Bike to the Future

Moving beyond safety to comfort

Safer Roads Conference, Auckland, May 22-24 2017
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National cycling programme focussed in the last few years around delivering the Urban Cycleways Programme – 54 projects, 16 main urban centres $333 million.
Two objectives – 'safer' and 'more attractive' – to get more trips. 10 million by 2019 to be precise.
Going to be talking about some concepts around safety in terms of cycling and safety's interesting, sometimes counterintuitive, relationship with participation. Caught me right in the middle of some deep pondering about this very issue, so this presentation will be some food for thought, ideas, concepts – we won't dive into too much detail as we don't have time.

What we'll cover today

- The tale of two cycle networks
- Who are our customers and what do they want?
- Moving beyond safety to comfort
- The psycho-socio-cultural cycle safety phenomenon
- !!Extra great bonus safety news!!
- The magic formula (that won't be so magic by the time we get there)

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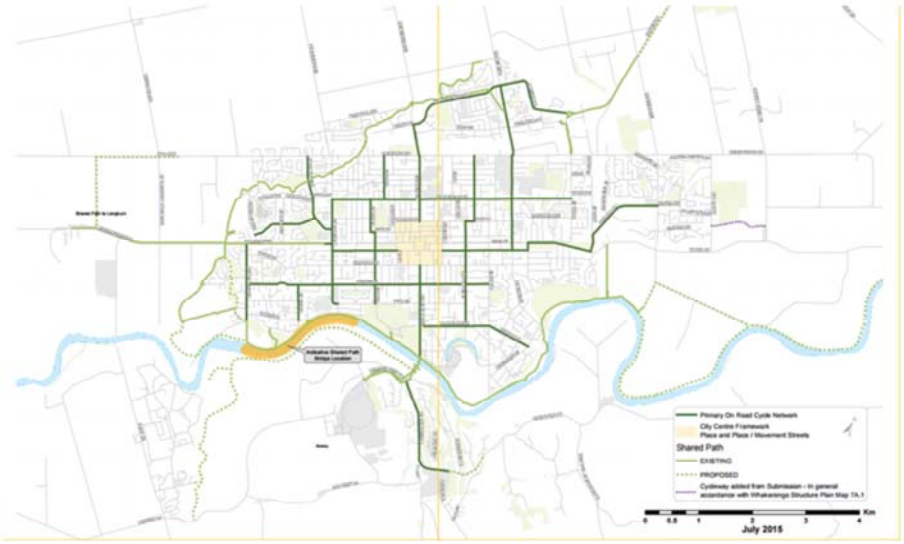
Will start by briefly looking at some differing trends around the country, and how they relate to different types of facilities.
Then look at our customers – something we've become a lot better at in the last few years.
Some ponderings around our some of our cultural cycling quirks
And then starting to look at where we're going into the future – including an interesting phenomena starting to emerge.

What do cycling networks look like these days?



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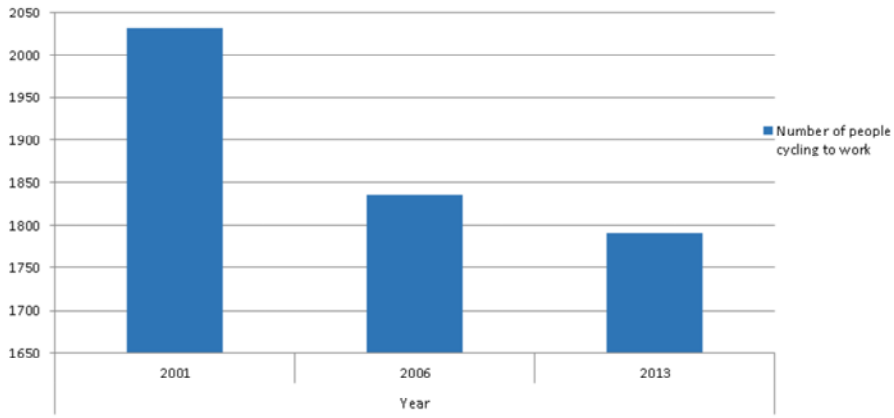
Anyone recognise where this is?
PNCC – vision of connected network. Not all complete but…

Cycling to work Palmerston North (census data)



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Cycle network has been developed over the last ten years but participation dropping. What's going on? Probably a few things but one of the key ones seems to be…

Barriers to cycling in Palmerston North
(Cheyne et al, 2015)

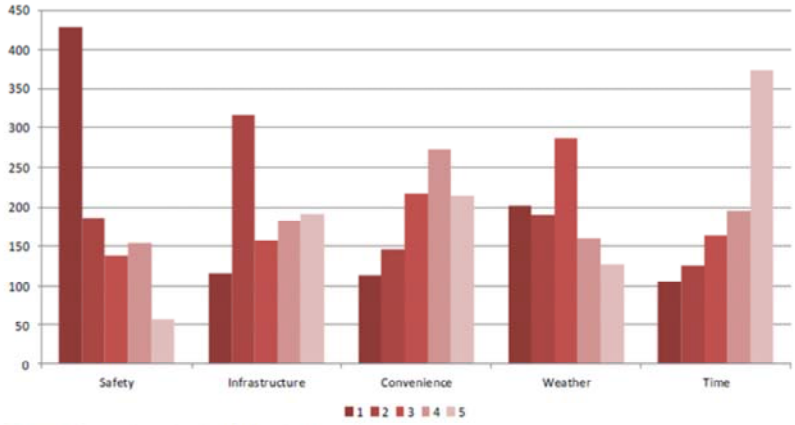

Figure 13 Respondents' ranking for barriers to cycling.

