a 'cell'). Classic transport planning texts such as the 1963 UK government's *Traffic in Towns* report do see walking very positively, but as a lifestyle amenity rather than transport. Just as for cyclists, classic theory proposed walkers should be segregated from motor traffic on busier roads.

Buses, by classic theory, were to use the 'collector' or 'distributor' roads which linked 'arterial' roads with 'local' access roads.

In reality, to serve public needs well public transport needs a range of different types of service, as complex as the arterial/ local road distinction on a road hierarchy. Public transport viability also largely depends on right of way given it in relation to car traffic (e.g. rail lines, tram lines and bus lanes), and (if taking roadway space is involved) this may conflict with classic road hierarchy theory's aim to move mass volumes of car traffic as efficiently as possible. Keeping public transport to 'collector' or 'distributor' roads, which gives neither direct access nor geographical penetration, would hinder it from reaching its full potential (see chapter 7).

The vanishing 'saturation point', and 'induced traffic'

Classic transport planning relies on there being a 'saturation point', when all demand for car use is satisfied.

Theory was that providing arterial roads forecast as needed would let traffic flow freely – permanently into the future – which would keep to the arterial roads for most movement.

The UK government's 1963 *Traffic in Towns* report, influential in New Zealand, assumed car ownership and use would rise steeply and then level off in the early 1990s, by which time "*everyone who wants a car will have one*" at "*about one car per household*".

By the late 1980s this 'saturation point' showed no sign of approaching. Instead, car growth continued to rise as vigorously as ever.

Intense debate about traffic modelling's complexities – such as the extent to which traffic growth on particular roads transferred to other roads or was new altogether – ebbed and flowed through the late 1980s. Finally by 1994 it had been clearly established that road building not only meets demand, but in some cases fuels further demand – that is, people make car trips they would not have made had the extra roads not been there.

Despite this finding, New Zealand's forecasts of new road journey time savings still take little account of extra traffic generated by the new road itself. This means forecast journey time savings may fail to materialise, and in some cases congestion may worsen as other traffic diverts onto the new road from elsewhere. 'Post-implementation reviews' may reveal this, but lessons may not be taken on board for future project evaluation (and in any case, by then the road has been built).

'Corridors', 'rooms' 'environmental areas' and the counter-reaction

The classic theoretical road pattern has sometimes been called "*corridors and rooms*": travel across an urban area by "*corridors*" (the arterial roads) to give access to "*rooms*" (e.g. residential areas theoretically relieved of through traffic). The 1963 *Traffic in Towns* report used the term "*environmental areas*" to define the "*rooms*" thus freed from through traffic.

Not only did traffic growth fail to stabilise at a 1990s 'saturation point', but people did not wanted to live and work in a "*corridors and rooms*" type city.

The classic solution to a 'high street' shopping centre was a bypass, where through traffic would be away from local activity, freeing up the bypassed shopping centre for access movement (including on foot, and the parking of cars). Retailers, however, wanted to catch through traffic 'passing trade'.

For nearby residents, the bypass road would cut them off from each other and the town centre.

Arterial road planners have sometimes complained that regulatory land use planners have allowed 'ribbon development' – direct property access – on arterial roads. The regulatory planners here, however, are trying to stem property development demand which may prove irresistible.

Jane Jacobs versus Robert Moses in New York

The fight-back against classic transport planning started in New York, then spread throughout the developed world.

A long-running battle of ideas, from the 1950s for well over a decade, pitted transport planning supremo Robert Moses against Jane Jacobs, whom Moses scathingly called a "*housewife*".

Not only transport planning theory but also social attitudes were being challenged. Professional people at this time were invariably male and of some social status. Women were expected to look after husband and children at home, and not bother themselves with matters such as how a city was planned. Jane Jacobs, however, wife of an architect and already writing in architectural journals, was an articulate champion.

In 1962 Jacobs published her seminal book "*The Death and Life of Great American Cities*". The odd title meant that urban areas which classic theory considered 'dead' actually had a lot of 'life'.

Jacobs meant social networks and relationships between people. New roads which swept away 'substandard' older housing areas seemed to benefit people living in the better-off suburbs (where often the transport planners themselves lived). Areas devastated by transport planners tended to be home to disadvantaged and ethnic minority people. Marxists saw a 'class struggle' aspect in this.

The New York Times has called Jacobs' book "*the most influential book on town planning ever written*", and it probably is. Jacobs' publishers sent a copy to Robert Moses, who returned it with a note saying to "*sell this junk to someone else"*.

In time, though, the verdict of history – at least among urban planners, perhaps not so much among traffic engineers – was that Jacobs was right and classic theory failed to relate to real people.

By the 1970s Jacobs' ideas had worked their way into planning orthodoxy, as the '*communicative'* theory of planning. Listening to people was central, with '*public participation'* a key concept.

The challenge to numerate science

Town planning (led by professional urban planners) and transport planning (largely led by professional traffic engineers) then diverged from the 1970s onwards.

Town planning had arisen from visionary ideas such as the '*garden city'*, theoretically combining the best of town life with the best of rural life. Transport planning, in contrast, had derived from engineering, technical science, and statistical data analysis. By the 1950s and 1960s these had merged, with many individuals (such as Colin Buchanan, lead author of *Traffic in Towns*) fully qualified in both types of profession.

In New Zealand today, typically urban planners will plan District Plans and process resource consents; while traffic engineers will cover transport planning, sometimes effectively as an extension to modelling and analysis of technical data.

'Communicative planning' had taken root more among urban planners. Maybe this is because of the heritage of reasoning based around concepts and ideas (such as Ebenezer Howard's early 20th garden city concept). Contribution of ideas from 'lay' (non-technical-professional) people may be difficult to integrate with analysis of technical data with its implication of being 'objective'. This thinking could dismiss 'lay' contributions as 'subjective opinion' and without substance (see chapter 11 for a modern example).

Transport planning in today's New Zealand

Transport planning (or traffic engineering) in New Zealand local Councils, especially smaller ones unable to directly employ a wider range of skills, typically focuses on administration of roading investment programmes and road asset management.

Public transport may be planned separately from either land use or road planning, generally by Regional rather than City or District Councils.

Planning for cycling may be by planners, engineers, or those from neither professional background. In the last few years in New Zealand, engineers seem to have been in the ascendancy (although this wasn't always the case).

Planning for walking has sometimes found a focus with a 'Road Safety Co-ordinator'. Sometimes walking has not been actively planned for at all, relying instead on promotional initiatives such as the annual '*Movin' March'* promotion for school-children. Road Safety Co-ordinators, now widespread at local government level, arose from the pioneering work of the first one, Christchurch's Susan Cambridge, during the innovative 'Mike Gadd years' outlined in chapter 5. Road Safety Co-ordinator positions often give considerable scope for creativity (e.g. the '*Don't Burst My Bubble*' campaign, a best practice example in the 2005 National Walking and Cycling Strategy, was invented by a Road Safety Co-ordinator).

Dialogue across professions

Other fight-backs have been led by professional movements such as 'urban design' and 'new urbanism'. Although they may find support from some professionals (notably architects and landscape architects), they may struggle to influence classic transport planning. Apart from the

problems outlined above, another is that funding may still be allocated and administered by professionals using the classic approaches (see chapter 4).

This generalises, and people vary in how much they fit generalised descriptions. An inter-professional disjoint (e.g. between architects and traffic engineers) still remains a problem, although some professionals are also open and actively want to learn from other's approaches, for example through the inter-professional *Urban Design Forum* and Engineering New Zealand's *Transportation Group* (which includes professions other than engineers).

More recently, concepts such as 'link and place' and the official '*One Network Road Classification'*, '*Network Operating Plans'* and '*Network Operating Frameworks'* in theory bridge the gap between the different approaches (and different forms of transport network; see chapter 7).

The difference between New Zealand and the Netherlands, with the latter's very high cycling levels and 'walk-friendly' environments has much to do with the classic approach having been reversed in the Netherlands.

THE BACKGROUND

Chapter 3

The Dutch and the Australians

From Australia: *Melbourne and road safety*

Planning for cycling in New Zealand came from Australia.

Melbourne has historically pioneered much road safety thinking. The State of Victoria, Melbourne's state, in the late 1980s gave us the influential "*three E's*" road safety template, "*engineering, education and enforcement".*

The mid-1970s 'oil shocks' and emergence of cycling lobbyists

In the mid-1970s some Middle Eastern oil-producing nations flexed economic muscle over the price of oil. Within a short time, the oil price rose substantially and quickly up in 'Western' nations.

This came at the time of rising concern about environmental effects of high-consumption developed world lifestyles.

The so-called 'oil shocks' added concern that natural resources, such as oil, might be more finite than previously assumed. The 1972 inter-governmental *Club of Rome* report *The Limits to Growth* echoed this.

Fledgling environmental lobby group *Friends of the Earth* and its offshoots, including cycling advocacy groups, saw cycling as part of the solution to these concerns.

The new cycling advocacy groups were very different from the old early 20th century social and recreational cycling clubs. They had a quasi-evangelistic mission, and were often independent and incisive thinkers (university lecturers were not uncommon). They often responded to an official 'no' with another well-reasoned question.

The State of Victoria co-opted such groups into their road safety work, and in this way embraced growing public interest in possibilities cycling represented.

The "Four E's" and the 1977 Geelong Bike Plan

To the road safety "*three E's*" was added a fourth "*E*", "*encouragement*", at the behest of cycling advocates on the steering committee of the pioneering 1977 *Geelong Bike Plan*, for an urban community on the edge of Greater Melbourne. This was the model for the same approach across Greater Melbourne, then the whole of Victoria State.

In 1977 many school children cycled to school, so the Geelong Plan largely focused on child cycling. 90% of Geelong cyclists were under 18 years old, and most of those under 15.

The Geelong Plan's "*education*" component seemed to talk down to cyclists as children, telling them to behave themselves on the road.

The Geelong Plan sought to adapt the road network. An important principle was that "*Every street is a cycle street. Bicycles are ridden everywhere*". Adaptations tended to be on the busier roads (where most cyclists were).

Measures included attention to drainage grates (so that their slots do not trap bike wheels, and are flush with the road surface); road surface maintenance in key places used by cyclists (e.g. close to the kerb); sweeping regimes; removal of 'pinch points' (which might force cyclists into the path of motor traffic); new paths through parkland; refuge islands in the middle of roads (to protect right-turning cyclists); signalised crossings capable of detecting cyclists; marked cycle lanes on busier roads (or reduced traffic volumes and speeds); and in some areas with high cyclist numbers (such as near schools) reduction to a 40 km/h speed limit (or closing some streets to motorised through traffic).

Greater Melbourne's 'Principal' Cycle Route Network

The Geelong Plan was followed by a bigger plan for Greater Melbourne, in which the term "*Principal*" Cycle Route Network was used. 'Principal' recognised that, again, cyclists may be expected on any street, and not only on streets described as 'cycle routes'.

And so began the 'parallel' cycle route concept, for many years an orthodoxy, although later discarded in favour of routes along main roads. Christchurch, New Zealand, in recent years has returned to this concept in its 'Major Cycle Routes' project (see an outline of Christchurch activity at the end of chapter 6).

'Little' issues for drivers, big issues for cyclists

Many measures outlined in the Geelong Plan might have seemed 'minor' when planning for motor vehicles, but were important for cyclists (e.g. a drainage grate with parallel slots, efficient for water flow, which could throw a cyclist off their bike). Many may not have occurred to public officials, had there not been cyclists on the steering group who experienced these problems first-hand (underlining the importance of *'communicative planning'*, listening to those affected, see chapter 2).

Although the Geelong Plan did suggest slowing motor traffic speeds (as an alternative to marking on-road cycle lanes) it did not explore how this might be achieved.

There will have been legal speed limit reductions for some particular roads, but not on a widespread scale. To do that would have significantly reduced the road system's capability to deliver efficient motor traffic movement.

Are 'parallel' cycle routes a win-win?

In Greater Melbourne's 'Principal' cycle route network (and in other urban cycle route networks adopted in Australian, New Zealand and British cities) it seemed that the 'parallel' cycle route concept was a 'win-win' for both car and bike movement. A cycle route along quieter roads, away from busier roads, could (so it seemed) give cycling accessibility at low-cost (just a few minor adaptations) whilst making arterial roads more efficient for motor traffic by diverting cyclists.

Underwhelming outcomes

By the mid-1990s the 'parallel' routes (or 'back street' routes) had been found incapable of providing a level of service good enough to attract significant cycling numbers. Reasons included directness ('back street' routes may involve detours), give-way requirements, change of direction, inadequate roadway width and on-street car parking.

The concluding 1995 *Cycle Routes* report to the UK government's long-running *Cycle Routes Demonstration Programme* found that the 'parallel' routes had induced some existing cyclists to change their journeys from arterial roads to the new parallel routes, but had failed to attract significant numbers of new cyclists.

Neither did the ostensibly 'safer' parallel routes significantly reduce crashes or injuries. Ironically, despite higher traffic volumes, arterial roads have cycling safety advantages. These included less on-street car parking, less side turnings, and less give-way requirements. Other parallel-based cycle route network plans gave similarly disappointing results. Another consideration was that significant detours (more than about 10%) would not attract cyclists, even if away from main roads.

Educate motorists? Encourage cyclists?

The "*education*" component of the Geelong Bike Plan's "*four E's*" was defined as "*To train cyclists to ride more safety*".

Motorist education is not mentioned – implying cyclists are responsible for their own safety, and that there is no need for motorists to take particular extra care in relation to cyclists; although "*enforcement*" is defined as "*To improve road behaviour of motor vehicle drivers and cyclists*".

The definition of "*encouragement*", the extra "*E*" added at cycling advocates' behest, is worded very carefully, maybe the outcome of compromises after intense argument (it does read as if 'written by committee'): "*To promote awareness of improved facilities, safety, education and enforcement programs and the benefits of cycling"*.

Most significantly – it does not say that cycling itself should be encouraged!

Although the steering group cycling advocates would have been keen to encourage more cycling for its various benefits, at this time in history cycling's nowadays-clear environmental and health benefits had not been quantified (at least, not in respected academic or professional literature).

"Cycling is dangerous!" and the 'safety in numbers' effect

With cyclists represented significantly in crash and injury statistics, a prevailing official road safety view at this time was that "*cycling is dangerous!"* Encouraging more cycling, it was considered, would simply push up cyclist crash and injury levels.

This "*cycling is dangerous!"* view prevailed until about the turn of the 21st century in New Zealand. It has since largely been discarded because of two types of finding: the 'safety in numbers effect', and the discovery that cycling's health benefits are very much bigger than ever imagined in 1977.

Statistics had also been gathered on a misleading basis, citing absolute totals without regard to numbers cycling or time cyclists were exposed to traffic danger (which, if taken into account, showed cycling to be less dangerous than it had seemed).

Many statistical studies from the late 1980s and through the 1990s have suggested the crash rate per cyclist reduces the more cycling takes place.

At first, New Zealand road safety professionals did not believe this, and reasons were suggested as to why this could not be true in New Zealand; such as "*New Zealand is different*" and "*We have a different driving and cycling culture"*.

But then New Zealand data also showed the same phenomenon, notably Kerry Wood's ground-breaking Lincoln University Master's thesis *Bicycle Crashes in New Zealand* (2000). This compared different New Zealand cities with each other, and found the same correlation between higher cycling numbers and a lower per-cyclist crash rate. Eventually road safety officials conceded that a 'safety in numbers effect' did exist. The radical implication for road safety practice was that increasing cyclist numbers would likely mean individual cyclists would be less likely to have an injury crash.

The reason for this correlation is less clear than that the correlation exists. One explanation may be that motorists are more used to seeing cyclists on the roads, so take more care around them. Another may be that cyclists where there is more cycling may be more experienced, and thus better skilled among motor traffic. Whatever the reason, the correlation is now beyond doubt.

Mayer Hillman and massive health benefits

Medical professionals also tended to see cycling as dangerous (maybe not surprising, since they treated the victims).

In 1991 Mayer Hillman, a London-based researcher already with a distinguished career in social aspects of transport (amongst other things), was commissioned by the British Medical Association (BMA) to prepare a study on cycling's safety and health aspects.

Hillman had a battle to get the BMA to allow him to publish what he had found. Preventive health benefits majorly outweighed likelihood of road safety trauma – at a time when health professionals were far more aware of the latter.

Hillman failed to get permission to include in his final report "*Cycling: Towards Health and Safety*" (1992) the statistic for which, ironically, it is best known.

Years added to a life through regular cycling, Hillman found, outweighed the statistical risk of years lost through the likelihood of being killed on the roads by a factor of twenty to one, under conditions prevailing at the time of his study.

Hillman published this figure in a conference paper later the same year. Although widely mis-quoted as cycling's benefits outweighing cycling's risks by a factor of twenty to one (and also mis-cited as being from the "*Cycling: Towards Health and Safety*" study itself), the message is clear: the health benefits of cycling are not just bigger than the risks, but massively so.

At New Zealand's 2000 cycling conference *Making Cycling Viable*, Hillman (appearing by live video; he refuses to fly long-haul for environmental reasons) stressed this ratio was conditional on the 1992 state of Britain's roads, and that safety improvements could widen the ratio gap still further.

***From The Netherlands**: a different approach*

Australia, New Zealand and Britain all substantially followed the Geelong Bike Plan approach. In the Netherlands cycling engineering ('cycle facilities') was similar but underpinned by radical 1960s and early 1970s changes in transport planning's fundamentals.

These changes in Dutch thinking were as fundamental as those prompted by Jane Jacobs' New York work. The end results include the Netherlands' now-legendary cycling culture and high cycling numbers.

By the 1990s questions were being asked as to why; prompted by cycling stubbornly remaining very much a minority transport choice in 'the Geelong countries'.

Stop killing our children!

The late 1960s Dutch *Stop de Kindermoord* ("*Stop children's deaths"*) campaign was more personally harrowing than Jane Jacobs' work – about their own children's lives.

1960s Netherlands had been building big roads and driving more cars as much as in other developed countries (see chapter 2 on theory behind this). *Stop de Kindermoord* directly blamed rising child death numbers on rising car numbers.

Whereas what Jane Jacobs wanted was clear – to stop certain specific roads being built – it was less clear how to reduce car numbers (without damaging the economy). This meant the response was more diverse in its practical expressions.

The "woonerf" concept ('living yard')

One response was the '*woonerf*, meaning 'living yard', typically applied to local roads (not arterials). Different road users (motor vehicles, people on foot, cyclists) all share the same space – reversing the classic principle (see chapter 2) that people on foot should be separated from motor traffic. Instead motor traffic was required to 'behave itself' as a guest in a space (visually and legally) 'belonging' to people on foot. The street space was designed for walking and cycling rather than for driving.

What was radical about this was that the onus was on car traffic to change its behaviour, rather than people on foot or bikes being expected to change theirs.

The *woonerf*, since its invention in 1970, has had a wealth of international variants. Although diluted in some cases (such as British '*traffic calming'* and New Zealand '*local area traffic management'*), every so often the basic *woonerf* concept pops up again in varying forms of full-bloodedness, under such names as '*complete streets',' home zones',' healthy streets'* and more.

Road network 'filtered permeability'

Stop de Kindermoord also changed how road networks were configured.

For cars, the conventional road hierarchy applied, with the local-collector-arterial-collector-local road progression being by its nature indirect. For walking, cycling and public transport, however, journeys were to be direct and connected.

New settlements built after *Stop de Kindermoord* came to be designed following this new theory, called 'filtered permeability'.

Easier than to drive

The far more direct journey by foot or cycling compared to driving played a significant part in a shift from driving to these forms of transport. The well-known popularity of cycling in the Netherlands was an outcome.

Public transport was also given priority attention. For longer public transport journeys, the journey experience quality tended to be higher than the rather unattractive (or unavailable) typical New Zealand public transport.

Filtered permeability principles were implemented not just in new developments, but also retrofitted in older urban areas. An example would be a road closed to cars, but with a gap for cyclists. With a conscious filtered permeability plan, this can be implemented across a whole urban area (keeping a conventional road hierarchy for motor traffic). The incentive to choose to walk or cycle, rather than drive, may then become considerable.

The Dutch also had cycle route network plans and cycling facility designs (just the 'Geelong countries' had), and classic Dutch templates (such as the Delft cycle route network plan) followed the same 'parallel route' approach as in Australian practice.

However, overall Dutch priorities meant that the 'parallel routes' provided were direct, and provided on a high density (e.g. every few hundred metres or so).

In Netherlands practice, cycle route network plans and cycling facilities were set in a context already likely to deliver increases in numbers of people cycling. In contrast, in the 'Geelong countries' (including New Zealand) reliance was placed on those cycle route network plans and cycling facility designs to deliver that increase (which, on their own, they could not do).

Swimming against the tide: Brits get envious

So in the 'Geelong countries', planning for cycling has been swimming against the tide of broader transport planning – whereas in the Netherlands it has been swimming with it.

In Britain, which had had a Government *Cycle Routes Demonstration Programme* through the 1980s implementing experimental schemes in several UK cities, Dutch high cycling numbers were embarrassing compared to an underwhelming British outcome, despite many parallel cycle routes and cycling facility trial schemes throughout the country (see above).

Explanations sometimes used in New Zealand, such as "*Dutch cities are older and of higher density, with road layouts predating the car, so of course that's more conducive to cycling",* failed to take into account that newer Dutch settlements had high cycling levels too.

British explanations included "*but Holland's flat"*, or less plausibly "*people are put off cycling in Britain because it rains*". The latter ignored that rain falls in the Netherlands too, and incredibly it took a serious professional study (Mynors and Savill, early 1990s, comparing rainfall and cycling levels between countries) to debunk that.

By the early 1990s, the difference between Dutch and British cycling levels had become so pronounced and long-standing that policy makers wanted to go beyond knee-jerk 'explanations', and undertake serious research.

David Davies, a transport planner who, after leading cycle planning work at a local authority, by the early 1990s worked for a consultancy, also had strong links with both academia and the cycling advocacy sector. He had made the news media by undertaking Britain's first-ever doctorate research into local authority cycling policies. Going on from this to make a well-respected career in professional research, Davies was a key driving force behind the initiation and execution of the very significant study *'Cycle Friendly Infrastructure: Guidelines for Planning and Design'* (1996).

'Cycle Friendly Infrastructure: Guidelines for Planning and Design', 1996

This study was notable for the widespread collaboration behind it. Those supporting, endorsing and/ or funding the study included the cycling advocacy sector, cycle planning technical experts (by this time significant expertise had built up based around the international *VeloCity* conferences and other networks), the Bicycle Association (industry body), the Ministry of Transport, and Institution of Highways and Transportation. This helped give the study strength and robustness, and may have at least partly accounted for its widespread international recognition.

Reducing motor traffic volumes and speeds are key to more cycling

Cycle Friendly Infrastructure: Guidelines for Planning and Design was a planning rather than a technical guide, road design illustrations being at the level of schematic sketches without dimensions. It is notable for the radical finding that the most important measures which will raise cycling levels, while keeping crashes and injuries low, were firstly reducing motor traffic volumes, and secondly reducing motor traffic speeds.

On-road cycle lanes and off-road cycle paths – measures up until then thought of as 'obviously' the best way to help cycling – were found to the least important.

This reverses a previous hierarchy of approaches. Before this study, planning for cycling had tended to be seen as building "*cycling facilities*" (an idea which has persistently continued in more recent years in some quarters). Yet Davies's study was clear in rejecting "*the cycling facilities approach*". Cycling facilities weren't wrong, just not the first things to consider.

Meanwhile, the UK Government's *Cycle Routes Demonstration Programme* (concluded with a *Cycle Routes* final report in 1995), had found that the exhaustively monitored cycle route planning and infrastructure trials through the 1980s and early 1990s made very little difference to cycling uptake, or to cyclist crash or injury rates. Some existing cyclists switched to the new advisory cycle routes, but few new people started cycling (see above).

Although some sceptics said this showed it was a waste of time and money to try to revive a 'dying' form of transport, others concluded that more fundamental changes were needed in wider transport planning.

What about those who don't cycle now?

Still others, notably John Grimshaw's *Sustrans* body ("*sustainable transport*") pointed out (quite rightly) that the cycling advocates pushing for the Government's trial cycle routes were cyclists already, and therefore not uncomfortable cycling amongst motor traffic.

Grimshaw aimed to get new people cycling, who would only be attracted by a traffic-free environment.

Britain had a particularly dense network of former railway formations, closed in major cuts in the 1960s, and Grimshaw aimed to convert these to flat, wide, direct motor-traffic-free routes for cycling, as well as other non-motorised users such as walkers and horse riders.

The concern to attract people deterred from cycling by motor traffic has seen a New Zealand resurgence in recent years, based around a population categorisation by Portland's Roger Geller. By this, Geller's very large "*interested but concerned"* population segment of would-be potential cyclists broadly corresponds to those Grimshaw was trying to attract from the 1980s onwards.