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Safety. PNCC have been building this network for years, but safety is still the main concern for taking up cycling. But we've been building cycling infrastructure. What does it look like?

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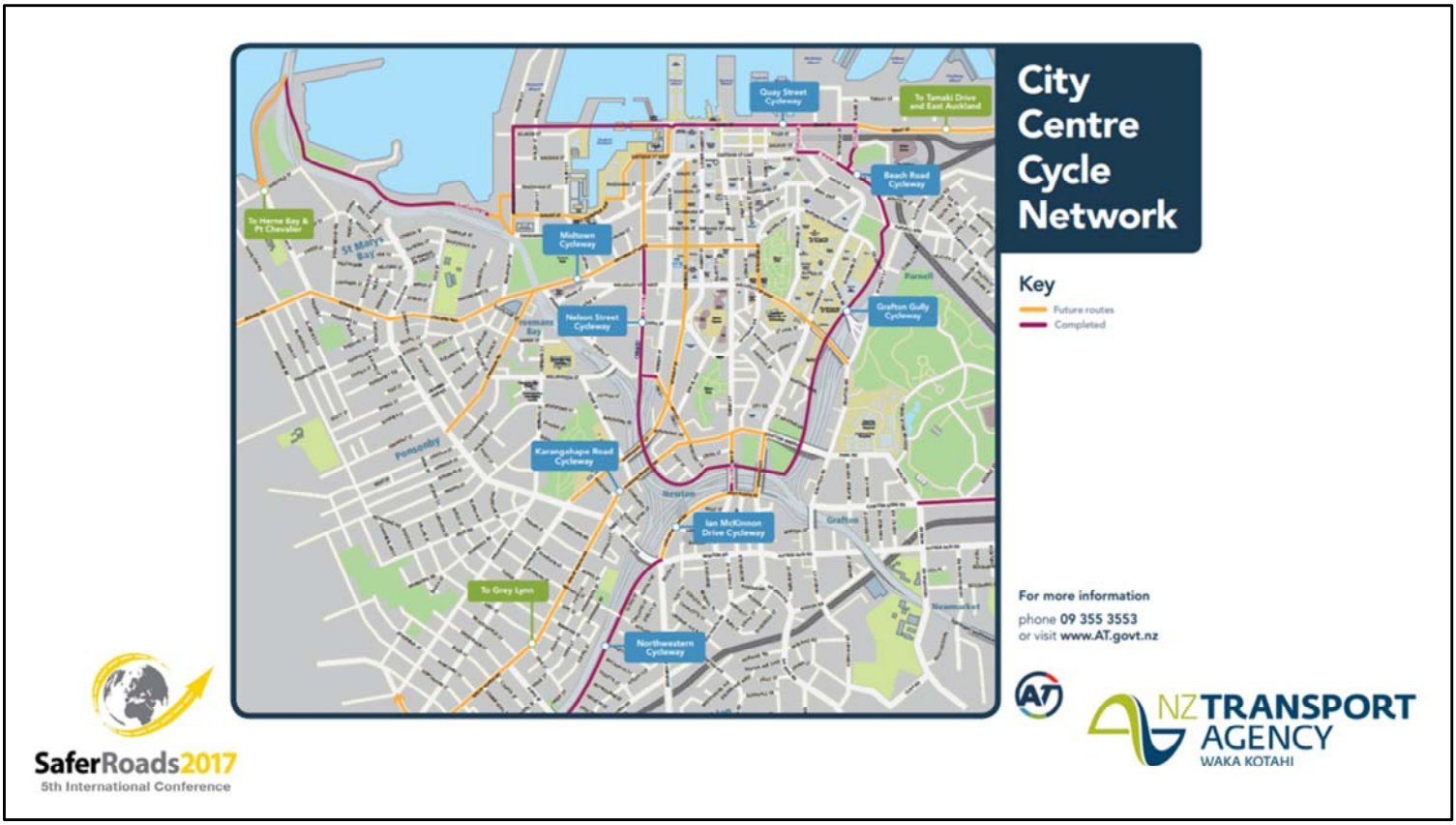
Some great off-road shared paths around the perimeter of the city but in centre, the cycling network is primarily painted lines. In wide streets, angle parking in town, no separation from traffic in inner city area.



Compared with Auckland. Another network map

Seeing a different trend. What do these facilities look like?