Arguments about the balance of whether to train cyclists (children or adults) to cope with road traffic, or to provide traffic-free separated "*cycling facilities"* or other dedicated infrastructure, has run and run ever since this time. This debate is outlined Appendix 1 (and also see chapter 11).

One lesson is clear from all this. 'Building cycleways' does not increase the amount of cycling – and neither, often, does it make cycling safer. But making cycling more attractive than driving, in the ways the Dutch have done as outlined above, achieves both.

Chapter 4

From Jaywalking to Jan Gehl

"Pedestrians, take care!" – only since cars

The term "*jaywalking*" was coined in 1930s USA – referring to a country bumpkin unaccustomed to city motor traffic. This was when classic transport planning ideas were beginning to emerge in Chicago (see chapter 2).

"*Jaywalking*" could mean crossing the road anywhere other than at marked pedestrian crossings – which actually is no crime.

Walking all over a roadway had been normal behaviour. Old urban film footage will confirm this. There simply weren't that many motor vehicles around.

The idea that pedestrians need to take special care crossing roads is relatively new; and only necessary as motor traffic volumes have rose since the 1930s.

Pedestrian freedom to roam across roadways gradually came to be limited, seemingly without any sense this could be of any concern.

Protect peace and quiet

Walking had been simply part of life, and taken for granted – until the 1960s. The UK Government's 1963 *Traffic in Towns* report (see chapter 2) didn't just talk about motorways. It also saw the aim of transport planning as to preserve residential areas' peace and quiet. It saw the measure of success, indeed the aim of transport planning, as the freedom to walk around residential neighbourhoods.

Traffic in Towns warned that unless something radical were done, living areas' lifestyle quality would be devastated. The future envisaged (and proposed) was that "*environmental areas*" (surrounded by motorways to remove through traffic) would be largely traffic-free.

Jaywalking something to commend?

The Dutch *Stop de Kindermoord* campaign saw walking positively. Indeed the "*woonerf*" (see chapter 3) seemed to positively commend "*jaywalking*".

In many other countries walking tended to remain a 'road safety problem' in official eyes (in New Zealand, perhaps until the early 2000s).

Jane Jacobs had implied walking was central to the value of the intensely complex and rich relationships within a local community, of which she had written in her *Death and Life* book.

Enter architects and landscape architects

'*New Urbanism'*, a professional movement since the 1980s, sought to reverse some of the classic transport planning concepts. Whereas *Stop de Kindermoord* originated from lay people, '*New Urbanism'* tended to come from professionals, most notably architects and landscape architects.

Classic transport planning's technical engineering roots may have led to a disjoint with these more qualitative and creative professionals. Deductive, logical, numerate analysis of 'hard' data does not seem to fit well with creativity, and what Edward de Bono called 'lateral [or more intuitive] thinking'.

Through the 1980s architects and landscape architects were increasingly concerned at transport's effect on urban form. They felt that planning for it was too important to be left to 'technical' professions like traffic engineering.

Meanwhile, a focus on a land use regulation had tended to also take professional town planning (in New Zealand) substantially away from transport planning.

'Urban design' could be considered an extension of the approach architects take to a particular site or client's brief. It thinks creatively to envisage a type of future, rather than derive a future from technical data analysis. This could be seen as a return to town planning's original focus of 'designing' a city's or a region's form (e.g. Ebenezer Howard's garden cities).

Having said that, '*New Urbanism'* tends to commend the rich intensity of urban life (much as Jane Jacobs had done), very different from Ebenezer Howard's more ordered '*Garden City'* with its neatly and spacious separation of activity into different land use zones. Jane Jacobs was quite scathing about town planning in her '*Death and Life'* book which, like '*New Urbanism*', celebrated the social and creative mixing of urban life.

Jan Gehl: walking is more than just walking

Jan Gehl, an architect from Copenhagen, is perhaps the urban designer best known for exploring the role of walking in urban centres. Over the past 20 years and more, he has been commissioned by city administrations, and given his suggestions on improving those centres' lifestyle.

Gehl has typically used detailed survey results to analyse how people behave when they walk. He's found walking activity changes as the amount motor traffic decreases and walking correspondingly increases. For Gehl, walking is not just about getting from A to B, like other forms of transport.

Gehl found that high walking intensity (enabled by motor traffic reductions), led people to linger, chat and look at shops. Without motor traffic present, and with generous space devoted to foot-based activity, people might listen to public speakers or engage in street theatre.

Gehl suggested this was what cities were about, and the key to economic prosperity (since people are more likely to go into a shop and buy if they are comfortable lingering outside it).

Crime is also deterred ('*Crime Prevention Through Environmental Design' (CPTED*)). People lingering, rather than busy travelling, notice things going on around them. Shopkeepers and the Police would no doubt conclude that Gehl is right.

Gehl wanted to make walking not just attractive, but inviting. This meant more than just providing footpaths and road crossing facilities.

Spaces were to be designed, not just provided according to technical standards. This brought in landscape architecture skills, and features beyond what traffic engineering criteria deemed necessary. Seats, shelters, high quality lighting, planting, public art, and generous space (beyond 'minimum' technical standards) typically may all be part of this mix.

All this means that planning for walking does not fit easily into transport planning, transport budgets or transport funding regimes.

Safety: more than a low crash record

Classic transport planning's aims are for traffic to move 'efficiently' and 'safely'.

If people on foot are considered 'traffic' (they aren't necessarily) then clearly Jan Gehl is talking about something very different from 'safe and efficient movement'.

'Safety' is measured by reference to crash and injury data. By this definition a place without any pedestrian crashes or injuries is considered 'safe'.

But this ignores perception of safety. Only if people feel safe will they want to go to a place, stay there and linger.

A place with no pedestrian crashes – seemingly safe by crash and injury measures – may be that way because people on foot feel unsafe walking there! An absence of crashes may have been achieved, but there's a major problem if walking is seen as the key to city prosperity, crime deterrence, cultural richness and more.

Crash data also ignores 'near misses', since obviously the crash didn't happen. Yet 'near misses' may have a major effect in putting people off walking.

'Personal' safety is another issue – actual or perceived risk of personal attack. This, too, may be 'off the radar' of conventional road safety measures, with their focus on vehicle crashes.

Discouragement of walking through perceived crash risk (even if few crashes actually occur); and the economic, 'place-making', crime deterrent and other reasons for encouraging walking by creating an environment where people feel safe; are very pertinent issues in the currently topical issue of cyclists and low-powered-vehicles on footpaths (see chapter 11).

'Efficiency'? Gehl seems to want the opposite!

As for 'efficiency', Gehl seems to want the opposite!

On an 'efficient' road (by traffic engineering measures), a traveller spends as little time there as possible. Yet for Gehl, in a successful pedestrian space a 'traveller' will linger.

Walking raises questions about what urban areas are for. Towns and cities, it should be noted, only ever arose so that people could meet face-to-face (to trade, or for other purposes).

After walking (in 2002) was brought under the government's transport funding regime (see chapter 5), transport economists found it difficult to know how to measure success. This may be part of the reason hardly any of the new 'walking and cycling' funding has ever gone on walking (except for facilities shared with cyclists).

Transport funding? Gold-plated footpaths?

New Zealand funding officials in 2002, tasked with allocating 'walking and cycling' money, were concerned it might be wanted for more than functional needs – "*gold-plated footpaths*", as one official put it to me at the time.

Investment to make a place inviting for walking was not considered 'transport', and therefore out-of-bounds for the new funding. Yet by Jan Gehl's thinking, this was vital for its success.

Walking and traffic modelling: Wellington's 2004 'City to Sea' study

Gehl's urban area proposals sometimes faced problems when transport professionals considered their 'feasibility'. Jan Gehl's 2004 Wellington City Centre study ('*City to Sea'*), commissioned by City Council urban designers, is an example.

Foot access to Wellington's waterfront, widely acknowledged as a great asset, was difficult from the rest of the centre. Gehl proposed reducing traffic on Lambton Quay, the main shopping street (which was generally two traffic lanes in each direction, including bus stops) and, more radically, reducing Jervois Quay, the main waterfront through-traffic route, from three traffic lanes in each direction (plus turning bays) to two.

City Council traffic engineers commissioned a traffic modelling report, which forecast that Gehl's proposals would result in very significant traffic congestion on not only Jervois Quay itself, but on other roads (such as the Terrace Tunnel, already congested at peak times). Because of this, most of Gehl's recommendations were not implemented.

Traffic modelling anticipates that traffic will adjust its movement pattern according to changes in road infrastructure (e.g. adding or reducing available roadway space). It does not cope well with 'induced demand' (traffic induced by extra road provision, which would not have happened otherwise) or 'traffic evaporation'/ 'traffic decongestion' (traffic not taking place when road space is reduced). This is because traffic models have generally assumed there is a fixed (i.e. unchangeable, either up or down) demand for travel from any given form of urban development (see chapter 7).

If overall road space is reduced, forecast congestion has been found to be less than the models forecast. It isn't clear why or how, but this is what evidence seems to show.

Analysis of what happens when people change their form of transport (e.g. car or public transport or cycling or walking), or whether to travel (as distinct from choice of route) requires skills beyond the more basic forms of traffic modelling. Skills required may include marketing analysis and social science, 'softer' forms of data (e.g. sociology, psychology) rather than the numerate traffic flow, land use, economic or population data which have always been traffic modelling's stock-in-trade. Added to this, especially in an internet age, some people may choose to work from home or on-line.

This also raises questions about a common assumption that economic prosperity is directly related to the amount of traffic.

Bringing 'Link' and 'Place' together

Some have tried to bring together classic transport planning theory (such as the arterial/ local road hierarchy template) with concerns of urban designers (more likely to see a road or city street as a

place to be experienced for its own sake). The early 2000s '*Link and Place'* methodology, devised by Professor Peter Jones of UCL University London, pioneered this.

Jones classified roads according to a matrix with classic road hierarchy categories on one axis (e.g. arterial, collector, local road), and a particular road's importance as a 'place' on the other axis.

A conventional 'high street', for example, may be very important as a 'link' (if it is a state highway, without a bypass) whilst also very important as a 'place' (if there is a lot of shopping or other foot-based activity).

On the other hand, a bypassed high street may be unimportant as a 'link' (since through traffic has the bypass) and still very important as a 'place'. The bypass may also be important as a 'link' whilst unimportant as a 'place'.

The '*Link and Place'* methodology, however, is complex, and this makes it difficult to apply in practice. Busy office practitioners need something straightforward.

The New Zealand subdivision guide standard, *NZS4404:2010*, is written according to the '*Link and Place*' methodology but is very complex to follow for the wide range of different street situations it embraces. In practice, in day-to-day office life, this guide gets reduced to some easy-to-remember 'rules of thumb'.

Another problem is that road hierarchy categories have been refined and implemented over many decades, whereas the 'place' concept is relatively novel professionally. This may mean that 'place' is given less weight in day-to-day decisions.

Rod Tolley, Todd Litman, advocacy, economics and 'Walk 21'

Despite '*New Urbanism'* and urban design gaining traction among architects and landscape architects through the 1980s, planning for walking only had profile among planners and traffic engineers from the 1990s, with the formation of advocacy groups and professional networks.

Rodney Tolley, a British academic, since the 1990s has suggested that walking and cycling should be planned for as first transport priorities. Developing similar ideas in Western Canada was Todd Littman, through his *Victoria Transport Policy Institute* (based in Victoria, British Columbia). Tolley and Litman gained prominence from the early 1990s onwards.

Tolley's and Littman's approaches were quite different from classic 'integrated transport planning' (see chapter 7). The latter arose from increasing sophistication of traffic modelling, which enabled modelling of public transport trips as alternatives to car travel. Tolley and Littman, in contrast, both started from walking.

'Transport economics' calculates transport project costs and benefits, typically to arrive at a 'benefit-cost ratio' (BCR) to guide public funding decisions. Professionals outside transport economics have sometimes found its technicalities hard to grasp, leaving it unchallenged.

Transport economic analysis has tended to be biased in favour of major road building, not consciously but because the *National Land Transport Fund* was originally the *National Roading Fund*, and benefits and costs of road projects have been more extensively researched and identified. Another reason may be lack of awareness of some important types of data (see chapter 11 on the footpath cycling low-powered-vehicle legalisation issue); and that analysis may be carried out by the

same officials who want to attract funding for the project (read Oxford University's Professor Bent Flyvbjerg's classic critiques on this issue). Strong weight has tended to be given to saved journey time for the motorist, and crash/ injury savings (see above, on limitations of relying on this to measure 'safety').

Tolley and Littman have had sufficient knowledge of economics to counter data with data. They have quantified (in dollar terms) such factors as 'placemaking', climate change, preventive health, crime deterrence and other factors which conventional economic analysis has downplayed or not covered at all. This challenge by Tolley and Litman is radical in a similar way to how Mayer Hillman, during the same period, used preventive health data to challenge the "*cycling is dangerous!"* mindset (see chapter 3).

Tolley started the '*Walk 21'* international conference network in the late 1990s. As with the cycling conferences (outlined in chapter 6), over some years these have gained mainstream professional respect.

Thanks at least partly to the '*Walk 21'* conference network, and key individuals such as Rodney Tolley and Todd Littman, planning for walking has gained professional support beyond just urban designers, including from transport planners and traffic engineers. An example is that in 2019 Rodney Tolley was a keynote speaker at New Zealand's prestigious Engineering New Zealand Transportation Conference; the core constituency of which is professional traffic engineers.

Walking loses out since 2014

Planning for walking in New Zealand has been majorly neglected since 2014, as a consequence of official attention, and extra funding, focused specifically on cycling.

More recently has also come a significant incursion onto footpaths of 'low-powered vehicles' (such as e-scooters) without, some would claim, anything like a proper robust consideration of the wider transport planning implications.

Some technical evaluation has been done in both these areas, but maybe less in quantity, and too limited in scope (e.g. types of costs and benefits considered). Groups representing people with various disabilities, seniors and walking in general, have been taken aback at this neglect (see chapters 6 and 11).

Chapter 5

Brief NZ walking and cycle planning history (1)
up to (about) 2008

This chapter and chapter 6 are roughly chronological, sometimes varied to help readability.

Early major centres activity

The 1977 Geelong Bike Plan, and environmentally concerned lobbying prompted by the 1970s 'oil shocks' (see chapter 3), took root in the larger centres.

In Auckland, 1980s lobbyists from cycling clubs and bicycle shops set up '*Cycle Action New Zealand*', intended to become a nationwide campaign group. The local authority proposed a 50km circular cycle route around Auckland's central areas. Some infrastructure proposed in more recent years follows the same route alignment as this earlier idea.

Protests were mounted about inability to cycle across the Auckland Harbour Bridge. There was a trial bus shuttle service for a short period, but the issue never approached realistic resolution until the early 2000s *Skypath Trust*'s work.

The Auckland Harbour Bridge access issue may be approaching resolution (at time of writing) but would not have reached this stage (firmly proposed path design and promised government funding) without dogged persistence; technical experts giving time for free; some 'playing hard-ball' (including confrontational direct action in 2009); and especially the drive, vision and pragmatism of leaders Andy Smith (walking advocacy background) and Bevan Woodward (cycling advocacy background).

In Wellington, 1980s officials considered the city not conducive for cycling (because of steep hills and narrow streets) but nevertheless pro-active cycling advocacy did raise cycling issues, notably the Kennett Brothers, who have since become legends in their own lifetimes, especially for their cycle touring work and publications.

Christchurch 1980s, Mike Gadd, Bob Gibson, Andrew Macbeth

In Christchurch, City Roading Engineer Mike Gadd acquired his own copy of the *Geelong Bike Plan* and rolled out 'advisory cycle routes' across the city. Gadd's 1986 *Cycling in Christchurch* strategy drew not only from Geelong, but also the UK's Stevenage New Town, well-known internationally from the 1950s for its well-developed segregated cycle path network.

Since Christchurch had (largely) a widely-spread grid-based road network, the cycle routes took the form of 'parallel routes', mostly on 'back streets'. With generally light traffic, little engineering was needed (not even on-road cycle lanes). Older Christchurch residents may remember lots of little round blue signs waymarking these routes.

Meanwhile, a '*Canterbury Cyclists' Association*' lobby group was formed, Hagley Park had New Zealand's first shared path, Kilmarnock Street the first on-road cycle lane, and Deans Avenue the first signalled cycle crossing.

New Zealand's first guidance, the 1989 *Guide to Cycle Facilities*, was developed by government official Bob Gibson, substantially helped by Christchurch cycling advocate Andrew Macbeth (who was also a professionally qualified traffic engineer).

Other than Mike Gadd's back street routes, New Zealand cycle planning activity gradually tailed off through the 1980s, reflecting the international trend of oil prices coming down compared to developed countries' cost of living.

Throughout this period a magazine *Southern Cyclist* kept cycling advocates in touch with each other.

1990s; VeloAustralis 1996

Through the 1990s environmental concerns gained traction for a host of reasons. Internationally, the European *VeloCity* and North American *ProBike* conference networks had been founded in the late 1980s. These helped disseminate ideas and practice examples (including from role-model countries Denmark and the Netherlands).

Until the mid-1990s, cycling strategies (or 'bike plans' to use Geelong terminology) tended to be restricted to larger settlements. Funding, from the local authority roading or road safety budget, often depended a councillor or two fighting cycling's corner around a Council table.

In 1996 *VeloCity* mounted its first Southern Hemisphere conference, *VeloAustralis*, in Fremantle, Western Australia.

John Struthers' NZ 'National Cycling Group' 1996

At a hastily convened *VeloAustralis* coffee break meeting of New Zealanders, John Struthers, CEO of Sheppard Industries (major bike importer and owner of the Avanti brand) formed a New Zealand '*National Cycling Group*' (a name which changed a few times over the years, eventually becoming *Cycling Support New Zealand*).

Struthers' meeting concluded some mainly Auckland-based discussions with contacts including cycling groups and industry (such as retailers). His aim was a body which would carry weight through the mass numbers of individuals its constituent members represented.

Struthers had not taken note that *Cycle Aware Wellington* (represented at Struthers' meeting by Jane Dawson) had just prior to the conference brought several environmental-concern based cycle lobby groups together as the *Cycling Advocates' Network* (now the *Cycling Action Network*, CAN).

Cycling Advocates' Network 1996

Cycle Aware Wellington leaders Robert Ibell, Jane Dawson and the Otaki-based Liz Mikkelsen had succeeded in drawing together *Cycle Aware Palmerston North* (pioneered by Massey University academic Christine Cheyne, and since re-named *Cycle Aware Manawatu*), *Cycle Action Waikato*, and the older Auckland-based *Cycle Action New Zealand* group (which welcoming the move had changed its name to *Cycle Action Auckland,* a few years ago again re-named *Bike Auckland*). The "*Aware*" title used by the Wellington and Palmerston North groups arose from objections at the time by charity registration officials, who considered that "*Action*" sounded too political. In 2019 the Wellington group dropped "*Aware*" to become "*Cycle Wellington*".

From a few constituent groups in 1996, the number of CAN-affiliated local groups has steadily grown, and is now many more. CAN and Struthers' group continued to work together through the late 1990s, tensely at times, but recognising each other's value in a common cause.

'BikeNZ' early 2000s

CAN and John Struthers continued to work together over the early 2000s establishment of *BikeNZ*, intended to bring together cyclists from day-to-day utility use (those CAN represented) road and track racing, mountain biking, BMX and the bicycle industry (in which Struthers was a major player).

This was at the behest of Sparc (Sport and Recreation New Zealand), itself a merger of sports funding bodies and the former Hillary Commission (which covered incidental non-sport exercise). I was CAN's representative on the *BikeNZ* Board in its early years, followed later in this role by Bevan Woodward and then by Axel Wilke. During Wilke's tenancy in 2007, CAN withdrew from *BikeNZ* since, in CAN's view, the promised embracing of day-to-day utility cycling had failed to materialise.

In subsequent years, *BikeNZ* changed its name to *Cycling NZ* – the original name of the road and track racing body, seeming to underline sport cycling as its main focus; although it had a utility cycling arm *Ride Strong*.

Paul Ryan's 1997 Hamilton cycling conference

One of the *Cycle Action Waikato* leaders, Paul Ryan (who had presented a paper on Hamilton practice at *VeloAustralis,* and was also a qualified traffic engineer), painstakingly built professional and local body support for New Zealand's first cycling conference, which took place over a day at Waikato University in 1997. This concluded with interest in a further conference, which eventually took place in 2000 (see below).

Christchurch: Alix Newman, Axel Wilke, Denis O'Rourke late 1990s

Christchurch City was particularly pro-active in the late 1990s, employing a Cycle Planning Officer, Alix Newman, assisted by a technical cycling design expert and engineer, Axel Wilke, and eventually an Assistant Cycle Planning Officer, Michael Ferigo (who at time of writing is still in post there undertaking similar work).

If Newman and Wilke were the 'Batman' and 'Robin' of Christchurch cycle planning, the 'Commissioner Gordon' role was filled by Councillor Denis O'Rourke, who battled the corner for cycling around the Council table. He later became a Member of Parliament and the New Zealand First Party's transport spokesperson.

Christchurch pioneered cycle planning and pro-actively trialled its own innovations. Newman thought through basic ideas (such as how cycle lanes should be marked and taken through intersections), while Wilke provided technical grunt, for example a traffic signal system to detect cyclists and give them longer to cross intersections, which O'Rourke nicknamed the "*Axel wave*".

Other innovations were made elsewhere, such as my own introduction (while with Hamilton City Council) of New Zealand's first advanced stop boxes.

Christchurch for many years coloured its cycle lanes red, although after a 2010 City Council decision, replaced this with green in conjunction with maintenance programmes.

VelOZity 1999; 'Austroads Part 14' revision

1999 saw the launch of Australia's *National Cycling Strategy* (revision of a previous 1992 strategy) at an Adelaide *VelOZity* conference ('*VeloCity*' were mildly annoyed at the parody of their name), and with it incorporation of its *National Bicycle Council* (from this event onwards re-named the *Australian Bicycle Council*) into the *Austroads* inter-governmental body. This had revived an early 1990s Australian national strategy initiative. New Zealand also had had a draft National Cycling Strategy, prepared in 1993 by safety official Bill Robertson but, although ready to launch, was pulled by the Minister as politically sensitive on the eve of a General Election, and then after a change of government never brought back.

A '*Cycling*' addition to the *Austroads Guide to Traffic Engineering Practice (GTEP)*, '*Part 14*' was initially produced in 1993 but substantially expanded as a revised edition in 1999, also launched at *VelOZity* (*GTEP* itself has since been substantially revised and re-formatted). Alix Newman had co-ordinated the considerable task of New Zealand input to the 1999 *GTEP Part 14* revision.

1999 Roger Boulter's 'NZ Cycling Strategy Foundation Project'; 2000 Liz Yeaman's 'Making Cycling Viable'

As an *Austroads* member, New Zealand acquired a place on the 'Australian' Bicycle Council, and I was appointed to this (through Transit New Zealand and its associated Road Controlling Authorities' Forum).

Partly prompted by developments in Australia, I was granted the IPENZ (engineering professional body, now Engineering New Zealand) Transportation Group's annual Study Award, to prepare a report on what a New Zealand Cycling Strategy might look like (*NZ Cycling Strategy Foundation Project*).

Liz Yeaman of the Energy Efficiency and Conservation Authority (EECA), in a letter supporting my bid, said that EECA would host a second New Zealand Cycling Conference to showcase my draft results. This conference, *Making Cycling Viable*, took place over two days in 2000, four years after Paul Ryan's original one, and was the beginning of these conferences becoming a series.

I used the conference to invite feedback in the final stage of my project. At this conference Denis O'Rourke announced Christchurch would host a conference the following year, after which the cycling conferences became two-yearly.

1999 Reena Kokotailo's 'National Pedestrian Project'

Also in 1999, through the *SafeKids* body Reena Kokotailo secured a Road Safety Trust grant to prepare a '*National Pedestrian Project*'. Kokotailo's and my own projects were partly concurrent; although neither of us knew about the other project when we applied for our grants.

Kokotailo presented at *Making Cycling Viable*, and her main plea was to avoid "*the joined at the hip problem*": never conflate walking and cycling, because they have greatly differing needs.

Kokotailo argued that, if conflated together, cycling would get almost all the attention because of its iconic health, fitness and lifestyle associations, and walking would be neglected. This warning has mostly not been heeded, and the last few years (see below, and chapter 11) underline how right she was.

1999 new government: Sue Kedgley's 'National Cycling Strategy'

A late 1999 change of government suddenly made my project (only just started) of great interest to government. The Green Party had six Members of Parliament, including Wellington City Councillor Sue Kedgley, on good terms with *Cycle Aware Wellington.* Through the Greens' Confidence and Supply Agreement, Kedgley secured a government commitment to a National Cycling Strategy.

Other than Bob Gibson's work on the 1989 *Guide to Cycle Facilities*, and Michael Cummins' work of on school education and 1994 introduction of New Zealand's compulsory helmet wearing law (Cummins had been the only government official to present at Paul Ryan's 1997 conference), the government had little experience of planning for cycling. The changed political situation made them now hungry to learn.

The Ministry of Transport was invited to send a speaker to Liz Yeaman's 2000 *Making Cycling Viable* conference. We expected a junior official, but the Ministry sent Deputy Secretary Transport Strategy Roger Tollman – who seemed very keen to learn. The keynote presentation, live video-streamed from England by Sustrans' John Grimshaw and Policy Studies Institute's Mayer Hillman, seemed particularly to impress him.

Between the change to a Labour-led government in 1999, and the major policy change of the 2002 *Moving Forward* package, several initiatives independent of government challenged a more fundamental re-think.

1999 Kerry Wood: 'safety in numbers' applies in NZ too

Kerry Wood, an engineer, undertook a Masters Thesis at Lincoln University, *Bicycle Crashes in New Zealand*. Under academic direction of the highly respected Professor Chris Kissling, Wood found New Zealand evidence of the 'safety in numbers effect'. This studied the cyclist crash rate across several New Zealand cities, and found a lower per-capita crash rate in places with more cycling.

The Land Transport Safety Authority at this time still regarded cycling as a peripheral form of transport, mainly of concern through (in their view) being 'dangerous', and a response tended to be to tell children to behave themselves and wear their helmets (see chapter 3). Wood's findings were not what they wanted to hear.

The Health Sponsorship Council and the 'Cycle Steering Committee' – push for safety, encouragement and co-ordination

During the late 1990s there was a sharp divergence between advice given to cyclists (and active transport in general) by those with a health professional background and those with road safety agencies (typically the Land Transport Safety Authority). The massive change internationally in health professional thinking provoked by Mayer Hillman's *Cycling: Towards Health and Safety* 1992 research for the British Medical Association (see chapter 3) had not yet worked through to New Zealand.

From about 1995 health professionals were telling cyclists that cycling was the best thing one could do for the heart and other aspects of health, while road safety professionals were telling them "*cycling is dangerous!"* (and if you really must cycle, then wear your helmet and bright clothing, take extreme care, and for your own safety defer to motor vehicles).

After some years of this, peace broke out in the form of a '*Safe and Sustainable Transport Association' ('SASTA').*

Very instrumental towards this were a '*Health Sponsorship Council*', set up to allocate government money earmarked in the wake of a ban on tobacco-related advertising. Some of this was allocated to promote cycling, with a '*Cycle Steering Committee'* set up to co-ordinate this.

Sectors represented on the '*Cycle Steering Committee'* including road safety (led the Land Transport Safety Authority's Michael Cummins), the Police (led by Education Officer Helen Harris), the Cycling Advocates' Network (Jane Dawson), the Health Sponsorship Council itself and, briefly, me, referred to by Cummins as 'our missing engineer' (1998-2003 I was Hamilton City Council's Transportation Policy Planner; and I am not an engineer).

However, from another direction at the same time, similar co-ordination moves were bring made by Transit NZ (see below on initiative by their Chief Executive Officer Robin Dunlop following National Land Transport Fund walking and cycling money) through the '*Road Controlling Authorities' Forum'* (through which Transit NZ brought together local authority roading managers, the Land Transport Safety Authority, and others).

In time, and by stages, the *Health Sponsorship Council* money was brought under the Transport Agency's auspices, but for some years promotion of walking and cycling was funded under branding including '*StreetSkills'* and, later, '*BikeWise*' via the *Health Sponsorship Council*. A major initiative of this '*Cycle Steering Committee'* was '*National Bike Week'*, later '*BikeWise Week'*, later extended to '*BikeWise Month'*.

Many more initiatives can claim 'ancestry' from this same source, including Mayoral Bike Challenges, *Bikewise Business Battle*, *Bike to Work Days* (later *Go By Bike Day*, to embrace not just work but also school and other commuting), some on 'active transport' in general (e.g. also including walking and scootering) such as '*Movin' March'*, many of which morphed by several stages into initiatives such as the '*Aotearoa Bike Challenge'* of more recent years.

2000 Roger Boulter's 'Into The Mainstream' report

My own study, the *NZ Cycling Strategy Foundation Project*, reported in 2000, with a final report *Into the Mainstream*. Most of my recommendations have since been taken up in some form by government over the ensuing few years.

I met with key central government agency figures, and researched seven local authority areas (Auckland, Wellington, Christchurch, Hamilton, Palmerston North, Nelson and New Plymouth), looking at infrastructure on the ground and interviewing both local authority people and cycling advocates on what they thought of each other's activities and stances.

The places I chose included the main centres, and some smaller places where particularly interesting initiatives had taken place. Having always had a good relationship throughout with the Road Controlling Authorities' Forum, I received a generally positive response.

Although like Wood I received silence from the Land Transport Safety Authority (LTSA), one LTSA official, Tim Hughes, wanted to give a (I think, positive) response, but this did not happen.

2001 Reena Kokotailo's 'National Pedestrian Profile'

Reena Kokotailo started from the then-conventional view of road safety being about children (she worked at the time for *SafeKids* and her grant was from the *Road Safety Trust*). Through fresh creative thinking and intelligent reasoning she cultivated the idea that walking was about everyone, far more than 'a safety issue'. At meetings she would ask the audience which forms of transport they had used within the previous week – invariably, everyone had walked (and only a few had cycled).

Her concluding report, a *National Pedestrian Profile*, gave valuable data, breaking down misconceptions such as that walking is mainly for leisure (proportions of walking trip for leisure were similar to those by car, in each case about one-third), and just how much walking took place (about 20% of all trips).

This proved useful when, after the 2002 *Moving Forward* announcement (see below), Kokotailo was hired by the Ministry of Transport to compile the *National Walking and Cycling Strategy.* The extension of Sue Kedgley's original strategy to include walking recognised the value of Kokotailo's project; albeit creating risk of a *"joined at the hip problem*".

2002 'Moving Forward' funding package, 'NZ Transport Strategy'

Early in 2002 the government announced its *Moving Forward* package of radical transport funding changes. The *National Roading Fund* was renamed *National Land Transport Fund*. Immediate 'kick start' funding was voted for public transport, while allocation criteria for further public transport funding was devised.

Work began on a slim and generalised *NZ Transport Strategy*, which was completed by the end of the same year. The first-ever government funding (other than road safety) for walking and cycling, within the *National Land Transport Fund,* was also announced.

Roger Tollman had hinted at this government walking and cycling funding at the 2000 *Making Cycling Viable* conference. Not wanting to look a gift horse in the mouth, I included this as a recommendation in my *Into the Mainstream* report.

I had my doubts, though, along the lines of the crucial 1996 finding (see chapter 3) that reducing traffic volumes and reducing traffic speeds were the main measures to help cycling. I therefore felt that how the rest of the *National Land Transport Fund* was allocated was more important than a dedicated walking and cycling allocation. I was concerned that discrete 'walking and cycling funding' would hinder progress through compartmentalised thinking – something which I think has happened (notwithstanding the value of the projects enabled by this funding).

2002 'Walking and Cycling Activity Class' funding: Robin Dunlop meets the state highways challenge

How to allocate this '*Walking and Cycling Activity Class'* funding needed coherent logic. Any expertise available was called on (I was asked to join the steering group).

It had long been an informal rule of thumb in the New Zealand Roading/ Land Transport Fund that Transit New Zealand, responsible for state highways, received one-third of the funding of any 'Activity Class' within the Fund.

There had up until this time been a view among Transit NZ staff that "*cyclists shouldn't be on State Highways".*

There is actually a logic behind this. State Highways received 100% government funding (so the logic went), because their function was 100% 'national' (to move traffic between localities, rather than within localities), following the logic of the road hierarchy. Cycling, it was considered, by its nature is local, short-distance, within localities rather than between them, and so should use roads other than the 'national function' State Highways.

There are arguments against this logic, including that raised general cycling levels would have national implications for road planning; that despite its short-distance local nature cycling has been emerging as a national and strategic policy issue; and that a significant proportion of State Highway traffic (especially within urban areas) is purely local.

Robin Dunlop, Chief Executive Officer of Transit NZ, declared that cyclists did indeed have a place on State Highways, and appointed a 'Regional Cycling Co-ordinator' in each regional office, with a 'National Cycling Co-ordinator', Michelle McCormick (still working at NZ Transport Agency Head Office at time of writing, as well as active and respected in professional body circles).

Transit NZ was duly allocated one-third of the $3million initial 'Walking and Cycling Activity Class' funding, despite it still being undetermined which projects this would be spent on. Some claimed this was inconsistent, since local authority funding was only given to well-reasoned specific projects supported by a local authority cycling strategy. Transit NZ, at this time, had neither identified projects nor a cycling strategy.

At one time Transit NZ said it would follow any local authority walking and/ or cycling strategy in place. In more recent years cycling facilities have been incorporated in state highway road designs as a matter of course – positive progress – although this is not necessarily true at all local Transport Agency offices.

A particularly practical change which will literally have saved lives has been incorporation of shoulders in the design of new bridges. It can also be noted, to state highway road designers' credit, that some walking and cycling facility aspects of specific new state highway designs have won awards from the Cycling Action Network and Living Streets Aotearoa (for example, State Highways 5/ 30 Hemo Intersection near Rotorua, and State Highway 2/ 58 Haywards Intersection in the Hutt Valley).

2002 'Walking and Cycling Activity Class' funding: local authority level

At a local authority level, already developed cycling facility project proposals tended to get the first funding, as also could 'walking and cycling strategies'; in fact no infrastructure would be eligible unless covered, specifically or generically, in a walking and/ or cycling strategy.

Available government funding produced a rash of such strategies (government subsidised at 75%) such that by about 2006, most Councils had a cycling or a walking-and-cycling strategy. They generally followed the Geelong "*four E's*" and "*cycle route network*" template. A 2003 government research project sought to define 'best practice' in strategy content and focus, but there was wide scope for creativity.

Criteria to govern funding allocation for walking seems to have been too difficult – officials were accustomed to costs and benefits accorded numerate (often dollar) values (see chapter 4).

Consequently, very little of the new 'walking and cycling' funding has ever been allocated specifically to walking, unless as part of a shared path or other cycling facility.

Dedicated money for walking would no doubt help (and in recent years some have advocated for a 'National Walking Fund', corresponding to the 2014 Urban Cycleways Fund) but a more sophisticated and deeper-level response would be required, involving a re-orientation of integrated transport priorities (see chapter 12).

2003 'NZ Cycle Network and Route Planning Guide', 'NZ Pedestrian Planning and Design Guide' and 'Austroads Part 14 NZ Supplement'

In 2003 the Land Transport Safety Authority's Tim Hughes set up two projects, the *NZ Cycle Network and Route Planning Guide* (preceded by a literature review) and the *NZ Pedestrian Planning and Design Guide.*

The latter (note the title difference) went down to design detail, drawing on some work Mike Gadd (the former Christchurch Roading Engineer, by this time a consultant) had done on footpath and pedestrian infrastructure design, as well as of course Reena Kokotailo's project and some pioneering work by Steve Abley (now Managing Director of his expanded firm, Abley).

Transit NZ, the state highways authority, was already working on a *New Zealand Supplement* to the *Austroads Guide to Traffic Engineering Practice (GTEP) Part 14 Bicycles*, which would meet the necessary design guidance need.

The cycling guide's title "*Cycle Network and Route Planning*" implies a top-down, rational process of first identifying a desired cycle network, and then drilling down to more map-based detail to choose specific roads or paths.

In reality, cycle route networks tend to start from one politically iconic route, and then work outwards from this. Paul Ryan led this project, with myself and Australian expert Kym Dorrestyn (who had led the 1999 Austroads *GTEP Part 14* revision) as sub-consultants. Steve Abley contributed significantly to the pedestrian guide.

Tim Hughes was familiar with the work of Alistair Cummings, mastermind of the Greater Melbourne Principal Cycle Route Network. I was able to persuade the team that (before planning a 'cycle route network'), it first needed to be determined whether that this was needed through a 'cycling strategy'. Although I would have preferred this to derive from an integrated transport planning exercise (and the latter was briefly mentioned in the Guide), government guidance on planning for cycle and multi-modal transport were in their infancy in New Zealand.

On integrated transport planning, the 2002 *NZ Transport Strategy* had only just appeared and, although brief and generalised, was the first document to cover transport generically (except for the National Government's 1999 *National Transport Policy Statement*, which was only a few pages long and effectively only lasted a few months preceding a change of government).

2003 Axel Wilke's 'Planning and Design for Cycling' training course

In 2003 Axel Wilke led a successful research bid to develop a training course on '*Planning and Design for Cycling'*. At this time there was no specific New Zealand training on either planning or design for cycling (the nearest thing being the occasional cycling conference).

Wilke brought together several leading experts of that time, including Alix Newman, Paul Ryan, Glen Koorey, Kerry Wood and myself. This course has since been further developed and expanded, and still runs. Its coverage includes cycling facility choice and design, funding justification methodology and legal/ procedural issues. A few years later it was joined by a companion course on '*Planning and Design for Walking'*.

2003 Kokotailo at the Ministry: the 'Getting There: On Foot, By Cycle' National Walking and Cycling Strategy

Reena Kokotailo started work (at the Ministry of Transport) on a *National Walking and Cycling Strategy*, using my *Into The Mainstream* report and her own *National Pedestrian Profile* as starting points.

The title, *Getting There*, of the *Into the Mainstream* implementation section was used in this strategy's title *Getting There: On Foot, By Cycle*.

The national strategy appeared in draft in 2003, in final form in 2005, by 2006 an *Implementation Plan* was added, and by 2007 special crown funding was allocated to the flagship element, the *Walking and Cycling Model Communities Programme.* The latter concentrated different elements together in two medium-sized population centres, Hastings and New Plymouth (intended to be models for action elsewhere, although this never formally eventuated).

Meanwhile, the government had brought the 2002 *NZ Transport Strategy*'s objectives into law through the 2003 *Land Transport Management Act*, and followed this by substantially reforming funding allocation.

No sooner had the *Walking and Cycling Model Communities* element of the *Getting There* strategy received funding and was underway, than the government changed in 2008, bringing further radical change.

Chapter 6

Brief NZ walking and cycle planning history (2)
from (about) 2008 to the present

The 2008 change of government made a clean break on past experience and practice on planning for walking and cycling.

This disjoint was added to after a 2014 spate of on-road cyclist deaths. There was a sharp increase in government funding for cycling and a NZ Transport Agency 'National Cycling Team' was set up.

Since 2014 walking and cycling advocates, previously generally allied on transport matters, have been pitted against each other over attempts by some cycling advocates and officials legitimise cycling on roadside footpaths.

An increasing advocacy, official and industry focus on '*separated*' cycling facilities (within legal road boundaries), and some advocates effectively reversing their previous opposition to the old '*cycling is dangerous'* mindset (see chapter 3), all have also played a part in these changes. Advocates have sometimes come to use the idea that '*cycling is dangerous'* (among motor traffic; or at least that cyclists feel under threat) as a key argument in support of cycling on roadside footpaths.

Dialogue between the cycling advocacy sector and Transport Agency staff has arguably given a close mutual understanding of respective positions, added to by some individuals previously involved in cycling advocacy being on the Transport Agency's staff or contracted as advisors to them). The walking advocacy, disability or seniors sectors – for whom footpaths are valuable as a reassuringly safe haven – seem to have had nothing like this level of dialogue (or on-staff presence), and this has caused the problems outlined in chapter 11.

A by-product of official enthusiasm for cycling seems to have been a corresponding neglect of the needs of people on foot; despite the latter (see chapter 4) arguably being far more important than cycling for its place-making, community-building, preventive health and economic prosperity benefits.

2008 new government effectively discards 'Getting There'

The post-2008 government effectively disregarded the *Getting There – On Foot, By Cycle* strategy (whilst not formally repealing it).

The *Walking and Cycling Model Communities* project was in full swing, but a clear message was that the National Land Transport Fund (NLTF) walking and cycling funding needed to show benefit for motorists (the NLTF was mainly funded from petrol taxes for cars and Road User Charges for trucks), or it was in jeopardy.

Monitoring of both Hastings and New Plymouth *Model Community* outcomes did show reductions in car use (which would not have occurred otherwise). The need to demonstrate congestion relief benefits, however, focused walking and cycling funding entirely on the larger centres (since smaller towns had no appreciable congestion) rather than this project being a model for similar action more widely (as had originally been envisaged in the *National Walking and Cycling Strategy*).

After 2008, the National Land Transport Fund walking and cycling funding was reduced relative to other parts of the government's transport budget.

The new government also, in general, preferred infrastructure to 'strategy' documents, so walking and cycling strategies were no longer eligible for government subsidy.

Also suffering similar budget cuts were 'travel demand management', 'travel behaviour change' and road safety in general – what the Geelong Bike Plan (see chapter 3) would have called "*education*" and "*encouragement*".

NZ cycling conferences continue, then walking conferences too

The two-yearly cycling conferences steadily grew in attendance and official support – Christchurch 2001, North Shore 2003, Lower Hutt 2005, Napier 2007, New Plymouth 2009. Living Streets Aotearoa, the national walking lobby group largely founded in about 2000 by Walk Auckland's Andy Smith, Walk Wellington's Celia Wade-Brown, and others, started its own conferences with Wellington 2004.

All these conferences were collaborations of interested bodies including professionals, advocates, local government and central government, but with Cycling Advocates' Network and Living Streets Aotearoa respectively tending to take the lead (with some financial support for the cycling conferences from John Struthers', see chapter 5, *Cycling Support New Zealand*). Central government support grew gradually, small and guarded at first but more overt after the post-2002 government policy changes.

A refusal of government funding for separate walking and cycling conferences (probably to simplify administration), apparently disregarding Reena Kokotailo's previous "*joined at the hip*" warnings, led to the walking and cycling conferences being combined. This led to the combined '*2 Walk and Cycle'* conference series, which continues, still two-yearly.

Living Streets Aotearoa: 2017 and 2019 'NZ Walking Summits'

Living Streets Aotearoa, always unhappy about the conferences merger and (as they saw it) an unbalanced enthusing about cycling at the expense of walking, withdrew as an official partner following the 2016 Auckland conference.

Living Streets Aotearoa has since organised two '*NZ Walking Summit'* conferences, 2017 and 2019. 2017 was low-key over one day (in Wellington), but 2019 larger and over two days (in Auckland). With these a positive relationship seems to have been struck with government officials (an NZ Transport Agency representative addressed the conference, and it was commended in a Transport Agency e-newsletter).

The 'CAN Do's'

The Cycling Advocates' Network convened cycling advocates to discuss their own strategy in the afternoon following the close of the *Making Cycling Viable* conference (2000, see chapter 5). This established a model of a '*CAN Do'* (pun intended) attached to a cycling conference when there was one (the North Shore conference had its '*Shore CAN Do'*), and freestanding in years without one. 2016 saw a freestanding *CAN Do* despite the Auckland '*2 Walk and Cycle*' conference being a few months later. *CAN Do*'s are now multi-day with guest speakers.

2009 NZ Cycle Trail

Cycling advocates were favourably surprised by the 2009 Ministry for Tourism announcement of funding for a '*NZ Cycle Trail'.* This originated from a suggestion at the post- Global Financial Crisis '*Jobs Summit'*.

Those allocating transport funding had previously disregarded leisure and touring cycling as 'not transport' (despite funding state highways explicitly to meet tourism demand). Now government was conscious of cycle touring's economic stimulation potential.

Paul McArdle 'Just does it': 'Bikes in Schools'

In 2010 a Hastings businessman, Paul McArdle, out of his own pocket provided a bike track, bikes, helmets, bike parking facilities and other equipment for his own children's school, and persuaded Prime Minister John Key to open the facility.

McArdle's initiative inspired many other sponsors to fund similar initiatives, and the *Bike On Charitable Trust* was born. Many other schools have since clamoured for the same.

The NZ Transport Agency is now a *Bikes in Schools* nationwide co-funder.

Bikes in Schools has uncovered that children can no longer be assume to pick up cycling as a normal part of day-to-day life, perhaps through a parent taking them on rides around the neighbourhood. Also, especially in low-income households, children cannot be assumed to own a bike. Many children delighted to use *Bikes in Schools* facilities may be cycling for the first time.

Bikes in Schools has been widely welcomed, and is a greatly to the credit of Paul McArdle's generosity, but it raises a further question: what about bikes out of school?

Bikes in Schools facilities are within school grounds. Having had a taste, what are children to do if they want to cycle elsewhere – like from their home to school? The tiny amount of school-based cyclist education through official *Bike Ready* courses goes nowhere near replacing informal coaching, as in previous generations, by parents and carers; and even *Bike Ready* takes place largely off-road, notably on school playgrounds. The lack of anything like comprehensive on-road cycle coaching (which nowadays, adults themselves, not only children, may need) may be part of the motivation for calls by some to legalise some footpath cycling. This is a major concern for walking, disabilities and seniors advocacy stakeholders (see chapter 11).

2014 NZ Cycling Safety Panel

In 2013 there had been a spate of cyclist deaths on the road. The Cycling Advocates' Network (CAN) asked for a single coronial inquest for all the deaths together, suggesting there were likely to have been common causes.

Then in a submission to this inquest, CAN asked for and secured a safety panel of expert and stakeholders, to consider how a spate of cyclist deaths could be prevented in future.

The 2008 effective disregarding of the 2005 '*Getting There: On Foot, By Cycle'* National Walking and Cycling Strategy left a vacuum and the 2014 '*Cycling Safety Panel*' (arguably going well beyond its formal road safety brief) ended up effectively formulating the government's strategy on cycling.

Engineers Axel Wilke (see chapter 5 on Christchurch City Council) and Glen Koorey (Wilke by now a consultant and Koorey an academic, who has since joined Wilke's consultancy firm) represented transport planning on this panel. They also both had had, over many years, made a significant contribution to the Cycling Advocates' Network.

2015 'Cycle Network Guidance'

The NZ Transport Agency's on-line '*Cycle Network Guidance'* since 2015 has focused on engineering aspects of dedicated cycling infrastructure. Other than some passing references to '*Network Operating Plans'* (see chapter 7) this does not substantially cover broader transport planning.

As implied by '*Cycle Network'* in the title, there is little coverage in this *Guidance* of reducing and slowing motor traffic (see chapter 3). 'Greenways' are covered (i.e. street routes substantially traffic-calmed), but only on a localised basis as part of a 'cycle network', not as part of any comprehensive approach covering whole transport systems. The *Guidance* also does not cover network-wide possibilities (other than specifically related to cycling) such as filtered permeability across a whole transport systems (see chapter 3).

2015 Urban Cycleways Programme: "the RoNSs approach applied to cycling"

In 2015 the government voted an extra $100 million '*Urban Cycleways Fund*' (doubling the '*walking and cycling activity class'* money available through the National Land Transport Fund).

Coming from a government still focusing on major state highway '*Roads of National Significance'* – the so-called '*RoNSs'* – one commentator described this to me as "*the RoNSs approach applied to cycling".*

Infrastructure – generally big-scale infrastructure – was the focus on this Fund – not the 'soft' areas of behavioural change, education or promotion (although the Fund's focus was later extended to include promotion of use of the new cycling infrastructure).

2015 'National Cycling Team': build cycleways and promote their use"

The National Cycling Team were charged to see the '*Urban Cycleways Programme"*s high-profile big-scale 'cycleways' delivered, and then their use promoted. This significantly disregards lessons learnt in previous years, even the Geelong Bike Plan's balance between its "*four E's*" (let alone more thorough-going approaches such as by the Dutch).

Teams set up at political behest and charged with a somewhat 'evangelistic' brief sometimes do not tend to sit well within government organisations, where all teams need to pull together around agendas set by a common management. Perhaps unsurprisingly, the team was disbanded a couple of years later in a restructuring. Most of the team were re-deployed within the Transport Agency.

Take over the footpaths too?

A positive outcome of these developments has been that big bold cycling infrastructure (such as Auckland's '*Skypath'* and '*Lightpath'*) are not now so readily dismissed impractical or silly.

The focus on the large "*interested but concerned*" non-cycling would-be cyclists seems to work in Portland, USA (where the population categorisation including it was originated by Roger Geller), but Portland for decades had been a North American role model for strong urban growth containment and car restraint. In the different New Zealand context, outcomes will be very different.

The stress on off-road dedicated cyclist infrastructure, and suggestion (from some official quarters at this time) that cyclists should be allowed to use footpaths where a 'cycleway' cannot be provided, may (as I forecast at the time) have contributed since 2015 to an apparent increase in 'road rage' attacks against cyclists (sometimes verbal in media, but sometimes physical) simply for being on the road.