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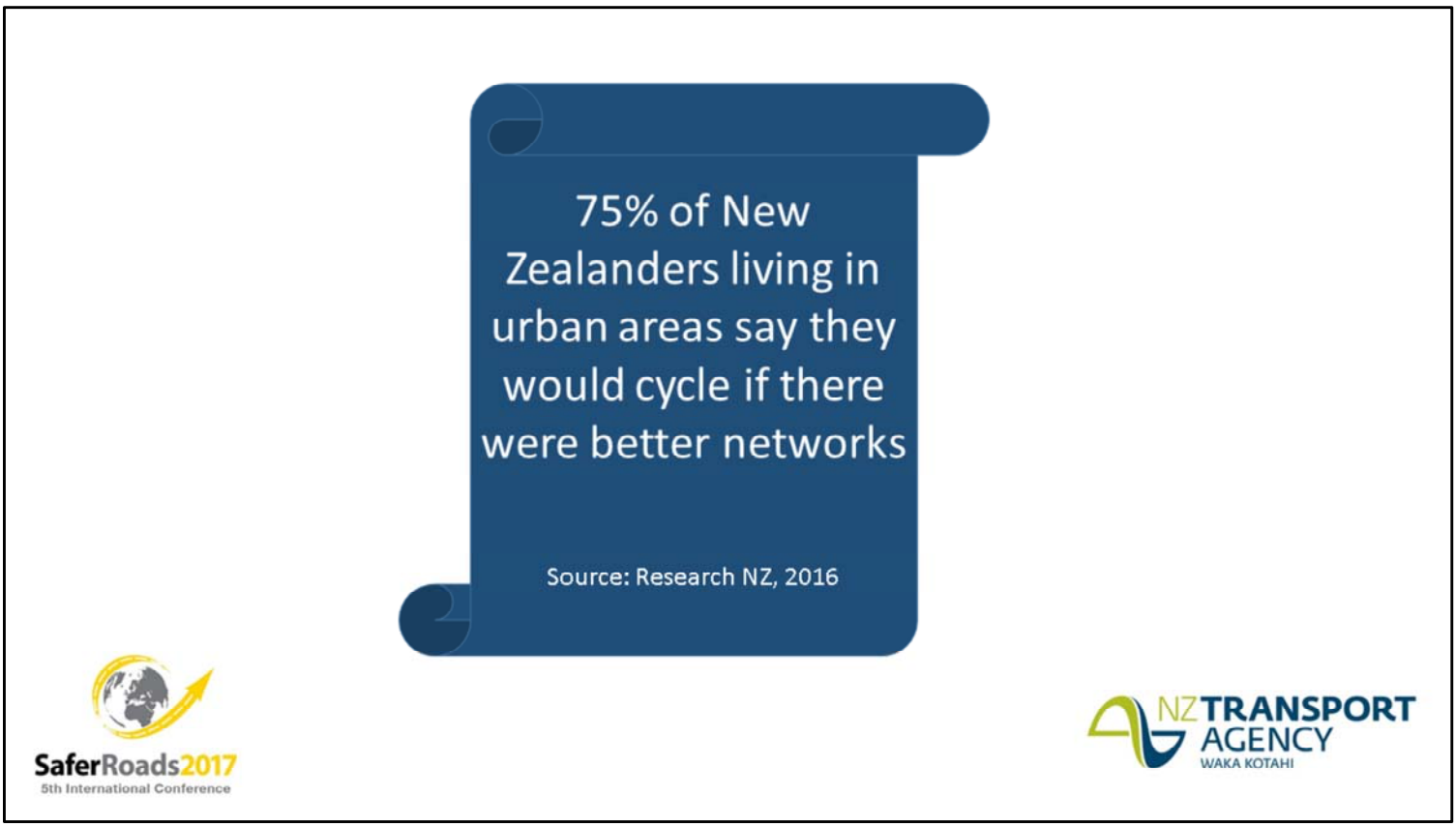
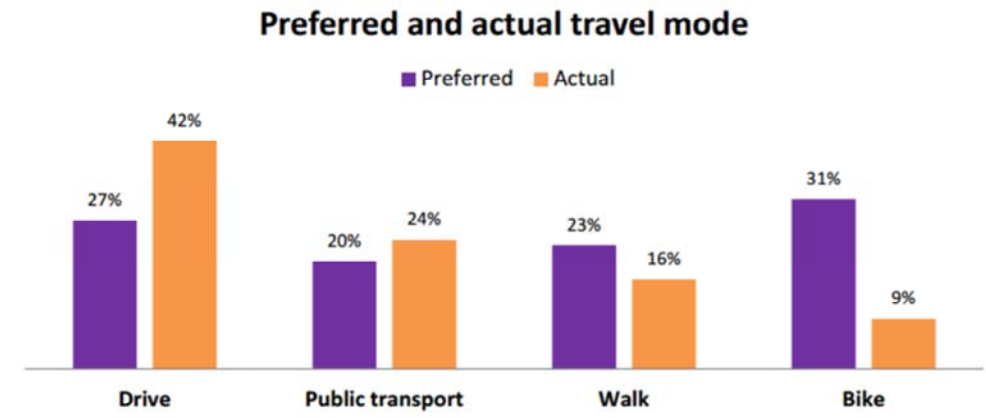
Something going on with what we're providing for our customers.



What about our customers – the people of nz. What do they want? Well, we know a lot of them want to get around by bike
We think cycling is our biggest customer gap in the network. Wellington resident satisfaction survey:

The customer gap



Cycling demand analysis, Wellington City, 2014

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Sample from Southern suburbs in lead up to Island Bay cycleway. Biggest difference between what people want, and what they're doing.

Cycling segmentation – Urban New Zealanders

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What else do we know? A bit of intel from who are NZ biking customers are. 8% are riding to work regularly in our urban areas (different than all of NZ) but 29% are doing some urban riding. There are people who ride bikes, but not for transport, and then out of those that don't ride – half of those think it's a good idea, and the other half are not so sure.

Target Audience focus

Geller typology – four main types of people who cycle

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Here's another way of segmenting our customers that can helps us understand a bit more about why there's a customer gap. Who's familiar with Geller's work from Portland?

Strong and fearless we have already – they'll ride anywhere. WE've got some enthused and confident and our bike lanes can help entice those people, but if we want to get to the masses – the IbC – we need to be thinking beyond safety to comfort. They need a little something else – we'll talk about that more soon.

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What this looks like in practice. Our customers want different things.

Planning a cycling network or route

Context | Principles | Process

Designing a cycling facility

Design guidance | Peer review and road safety audit | Supporting infrastructure

Information to support planning and design

Evaluating and monitoring | Trials underway and rules programme | Case studies lessons learnt

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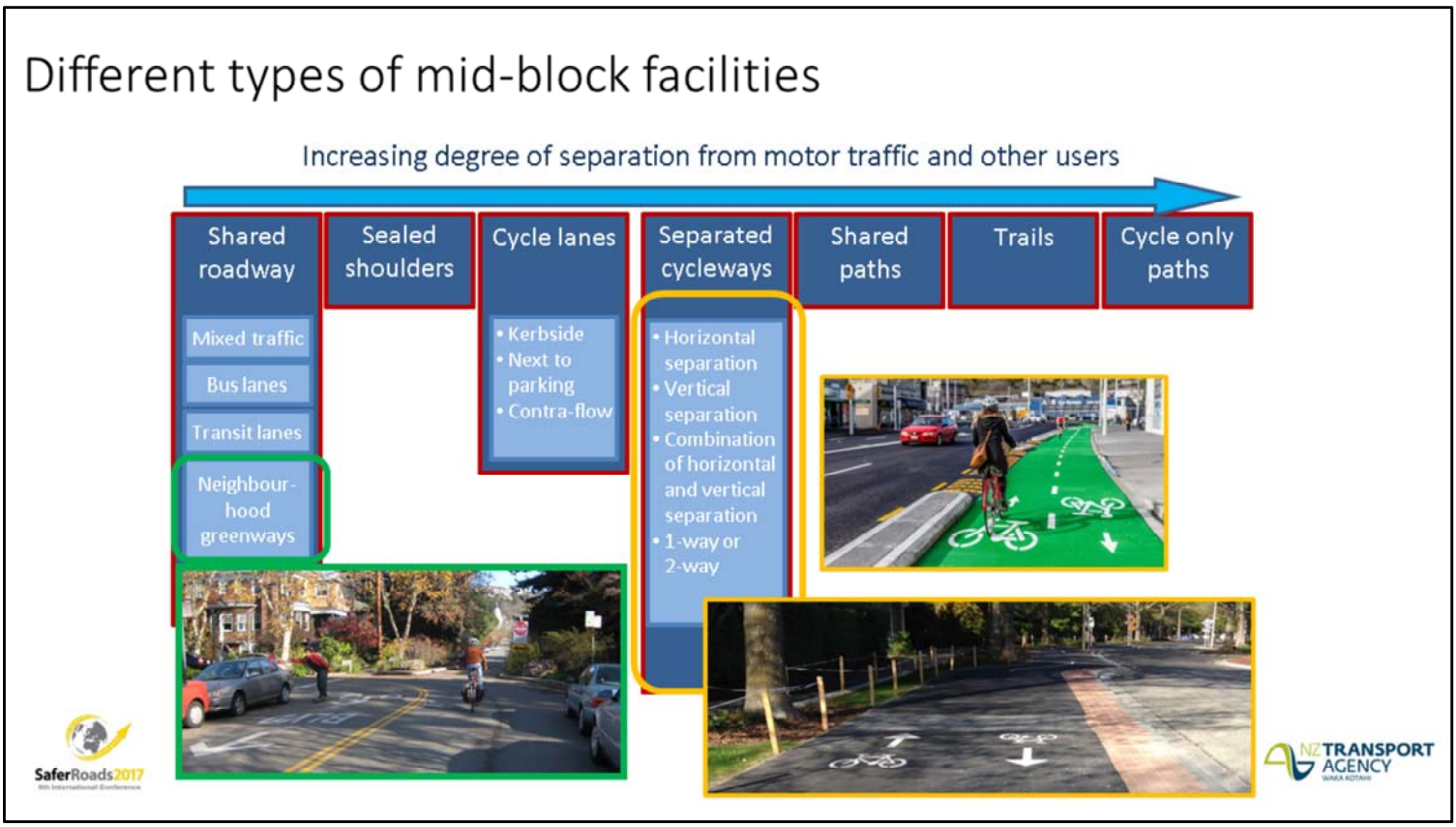
With all this in mind, I'll now introduce the recently updated Cycling network Guidance. Google it, or go to cycling on our website.
Principles based planning and design. Important principle – who are you planning for? What's the goal? If its growing mode share beyond fast and fearless, need to account for that in design.