A Footnote: Christchurch's experience

Christchurch illustrates the state of New Zealand cycle planning well, because of its unique concentration of both implementation and expertise.

The already-implemented and planned cycle routes incorporate good engineering innovation reflecting up-to-date international practice (such as, for example, protected/ separated cycleways within the reserve of busier roads).

Axel Wilke, late 1990s at the City Council, then founding the early 2000s '*Planning and Design for Cycling'* training courses, has since grown his own medium-sized consultancy, ViaStrada; a few years ago joined by Glen Koorey from cycle engineering academia (and, before this, engineering research).

Tim Hughes, now effectively the NZ Transport Agency's cycle planning elder statesman is also Christchurch-based, not directly involved locally but widely consulted by the Agency's head office.

Koorey and Wilke, widely respected for engineering expertise, have had a significant leading influence in the Cycling Advocates'/ Action Network (CAN), as well as having some contact with the local *Spokes* cycling advocacy body.

Tim Hughes has rigorously avoided involvement in cycling advocacy, and has earned significant respect through battling for cycling within sometimes inhospitable official environments. Jane Dawson, an early national cycling advocacy leader (see chapter 5) once called him a "*subversive bureaucrat*", which Hughes has openly relished as a compliment.

Christchurch's cycle route engineering has massively advanced since Mike Gadd's 1980s rash of little blue signs (see chapter 5).

The 1996 *Cycle Friendly Infrastructure Guidelines for Planning and Design* found that reducing and slowing general traffic are the most effective ways to help cycling (see chapter 3). This, however, requires wider planning across transport as a whole, and does not lend itself to programmes involving dedicated cycling infrastructure.

Planning for cycling in Christchurch, in some ways positive, has failed to break out of a compartmentalisation problem (see chapter 7). Christchurch cycling levels are high compared to

other New Zealand centres (Census 7% of journeys to work by bike, a very generalised measure missing much but nevertheless a broad indicator).

At the same time as the '*Major Cycleways'* reflecting the post-2014 'big infrastructure' emphasis, Christchurch also built '*Major Motorways'* under the '*Roads of National Significance'* programme.

Building cycleways and roads at the same time has always, wherever it has been applied, delivered underwhelming or even dangerous outcomes (see chapter 3, and chapter 7 on potential for different transport programmes to work against each other).

Even the more recent *'Major Cycleways'*, with their relatively cutting-edge cycling facility designs, are based on the old approach of providing for cyclists away from the main road routes.

Although some of Christchurch's '*Major Cycleways'* broadly follow 1980s routes signposted by Mike Gadd, improvements can be seen, not only in engineering but in directness and separation from motor traffic.

In some cases, ways are allowed through for cyclists but not general traffic – examples of 'filtered permeability' (see chapter 3) – but these are location-specific. To be effective (as, for example, in the Netherlands) 'filtered permeability' needs to be applied throughout a city's road network, not on the minority of roads identified as 'cycle routes'.

It has sometimes been said that major roading will divert motor traffic away from local roads, thus making them more attractive as 'cycle routes' – but then in the late 1980s it was discovered that increasing road capacity generates its own traffic (see chapter 2).

The expanded motorways of Christchurch's '*Major Motorways'* programme will, over the medium term, induce more traffic, some of which will use local roads, rendering the local roads no more attractive for cycling (and possibly less attractive).

The '*Major Cycleways'* are popular and will have attracted some new people to cycling (one City Councillor has personally attested to this) but some existing cyclists (who prefer the road) have opposed them because of inconvenience and delays (for example, through dedicated cyclist intersection signals). Although motivated to attract and protect "*interested but concerned*" would-be new cyclists (see chapter 3), safeguarding general road traffic efficiency has inevitably meant delays on the new cycleways.

The end result over many years has been that, despite having increased cycling levels somewhat, these remain persistently low by international comparisons.

Glen Koorey points out that Christchurch's cycling levels compare respectably internationally, if the Netherlands and other leading countries such as Denmark are excluded from the comparison. Christchurch cycling levels are rather high compared to other New Zealand cities, but then they always have been.

Origins and destinations of journeys, whether by cycling or car, will be from any property to any other property, meaning the vast bulk of cycling will only use official cycle routes for part of the journey. Road traffic away from official cycle routes may still deter cyclists unfamiliar with motor traffic. With expanded general road capacity, and without generalised 'filtered permeability', driving will still be more attractive than cycling for most people.

Glen Koorey, through his '*Cycling in Christchurch*' website and other social media, repeatedly battles comments like "*I don't see (m)any cyclists on the new cycleways, so why waste our money building them?*"

Of course there are more cyclists than these comments would suggest, and Koorey cites the figures, but the argument may not have been raised had major road building, without generalised filtered permeability, not generated the traffic congestion and frustration to give rise to it.

Chapter 7

'Integrated transport planning': honoured in the breach

Since the 1980s, transport planners have spoken of 'multi-modal', 'integrated' or 'balanced' transport strategies.

Classic transport planning is rooted in analysis of mass data including demographic, economic, geographic and forecast traffic statistics. The numerate focus obscures the importance of matters not expressed readily in numbers, such as lifestyle quality (see chapter 2).

Numerate data and 'objective' truth

Numerate analysis gives the impression of being 'objective', generally held to be superior to anything originating from an individual, or 'subjective'.

'Objective' is used to imply "*true and beyond challenge*"; 'subjective' implies "*you think this but you may be wrong because it's only your opinion".*

Yet transport planning's numerate analysis inevitably derives from subjective values, often not explicitly defined, and in many cases not even recognised to exist.

Robert Moses and Jane Jacobs in New York (see chapter 2) argued for so many years because Moses and his staff could not credit that anyone could think their vision for urban areas could be anything but a vast improvement. Old 'substandard' housing torn down to make space, light and fresh air around new tower blocks and free-flowing motorways seemed a very obvious improvement.

The lifestyle qualities Jane Jacobs outlined in her *Death and Life of Great American Cities* book were to do with everyday life as experienced by her neighbours – especially social relationships – which together made a community's richness. These were not so easily grasped by numerate analysis, so not held to have any value in Robert Moses' office.

It might well have been argued that Jacobs and her neighbours were getting sentimental about areas which, 'objectively', were bad for them.

Refinement of traffic modelling's 'modal choice' stage

As computers became more grunty since the 1950s, data became available on public transport use.

Traffic modelling had historically used a fixed proportion estimate of a city's public transport users. This was then used to mitigate the forecast need for road-building (i.e. fewer roads needed because x% of people will go by bus).

From the 1980s, more sophisticated data enabled public transport improvements to be modelled and compared with road proposals for effectiveness in satisfying travel demand.

This also answered concerns since the mid-1970s 'oil shocks' (see chapter 3) about responsible fossil fuel use and environmental impacts (such as air pollution). Transport planners could now show they were considering public transport, not just roads.

It also helped tackle the issue of car use demand failing to reach the envisaged 'saturation point' and instead continuing to rise as strongly as ever, evidence for which had been growing through the 1980s (see chapter 2).

Traffic growth equals prosperity?

The new 'multi-modal' approach still assumed travel demand would grow, and that provision should be made for growth so as not to stifle the economy.

The official Dutch response to *Stop de Kindermoord* (see chapter 3) had questioned the idea that traffic growth was always good for the economy and lifestyles. By implication this was also questioned in the 1996 *Cycle Friendly Infrastructure: Guidelines for Planning and Design* with its conclusion that reducing motor traffic volumes was the best way to help cycling (see chapter 3). Rather than divert some traffic demand onto public transport, *Stop de Kindermoord* and *Cycle Friendly Infrastructure* implied it might be better if the travel increase could be avoided in the first place.

The nature of walking seems to imply this too. Jan Gehl (see chapter 4) sought environments where people on foot could linger, socialise and interact, pointing to major benefits in economic prosperity, crime deterrence, social cohesion, safety from traffic, personal safety and environmental benefits. For city centres at least, that would imply that less motor traffic is (sometimes, at least) better.

Although the 1963 *Traffic in Towns* report stressed how important it was to be able to walk around "*environmental areas*", the environments created under classic transport planning were sometimes found to be uninviting, or even hazardous. Their pedestrian spaces, underpasses and bridges often imposed awkward inconvenience on pedestrians (see chapter 4 on the need for spaces to be inviting to attract walking) such as climbing up and down steps to cross an arterial road (on an underpass or bridge). This led them to be unfrequented and vulnerable to crime.

Where are walking and cycling in 'integrated' transport studies?

An influential early 'integrated transport study' was the 1989 *Birmingham Integrated Transport Study (BITS)* in the UK. *BITS* was much studied in academia, replicated for other UK conurbations, and the BITS approach was adopted by the UK government first for metropolitan areas and later more generally through the mid-1990s 'local transport plans'.

This thinking reached New Zealand in the early-1990s *Greater Wellington Area Transport Study* (*GATS*) and late-1990s *Hamilton Integrated Transport Strategy* (*HITS*).

BITS included sub-studies on possible rail service improvements, bus services and light rail – but only referred to walking in a few mentions of pedestrianised city centre streets, and cycling in a single sentence saying more should be done to "*encourage*" it (without saying how). The study (following a classic approach) had been based on numerate data analysis – and except for official road crash records, no walking and cycling data existed.

A walking and cycling 'data famine' still hinders serious planning for these forms of transport. Some recent-years New Zealand "*Urban Cycleways Programme*" projects require and incorporate automatic counting equipment, but this is a relatively novel. Walking and cycling usage data is still not routinely collected by local authorities. Without data the significance of, and effects on, walking and cycling can't be assessed; "*what isn't counted doesn't count".*

At the time of *BITS* (1989) professional 'reasoning' on cycling was still in "*But Holland's flat*" and "*But it rains in England*" territory (see chapter 3). Since *BITS,* cycling has been worked into some into multi-modal traffic modelling, but the nature of cycling itself (notably how it is deterred by motor traffic) makes this difficult. For walking this is even more difficult, for reasons covered in chapter 4.

A favoured rail project: Wellington NZ and Auckland NZ deja-vu?

For all its limitations, *BITS* did break new ground internationally. 'Multi-modal programmes were to implement it. Birmingham (and other collaborating local authorities) proposed a new light rail line on a disused rail formation from Birmingham to Wolverhampton (across the conurbation) top of its priorities, despite Central Government warning this would not be funded. Birmingham responded by still leaving the project as its top priority.

This is strikingly similar to early 2000s arguments between the NZ Transport Agency and Wellington City Council, over Wellington's desire for CBD-Airport light rail. Together with a legal process defeat of a favoured government road project (the Basin Reserve Flyover), this led on to the *Let's Get Wellington Moving* initiative (see below).

It also parallels the origins of the *Auckland Transport Alignment Project (ATAP,* see below), with central and city governments differing on priorities (motorways and major state highways for central government, City Rail Link for Auckland Council).

The disused Birmingham-Wolverhampton rail formation involved now has light rail and heavy rail (as well as there being a cycleway on a parallel canal towpath). These seem symptoms of long-term changes in attitudes to different forms of transport (see chapter 8).

NZ's late 1980s 'Urban Transport Council' and 'Alternatives to Roading' Fund

The idea of non-roading projects mitigating demand for roads came to New Zealand in the late 1980s *Urban Transport Council* for major urban centres' public transport, and an *Alternatives to Roading Fund* for projects elsewhere.

Both assumed traffic growth was beneficial (the classic theory view) but that diverting some away from roading projects would help.

The *Alternatives to Roading Fund* covered freight as well as passenger transport. An example was coastal shipping possibly reducing a need for state highway building, renewal and maintenance.

2003 Land Transport Management Act: transport economists struggle

The 2002 *NZ Transport Strategy*'s (see chapter 5) objectives were taken into legislation through the 2003 Land Transport Management Act.

Criteria "*efficiency*" and "*safety*" had been defined by technically-measured '*levels of service',* such as traffic flow smoothness for "*efficiency*" and crash/ injury records for "*safety*".

Government transport economists struggled, however, with how *NZ Transport Strategy* objectives "*protecting and promoting public health"* or "*ensuring environmental sustainability*" were to be measured. Even in numerate terms (let alone qualitative assessment) this would bring in types of data outside professional scopes transport analysts were used to.

It fell to Transfund NZ (the funding predecessor of the NZ Transport Agency) to work out how to do this, and provide guidance for local authorities.

2003 Don Wignall and 'packages'

Transfund NZ hired British transport planner Don Wignall, who had a strong grasp of transport modelling and economics whilst also grasping non-statistical aspects. Wignall had been chief transport planner at Birmingham City Council during preparation of *BITS,* which was useful background.

Wignall, supported by senior manager Simon Whiteley, sought to reform New Zealand transport programming from the bottom up. Forms of transport tended to have their own programmes, prepared separately from each other, so Wignall sought to find win-wins through linking different programme elements with each other.

A simple example would be using a road surface renewal project to add kerbside cycle lanes and bus lay-bys – benefiting private motorists, bus users and cyclists from a single exercise.

By 2004 and 2005, Transfund NZ (and then Land Transport NZ, a merger of Transfund NZ with the Land Transport Safety Authority) not only encouraged local authorities to identify multi-modal 'packages', but encouraged all 'projects' (or 'activities') to be linked together in 'packages'. They also proposed replacing an annual funding round with year-round continuous dialogue.

Gradually, over some years, 'packages' was reduced within transport programming. Although possibly in official guidance somewhere, in practice it has been abandoned.

Maybe the qualitative, intuitive approach Wignall and Whiteley were asking of transport analysts clashed too strongly with an established deductive numerate approach.

Identifying a potential 'package' required pondering a wide variety of projects and different programme types, to intuitively identify potential links – not how deductive engineers and economists were used to working.

2009 the Ministry of Transport's 'Integrated Approach to Planning'

The Ministry of Transport's 2009 "*Integrated Approach to Planning"* project, like the 2002 NZ Transport Strategy before it, was in generalised terms, and words rather than numbers. It was further hindered by the deliberate distance established between the Ministry of Transport's policy advisors and Transport Agency's 'sharp end' practitioners.

The "*Integrated Approach to Planning"* project was advice to the Minister of Transport. Translating this into practice would require political approval (notably by Cabinet), incorporation into legislation, and then reflection in the service agreement between the Minister and the Transport Agency's Chief Executive Officer. Without this, the "*Integrated Approach to Planning"* project remained interesting work, from which professionals might learn, but without legal 'teeth' it could be ignored.

If Wignall's work on 'packages', embedded firmly within the 'sharp end' of Transfund NZ's operational practice, could effectively be disregarded, then not surprisingly the "*Integrated Approach to Planning"* project, from a Ministry of Transport 'distant' from 'sharp end' practice, seems to have had little lasting effect.

2012 'One Network Road Classification', Network Operating Plans' and 'Network Operating Frameworks'

Since the late 1990s the former Land Transport Safety Authority had worked towards a common road hierarchy for the whole country.

Then it was recognised that a road hierarchy, for mass motorised traffic efficiency and safety, was only one of several types of transport network.

There were bus route networks, and by the turn of the century the cycle route network concept had become established enough to be noticed by transport planners.

These transport planners also thought in terms of a 'route network' for walking. This was somewhat problematic because walking is very much about environments, and spaces and lingering rather than 'getting from A to B' (see chapter 4).

A road freight delivery network is also important. Planning for freight has tended to be neglected in transport planning, especially the very localised last part of a logistics chain ("*the last mile*").

The 2010s Transport Agency *One Network Road Classification* project is based the public road (and path) network having different network functions for different forms of transport, which need to be reconciled with each other.

The *One Network* project (and *Network Operating Frameworks* and *Plans*, see below) seeks to define common criteria for decisions on roads (or paths) to assign to each level of the different hierarchies.

'Arterial' roads tend to be defined according to traffic volumes (amongst other criteria). This is problematic in itself, since their original intention was to divert traffic away from quieter "*environmental areas*" (1963 *Traffic in Towns* report) and this would not necessarily be where the heaviest traffic flows would take place (see chapter 2).

What about public transport . . . .

Classic theory texts such as *Traffic in Towns* (1963) envisage buses using the middle 'collector' road hierarchy category. That reflects the classic (1960s) view of buses as a residual form of transport for those without access to a car.

If, however, public road transport (basically buses) is seen as positive in its own right, then planning for it will be as complex as planning a road hierarchy for cars – especially if the bus services are to connect with (heavy or light) rail services.

The public transport's role and success depends crucially on the right of way accorded it relative to other traffic.

To be more attractive than driving, fast, direct and longer-distance public transport needs an exclusive right-of-way fully segregated from other transport. That usually means rail (on a separate track) or street trams, although there are exceptions such as Auckland's highly successful North Shore Busway (which is successful because in right-of-way and level-of-service it operates like a train).

Street tram services may also have their roadway right-of-way. Conventional bus lanes, to operate effectively, need to give bus users journey time advantage over driving; be continuous especially through congested intersections; and give buses right-of-way over other traffic.

Then there will be buses for more localised access, together with easy-to-use interchange facilities between these and longer-distance (often train) services.

There may also be 'demand-responsive' transport, such as 'ring-and-ride' shuttles.

All this is a far cry from the classic theory that buses should use mid-hierarchy 'collector' roads.

The need for public transport 'right-of-way' will conflict with the 'right of way' for mass motor traffic given in the form of the '*arterial*' road network. In the North Shore Busway's case, there happened to be spare land for it next to the Northern Motorway. In other situations where this type of facility is being planned, there may be no other option but to take the space away from arterial road motor traffic (perhaps by removing a traffic lane in each direction).

. . . . cycling . . . .

The old-style 'back street' or 'parallel' cycle route network fits well with a classic road hierarchy, because part of the reason for such routes was to get cyclists away from motor traffic.

For reasons outlined in chapter 3 and chapter 6's Christchurch footnote, at the most these tend to have only slight success in attracting new cyclists.

Such routes only achieve real success when accompanied by restraints on car movement. Recent international examples include Central London's congestion charge, Central Paris's restrictions city centre car access restrictions for pollution reasons, and various measures employed over many years in Portland, Oregon, USA.

. . . . and walking?

For walking, path networks play some part but more important, for accessibility on foot, are the amount of motor traffic (which in itself may deter walking) or waiting time necessary to cross a road (whether governed by signals or gaps in traffic). These conflict directly with the classic motor traffic efficiency objective.

Reconciling networks is more than plotting on a map

The *One Network* guidance documents itemise some of these issues, but reconciliation between conflicting needs can only really be tackled at local level.

Network Operating Plans or *Network Operating Frameworks* do this. The NZ Transport Agency encourages local authorities to formulate these which, in theory, would take the place of a conventional road hierarchy.

Their main focus and content to date has been to plot different networks on a map.

The road hierarchy will generally be found in a District Plan, the bus route network published by service providers or a Regional Council, and a cycle route network in a local cycling or other strategy.

Sometimes a walking network will be found in a local strategy too. A freight delivery network can be defined in consultation with operators. Then the results can be plotted together, on a map of existing (and sometimes proposed) roads and paths.

The purpose of this exercise, however, is to reconcile tensions and contradictions between different networks, not just plot them on a map. This is where problems begin.

Say a particular road is an arterial road, on a bus route, part of a cycle route network and part of a walking network too.

Then itemise what these different networks need. Arterial roads will need a sufficient number of adequate-width general traffic lanes to avoid congestion.

The bus route, to give the envisaged level of service, may well need separate bus lanes, especially through congested situations (notably intersections).

Cyclists, on an arterial road, may need a separated cycleway (one-way on each side, or two-way on one side with regular access connections with other side). Walkers will need footpaths. Berms may be needed to comfortably separate walkers and cyclists from each other and from the roadway.

The total available width for all the above may well exceed the total width 'road' reserve width (i.e. property boundary to property boundary), sometimes very significantly. Underground pipes and other services will also need to be accommodated.

Available width may well be less, sometimes far less, than the total infrastructure the *Network Operating Plans* or *Network Operating Frameworks* tell us is needed. Even if it were available, the budget required for necessary modifications may be significantly more than available for implementation.

Explicit strategy or criteria to guide reconciliation of these contradictions may not exist. Decisions will then tend to be made according to relative strength of different transport stakeholders.

In practice, transport other than the car will tend to be provided for where this can be done without significantly impeding mass car movement efficiency. *Network Operating Plans* or *Network Operating Frameworks* may therefore fail to give priority to other forms of transport.

'Let's Get Wellington Moving'

The 2010s *Auckland Transport Alignment Project* and *Let's Get Wellington Moving* exercises try to bring together planning for different form of transport, and the different bodies responsible for this, in those metropolitan centres.

The *Auckland Transport Alignment Project* brought together a National-led government (at the time pursuing *Roads of National Significance* state highway proposals) and a Labour-led Auckland Council (which had prioritised the CBD Central Rail Link proposal).

The *Let's Get Wellington Moving* exercise was set up by the Government, Regional Council and City Council in response to a public inquiry defeat of the state highway 1 Basin Reserve Flyover proposal.

With the government committed to *Roads of National Significance* (of which the defeated proposal was one) and a City Council led by Mayor Celia Wade-Brown (elected on a manifesto of achieving

light rail to the Airport on roughly the same alignment as the defeated road) *Let's Get Wellington Moving* sought collaboration instead of a potentially messy fight.

Let's Get Wellington Moving initially involved significant public consultation, but then much formulation of proposals was out of the public eye, by technical consultants.

When, after this, the public were invited to choose from a range of options, choice was hindered by how the choices were framed.

Most crucially, it was impossible to choose between different forms of transport within the City Centre; or to consider transport choices into the City Centre from the Porirua/ Palmerston North and Hutt Valley/ Wairarapa corridors (which, of course, were a major influence on central city traffic levels).

Each option presented involved some roads, some public transport proposals and some cycleways, with the difference between them being the amount of money and new infrastructure involved. This made it impossible to face the types of contradictions outlined earlier.

Light rail was not included (despite having been a major City Council preference and with significant support from some quarters), being replaced by reference to "*mass transit*" (leaving open what this meant).

This seems to echo a down-grading of the light rail idea some years earlier. A Ngauranga-Airport '*Spine Study*' considered light rail together with a range of other possibilities, and led to recommendations first for 'bus rapid transit', then 'bus priority', then no substantial change. In 2019 the possibilities were joined by 'intelligent' 'trackless trams', supported by no less a respected professional figure than Australia's Professor Peter Newman (although sceptics have derided this as 'a fancy bus').

Drawing the *Let's Get Wellington Moving* study boundary at Ngauranga prevented choice between road improvements and rail improvements between Central Wellington and urban areas and regions beyond.

The *Talk Wellington* website, drawing particularly on young contributors, panned the *Let's Get Wellington Moving* proposals in an April 2019 series of invited *Dominion Post* articles; claiming they were still largely based on road-building, and that Wellingtonians preferred decent bus services and not to need a car (see chapter 8 on changed attitudes especially of younger generations).

The 'Auckland Transport Alignment Project'

The *Auckland Transport Alignment Project* was a less overtly public exercise than *Let's Get Wellington Moving*, and more an assembling of the transport programmes from different agencies.

For cycling, content was supplied by the NZ Transport Agency's National Cycling Team and based around iconic major infrastructure projects (see chapter 6 on this then-current approach). By doing so, it omitted much of the more important ways by which helped cycling could have been helped (see chapter 3).

Arguably the *Auckland Transport Alignment Project* was weak on links between the projects of different agencies. For example, there was nothing on cycling to public transport stops and stations,

or comprehensive filtered permeability applies to road networks (see chapter 3 and chapter 6 Christchurch footnote).

The problems besetting *Let's Get Wellington Moving* and the *Auckland Transport Alignment Project* seem very similar to those of the original 1989 *Birmingham Integrated Transport Study* (*BITS*). As outlined above, this was much studied (for example by academia and local government) and criticised as compiling different transport programmes together without resolving contradictions between them.

'Turning the Tide'?

In mid-2019 a report '*Turning the Tide – from Cars to Active Transport'* was released under a headline "*Urgent action needed to end our love affair with cars, report finds".* This articulated findings of a conference convened by Otago University's Health Professor Sandra Mandic.

The conference and associated study work brought together policy and strategy leaders from different areas including Celia Wade-Brown, pioneer of walking advocacy body *Living Streets Aotearoa* and former Mayor of Wellington, and Andrew Jackson, a former Ministry of Transport Deputy Secretary.

The report is well-researched and supported by data-based findings, especially health data, which it uses to argue a strong need to reduce (or even end) reliance on cars for transport. Other recommendations include doubling walking and cycling trips, and increasing public transport trips.

A crucial question, however, is the ability of reports like this to influence those who determine our transport planning and infrastructure decisions.

In 2019 some local and national governments 'declared' a 'climate emergency', urged on by the '*Extinction Rebellion'* movement.

With 'school strikes for climate change' occurring at the same time, and many articulating their concerns through *Talk Wellington* (see above) being younger too, there may be an age disjoint between those determining transport planning outcomes and those so concerned about this that they will take 'direct action' over it. This is explored in chapter 8.

TODAY

Chapter 8

Changed thinking since the 1990s

Questionable philosophy and values underpinned transport planning before and through the first half of the 20th century (see chapter 2), then attempts at an 'integrated' approach in the second half failed, perhaps because the underpinning philosophy was too strong (see chapter 7).

Thinking has changed majorly, though, since the 1990s.

From their introduction onwards cars were seen as progress, even when only a minority drove them. Giving space so they could flow freely was seen as key to prosperity and a high-amenity lifestyle. Technology was seen as advancement and to be encouraged.

Jane Jacobs and *Stop de Kindermoord* essentially said that the experiences of people, with all their vulnerabilities, sensitivities, ability to love, tenderness and drive to succeed, are the real measure of whether our transport planning is healthy.

Push-backs for people over machines didn't just happen in 1960s New York (Jane Jacobs, see chapter 2) or 1970s Netherlands (*Stop de Kindermoord*, see chapter 3).

The changed thinking outlined below may not seem high-profile or confrontational, and may have been gradual or easy to miss – but over 20 or 30 years they add up significantly.

New generation, new thinking

As *Talk Wellington* has highlighted (see chapter 7), a new generation has grown up less hindered by the thinking of the past.

People born since 1990 have grown up with cars. They don't see cars as a luxury, an aspiration, a status symbol or a sign of achievement. They feel they need one to get by, and some would rather not need this. More tech-savvy than their parents, they see technology as a routine part of life – not something to get excited about.

For this up-coming generation with different thinking from previously, public policy with walking and cycling more central may be 'on the right side of history'.

Allocation of public space to people on foot

Town and city centre space devoted to people on foot has increased over the past 20 or 30 years, sometimes dramatically. Public squares once used for car parking, or streets once clogged with motor traffic, may now be pedestrian spaces (even if the high overall amount of private and public land devoted to car parks, including next to rail stations, show the car still has a very strong role).

There are exceptions. Manner Mall (now Street) in Wellington, Cashel Mall (now Street) in Christchurch, Queen Elizabeth II Square in Auckland and part of Garden Place in Hamilton all have motor vehicles (albeit sometimes only buses) in formerly 'pedestrianised' spaces. Overall, however,

there seems to have been a pronounced trend to turn more and more town and city centre space – in publicly prominent locations – overall over to walking.

Sometimes new road provision has compensated, but not necessarily. Traffic has sometimes been left to sort itself out, with positive results. Sometimes 'traffic evaporation' has occurred (see chapter 2), without the congestion which traffic modelling would have forecast, and the city hasn't suffered. Sometimes trade and other street activity has increased too.

Some of the most dramatic changes of this kind have been where the car had been most central in transport planning. Western United States has some striking examples, also some Continental European cities, and the English city of Birmingham. In Birmingham many City Centre streets and squares were closed to motor traffic during late 1990s.

Following the 1963 UK *Traffic in Towns* report, lead author Colin Buchanan worked in New Zealand as a consultant to draw up major road network plans in several major centres. Fightback meant the plans were only partly executed. In some cases, roads built were later demolished.

In Birmingham, UK, a major early-1990s urban design exercise led to parts of the 'Inner Ring Road' being demolished (a classic major arterial, with four lanes plus turns, central median, pedestrian underpasses, tunnels and flyovers). The urban designers called this City Centre 'Ring Road' a 'concrete collar' stifling expansion of City Centre business activity to the surrounding areas. Classic traffic planning rules were broken, and the 'Inner Ring Road' re-styled as a 'boulevard' with at-grade pedestrian crossings (in place of inconvenient underpasses perceived to be unsafe). The neighbourhoods next to the City Centre core were rebranded as 'quarters'.

Paris turned its riverside City Centre freeway into a pedestrian space. There are many more examples in other major centres.

New Zealand may not have many examples of turning major roads over to walking because fewer were built in the first place.

A few years ago an Auckland motorway slip lane was turned into the '*Lightpath*' walking and cycling space, but this was far from radical. The slip lane was redundant because of further motorway provision, and the rest of the central motorway intersection roads are still there.

A new image for public transport

The bus has sometimes been seen as a 'loser cruiser': for people who can't afford a car. Many New Zealand buses are largely used by the elderly (too old to drive), early teenagers (too young to drive), and the very poor (don't have access to a car).

This is changing. While cars are central to people's lives probably as much as ever before, more people may be open to using public transport, especially where it has acquired a 'chic' rather than downmarket public image.

Rail in particular has seen a gradual but steady rise in quality expectation. Although under-developed in New Zealand compared to many countries, such passenger services as do exist have seen steadily rising patronage numbers.

Although much growth on longer-distance rail services has been international tourists, which may reduce following the 2020 Covid 19 infection issue, the steady growth within major centres and

between them and nearby regions has been for commuting or other 'utility' purposes. Even without international tourism numbers, it seems 'the train is back'.

Auckland had 1 million passenger rail trips in 1990, and 20 million in 2017.

Some longer distance commuter services such as the Pukekohe-Auckland train, the Palmerston North-Wellington 'Capital Connection' and the Masterton-Wellington 'Wairarapa Connection' have an 'executive' clientele (e.g. 'suits' on laptops) at peak commuting times. Such people demand, and are used to getting, quality service.

Some specialist bus services are going this way, such as Auckland and Wellington City Centre-Airport services, both of which have seen increased quality and comfort over recent years, and Auckland's North Shore Busway.

Little New Zealand light rail exists at present – individual tram services in Christchurch and Auckland – but interest in this is growing, with further proposals being mooted. Where light rail has been introduced (internationally and in New Zealand) there have been expectations of high levels of comfort and service – very different from the old and clattering association of trams so widely scrapped in the 1950s and 1960s.

Urban design movement and 'New Urbanism'

The urban design movement (see chapter 4) can no doubt claim some credit for increases in urban space devoted to people on foot (see above), but it has gone further than this, including some ambitious new settlement concepts.

Some criticisms from urban designers of Ebenezer Howard's '*Garden Cities*' – that this has led to 'sprawl' and bland car-dependent suburbs – haven't been entirely fair. New urbanists aspirations for 'medium density' housing (denser than New Zealand's classic quarter-acre section) are generally similar to densities in Howard's classic Letchworth and Welwyn Garden Cities.

However, new urbanism does seek a locally-based lifestyle; which was not necessarily a motivation in the '*Garden Cities*' (or later '*New Towns*' which followed them). This implies a bigger role for walking.

New urbanism tends to favour mixed use areas, a move from regulatory planning zones separating land uses from each other. Land use mixing can (in some circumstances) produce a lifestyle based more around walking, cycling, shopping locally, as well as working and socialising locally. New urbanism often aims to reduce the need to use a car (even if car ownership in such settlements remains high).

New urbanist examples in New Zealand have not integrated well with surrounding environments, although that may have more to do with planning processes and organisational obstacles rather than motivations.

Examples include Canterbury's Pegasus new settlement, and the Addison housing in Papakura, southern Auckland. In neither case does the new settlement connect with local rail services (in the Canterbury case only one long-distance services exists on the nearby rail line) meaning that these settlements are still very dependent cars for day-to-day travel.

The intention is there, though. Under the government's urban housing initiatives, urban design skills which have produced Pegasus and Addison are now being brought into provision of social and affordable housing within major urban centres.

Changed image of cycling

During the 1950s and 1960s, cycling was low-status transport for low-income people.

The 1970s 'oil shocks' tempered this perception with associations of independent and sometimes intellectual 'greenies', and environmental responsibility. Cycling, although maybe still seen as 'odd-ball', was also somewhat admired.

After more and more 1960s labour-saving "*mod cons*" – "*modern conveniences*" – lack of day-to-day exercise grew steadily as a concern through to the 1980s (with preventive health being seen as more to do with little-and-often incidental exercise than formal sports). This associated cycling with a positive attitude to personal health. Even the term 'fitness freak' included some admiration.

The Cycling Advocates' Network (CAN) were surprised when, about 2000, they surveyed members and found them to be of above-average income – the opposite of the then-conventional stereotype. A preponderance of males and older age groups led one commentator to call CAN "*rich old men*"; although more men than women tending to cycle (where road traffic is seen as hostile) has been known for decades.

An early 2000s broadening of cycling's public image came with the *'Frocks on Bikes'* movement (and sometimes a male equivalent the '*tweed run''*), where (usually) women deliberately dissociate themselves from stereotypical 'cycling clothing' (e.g. skin-tight lycra) and an arguably 'macho' bike shop culture. Their overall aim was to 'normalise' cycling as part of day-to-day life rather than as a 'sport' or a 'pursuit'.

A similar motive led some advocates and officials, over the last few years, consciously using "people on bikes" rather than "cyclists", to counter (as they saw it) the latter term's negative associations.

From the early 2000s there has been strong growth in interest in bike sharing schemes. Early 1990s bike sharing schemes (led by Palmerston North's 'green bike' project) encountered problems of bikes (freely available, left after use for other users on the streets) being stolen and dumped. Smart technology, however, has dealt to this problem in more recent years, and many examples exist of such schemes thriving, especially in larger centres; although their obstruction of footpaths remains a problem (see chapter 11).

In more recent years, cycling has been called "*the new golf*", adding to association with higher incomes. Especially mountain biking, in dedicated parks and cycle touring on dedicated (usually off-road) 'trails', has been associated with business executives (see chapter 10 further on this).

Together with a wider association with off-road facilities – not only parks and trails but also urban 'separated cycleways' (see chapters 2 and 6) – an impression may have built up in just the last few years that cyclists do not belong on the roadway.

A form of cycling advocacy 'direct action' popular in the 1990s and early 2000s was the '*Critical Mass'* ride, where mass numbers of cyclists, often with a 'fun' theme, ride through congested streets 'critical' of lack of consideration for them in transport planning. In just the last few years, however, 'pop-up bike lane' direct action seems more popular, where the focus is dedicated cycling

infrastructure rather than rights in relation to roadway motor traffic. 2019 saw several 'pop-up bike lane' protests by *Cycle Wellington*.

Increasing official and cycling advocate support for 'separated' cycleways may have helped create an odd paradox: that more people may want to cycle, but think there is nowhere they can cycle.

Anecdotally, more and more cyclists (of all ages) ride on roadside footpaths, and enforcement is almost non-existent. A NZ Transport Agency survey apparently shows most people do not know roadside footpath riding is illegal; and an official response has been to propose legalising it (see chapters 10 and 11, including concerns of the walking, disability and seniors advocacy sectors).

Changed image of car use and ownership – 'been there, driven that'

Today, people may either have a car or feel socially excluded without one – it is no longer a luxury or status symbol. Low income people may own a car they can barely afford. Average or higher income people may own one but would rather spend the money on other things.

We may be more dependent on cars than ever before – they're not easy to give up. Public transport may not be available. It may not seem safe for children to walk, cycle or scoot to school.

Some policy analysts have talked of "*mobility as a service*", and suggest a role for autonomous vehicle 'quasi-taxi' services. Although there certainly does seem potential for sharing rather than owning a car (and this chapter has argued this) we need to ask whether autonomous shared vehicles are really what people want, if also described as likely to be "*disruptive*" (see chapter 9)?

Car users may also prefer to walk and cycle more – if we can make that attractive enough.

Beyond this book's scope, yet still relevant, is a growing 'tiny homes' movement. Although possibly motivated more by cutting mortgage debt or rent rather than people wanting to live this way, if you aspire to live in the space of a shipping container, then you may not want to garage a car with it.

Time will tell how widespread the 'tiny homes' movement will be, but here again are people who may want to live without owning a car (maybe preferring to share a car with others).

The future is more walking and cycling?

Even if the time is right for more walking and cycling, this won't happen automatically. People seem to want to cycle more, but it is still not clear where can do this safely.

Walking seems under threat as never before, and people won't be encouraged to walk by legalised or increasing numbers of cyclists and 'low powered vehicles' on roadside footpaths (see chapter 11).

Members of the public may object if (say) their ability to park outside a shop is hindered, or they have to sit in a traffic jam. We can, however, explore responses which could get a wide range of support, including from those who were originally concerned.

Going by trends outlined above, there may be a receptive audience to win-wins (if we can work them out) which keep the convenient accessibility which car use gives us, while broadening transport choice beyond driving or personal car ownership.

Chapter 9

Technology fights back

Autonomous vehicles hype

Some of the hype surrounding autonomous vehicles seems unreal.

From some commentators, you'd think we will all be vehicles which drive themselves, human-driven cars will be off the streets, and public transport will also be obsolete.

The word "*disruptive*", sometimes used of a transition to autonomous vehicles, seems to imply this will hurt but be good for us.

Robert Moses and his colleagues had said something similar to Jane Jacobs and her neighbours (see chapter 2) in the 1950s – when some were saying we'd all be using nuclear-powered cars by the year 2000, so this sort of talk isn't always borne out by reality.

During the 1960s, throughout the developed world, local councillors and national politicians were being told that they must take experts' word that motorways and new tower blocks would deliver an exciting future and high standard of living. Some of us can remember as children this breathless enthusing over universal car ownership, free-flowing motorways and glass tower-block cities.

We are now told there will be no need for car parking (on- or off-street), because autonomous vehicles will constantly circulate answering customers' calls (so will never need to park).

On- and off-street car parking takes up a very large proportion of precious urban space. Donald Shoup, an American academic, has led research to put a cost on this; a cost rarely counted when planning regulations require it to be provided as a basic necessity in new developments. For Shoup, the Monopoly Board square "*Free parking*" is not true.

Taxi drivers, who ply for hire, have 'down-time'. Whether a car (autonomous or not) is parked or circulating, it is taking up space, and thereby contributing to traffic congestion and/ or inefficient use of prime-value urban land.

Public transport, we are told, would be obsolete because autonomous vehicles will take people from each journey origin to each journey destination. That's the same as everyone using taxis instead of buses and trains. Cities would be gridlocked (autonomous 'taxis' would be no different) because public transport is much more efficient at carrying mass numbers of people making the same journey at the same time. That's why it was introduced in the first place.

Platooning – automatic sensors packing autonomous vehicles close together while they move at the same pace – would make little difference from slow-moving traffic jams. 'Smart' motorways (such as Wellington's urban motorway) already do this through signal controls, and these motorways do not necessarily flow freely.

Probably the biggest argument used to support autonomous vehicles is safety – and here, apart from not actually being safe (see below), the effect on walking and cycling (and on the life of towns and cities) could be dramatically adverse.

Autonomous vehicles, walking and cycling

Before the 1930s, it was normal for people to roam across streets on foot. More recently, commentators like Jan Gehl (see chapter 4) has pointed to the very major benefits this brings.

It is said that autonomous vehicles would detect a person in their path, and instantly stop. Apart from the 'machine glitch' issue (see below) it's inconceivable all autonomous vehicles would stop whenever anyone on foot stepped into a roadway. This would turn an entire street system into one vast zebra crossing – with gridlock in town centres and serious traffic delays elsewhere.

Corralling pedestrians?

No government would allow this. Pedestrian movement would inevitably be restricted. For any half-decent autonomous vehicle traffic efficiency, the restrictions may be severe and dramatic.

Nowadays it may be difficult to cross a heavily-trafficked street, but it is not illegal. In light traffic it may be easy to cross a street, but to avoid annoying (and very inefficient) autonomous vehicle stop-start movements, this too would need to be made illegal in many places.

Lawful crossing of a road on foot would need to be restricted to specific locations. For autonomous vehicle traffic movement to be practical, these would need to be few and far between. With traffic flow 'platooning' (see above), this would be even more so. With walking characteristically deterred by inconvenient detours, this could mean a dramatic reduction in walking – and consequent loss of the 'street life' for which ability to roam freely is crucial. One way of keeping autonomous vehicle flow efficient would be bridges or underpasses for people on foot.

The end of 'street life'?

This outcome would echo the 1960s vision (see chapter 2) of pedestrians separated from arterial roads and required to use bridges or underpasses. Planners later reversed this (see chapter 8 on Birmingham) as adverse effects such as inconvenience and personal safety became clear.

If it is claimed there aren't many pedestrians, firstly systematic data in often lacking on pedestrian movement (see chapters 8 and 11), and secondly this may be a problem we need to address.

A city without walking is a city without life (according to Jan Gehl and others). The attractiveness of walking derives from its sense of freedom. Restrictions have their own deterrent effect, and kill off street life and vibrancy.

Free movement on foot deters crime while encouraging lingering, social interaction, window shopping, and spending of money. Restricting pedestrians to marked crossings, bridges and underpasses would discourage all those things. The idea may even grow that people on foot are a nuisance or a threat, especially with moves to increasingly allow 'low powered vehicles' on footpaths (see below and chapter 11).

Cyclists: off the road, or 'vehicularly cycle'?

A push for 'separated' cycleways may have already fuelled some suggestions that cyclists should not be on the roads (see chapters 6, 8 and 11). A push for autonomous vehicles may add to this.

"*Vehicular cycling"* teaches skills for cycling among motor traffic on roadways. Cyclists stay safest, according to this thinking, by 'behaving like a car', with similar manoeuvring skills and clear signalling Some cycling advocates feel this may threaten provision of 'separated' cycleways (see Appendix 1). "*Vehicular cycling*" may become essential, however, or even required, in an autonomous vehicles future.

"*Vehicular cycling*" tells cyclists, in some circumstances, to "*claim the lane"* – position yourself centrally within a traffic lane – which is not to annoy car drivers but to prevent cars overtaking and then turning left 'cutting up' the cyclist. "*Claiming the lane*" is also be necessary for a cyclist turning, and helps avoid crashes involving 'SMIDSU' – "*Sorry mate, I didn't see you*". Such manoeuvres are in fact basic to safe cycling among motor traffic.

Detection by autonomous vehicles works best with road vehicles all of a similar size, and of course 'behaving like a car' is the central "*vehicular cycling*" principle.

The problem of cyclists manoeuvring differently from cars has already been encountered during Dutch autonomous vehicle trials, with some suggestion that cyclists could be excluded from the roads. If this can be said in a country associated with mass cycling and '*Stop de Kindermoord'* (see chapter 3), we could expect it in other countries (including New Zealand).

'Human error' or 'computer glitches'? I'll trust humans, thank you

People make mistakes – "*human error*" – and it is claimed autonomous vehicles will eliminate this, and with it road crashes.

However, all machines have 'glitches', and it's inconceivable that autonomous vehicles would be any different. Sensors may also be affected by frost or pollution.

I am not aware of any evidence that autonomous vehicles would have fewer 'glitches' than human drivers have 'errors'. We may be safer leaving safety in human beings' hands.

Then there are 'priorities' in autonomous vehicle crash avoidance programming. If an injury or fatal crash will 'inevitably' occur (according to the programming), should priority be to save the vehicle's occupants or a pedestrian or cyclist who would otherwise be hit? Human beings, with emotions, compassion, and drive to survive and succeed, may handle this situation better than a machine would. Old-fashioned heroism may even save everyone, as human beings driven by emotion push beyond what a machine says is 'possible'.

Early philosophy behind transport planning (see chapter 2) suggests that the more technological something is, the better it is, and that this will inevitably deliver benefits. This suggests cars are an advance on public transport, which in turn is an advance on walking, cycling and horse-riding.

Let's ask ourselves the hard question as to whether this is the real reason behind much of the hype (including in official circles) over autonomous vehicles. If so – then let's get realistic rather than excited.

Peak everything?

'Peak oil' (the suggestion worldwide oil production has peaked and is now in decline, despite increasing demands on it) is not the only potential 'peak'.

'Rare earth' components of batteries are also limited in availability. Lithium, another battery component, cannot be recycled, which means unwanted waste. Some components are also highly toxic. Battery-dependent electric cars and other e-vehicles may not be as environmentally benign as we think.

Recharging batteries needs electricity supply – and a lot more supply if electric vehicles become commonplace. Depending on how electricity is generated, it may not be environmentally responsible.

Unless we are going to run cars on steam (don't laugh – it has been done, is surprisingly viable, and isn't constrained by fuel type) then we may be better focusing on walking and cycling more than on the technological developments outlined in this chapter – especially adding in health, crime deterrence and place-making benefits.

'Low powered vehicles': why on the footpaths?

Demand for use of 'low powered vehicles' has rapidly become topical. By default, they are used on roadside footpaths without, some would argue, a sufficient assessment as to whether they are safe for footpath users.

It is not clear why the focus is on footpath rather than roadway use. Maybe it is an assumption they would be a hazard or to motor traffic, would adversely affect road traffic efficiency, and would expose users to danger from other roadway traffic. Reasons for this are not explicitly examined, let alone comparing whether a footpath-use or roadway-use focus would be more beneficial. Behind all this it may be that the old values outlined in chapter 2 are still very strong.

'Low-powered vehicles' may be considered unsafe on the roads because they are smaller than most other road vehicles, and they manoeuvre differently. The same could be said for cyclists (see above), and any suggestion that 'low-powered vehicles' belong on footpaths rather than roadways could increase this expectation for cyclists too (also see above and chapter 11).

2019 NZ Transport Agency's website advice on e-scooters use was tellingly placed under 'footpaths'. The law actually says they may be used on either footpaths or roadways, yet on roadway use this recent NZ Transport Agency advice said no more than to stay as far to the left as possible.

This same advice to cyclists was debunked years ago, including through dialogue between officials and the then Cycling Advocates' Network . A cyclist or an e-scooter rider on a roadway may have (see above) very sound reasons for not staying to the left, and it may be dangerous to do so (e.g. to stay clear of opening parked car doors, or turning right at an intersection, or to avoid being 'cut up' by left-turning traffic). This seems to suggest the Transport Agency has not properly thought through its advice on low-powered vehicles on the roadway.

No advice is given to car drivers on how to respond to roadway e-scooters – surely very important if safety is a concern.

Maybe 'low-powered vehicles' are being supported in some quarters, despite clear footpath use problems, on the (perhaps unconscious) assumption that technological advancements must necessarily represent progress, advancement and bigger benefits (see chapter 2), and so should be embraced despite the problems.

Low-powered vehicles: ask the hard questions

It has sometimes been assumed that people will use low-powered vehicles in place of driving. Such data as is available (including from Auckland Transport) suggested that some are attracted from driving, and some from walking (or cycling). This would suggest some environmental benefits, though not as many as sometimes assumed. Further research, and systematic data, would be useful.

Another benefit claimed for e-bikes is that they enable older people to continue cycling beyond an age when they would otherwise have given up. That may be true, but again data would be useful.

And the rest . . .

'*Skycabs'* have been suggested, monorails above streets (to my knowledge, none have yet been built) and for an untried idea has gained a surprisingly positive response in some official circles. There are successful monorails, and they can be done well and in the right places, but their advocates don't seem to have considered the implications of them everywhere – including most crucially whether people actually want them.

Others have suggested drones collecting and delivering air freight may become commonplace – with city centres possibly becoming like the *Star Wars* Galactic Capital *Coruscant* where constant streams criss-cross above the streets. Again, wider implications have yet to be examined, and among these should be whether people perhaps prefer the birds, the bees and the clouds.

Just like our experience of motor cars, ideas like these may seem very appealing when just an idea or when only a few are in use. However, as any gridlocked motorist knows, reality is a whole lot different when mass use kicks in.

Technology is good in principle, but should be made to 'earn its keep', with proper searching scrutiny applied to any claims; especially if its advocates tell us in advance that introduction will be "*disruptive*".

And, especially, we should keep a close watch on potential effects on walking and cycling, those most human-scale and lifestyle-enhancing forms of transport.

Chapter 10

"*Coming through!*": cyclolatry and the "*new wealth*"

Polite or aggressive?

Bikes used to come equipped with handlebar bells, but not today. To warn people on foot, cyclists are now expected to politely call out, in plenty of time and at a distance

The polite cyclist would (or should) then give people on foot a wide berth, going around them rather than expecting the walkers to modify their movement. Shared paths would (or should) always have ample width and visibility for this.

Sometimes in more recent years, however, a call such as "*coming through*!" is used to aggressively bully pedestrians out of the way. I and many people on foot have had that experience (my own, more than once, have been on roadside footpaths where cycling is illegal).

Some newer shared paths have direction arrows to imply people on foot should 'keep left' – a relatively recent innovation (last 20 years in official guidance, but still not common 'on the ground'). This is the opposite of the 'freedom to roam' which is at the heart of walking's attractiveness (see chapter 4) and also the opposite of previous expectations of how cyclists should behave in pedestrians' presence (see above).

Some trails, and especially mountain bike planning and development, seem to show insistence and aggression (see below), which may then spread to other contexts where cyclists and pedestrians are expected to share the same space (see chapter 11).