Starting with – what is a cycleway? What's a lane? What's a trail? The CNG sought to provide a bit of clarity over how we classify these things – has done that in terms of degree of separation from traffic, not level of service. What's fit for purpose depends on the context and the target audience.

Two facility types in particular significantly updated from mentions in original CNRPG and seem to be more 'Interested but Concerned' friendly (hint, think magic formula. Safety to comfort).

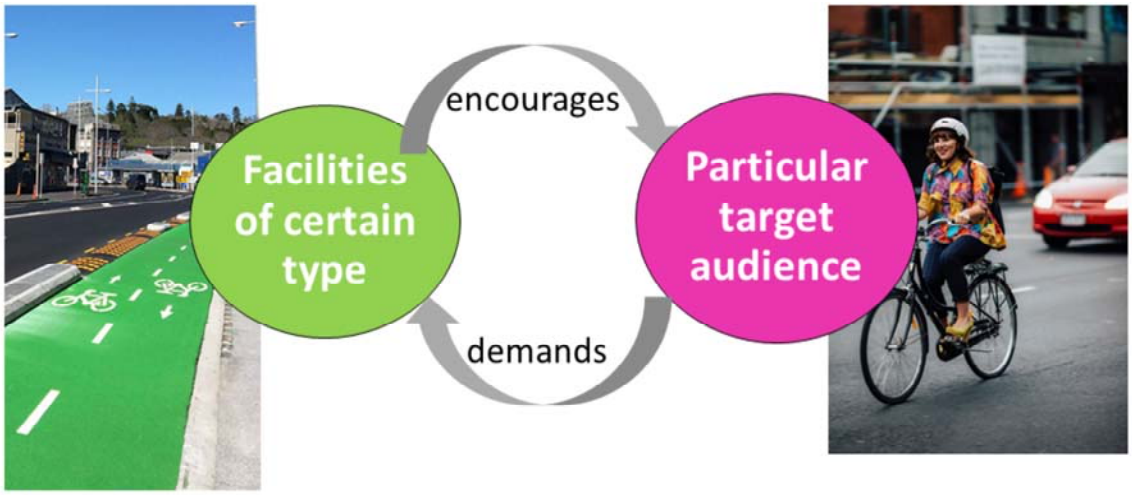
Neighbourhood greenways – a mixed traffic environment with slow speed.

Protected cycleways – physical barriers between the cycleway and motor traffic. A variety of different ways of achieving this.

Low speed and physical separated – move safety to comfort.

Target Audience and type of provision

Inter-relationship



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Set a target audience - Build a suitable facility and they will come
Or, target audience imposes themselves (e.g. community requests, safety problems) – need to provide more suitable facilities
Be aware that existing facilities (those we build) will attract certain types of people and levels of cycling.
Thus, framework indicates appropriate TA for various treatments presented.

Safer vs comfy bike rides

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Thorndon Quay – clearway made it safer, but not 'comfortable'. The type of rider you find there looks like this. I do the 'mum' test (my mum). No way.

Physical separation and low speed. Both can create comfort for 'interested but concerned'.

Separated cycleways: two-way or one-way?

(bi-directional or uni-directional)