Like autonomous vehicles hype?

There is some evidence that some cycle trails boost local economies (especially in remote areas). Since the 1980s, the UK's Sustrans (developer of cycle trails on disused railway formations or canal towpaths) have collated evidence of this, and there is similar evidence from other countries.

In New Zealand the Central Otago Rail Trail has shown this since about 2000, when the Department of Conservation collated evidence of cyclists spending money on accommodation, food and other things locally. The local economic benefits have been more than from car-borne tourists, because cyclists carry less with them. Cycle tourists have also tended to be relatively prosperous (see chapter 8).

Official interest in 'trails' was later revived with the 2009 announcement of the NZ Cycle Trail. Many local enthusiasts promoted favoured projects, and the concept changed to a trails network spanning the country. These varied from the '*Great Rides*' (largely on Department of Conservation land), to the '*Heartland Rides*' (largely on lightly-trafficked side roads).

The Kennett Brothers (also see chapter 5), already well-known for cycle touring guides and events, were employed as official advisors.

It should not be assumed, however, that any cycle trail in any situation will benefit a local economy. There's a danger we may then, just as can happen with autonomous vehicles, insist that everyone 'must' support such trails and facilities, with benefits being assumed not established.

Some economic development advisors have warned of a possibly imminent "*peak trail*" phenomenon – market saturation for cycle trails and mountain biking facilities – which underlines how important it is for any claimed benefits to be robustly established and not assumed.

A cycling advocates' phrase "*You can't buy happiness, but you can buy a bike, and that's pretty close*", although plainly a joke, should alert us against regarding cycling as akin to 'the meaning of life'. We would then be into religious territory, "*cyclolatry"*, worship of cycling, to which everyone is expected to bow, excluding the possibility that some people may feel differently about it.

Cycling (in this context potential cycle trails and mountain biking facilities), like autonomous vehicles, must 'earn its keep', with proper evaluation – including a 'case against' not just a 'case for'.

A 'case against'? Alternative use, users or value

A 'case against' cycle trails or mountain bike facilities may include disruption to the environment or other users; effect on conservation values (especially if the trail or other facility is on the Conservation Estate); and of course development cost.

Development cost is relatively easy to address. Expert studies can then argue a case as to whether costs of developing the facility are greater, or less, than benefits likely to accrue.

Also relevant is to whom the benefits will accrue. There's big money to be made from cycling, cycling equipment and some cycling activities.

Will the benefits accrue largely to those somehow involved in or connected with 'the trails industry' or 'the mountain bike industry', or will they benefit the wider public? Will the multiplier effects (e.g. money generated by those employed then spent more widely in the local community) be less or more that other use or development options?

Will one trail or mountain bike facility compete with another such facility nearby, and take their potential customers (maybe a local "*peak trail*")?

If it is claimed in such cases that the two facilities will not compete but will serve different markets, has this been established with sufficient rigour to answer arguments and evidence which others may advance?

Then there are alternative users. How else could the land be used, is there potential for this, and would alternative use deliver more benefits than development for cycling?

On the Conservation Estate, mountain bike trails require different forms of construction. Some who build such trails have told me that people on foot therefore need to be banned from such paths. Mountain bike paths may be scoured out of hillsides so that bikes can negotiate them (safely) whilst also delivering the thrills which are the key to mountain biking's attractiveness, and this can (so trail construction staff tell me) risk the safety of people walking on these paths.

Especially where enforcement may be minimal, user restrictions may be ignored. There is no reason to suppose that decreeing walkers or cyclists may not use a particular path will be adhered to (see chapter 11 on similar issues regarding use of roadside footpaths).

In such cases, the Conservation Estate peace and quiet so much valued by hikers and trampers may be ruined by mountain bikers who (for whatever reason) are attracted away from paths provided for their use and onto on paths where cycling is not officially allowed.

These potential effects, and their costs, need to be robustly identified and analysed. What economic effects would accrue from deterring tramping and hiking (if this were found to be possible or likely)? Would loss of amenity for different types of user be justified by benefits the trail investment might bring?

Apart from peace and quiet valued by people, there is natural ecology to consider. Some Conservation Management Plans prohibit cycling within particular reserves for valid ecological reasons.

Mountain bike paths may cause erosion through funnelling rainfall, and also starve surrounding land of rainfall needed by flora and fauna. In one 2019 Wellington case, unauthorised mountain bike trail construction on public (City Council) land threatened extinction of a rare snail species.

Unauthorised trail builders: bullies on wheels

Changed and more positive associations of cycling with higher incomes (see chapter 8) epitomised by "*the new golf*" tag, must not give those wanting trails and mountain bike facilities priority over other interests.

Many trails and mountain bike advocates seek official approval and funding. However, an insistence that everyone should support this ('*cyclolatry*', see above) can lead to it being considered inconceivable that permission and funding would be denied. It is then only a short step to simply build a trail and seek approval afterwards – despite it then often being difficult or impossible to reverse any disturbance caused.

Over the last two years four unauthorised trail construction anecdotes have come (unsought) to my attention (making me wonder how many more there are, and whether this is a trend): from New Zealand (Port Hills Christchurch; North Auckland; Wellington Town Belt; and the South Island West Coast) and one from overseas (several locations in Southern England).

The land involved is often of conservation value where it is fully known that mountain bike tracks will damage ecology in such ways as outlined above.

In all cases, it is also generally well-known that cycling is not allowed in the operative Reserves Management Plan covering the land. Sometimes the advocates have sought retrospective approval, but sometimes they haven't even bothered to do this. In one case this disrupted research by a university (the landowner) into native bush regeneration.

In the case mentioned above of a rare snail species being faced with extinction, a City Councillor threatening to trespass them, saying "*No more Mr Nice Guy".* Bullies need facing down.

Chapter 11

Walking and footpaths: a dumping ground

Bottom of transport planning's pecking order

Despite Reena Kokotailo's valuable work and warnings of the "*joined at the hip*" problem" (see chapter 5), and urban designers' message since the 1980s about walking's central role in 'placemaking' and urban prosperity (see chapter 4), walking and footpaths are suffering as never before from changes in the last few years in New Zealand's transport planning official culture. This would continue if some currently proposed law changes were implemented.

Bearing in mind a strong push on cycling in recent years, Kokotailo's "*joined at the hip"* problem certainly seems part of this problem: a tendency to conflate the needs of walking with those of cycling and assume that meeting the latter will also be good for the former.

Maybe transport planners' (notably engineers') view of transport (see chapter 4) in terms of movement networks and efficiency, when walking is actually more about lingering, roaming and being distracted by what is going on around (something which will only happen when people feel comfortable and not under threat in any way) is part of the problem. The last chapter's mention of shared path direction arrows and a bullying "*coming through!"* mentality may be symptoms of this creative tension within walking between travelling (on the one hand) and lingering or wandering (on the other hand).

Particularly striking and spectacular has been the apparent failure to recognise, or sometimes no mention at all in official documentation, of the effects of a potential problem of people being deterred from walking by suggested law changes to legalise footpath cycling and some low-powered vehicles on footpaths; in areas such as lifestyle quality, social cohesion, preventive health, crime deterrence and social exclusion.

Some crucially influential Transport Agency reports (notably a 2020 cost benefit analysis report and a 2016 report on footpath cycling options, covered further below) extensively itemise, quantify and analyse data on crashes and injuries, without any mention at all of potential effect of discouragement of walking, let alone any moves to quantify those effects. This seems reminiscent of the official failure to recognise cycling's much larger preventive health benefits in the days of the 1990s "*cycling is dangerous"* official message (see chapter 5).

Another concern is an apparently close (not necessarily 'inappropriate') relationship since about 2015 between the cycling advocacy sector and those formulating footpath cycling proposals, when the sectors most directly affected – that is, representatives of people on foot, disabled people and seniors – have none of this closeness, so are not included in discussions behind the proposals (see chapter 6).

As a result, walking and cycling advocacy sectors seem at loggerheads as never before (when previously they had often found common cause, notably around road traffic issues.

What are cities about?

The city life argued as so important by Jane Jacobs depended largely on walking – not so much as transport but as a context for face-to-face interaction which has always been cities' life-blood and reason for existence (see chapter 2).

This would give walking, in transport planning, a higher priority place than cycling – and, as outlined above, very much as lingering and interacting with others rather than as travelling.

The 1960s/ 1970s Netherlands *Stop de Kindermoord* campaign (see chapter 3) also elevated walking in importance (e.g. the *woonerf* concept), but this didn't have much influence at the time in New Zealand. In some official quarters walking was still seen largely as a road safety problem, right into the early 2000s.

The 1980s/ 1990s urban design movement did have some New Zealand support, Jan Gehl did some New Zealand city studies (see chapter 4), and in time government embraced urban design's contribution in the 2004 *Urban Design Protocol*.

Compared to some countries, New Zealand planning has never coped well with cities, historically being based around regulatory controls. The late 1980s *Resource Management Law Reform* exercise and 1991 Resource Management Act re-cast urban planning around 'sustainable management of natural and physical resources' (appropriately, with New Zealand's exports and economy being based around farming, forestry and fishing). The New Zealand planning profession grew out of a surveying profession more strongly established than in some other countries.

The 'bread and butter' of New Zealand planning tended to be complex regulatory '*District Schemes'* – a far cry from Ebenezer Howard's 1900 concept of combining the best of town and country in *'Garden Cities'.* This gave New Zealand tidy, but not pretty, suburbs.

The 2004 'Urban Design Protocol'

The government's response to concerns raised about this was the 2004 '*Urban Design Protocol*', and with it creation of an 'Urban' team at the Ministry for the Environment. With the Protocol about exhortation and information exchange (it is difficult to regulate for urban design creativity), signatories were invited to originate their own contributions. As part of this the Ministry of Justice produced a guide on *Crime Prevention Through Environmental Design (CPTED;* see chapter 4). Although government focus on the Protocol has declined in the years since, it was an interesting official deviation away from New Zealand's generally regulatory governance culture.

Reena Kokotailo, 'Getting There' 2005, and new funding

Meanwhile, in the old Land Transport Safety Authority walking still tended to mean road safety, and within this children. Reena Kokotailo, working for *Safekids* at the time of her 1999 *National Pedestrian Profile*, nevertheless brought a creative flair into established professional culture (see chapter 5).

Living Streets Aotearoa had been formed a few years earlier to represent people on foot, by *Walk Auckland*'s Andy Smith, *Walk Wellington*'s Celia Wade-Brown (before her higher profile as Mayor of Wellington) and others. Kokotailo was not involved with these bodies.

Despite "*joined at the hip"* dangers about which Kokotailo had warned (see chapter 5), in a government context where there had never been any official strategy to address the needs of either walking or cycling, the combined strategy Kokotailo was hired to lead was a significant achievement. No doubt thanks to her involvement, recommendations on walking and cycling were kept distinct from each other.

National Land Transport Fund funding for walking and cycling (see chapter 5) was followed by a rash of local authority walking and cycling strategies throughout the country.

2014: surge for cycling, but not walking

The NZ Cycle Trail (from 2009), Cycling Safety Panel (2014), and following this the *Urban Cycleways Programme* and Transport Agency's National Cycling Team (2015), were all specifically and exclusively focused on cycling to the exclusion of walking – worse even than the "*joined at the hip"* problem warned against by Kokotailo (in which walking had at least some attention, albeit obscured by cycling matters).

Some official initiatives have since officially been broadened to cover 'walking and cycling' (or 'active transport'), but they remain overwhelmingly focused on cycling.

"The RoNSs approach applied to cycling"

The post-2015 '*Urban Cycleways Programme'* (see chapter 6) funding applied only to larger urban centres and missed out much of 'middle New Zealand' – a sharp reversal of the intention behind the *'Walking and Cycling Model Communities'* (the *National Walking and Cycling Strategy*'s flagship project). As that project's name implied, originally the lessons learnt were to have been replicated in smaller towns, cities and local communities across the country. Measures other than big infrastructure projects were neglected, at least initially (see chapter 6).

This major proportionate increase in cycling funding this represented (though insignificant compared to that for roading or public transport) led the Cycling Action Network to applaud and press for its extension beyond just major centres).

Recruiting footpaths for cycling? Back to the 1930s and 1990s

'Separated' cycleways were by now in vogue in official circles, but widespread retrofitting of them to roads was impractical. Some officials responded by suggesting cyclists should ride on roadside footpaths where 'separated' cycleways could not be provided.

This seems a sharp reversal of – and capitulation in – cyclists' battles of the 1990s (see chapter 5). Back then cycle lobbyists strenuously argued against an official view that cycling (which, in those days, unquestionably meant roadways) was "*dangerous*". Now the 'danger' of roadway cycling seemed the key argument behind a new push for footpath cycling (reminiscent of the 1930s aim of getting cyclists out of the way of cars, see chapter 2).

Not surprisingly, those representing people on foot, people with disabilities and seniors were aghast – especially since they had not been involved in the preceding discussions.

Argued justification for footpath cycling was sometimes on the basis of a low official footpath crashe and injury record, and comparisons with more serious crashes and serious injuries to cyclists on roadways. This was generally in terms of absolute numbers (or crashes and injuries), without taking

into account that probably massively more cycling takes place on roadways than on footpaths (although hard data is limited).

Official reports (notably the 2020 and 2016 reports outlined below) gave no mention to the issue of how much footpath use – and the 'street life' highlighted by Jane Jacobs in the 1960s and urban designers since the 1980s – might be deterred by such a law change. Again, this is back to 1990s thinking, when officials cited crash and injury data whilst completely disregarding preventive health benefits – which Mayer Hillman and other had shown substantially outweighed cycling's statistical road safety risk (see chapter 3).

Part of the problem this time may have been that officials were listening to cycling advocates and not representatives of people on foot, people with disabilities or seniors – and what is more, cycling advocates who seem to have forgotten the lessons of the 1990s (see chapter 3).

All the more galling was that some officials (or advisers to officials, whether in-house or consultants) behind these changes were known to have an active history in cycling advocacy, sometimes even formally within the Cycling Action Network. This seems at least a serious conflict of interest.

Accessible Streets Package Footpath Cycling Cost Benefit Analysis 2020

The official Accessible Streets Package Cost Benefit Analysis Report *Allowing Cyclists on the Footpath* (the official report in support of a proposal to legalise footpath cycling), was said (page 2) to be "*As part of the policy development and to inform public consultation*", yet was dated "*April 2020*" and not available at the March 2020 formal invitation of submissions on the Package. Its late appearance was communicated to cycling advocates, but leaders of the leaders of the '*Footpaths For Feet*' coalition (bringing together Living Streets Aotearoa and representative stakeholders of the disability and seniors sectors) only heard about it indirectly (sometimes through cycling advocates. There seem some process concerns here – at the very least, a lack of even-handedness between competing advocacy sectors.

This cited an earlier 2016 official report on footpath cycling options (Abley and Mackie, see below) as saying that "*ideally pedestrians, cyclists and motor vehicles should be separated, but as this is currently unfeasible on most roads, providing particularly vulnerable cyclists the option of riding on the footpath . . . . would improve cycle safety overall"*.

Apart from this bald statement rather mis-stating what the report said; other serious flaws in this report; and signs of ignorance of the professional literature consulted (see below), this is simplistic and at variance with what would actually "*improve cycle safety overall"* (as outlined in this book). The report's most crucial flaw is not covering, or even mentioning, the issue of potentially deterring people from walking (see above).

Another bald, and unsupported, statement near the report's beginning is that "*The greatest cost relates to the number of crashes and severity of injuries that result from allowing all-age cycling on footpaths and whether there would be a subsequent decline in crashes and injuries if cycling is allowed on footpaths".* No reasoning or analysis is given as to why this is considered "*The greatest cost . . . ".*

The statement is at least questionable and, I would suggest, manifestly false bearing in mind other issues aired in this book, most notably the potential for such a law change to deter walking, 'street life', accessibility of sectors with limited mobility (e.g. disabled and frail elderly) and all the wider effects of all this.

This April 2020 report follows on from a process since about 2015, starting with the Urban Cycleways Programme and the National Cycling Team's "*RoNSs approach applied to cycling*" (see chapter 6) and continuing with the 2016 petition of self-styled "*cycling mum*" Jo Clendon (see below).

The Accessible Streets Regulatory Package Cost Benefit Analysis *Allowing Cyclists on the Footpath* shows signs that maybe it was prepared hastily after policy formulation had been completed (see above on date and means of release) and without a grasp of the issue or literature covering it.

An important 2016 report commissioned by the Transport Agency on footpath cycling options and prepared by consultants Abley and Hamish Mackie (see below), is cited as authored by "*Abley Consultants Ltd"*: no mention that Hamish Mackie (an expert on sports injuries) was a co-author.

The report states that the Parliamentary Select Committee considering Jo Clendon's petition "*agreed*" with a recommendation that children under 12 be allowed to cycling on footpaths – when in fact it only agreed to refer this to the Transport Agency for further consideration (a very important difference).

A 2018 report commissioned by Victoria Walks (Australia), concluding "*there is no clear evidence that cycling on footpaths is safer than cycling on streets*" is said to "*express* [an] *opinion*" (rather than the more substantive-sounding "*finding*") and that *"it is important to note the above concerns . . . . are based on very limited empirical evidence and this is acknowledged by the authors".*

The general dearth of any data on walking and cycling usage and (especially minor) crashes means the same could be said of virtually any report on this subject! The 2016 Transport Agency footpath cycling options report (Abley and Mackie, cited above), has a similar proviso. Even the Cost Benefit Analysis report itself states in its Introduction that "*Data to carry out the cost-benefit analysis is limited, and assumption have to be made to quantify and monetise the benefits and costs involved".* Yet for the Victoria Walks report, a different and arguably dismissive tone is used.

An important 1993 UK study by Trevelyan and Morgan on cycling in city and town centre pedestrianised shopping centres was referred to as about "*shared paths*". I remember this study well (I represented the UK Association of Metropolitan Authorities on the Local Government and Cycling Working Party at the time, followed this project's work closely, and fully supported its findings) and it had nothing whatsoever to do with shared paths. It was solely about pedestrianised streets, a completely different subject with totally different issues from shared paths (let along roadside footpath cycling; see chapter 12 for an outline of what this report's contribution actually was, which is still valuable today).

David Davies (author of the *Cycle-Friendly Infrastructure Guidelines on Planning and Design* covered in chapter 3) is cited for another 1999 report (arguing against cyclist/ pedestrian sharing on shared paths) as "*Davies G D"*. His initials are in fact "*D G*". I was in correspondence with him at the time, and he was very concerned about the same issue I have highlighted above: the ignoring in much official analysis of the potential for cycling/ pedestrian sharing to deter walking, and the wider social, economic, crime effects this might have. The Transport Agency's Cost Benefit analysis report, despite in other ways faithfully representing Davies's findings, does not mention this.

The above examples of apparently disingenuous language (for 'inconvenient' findings?); some lack of grasp of the relevant professional background material; and some other seemingly small 'careless' mistakes, does not inspire confidence. I expect better in official justification for such a controversial proposed law change.

The costs and benefits argued in this report are quantified from the Transport Agency's official Economic Evaluation Manual, in areas of potential cyclist and pedestrian injuries from cyclists induced by the law change to cycle on footpaths instead of roadways; and other potential benefits (e.g. emission reduction and saved vehicle operating costs) from motorists potentially induced to cycle (on footpaths) instead of driving. This is understandable: an official Transport Agency analysis of costs and benefits can only formally quantify what is formally itemised in the Transport Agency's official manual.

However, the Economic Evaluation Manual (formerly the Project Evaluation Manual) has since the 1990s steadily broadened in the scope of costs and benefits which it covers; and the Transport Agency has often admitted it can be improved. As the history in this book outlines (especially chapters 4-6) costs and benefits relating to walking are much less further developed than are those relating to cycling, and this needs to be recognised – notably, of course, costs relating to potential deterrence of walking through perceived risk (of which this report fails to give any mention).

Based on the report's limited itemisation of costs and benefits, a benefit cost score of 1:1.75 is derived.

Cycling Action Network's Patrick Morgan has argued that a Transport Agency survey found most people were unaware footpath cycling was illegal, and that therefore there would not be an increase in footpath cycling. Yet the Transport Agency's Cost Benefits Analysis derived all its argued benefits from the assumption that there would be increased footpath cycling! This contradiction seems to at least show confusion.

Legal shared paths – and next general footpath cycling legalisation?

If an aim is to get cyclists off roadways and onto dedicated cycling infrastructure (for whatever reason) then space needs to be taken from some other often-limited roadway reserve space.

'Separated' cycleways, the currently in-vogue 'ideal' solution, can be expensive and the space may not be available without severely constraining width for footpaths, berms, roadside parking, cycle lanes or general traffic lanes. All of these may be important for other purposes or, even if not, difficult to remove without political contention (notably for on-street car parking).

Rather than creating a new and separate space for cycling (additional to other demands on the total road reserve width), legalising footpath cycling may be an 'easy' solution to this problem..

An individual footpath could then (through appropriate legal channels) be declared a 'shared path'. Where pedestrian numbers are low, this might seem sensible.

Data on footpath use may be unavailable, and a popular perception of few pedestrians may not be borne out in fact (akin to the "*I don't see (m)any cyclists"* perception which Glen Koorey battles in Christchurch, see chapter 6's Christchurch footnote).

Rather than declaring individual footpaths as 'shared paths' an even 'easier' approach may be to make a similar law change applying to all footpaths, unless specifically excluded. This is, in fact, what the Accessible Streets Package proposed law changes would do.

Footpath cycling legalisation suggestions (e.g. Jo Clendon's petition, see below) will typically envisage a situation of wide (or at least adequate) footpaths, good visibility and good maintenance (e.g. a smooth surface) where users are few.

Such a situation, however, is far from typical, and in reality extremely patchy. Historically footpaths have been officially considered an 'amenity', purely of local concern, and therefore no business of central government.

Central government involvement in footpaths is still relatively recent. Official information on footpath provision may be limited to local authority (or for state highways the NZ Transport Agency) Asset (or Activity) Management Plans, which regularly monitor the state of existing footpath assets, not whether those footpaths accord with best practice standards or are adequate for sharing by cyclists, low-powered vehicles, or other non-walking users.

Especially in smaller settlements footpaths may be inadequate or non-existent. Some local Councils have an informal 'rule of thumb' that a footpath is only to be provided on one side of most roads.

Without looking at what the footpath asset consists of, it may be easy for officials to propose that many (or, for some categories of cyclist, all) roadside footpaths should be changed legally to 'shared paths'.

At the stroke of a pen (or gazetting of a notice, or passing of a by-law) cyclists may be legally allowed to cycle on footpaths which may in some cases reduce in width to less than a metre (or disappear altogether), have blind corners or other visibility restrictions, and have surfaces uneven, broken or inadequately maintained and/ or have driveways from which cars may reverse with little or no visibility.

The crash data typically cited (see above) usually excludes 'near miss' incidents, and it may only take a small number or these to give rise to a much larger and more widespread deterrent effects on walking.

Anecdotally (because statistical data is lacking) there does seem more footpath cycling than in previous years, including by adults alongside roads where the traffic could not be considered intimidating. Legalisation may alter behaviour of footpath cyclists (possibly in a more intimidating direction), because they now know they have a right to be there. Official examination of this issue seems not to have taken place, and would be needed in order to satisfy concerns of walking, disability and seniors advocates. This may be of all the more concern bearing in mind the apparent changes in public attitude outlined in chapter 10.

"The cycling mum" Jo Clendon's 2016 footpath cycling petition

In 2016 concerned Lower Hutt mother Jo Clendon, branding herself "*the cycling mum*", started a petition for children under age 14, accompanying adults, physically disabled, mentally disabled and elderly people to be allowed to cycle on footpaths (a very wide range of people), arguing that many footpaths are often empty.

Following this, Cycling Action Network (CAN) reviewed its policy that under-aged-12 children should be allowed to cycle on roadside footpaths. Their members' opinions were divided, but CAN did change its policy to support Clendon's petition.

Patrick Morgan, often CAN's official media voice and also a school cycle trainer under the government's *Pedal Ready* (now *Bike Ready*) programme, advocated for this change of stance by CAN. School cycle training takes place largely within school playgrounds, followed by a few hours' coaching on quieter roads and then (embarrassingly for Morgan, who cannot condone it) the children often ride home on roadside footpaths. Morgan has argued that legalising footpath cycling would enable him and other trainers to teach school children how to 'safely' ride home on footpaths.

In fact, only a very small proportion of school children receive *Bike Ready* training (about 1 in 20 of the relevant age group in 2016, although this may have increased since); is very brief (typically less than 1-2 days in total); and it is unclear how effective the training is (some assessments seem to suggest it is ineffective). This argument therefore seems weak at best and spurious at worst. Added to this, the stage in life involved – teenagers – is well known as one when 'boundaries' are challenged, with some reluctance at 'being told what to do' by an adult.

There are suggestions that officials of the former National Cycling Team may have given active help (e.g. staff time, or other resources) to Jo Clendon's footpath cycling petition. I am not aware of any conclusive proof, but were this true it would seem unethical for public servants, whose role is to work within the law and not work with sectional lobbyists trying to change it.

Unequal stakeholder liaison at the Road Controlling Authorities' Forum

Some among the walking advocacy sector even suggested that CAN had effectively become part of the Transport Agency (I neither endorse nor contradict that view). Some cycling advocates have responded by laughing off the suggestion. Yet official liaison channels do in some respects seem uneven.

The Road Controlling Authorities Forum, led by the Transport Agency to bring local authority roading managers and others together (also see chapter 5), had already had for some years an '*Active Modes Working Party'* to cover walking and cycling issues. By the time of Jo Clendon's petition, this had for some years been mainly pre-occupied with cycling matters (apparently reflecting Reena Kokotailo's "*joined at the hip*" problem, see chapter 5).

Then the Forum set up a further '*Shared Footpaths'* working party. This seems to have been prompted by Jo Clendon's petition (at least, there didn't seem any other reason for it, especially since the '*Active Modes Working Party'* already existed).

The Parliamentary Select Committee which considered Jo Clendon's petition (further to her constituency Member of Parliament tabling it in the House) had asked the Transport Agency to further consider the possibility of legalising footpath cycling. Yet setting up a working party called *'Shared Footpaths'* seems to presume that it should take place. Charging the '*Active Modes Working Party'* to consider this matter would have seemed the logical step, and this would not have presumed an outcome either to allow or decline legal footpath cycling.

Representatives of people on foot and people with disabilities were invited to join the '*Shared Footpaths'* working party, but its very setting up placed them in a defensive position, with an implied onus on them to show how roadside footpaths could be 'safely' shared with cyclists.

With Transport Agency raising footpath sharing possibilities, those representing walking, people with disabilities and seniors were not surprisingly unimpressed by needing to show why this should not take place, rather than whether it should, or to raise other concerns they might have about

footpaths and their use. Some presented their own data challenging Transport Agency data, but it is not clear whether this was considered with any seriousness.

By 2017 the Road Controlling Authorities' independent convenor disbanded the '*Shared Footpaths'* working party, because (in his view) it had become so acrimonious as to be unworkable.

NZ Transport Agency's 2016 'Footpath Cycling Rule Options Research' report

Much '*Shared Footpaths'* working party's acrimony focused around a report commissioned by the Transport Agency: *'Footpath Cycling Rule Options Research'* by Abley Consultants and Hamish Mackie.

This report, like the working party's title, was telling and presumptive. This was not a report to examine cycling safety issues (of which footpath cycling might be one among a wide range of possible responses) but specifically on possible changes to the law to allow cycling on footpaths. Most crucially, tackling roadway user behaviour was not included in its brief.

The report seems to have been commissioned specifically in response to Jo Clendon's campaign – at least, there do not seem to have been any other general calls to change laws on footpath riding.

Again, advocates for walking, various disability sectors and seniors were not involved, despite footpaths being ostensibly provided for people on foot; there seemingly being far more people on foot than on bikes (although statistical data is lacking); that the most vulnerable groups (e.g. elderly, disabled) rely on footpaths more than most people and are arguably more likely to be deterred from using footpaths than are most people; and that walking advocacy and disability sector groups are among the main representative of existing footpath users.

The report concludes with support for legalising some forms of footpath cycling – without, like the Transport Agency's 2020 Cost Benefit Analysis report which followed, considering the most important types of data.

The report analyses official crash data (in detail), together with an international literature review. It also looks at hospital admissions (a useful comparison because of the common problem of under-reporting especially of 'minor' crashes, into which category footpath crashes tend to fall). The report concludes there were very few crashes or injuries or hospital admissions (hardly a surprise to many lay people).

Like with the 2020 Cost Benefit Analysis report, 'near misses' and effects on people's perception of safety; the possibility and extent of this deterring people from walking; and wider social, economic, crime and health effects stemming from this, were not considered.

An apparent Transport Agency staff imperative towards legalising footpath cycling (both consultant lead authors are well-respected professionally including by me) may at least partly account for the report's flaws:

- Lack of coverage of perceived safety. No data gathered, and the issue not mentioned (see above).
- More 'courteous' cyclists, since cyclist training can now cover behaviour on footpaths? Very low proportions of children given this training, training only very brief, no assessment of the training's effectiveness, no allowance for the 'challenging' nature of the adolescent years, no allowance for a (possibly more assertive) culture change from knowledge that footpath cycling is now lawful and officially endorsed (see above).

- Age a less arbitrary basis for restriction than wheel size? The report claims that restricting footpath cycling by age is less arbitrary than by wheel size (the current legal basis), when in fact each is as arbitrary as the other. Although footpath use enforcement is almost non-existent anyway, a wheel size is easier to determine than a person's age.
- Cursory stakeholder 'workshops'. Dialogue with walking, disability and seniors' advocates was through a few brief 'workshops' which already had an agenda of considering footpath cycling legalisation; strongly at variance with principles of 'public participation' and 'communicative planning' in which those consulted are listened to (see chapter 2).
- Driveway visibility and crash risk. The report acknowledges a problem of limited or zero visibility at driveways, and a consequent risk of crashes and injuries to footpath users, but proposes to legalise footpath cycling anyway and 'monitor' the situation. This is bad practice when a problem has already been acknowledged to exist; it is doubtful whether any monitoring would take place (no specific monitoring is proposed); and the claim that legalising footpath cycling might 'encourage' developers to provide greater driveway visibility is at the very least highly questionable (no evidence is advanced in support of this).
- Footpath cycling speed limit. Apart from the general problem of little or zero enforcement (see above) no one (including the cyclist) will know how fast they are travelling on the vast majority of bikes which do not have speedometers.
- E-bikes excluded? Despite the report recommending against allowing e-bikes, the little or zero enforcement, together with official endorsement implicit in legalisation of other forms of footpath cycling, may encourage e-bike footpath riding.
- Specifically identified footpaths excluded? Specifically identified footpaths (e.g. busier or narrow ones) may be excluded from general footpath legalisation, but it would seem doubtful whether already hard-pressed local authority staff would devote the considerable amount of time to gather data and go through a possibly fraught and politicised process to determine specific footpaths to exclude. It is also doubtful whether cyclists would comply, especially since (even with signage) the exclusions may be confusing or inconvenient.

The report says (without any substantiating evidence) that attitudes have changed in favour of footpath cycling. This is patently not true among those representing lawful footpath users, i.e. people on foot, various forms of disability and seniors.

The report gives no figures on numbers submitting for or against Jo Clendon's petition when considered by a Parliamentary Select Committee, let alone the proportions for and against – raising suspicions of an overwhelming proportion being opposed.

It also seems strange that at the time it was being stressed that no general legalisation of footpath cycling was being considered (i.e. for all adults); yet the Accessible Streets Package – into which representatives of lawful footpath users had realistically no input prior to formal invitation of submissions – proposes exactly this.

More 'low-powered vehicles' on footpaths?

The Accessible Streets Rules Package includes measures to legalise some footpath use by 'low-powered vehicles'. This has been under investigation for a few years, is an area rapidly growing in topicality as well as changing with technological developments. The Accessible Streets proposals are too complex to itemise here, but basically would allow some more low-powered vehicle footpath use, while legally prohibiting higher-powered and larger 'devices'.

The Accessible Streets proposals would broaden the definition of 'wheeled recreation devices' (a current legal term covering non-motorised devices such as scooters and skateboards) as part of a

comprehensive recasting of the range of definitions covering all non-motorised and low-powered devices.

This follows on from Living Street Aotearoa, within the last two years, having questioned the legality of a process by which some low-powered devices were legally declared to not fall within the category of 'motor vehicles' (the result of which being that they can now legally used both roadways and roadside footpaths). Living Streets' legal case was based on an argument that proper consideration was not given to safety risks to pedestrians and other footpath users (I neither endorse nor dissent from that case).

Issues surrounding low-powered vehicles on footpaths has built up incrementally over several years. Legalisation of individual vehicle/ device categories may not have considered the cumulative effect when taken together with legalisation of other categories.

For some years mobility scooters have been lawful on footpaths, and probably few people would begrudge these aids for frail elderly people, especially (maybe because of that frailty) there does not seem to have been a problem of their being used aggressively.

NZ Post's push to remain economically viable with plunging hard-copy letter numbers has led to the small Paxster motorised cart capable of carrying parcels. These may be wide compared to available footpath width, and (like e-bikes) can be driven at speeds akin to some urban roadway traffic. There have been cases of pedestrians being forced into a roadway by an approaching Paxster. Traditional cargo bikes (narrower than Paxsters, and not capable of high speed) are also capable of carrying parcels, raising whether Paxsters were necessary anyway.

Footpath right-of-way issues

The Accessible Streets Rules Package proposes that pedestrians should have legal right-of-way over footpath cyclists. Apart from the issue of little or zero enforcement, this would seem very unlikely in practice, because cyclists are faster, heavier, have greater momentum, and can slow and change direction less readily. This is a similar issue to cyclists and motorists having the same legal rights on roadways, yet with cycling advocates often saying they feel threatened by motor vehicles as bigger, heavier and of greater momentum (ironically, this is behind the calls for footpath cycling legalisation).

People on footpaths crossing side roads do not, in New Zealand, have right-of-way over side-road roadway traffic. In some overseas jurisdictions they do, *Living Streets Aotearoa* has campaigned for a law change to this effect, and the Accessible Streets Package proposes that this would apply when certain minimum (simple and low-cost) road markings are put in place. Although this would only apply in specific cases where the road markings are applied (which would likely be at a small minority of intersections), this does seem a slight move towards *Living Streets'* position.

Footpath pedestrians have right-of-way over driveways, but often a message is conveyed that they do not.

Although not about footpath riding, campaigns encouraging child cyclists to look for 'sneaky driveways' give the impression that the roadway child cyclist should give way to the driveway-exiting car (over which they have legal right-of-way); all the more since campaigns seem lacking to tell driveway-exiting drivers to give way to the roadway child cyclists (or, indeed, any cyclists, or to footpath users).

Commercial car park accesses (notably for parking buildings and supermarkets) are legally 'driveways', and footpath users have right-of-way over these, but infrastructure may give the opposite impression.

Lights and/ or buzzers at car park exits, to alert footpath users that a car is about to exit, imply the footpath user should give way. It would be feasible (e.g. with infra-red technology) to warn an exiting car to give way to a footpath user about to cross the car park exit, but this is rare (or non-existent).

Some supermarket car parks may include corner-splayed kerbs, which make this 'driveway' look like a road and, again, imply the footpath user should give way. There are even a few cases of crossing lights, to enforce this, at some more heavily-used car park entrances/ exits.

Some zebra crossings have words "*look*" or "*check before you step"* directed at pedestrians and spray-painted on the ground, without a corresponding warning for roadway traffic to give way to pedestrians on the crossing (who have legal right of way).

All the above examples seem to indicate that, regardless of actual legal right-of-way, a culture of pedestrians being required to defer to motor traffic is very entrenched. Justifying these on safety grounds (i.e. the footpath user generally is at greater injury risk) fails to recognise that it may be as effective, or more effective, to convey the actual right-of-way (e.g. for driveway traffic to give way where this is the case).

Other erosion of freedom to walk (or cycle)

In mid-2019 a coroner responded to rubbish truck killing a six-year old child cyclist by saying the child should not have been walking to school unaccompanied. There is no law, or even official guidance, to this effect, and *Living Streets Aotearoa* called for the coroner to be censured.

There have been (overseas) cases in recent years of Police officers apprehending unaccompanied children cycling to school and warning parents they might be held guilty of neglecting their legal duty of care.

There has been at least one (New Zealand) case of a mother cycling on a roadway with her children to school being told by Police they were too young to ride on the road and so must ride on the footpath. Informal official guidance is that children of that age (under 12) should be accompanied by an adult on the roadway (which is what was happening).

The above examples (and no doubt there will be others), seem to show a culture change over the past few decades.

Early cycling strategies, notably the seminal 1977 *Geelong Bike Plan* and Mike Gadd's 1986 *Cycling in Christchurch* strategy (see chapter 5) were largely built around an assumption of large numbers of children cycling to school unaccompanied by adults.

Social researchers such as Mayer Hillman (see chapter 3), have extensively studied and argued the importance of personal independent mobility, especially for children who are developing physically and in their cognitive and social skills. *Crime Prevention Through Environmental Design (CPTED;* see chapter 4 and above) is based on the principle that safety is served better by more people on the streets.

Children vary in their cognitive skills, and roads vary in their traffic. Informal localised riding on low-trafficked streets may be vital in building up skills children need to interact safely with traffic.

In fact a post-Jo-Clendon world, where the expectation may be that child cyclists keep to footpaths, may deprive children of the natural learning of road skills, and so paradoxically result in more dangerous outcomes than at present.

State of footpath infrastructure

In 2016 National Land Transport Fund subsidy was broadened to cover footpath maintenance – a major change from a longstanding legacy that 'transport' is what happens between roadway kerbs; and that walking and footpaths are an 'amenity' and not 'transport'.

The legacy that footpaths are an 'amenity' of purely local concern has meant that their provision has been left to local Council staff – who may not be conversant with national-level official guidance.

The Transport Agency's *Pedestrian Planning and Design Guide* (see chapter 5) – another break with the legacy that walking and footpaths are of no concern to central government – recognises that in most circumstances a footpath should be provided on both sides of most roads. Local authorities may have never thought through footpath provision as professionally rigorously as this (still relatively new) national guidance has. Some have an informal rule of thumb that a footpath should only be provided on one side of most roads.

Apart from this, something similar ends up being worked into District Plan rules governing new subdivisions, meaning that many new subdivisions have been (and are still being) built with footpaths on only one side of most roads.

It is worth noting that the main official guidance used (in conjunction with District Plans) to govern new subdivisions, the *Land Development and Subdivision Infrastructure* Standard *NZS4404:2010*, also recommends a footpath on both sides of most roads (although the Standard is very complex, so maybe some practitioners are unaware of this).

What is more, in many circumstances these official guidance documents stipulate a wider path than a commonplace dimension of about 1.5-1.8m. A wider path is generally required where there is likely to be more pedestrian activity, for example in shopping centres and near schools.

This dimension also takes no account of the increasing issues of footpath cycling and 'low powered vehicle' traffic on roadside footpaths of recent years.

To my knowledge, no survey has been undertaken either by central government or local authorities to assess how well existing New Zealand footpath infrastructure compares with the official guidance (something quite different from Asset Management Plan surveys, which are routine and measure the condition of existing infrastructure).

Low-powered vehicles in separated cycleways?

One suggestion has been for low-powered vehicles to be able to use cycling facilities (whether 'separated' or on-roadway); it being seen as an anomaly that they can't while some low-powered vehicles can use footpaths.

The Accessible Streets Package, much of which in other ways seeks to resolved apparent anomalies through re-casting legal categories and road rules, has taken up this suggestion and proposed it.

This follows an earlier suggestion of a 'small streets' middle road-space category, between footpath and roadway, for the increasing number of means of transport more 'technological' (generally with a very small motor) and faster than a pedestrian, whilst smaller than a motor vehicle and also not being a pushbike.

The idea may have merit, but suffers from 'separated' (and even conventional roadway) cycling facilities not being widespread (a miniscule proportion of total road length, and completely absent from many towns and cities) and the complexity of road arrangements which would be necessary (especially at intersections) which may well create their own confusion and hazards.

The practical difficulty of squeezing in yet another separated facility into already limited road reserve width has already been mentioned.

An alternative approach, which may be more practically feasible although with its own complex issues and beyond the scope of a book on planning for walking and cycling, might be tackling the wider issues of how these 'very small vehicles' could be safely included together with other user categories in use of the general roadway, rather than any form of segregated dedicated facility. 'Filtered permeability' in road network planning (see chapter 3) may also have a role in encouraging their use in preference to driving, to in turn reduce roadway car volumes thus making the idea more potentially feasible.

Whilst not easy, the lack of looking for wider solutions has been at the heart of this chapter's issue of more and more categories of 'non-foot' traffic using, or being proposed to be legally allowed to use, roadside footpaths.

'Tactical urbanism', 'Innovating Streets' and Covid-19 'social distancing'

'Tactical urbanism', finding expression in the Transport Agency's 'Innovating Streets' programme, has co-incided in early 2020 with the Covid-19 (/Coronavirus) pandemic and with it 'social distancing' anti-infection measures. These together raise the prospect of more radically re-thinking footpaths, cycleways and roadways, which may include a generalised re-thinking of roadway used (see above).

'Tactical urbanism', has gained ground over recent years, at local rather than central government level until the early 2020 'Innovating Streets' programme.

Conventional road planning undergoes reflection, iteration and (sometimes) community/ stakeholder engagement based around drawings (which may themselves progress from concept to detailed and engineering plans), then finalised plans are implemented 'on the ground'.

'Tactical urbanism' makes changes 'on the ground' first, then discusses possible changes, including iteration and public engagement. It is generally low-cost, simple and can readily be reversed (and removed if found inappropriate). More radical ideas can be trialled than would otherwise be the case. Required budgets may be small. Typical measures may include installing or moving plant pots or seating.

The early 2020 Covid-19 global pandemic has carried with it (overseas as well as in New Zealand) a requirement for people to keep at a physical distance from each other, typically 1 or 2 metres. With many footpaths only 1.8m wide (a longstanding 'rule of thumb' dating from the previous standard

imperial measure of 'six feet'), 'tactical urbanism' type measures (without being called that, or maybe without conscious thought of that) have been taken to widen footpaths.

A typical measure has been using traffic cones to add to the footpath a roadway on-street car parking lane, which may have been made less publicly contentious through many businesses having closed (temporarily, through Covid-19 anti-infection measures), thus reducing or eliminating local on-street car parking demand.

Covid-19 measures may not continue in the long term (i.e. beyond the pandemic) but they have (unconsciously) showcased 'tactical urbanism' in a way which would not otherwise have been possible. The Transport Agency's 'Innovating Streets' programme coming at the same time means that, potentially, government money may be available to fund the ideas emerging.

Although Covid-19 restrictions will be eased in due course and traffic levels rise again, some of this change may have prompted ideas for the longer term. Businesses will have become more familiar with staff working from home, and may see advantages to continue it.

The restrictions have showcased a situation of less traffic. Prosperity has for many decades been seen as closely related to road traffic levels.

In past years this has been questioned (i.e. suggestions a prosperous economy can co-exist with less traffic).

Familiarity with remote (notably home-based) working and trading (required through Covid-19 restrictions) may boost this idea and, again, prompt a search for lower traffic levels while preserving (or enhancing) economic or lifestyle prosperity.

All this may serve to make this chapter's underlying issue, i.e. walking and footpaths having become a 'dumping ground' for problems encountered by other (i.e. non-foot) means of transport elsewhere – easier to resolve.

THE PRESCRIPTION

Chapter 12

Priorities right-side-up: local means success

More mobility including for car drivers

A well-functioning transport system will not be delivered by planning, programming and funding different forms of transport separately from each other. Investment in one form of transport affects and may undermine investment in others (see chapter 7).

The German philosophical roots which gave us transport planning (see chapter 2) may seem a long way from real life, where we drive cars for probably most transport needs.

But unless we tackle the priorities and the nature of decision-making within transport planning, and how this affects funding and investment decisions, we will continue to reap more congested roads as well as unsatisfactory outcomes for other forms of transport (see chapter 7).

A wider road may seem the obvious solution to a traffic jam, but freedom from congestion has been promised for over half a century, and is still elusive despite much road building to meet the demand for driving (because the more roads there are the more we drive, see chapter 2).

Carrying on as we have done would mean public transport would still be inadequate or unavailable (because potential passengers find driving suits their needs better); cycling conditions would still be off-putting (so not many would cycle); and walking would still be uncomfortable with inadequate footpaths where bikes, small e-vehicles and Paxsters compete with us for space.

Greater priority for walking and cycling would benefit car driving too. No one identifies as 'a motorist' – instead, people use the form of transport which best suits them. If walking and cycling or public transport suits them best, fewer people would drive and roads would be less congested.

Good, plentiful, comfortable and efficient public transport induces many to use it instead of driving. The same holds true for walking, cycling or scooting. And those still choosing to drive may find the roads less congested as a result. All this has been proven where it's been tried, in places like the Netherlands (see chapter 3).

Chicken and egg

Some argue that public transport services need to be in place first, before we can reduce investment in roads. In fact, a high proportion of trips (by car or public transport) are for very short distances (5-10 kilometres or less) which can be readily cycled by most people. High proportions are shorter still (1-3 kilometres) so can be readily walked too.

If walking and cycling is attractive (and the amount and speed of motor traffic is the main factor in that, see chapter 3), then numbers driving may drop. Any reductions in road capacity (for example, losing a car parking or traffic lane to accommodate a cycleway or wider footpath, see chapters 3 and the last part of chapter 11) may – in some circumstances – be cancelled out by fewer cars (thus heading off a potential congestion problem).

This is 'a chicken and egg situation': each measure seems to require the other measure to happen first.

Closing down road space without careful thought can, indeed, result in local traffic congestion. So we need to be careful how and where we do this. Yet building cycleways without supporting measures, affecting other forms of transport and across a whole road network, will yield underwhelming results (see chapter 3).

Public transport needs to be viable so it can deliver a good level of service to attract users. It can't be viable if driving takes those passengers (because driving meets their needs better). So there's a 'chicken and egg' situation with public transport too.

Traffic modelling (see chapter 2), which has been a bedrock for so much of transport planning's history, can help. Indeed it is vital for us to know how to break into the cycle of 'driving demands more roads which bring more congestion which demands more roads'.

The right types of measures at the right place and time, however, can deliver a win-win of enabling us to get where we want to get efficiently and safely, by whichever form of transport serves our needs best.

York and the 'road user hierarchy' concept

The idea of a hierarchy reversing priorities implied in Nietzschean philosophy (see chapter 2) is not new.

A 'road user hierarchy' (not to be confused with the classic road hierarchy, see chapter 2) has been adopted by many local authorities and transport planning theorists, and was incorporated in the 2005 *Getting There – On Foot, By Cycle* National Walking and Cycling Strategy (see chapter 5).

But because it wasn't incorporated in the parent 2002 NZ Transport Strategy (see chapter 5), this had little effect – just as the local 'integrated' transport strategies were ineffective because they avoided choosing between different forms of transport planning measures where these would undermine each other (see chapter 7). Relegating a 'road user hierarchy' covering all form of transport to a strategy only covering walking and cycling doomed it to failure from the start.

The 'road user hierarchy' concept originated in York, UK – and many will say that York isn't like typical New Zealand towns and cities. That's true, but the issues are; and York's special characteristics meant it experienced, before the rest of us, pressures making clear how important these priority choices were.

York has a historic centre, defined by mediaeval walls which follow those of the older Roman settlement. Within these were built the massive York Minster Cathedral, medieval houses, streets, churches and a castle. This old city core experiences massive congestion not only of car traffic but also people on foot, added to by large numbers of coaches, from which tourists visit sights on foot. The place also has high cycling levels and bus service congestion. Some pedestrian streets can be jam-packed. All this prompted hard choices.

Why cities came about

York's answer, that first priority would be given to walking, then cycling, then public transport, and lastly to car traffic (with York-specific variants such as tourist coaches) followed the logic of cities' origins.

Cities came about so large numbers of people could interact face-to-face – and this happens best on foot. Whether trading in markets, meeting for government or religious worship, foot fits face-to-face interaction better than any other form of transport does. That's why walking should take priority over cycling (see chapter 11).

For York, cycling was next priority, because the importance of geographical closeness gave high value to those forms of transport taking up the least space. To cycling we could add (manual) scooting, still 'human scale' (as well as, like some bikes, being small enough to carry on public transport for longer journeys).

The central role in cities of face-to-face interaction means that giving public space over to foot-based interaction (including decisions on how much and where) becomes of prime importance – more important even than motor traffic efficiency as measured by conventional traffic modelling (see chapter 2). This would mean a major public square would often be of greater value for people on foot rather than (as sometimes happens) as a car park.

Walking – missed because it's more than transport

The vital central role played by public pedestrian space in cities is frequently missed or downplayed. Good examples are the *Auckland Transport Alignment Project* and *Let's Get Wellington Moving* exercises (see chapter 7), both of which are dominated by transport infrastructure other than for walking.

Walking's central role gets missed because walking (see chapter 4) is not primarily about getting from one place to another – which is how transport planners tend to see transport.