Two-way cycleways

- One side of the road only

One-way cycleways

- Both sides of the road

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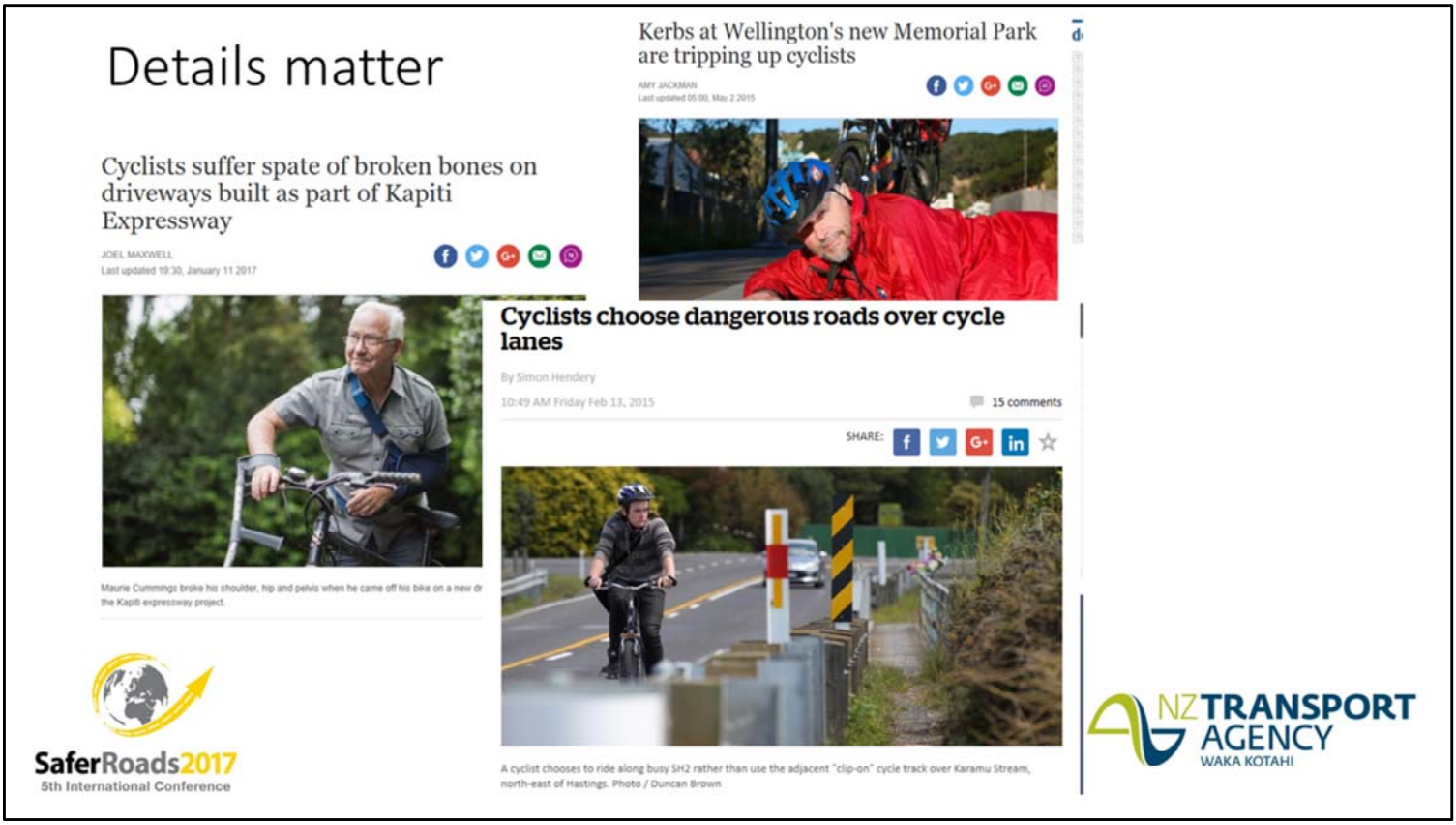
Can be occasions where its comfortable but not safe.
Tool to help decide and weigh up risk factors – not always as it seems.

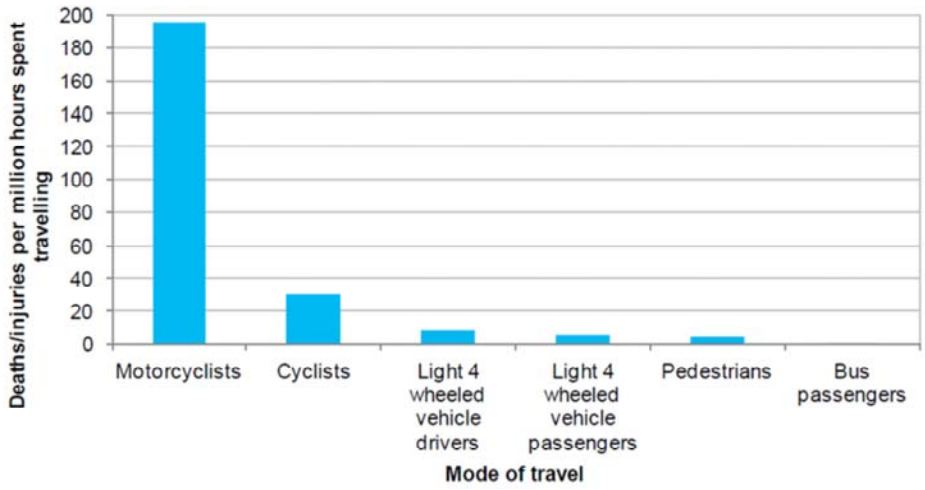


Building cycleways is not just about flashy separated facilities – details matter too!

Our psycho-socio-cultural cycle safety phenomenon

Time to take a bit of a tangent to think about this from a slightly different angle that's an important part of the conversation. Reality vs perception.

Figure 1: Deaths/injuries in motor vehicle crashes per million hours spent travelling, July 2010–June 2014 (all ages)



Source: Ministry of Transport, 2016

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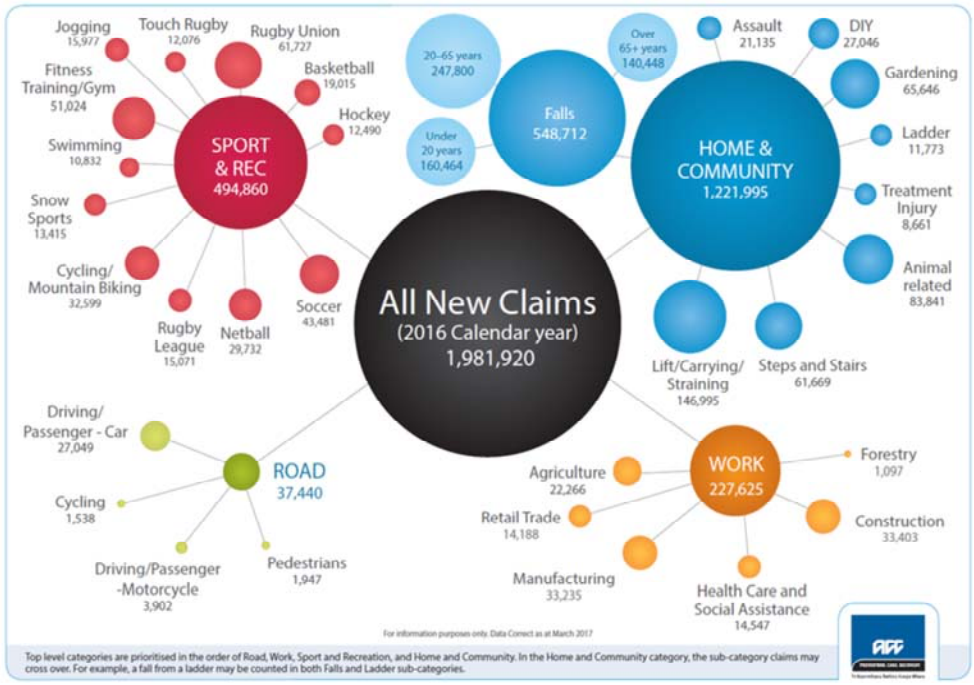
Acknowledge that in terms of traffic modes, higher relative risk per time spent travelling.



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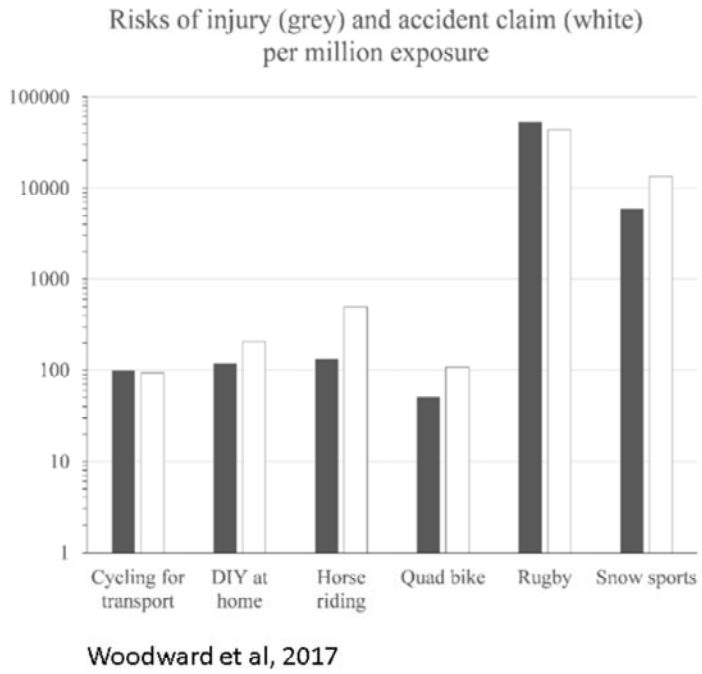
Rates are low right now. So, far fewer injuries from cycling incidents than car injuries, but *rate* is higher.

Often, an instinctive response to even hearing the word cycling is ‘you’d have to be CRAZY’ ‘You’d never see me doing that’ ‘god, I’d never let my kid do that’. But when you start by putting it in context – there’s a lot of dangerous things out there in the world. How dangerous really IS cycling?



Woodward et al, 2017

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Cycling on the road half an hour three times a week was similar to DIY twice a month and safer than horse riding 1.5 h twice a week (5-fold difference in injury claims), skiing half a day for 4–5 times per year (140-fold), and playing rugby once every 3 weeks (530-fold difference). In statistical terms, based on moderate injuries, cycling is less dangerous than many recreational and every day activities. We conclude that fear of cycling in car-dependent New Zealand arises mainly from other causes than risk of injury, associated with the marginal status of cyclists on the public road.