We should start planning a city's transport by asking where movement and interaction on foot would play its most important role in the city's activities. Examples would tend to include public squares (especially near a major public facility such as a library), main shopping streets, routes from railway stations to people's places of work, and areas near schools.

Generous provision for people to relax and enjoy the outdoors, provided in this way, is important for people to want to be in the city, which in turn is the key to prosperity, crime deterrence and much more (see chapter 4).

This focus on foot, followed by cycling, also works for places other than city centres. Donald Appleyard was well-known professionally for his 1970s research measuring individual foot-based interactions in suburban streets, and how this changed depending on the amount of motor traffic passing through a street – the more motor traffic, the fewer face-to-face interactions on foot. This echoes David Davies's finding in the 1986 *Cycle Friendly Infrastructure Guidelines for Planning and Design* (see chapter 3) that cycling levels are heavily influenced by the amount and speed of motor traffic. Appleyard updated his 1970s research in the early 2000s and it is still relevant today.

Public transport and 'transit-oriented development'

The approach outlined above would reverse priorities established during transport planning's 1920s-1950s formative period.

Cars, seeming great when few in numbers, have been found very inefficient for mass use (especially in cities, shown by congestion). Younger people especially would sometimes prefer car ownership to not play such a large part in their lives and budgets (see chapter 8).

Public transport, devised for mass volumes, is more efficient in space occupied per person moved. Space saved can then be made available for foot, enriching the city, its trade and street life.

Some bus lanes may look empty, but not considering numbers on each bus, and roadway space which would have been occupied were each person driving their own car.

Around public transport stations, land use planning can work with the property development market instead of against it ("*transit-oriented development*").

Main road planners have been fighting the market for decades, using land use controls to prevent businesses locating on main roads to get passing trade ("*ribbon development*"; on the basis those roads are for movement not access, see chapter 2).

Commercial and community development near rail stations may encourage some to walk instead of drive to the train, and this helps local business viability through 'footfall' past the shops. Whilst a car park will often serve the station (e.g. for "*park-and-ride*"), this should be a short distance away.

The short walk from the car park is no inconvenience. Routing it past the shops helps travellers (e.g. preventive health) and the shops themselves (e.g. compare how larger airports sometimes place shops on the walk from check-in to departure gate). Any walking or cycling encouraged to the station will also have some traffic decongestion effect on surrounding streets.

New Zealand has some '*transit-oriented development*' heritage of its own. The Eastern branch of Auckland's Southern passenger rail line is a legacy of an early 20th century project to build new suburbs in conjunction with the new line. Naenae in Wellington's Hutt Valley is 1950s example of a centre consciously planned in conjunction with rail services.

City centre streets: nurture, don't kill, the shopping goose

Retailers tend to highly value customers being able to park outside a shop. Although plentiful car parking close to shops works in smaller centres (because of less intense competition for public space), in larger town and city centres this can 'kill the goose which lays the golden egg' of business viability and prosperity. This is because busy motor-traffic-thronged streets may deter more shoppers than they attract.

This has been borne out many times in experience. Retailers are very concerned that taking the car out will kill trade, but (typically after adjustment of a year or two, which admittedly may be difficult) trade booms and people (including businesses) want more of it.

Birmingham, historically a city of large road intersections (e.g. the original 'Spaghetti Junction') and car manufacturing, has seen exactly this since the 1990s. Some streets and public spaces previously

used by cars (moving or parked) were given over to people on foot from the early 1990s, and this prompted much more of the same in other parts of the centre (see chapter 8).

Cycling in pedestrian areas

In pedestrian spaces, cyclists manoeuvre quite differently from people on foot. Bikes are bigger, they travel faster, and they turn through gentler curves. A person on foot may more readily be able to change direction, whereas a cyclist would need a gentle curve (depending on their speed). Cyclists need extra width, so that cyclists can pass pedestrians at a distance safe, emotionally comfortable and satisfying any 'social distancing' requirements (see chapter 11 on the Covid-19 pandemic).

Allowing cyclists to share pedestrian spaces can be contentious. A ban may require cyclists to use an intimidating road system (which may have been provided in conjunction of clearing the pedestrian street from through traffic), and a detour may be more of a deterrent for a cyclist than for a motorist. It may therefore be better to plan pedestrian spaces for safe cycle/ pedestrian sharing. It was to determine how this should be done that the 1993 Trevelyan and Morgan study (mis-cited by the Transport Agency as referring to shared paths, see chapter 11) was set up.

Trevelyan and Morgan (1993) '*Cycling in Pedestrian Areas'* found that cyclists and pedestrians, to comfortably share the space, generally require a street's full width. Cyclists' very different movement characteristics (see above) mean they will be attracted to space relatively free of landscaping features (such as plant boxes, seats and other street furniture).

In a pedestrian street a way through may be left for some motor vehicles (typically for deliveries, sometimes restricted-hours, and emergency vehicles). Trevelyan and Morgan found (from extensive video material) that cyclists tended to gravitate to these generally more central parts of a street.

Trevelyan and Morgan found that pedestrians tended not to be paying attention to cyclists' possible presence, but to other concerns, such as window-shopping or chatting to other pedestrians. This is a very important finding, and strongly echoes the nature of walking as found by Jan Gehl some years later (see chapter 4). It is important to acknowledge that this type of behaviour is in the very nature of walking, and that there should be no presumption (notably on shared paths) that people on foot should 'keep left' or in other ways behave other than how it is in the nature of pedestrians to behave (see chapters 4, 10 and 11).

Preserving a space towards the middle of a pedestrian street tends to pull cyclists away from people on foot (who tend to gravitate to the street edges, for example to chat, sit or look in shop windows). Designed in this way, pedestrian streets tend to work well for people both on foot and on bikes, without regulation (see chapter 11 on problematic regulatory enforcement issues).

Cycle parking, "Bikes Belong" and "bike stations"

For cycling to be attractive, cycle parking needs to be available, but is not routinely provided.

Even the longstanding and widely-used standard measure for casual short-term cycle parking the '*Sheffield*' stand (named after the English city where it was invented), has sometimes been positioned such as to make it unusable. This is hoop of metal to which bike wheels and frame are secured, and positioning needs to take into account that the bike extends a considerable way beyond the ends of the stand (e.g. these stands have sometimes been placed up against a wall, a typical mistake). Other bad positioning of cycle parking stands (e.g. in extending into or obstructing

a pedestrian desire line) may also cause problems for people with disabilities (notably sight-impaired).

'Sheffield' stands are only suitable for short-term casual parking (e.g. a few minutes to visit a shop, where security is not a concern in daylight when people are around). Longer-term storage (e.g. work commuting) generally requires a lockable container, for security and weather protection and to enable accessories to be locked away (e.g. a helmet or pannier). Providing well for cycle parking requires significant thought and space.

Sometimes bike parking is required through Resource Management Act District Plans, but this is not commonplace, and even where it is, enforcement tends to be weak.

Jo Clendon, also known for her footpath cycling petition (see chapter 11) has mounted a separate campaign, '*Bikes Belong'* encouraging retailers, cafés and restaurants to routinely provide parking for their cycling clients. This is in businesses' own interests, in that adding bike-bound customers should be good for trade.

Some businesses have also encouraged cycling clients because of cycling's positive associations (see chapter 3), most notably some cafés. Some cafés have gone beyond this and combined their café service with bike-related services.

'*Bike stations'*, combining secure cycle parking with other activities, are provided in some overseas countries. Services provided have included bike repairs and maintenance; cycling accessory sales; a venue for cycling clubs to meet; and job creation through bike maintenance training for unemployed (or handicapped or 'at risk') people.

The last may attract government grant money and thus help business viability. Some overseas examples have been located at rail stations.

Sadly, the few New Zealand examples of which I am aware – Auckland's *Bike Central* and Hamilton's *VeloEspresso* – failed for viability reasons after a few years of combined café and bike-related services, despite *Bike Central* having been located at Auckland's city centre Britomart rail station.

Entrepreneurship may counter viability problems, and the general public benefits (notably enabling cycling journeys in place of driving, for example work commuters or rail travellers currently with nowhere to leave their bike) may merit some government assistance. Grant-assisted job training (e.g. in bike maintenance) could also be a possibility, justified through benefits in terms of employment particularly for handicapped or 'at risk' people. Benefits from saved congestion (people bike instead of drive) and all the other benefits of cycling (health, crime deterrence, environmental, etc) would be reaped. Knowing there is somewhere to securely park may attract cycling in its own right.

For too many years people who cycle to work have been humping bikes up and down stairs to their offices (probably to the great inconvenience of their work colleagues), because there is nowhere else safe to put them. More may cycle if there was somewhere safely to park.

'Filtered permeability'

'Filtered permeability' has already been mentioned (see chapter 3). Transport networks better connected and easier for walking, cycling and public transport have potential to free up road space by encouraging a shift from driving to walking, cycling and public transport. This doesn't necessarily

require any regulatory restrictions on driving or dedicated infrastructure (e.g. 'cycling facilities') for those other forms of transport.

Far from restricting car movement, this approach actually respects and re-inforces the classic road hierarchy 'corridors and rooms' road network pattern (see chapter 2), by keeping motor vehicle through journeys to the 'arterial' roads (where, according to the classic theory, they should be). This approach therefore should not be difficult politically or professionally.

Whilst respecting and working with classic theory for motor vehicle movement, the road and path network layout would be highly connected for walking and cycling. A classic 'road hierarchy' can be a major deterrent to walking and cycling through detours imposed, which are more onerous for non-motorised than for motorised journeys.

Some examples of this may be simple, such as connecting conventional cul-de-sacs layouts with paths between cul-de-sac ends. Walkers and cyclists could use these paths (with adequate width, good lighting and good sight lines). (Non-motorised) scooting could be included in this, and the same approach could also be used to give public transport, and possible localised ('*last mile'*) freight movement (see chapter 7), some journey time advantages.

Bus network planning done well

Bus services, like roads, differ greatly as to their function (e.g. long-distance/ direct, or localised access). All these different functions need to be planned for.

Whereas *Network Operating Frameworks* typically cover plans to pro-actively develop the road network along classic road hierarchy theoretical lines, public transport is not planned for through these plans in such a pro-active way. Instead, *Network Operating Frameworks* tend to show existing routes. These are typically imperfect compared to what good bus route planning would have given (see chapter 7) because existing bus networks tend to have been what it has been possible to achieve in the context of classic road-hierarchy-based network planning (see chapters 2).

A well-planned bus network, taking into account different bus route functions, under the filtered permeability principles I have outlined, may well include some streets, or movement facilities, which only buses can use.

For a whole bus system to be viable, and serve people's need better than driving does so as to enable it to keep both economically viable and give a high level of service, buses would need to incorporate (especially for faster more direct 'arterial' bus services) some right of way over car use, as trams used to have and which modern light rail also tends to have. This could also include integration of 'feeder' bus services into the heavy rail network, or express buses on dedicated tracks, such as Auckland's North Shore Busway (see chapter 7).

Appendices

Appendix 1

'Cycling facilities' and 'vehicular cycling'

A fraught and increasingly topical debate

Road or path infrastructure dedicated specifically for cycling originated in the 1930s with the rise of transport planning based around the car representing 'progress' and needing to be proactively planned for. The purpose of the resulting 'cycling facilities' was to remove cyclists from roadways for the efficiency of the roadway motor traffic and the safety of the cyclists. There was no sense here that cycling should be seen as in any way beneficial for the future, or be positively planned for (see chapter 2).

This changed following the mid-1970s 'oil shocks' (see chapter 3). Whether following a Dutch or an Australian model, 'cycling facilities', typically set along identified 'cycle routes' selected from the total available route network, were found useful not only for safety but also to increase cycling's uptake (although largely failing in the latter, see chapter 3).

At this time, everyone accepted that the vast bulk of cycling would take place on the general road system, and not on dedicated 'cycling facilities'. Cycling advocates internationally, and in the 1990s in New Zealand fought, and won, against an established road safety view that "*cycling is dangerous"* on the road system.

Arguments which led to this change in official views included seeing crash and injury data in terms of numbers cycling and time spent cycling (rather than in absolute terms), but more important was that cycling's health benefits were major, far bigger than officials had up until then recognised (see chapter 3).

These positions seem to have changed over the last 10 years as 'separated' dedicated cycling infrastructure (generally within road reserves) came into vogue among some New Zealand cycling advocates, following their adoption overseas. With the aim of securing more of this type of infrastructure, cycling advocates started to argue in effect that "*cycling is dangerous*" (or at least that cyclists felt threatened) on roadways – the opposite of what they had argued in the 1990s.

These developments have made all the more topical a long-running and sometimes acrimonious debate comparing two approaches, each with their champions:

- focusing on how cyclists and motorist can and should share roadway space with each other, including building up skills for cycling among motor traffic, and
- building up comprehensive facilities segregated from motor traffic to enable comprehensive accessibility for cyclists. In the last few years in New Zealand, this has led on to a push by some cycling advocates to allow cyclists, or some categories of cyclists, to use roadside footpaths (see chapter 11).

Birth of the 'vehicular cycling' concept

In New Zealand, cyclists are officially advised to use a 'cycling facility' if one is available. Where cyclists have cycled on the roadway despite a 'cycling facility' being available nearby, the 'cycling facility' has sometimes been found to be inadequate (see chapters 3, 5 and 6 for a background which may account for this) or because the 'cycling facility' does not meet the cyclists' needs (e.g. a nearby off-roadway path going to a destination different from that of the cyclist). As chapter 6's Christchurch footnote points out, cyclists confident among roadway traffic may avoid even apparently well-designed 'cycling facilities' because of inconvenience and delays.

During the late 1990s discussions between the Cycling Action Network and the Police were very constructive, and led to improved Police officer training and a more nuanced (and selective) basis for apprehending cyclists using roadways in preference to nearby 'cycling facilities'. In the last few years this issue has again become topical, with some politicians calling for cyclists to be required to use available 'cycling facilities'.

In 1971 John Forrester, a cyclist in California, USA, was apprehended by a police officer for failing to use a 'cycling facility' which (Forrester argued) was woefully substandard and did not meet his needs. Forrester went on to write '*Effective Cycling*', a guide book on skills for cycling among motor traffic, published by the prestigious Massachusetts Institute of Technology. This guide is seen as the definitive guide to the "*vehicular cycling*" concept, which could be summed up in the phrase: "*Behave like a car*".

Where's roadway cycling tuition in NZ?

Skills taught in '*Effective Cycling*' are as essential to a cyclist as car manoeuvring skills are for a motorist. Unlike driver training, however, which is given to all motorists, training in cycling roadway skills is far less readily available.

In New Zealand adult cyclist training is very rare, and training for children is limited to the very brief *Bike Ready* courses, given to a very small minority of school children (about 1 child in 20 of the appropriate age group in 2016) on a voluntary basis (see chapter 11). Most of this takes place off-road, including how to balance, signal, maintain a bike, legal requirements (e.g. lights, helmet), with the skills of interacting with roadway traffic typically occupying a single afternoon, in a cyclist group, on lightly-trafficked roads.

Maybe this dearth of cycle skills training is a legacy from a situation of half a century ago when child cyclists may have had an obliging parent (who cycled regularly and so already had roadway skills) who 'coached' the child in these skills incidentally to routine family life and upbringing. Today, that situation is far less likely to exist: the parent may not be a regular cyclist (and may not even own a bike). By default, in New Zealand today (possibly after cursory and selective school-based *Bike Ready* training) adults and children are expected to 'pick up' (rather than be actively taught) roadway cycling skills. Absence of on-road cycling tuition over many years may have contributed to the problems encountered by footpath users from some cycling advocates and even some officials in a push for footpath cycling (see chapter 11).

There have been suggestions in recent years (including from some politicians) to include car driver training as a basic part of the school curriculum for adolescents approaching car driving age. Incorporating roadway cycling skills in with this (which would reach all children, not the small minority currently receiving *Bike Ready* training) would have advantages. Not only would it give

adolescents the roadway cycling skills they currently lack, but it may also encourage the new car drivers to appreciate cyclists' roadway experiences, leading to safer driver behaviour.

UK 'Cyclecraft' to NZ 'Bikeability'

In Milton Keynes, the biggest and boldest of England's post-war 'new towns', based around segregation of cyclists from roadways, a British movement arose parallel to Forrester's in the USA.

Milton Keynes is relatively low density (in New Zealand terms 'medium density') housing interspersed with green spaces to the north-west of London, dating from the early 1970s. Its basic form is one-kilometre-spaced arterial roads with a 'centre' (and its shops, schools etc) in the middle of each 'neighbourhood' so created. Through the middle of these 'neighbourhoods' and their 'centres' (and thus away from the arterial roads) passed a '*redway*' network of cycle/ pedestrian paths. On these paths one could cycle from one end of Milton Keynes to the other using only the occasional minor local road.

This segregation approach followed that of the earlier pioneering Stevenage New Town, also used as a template by Christchurch's Mike Gadd in his 1980s roll-out of early Christchurch cycle routes (see chapter 5). The same methodology was also used in laying out the 1960s suburbs of Canberra, Australia, where it gave rise to similar issues and controversy to that outlined below. The basic idea was to provide liberal dedicated infrastructure for both motorists and cyclists.

The transport planners in Milton Keynes (and also in Canberra) considered that there would, and should, now be no cyclists on the arterial roads, since they now had their own paths. Local cyclist John Franklin campaigned against an official culture that cyclists should get off the roads.

The '*redways*' were original designed just for people on foot (but for a drafting error, they were probably to have been called '*pedways*'; they weren't coloured red). Although plentiful, they weren't engineered well or safely. In places they were too narrow, path users were to give way at every road no matter how minor, and visibility was arguably inadequate at some intersections. Some '*redways*' were also personally unsafe through seclusion and low user numbers.

Franklin produced data to support his contention that the '*redways*' were actually more dangerous for cyclists than the roadways. He also wrote a classic guide on skills for cycling among traffic, '*Cyclecraft*', originally published by the cycling advocacy sector but later given official endorsement through re-publication by the UK Ministry of Transport. Some '*Cyclecraft*' material came to be incorporated in the early 2000s New Zealand '*Bikeability*' cyclist training curriculum.

Polarisation is not constructive

Starting from John Forrester's apprehending by the Police officer, 'vehicular cycling' advocates have always, to some extent, opposes 'cycling facilities'. Sometimes opposition has been to substandard 'cycling facilities', and certainly these have not been unusual (see chapters 3, 5 and 6 for the background leading to this). However, sometimes 'vehicular cycling' advocates may oppose any 'cycling facilities' on principle.

With an 'industry' and specialist expertise now having built up in cycling facility design (especially since the Transport Agency's post-2015 stress on dedicated cycling infrastructure projects), cycling advocates may be reluctant to advocate for comprehensive 'vehicular cycling' training on grounds that governments may use it as a reason not to invest in dedicated cycling facility infrastructure.

Neither 'cycling facilities' nor 'vehicular cycling' are anything approaching a 'magic bullet' which would 'solve' cycling's safety and accessibility issues.

The 1996 '*Cycling Friendly Infrastructure Guidelines for Planning and Design'*, drawing on Dutch experience, saw 'cycling facilities' as of minor importance compared to reducing traffic volumes and speeds. Following this, other jurisdictions' official guidance established that 'cycling facilities' were appropriate on busier roads only.

Vehicular cycling training is important too. We are no longer in the 1950s where cycling was commonplace as transport, so we can no longer assume that cyclists pick this up naturally from childhood. And also, good though *Bike Ready* school-based training is, this is nowhere near as thorough or widespread as is needed.

It's impractical to expect every type of cyclist to be trained to tackle every type of road situation. We should not expect small children to negotiate major multi-lane roundabouts, for example. Cycle facilities will be needed in some circumstances, and the higher the traffic volumes and speeds, the greater the level of separation needed.

Equally, it is silly and impractical to pretend that cyclists will not need in-traffic cycling skills. Most cycling will continue to be amongst traffic – consider that a miniscule proportion of roads have (or, realistically speaking, will ever have) 'cycling facilities'.

The skill will be in getting the balance right between 'vehicular cycling' and 'cycling facilities' – but even more important will be tackling the wider issues outlined in this book.

Appendix 2

Incendiary helmets: the avoidable subject

This book has only very briefly mentioned the issue of bike helmets and NZ's compulsory helmet law. Yet bike helmets and wearing laws them attract a great deal of anger.

Complex and necessary discussions about other aspects of cycling may be swept aside in favour of a simple question of whether cyclists wear helmets, or should be required to wear helmets.

Like distracting polarisation in the vehicular cycling and cycling facilities debate (see Appendix 1), helmets can distract from issues which are actually more important.

Can there be any arguments against?

If a helmetted cyclist falls off their bike, they are obviously less likely to be brain-injured or killed.

Yet a helmet may give a cyclist a false sense of security, induce them to take more risks, and so raise their chance of crashes and injuries. Some researchers have claimed that motorists may unconsciously take less care around a (seemingly protected) helmetted cyclist.

Helmet-wearing inconvenience may arguably deter people from cycling, encouraging them to drive and meaning they miss out on considerable preventive health benefits (see chapter 3).

An early draft of the late 1990s former Land Transport Safety Authority's *The Safe Cycling Book* opened by saying that motor racing drivers, astronauts and construction workers all wear helmets because what they do is "*dangerous*" and cycling is dangerous too! It encouraged children to consider themselves "*gun cyclists*" and compare themselves to motor racing drivers. This text was changed after input from the Cycling Advocates Network.

An early 1990s British TV advertisement showed a helmetted child cyclist riding through heavy roadway traffic, against a soundtrack listing cyclist road crash deaths and injuries, concluding with the smiling helmetted cyclist and a soundtrack comment "*tough nuts are hard to crack!*" The dangers this created of encouraging cyclists to venture into dangerous road situations was pointed out, and the advertisement was withdrawn.

Cycle helmets are designed to protect from falls, not road crashes. They are in fact easy to crack, and in fact designed to crack, which is how they absorb shock (instead a head suffering it).

Opposition to helmets and a helmet-wearing law

Mayer Hillman (known for his 1992 "*Cycling: Towards Health and Safety"* study, see chapter 3) has even opposed wearing helmets (a different issue from a helmet-wearing law) because of his research findings suggesting potential effects on cyclist and motorised behaviour caused by a false sense of safety ("*Cycle Helmets: The Case for and Against",* 1993).

A small New Zealand lobby group active in the early 2000s was "*Cycling Health*". It included several medical doctors, and also the Cycling Action Network's Patrick Morgan. The second word, intended to drive home cycling' health benefits, was an acronym for "*Helmet Law Truth and Honesty*".

An issue to dodge?

Some have deliberately avoided taking any position for or against bike helmet wearing and/ or the helmet law, because of the furious emotions and distraction which usually results.

I downplayed it in my 2000 *Into The Mainstream* report (see chapter 5). The 2014 Cycle Safety Panel explicitly took a neutral position on the New Zealand's cycle helmet law (see chapter 6).

The Cycling Action Network, after 2004 internal arguments which risked tearing the body apart, adopted a policy stance that CAN opposes the law but does not see reforming it as a priority.

Nigel Perry and Rebecca Oaten

Nigel Perry, a CAN Executive member most strongly opposed to the helmet law (who left the Executive after CAN's 2004 stance) led opposition to the helmet law on the grounds that, speaking as a 'scientist' (university computer science lecturer) the law's introduction had been grounded in emotion rather than rational arguments. Certainly, the prelude to the law's 1994 introduction had been very emotionally charged.

Leading the case for the law was Rebecca Oaten, nicknamed "*the helmet lady*", whose (helmetless) son Aaron was knocked off his bike, in a coma for six months, and after that required constant care. Some did mount a 2018 campaign for the law's repeal, and Rebecca Oaten was again speaking in support of the law in the media.

The helmet wearing law has been said to "*save lives*", but also needing to be taken into account are cycling's health and other benefits (lost if someone gives up cycling because of the helmet law's inconvenience) quite apart from possible risk-taking effects outlined above.

To really plan effectively for walking and cycling, the main focus needs to be elsewhere. And for that reason I will still make no comment either in support of or opposition to helmet-wearing or a helmet-wearing law.

Is Jo Clendon today's Rebecca Oaten?

There are some striking similarities between early 1990s moves towards introducing the helmet law, and (at time of writing) current arguments in support of legalising footpath cycling.

Both types of law change prompt an "*it stands to reason"* type of response (i.e. there surely cannot be substantive counter-arguments) from some.

Both copy similar laws recently enacted in Australia.

Both involve emotional appeals in which the safety of a mother's own child, or children, play a key part. In fact, is Jo Clendon, "*the cycling Mum*" (or maybe "*the child footpath cycling lady*"?) today's Rebecca Oaten?

In both cases, opposition came, or comes, from those who suggest emotion has distracted from more important wider questions; and who say that the helmet law (in the early 1990s) or some footpath cycling legalisation (proposed in 2020) will in fact worsen the situation for cycling.