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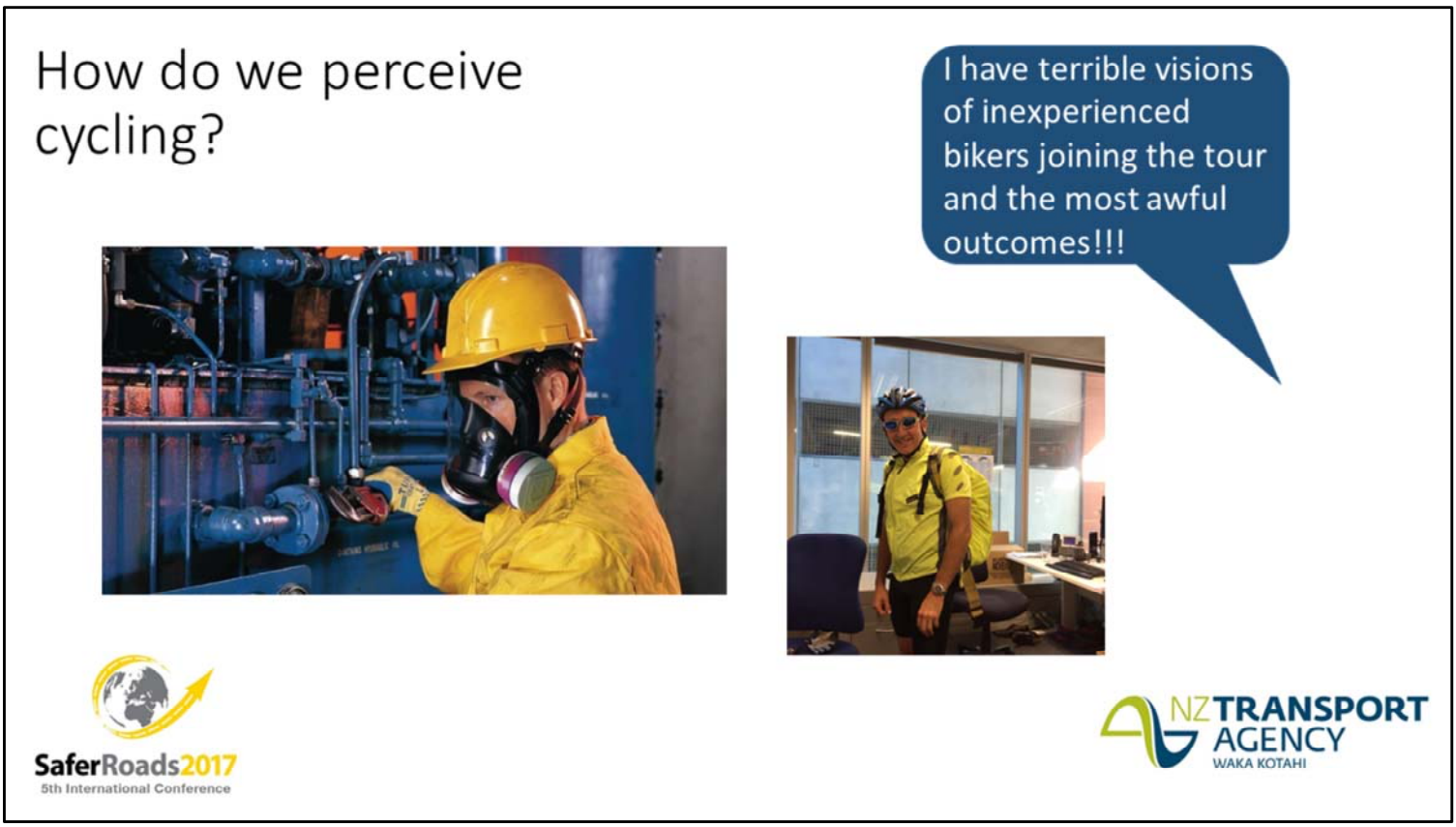
This image doesn't give people shivers down there spine – looks like a great way to get kids active.

'It's too dangerous' – most common response for why more kids don't ride to school. Show this image to most parents, and it'll give them a shiver down their spine.



- The way we portray and discuss cycling creates a perception of 'danger'. It looks like something you need to wear a lot of 'PPE" for – therefore something the average person steers away from.

- I've been noticing this a lot recently –especially as I've been developing this presentation. I was helping to lead an e-bike tour for a conference, and unlike any walking tours I've ever heard of, we required an intensive health and safety plan, which included a 'crisis communication plan' - once we don't ride ourselves, for a variety of reasons, and we're surrounded by images like this – we can only assume it's a deathly hazardous activity. Not great for participation.

Safety in context...

Table 6

Summary of impact on all-cause mortality for subjects shifting from car to bicycle.

Stressor	Relative risk	Gain in life years[a]	Gain in life days/months per person[a]
Air pollution	1.001 to 1.053	−1,106 to −55,163 (−28,135)	−0.8 to −40 days (−21 days)
Traffic accidents	0.996 to 1.010[b] 0.993 to 1.020[b]	−6,422 to −12,856 (−9,639)	−5 to −9 days (−7 days)
Physical activity	0.500 to 0.900	564,764 to 111,027 (337,896)	14 to 3 months (8 months)

Living less

Living more!

De Hartog et al, 2010, Do the Health Benefits of Cycling Outweigh the Risks?

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Let's think of it another way. How likely is it that cycling will shorten your life vs how likely is it to lengthen your life?
mortality impacts in life-years gained or lost. For individuals who shift from car to bicycle, we estimated that beneficial effects of increased physical activity are substantially larger (3–14 months gained) than the potential mortality effect of increased inhaled air pollution doses (0.8–40 days lost) and the increase in traffic accidents (5–9 days lost).

The estimated gain in life expectancy per person from an increase in physical activity ranged from 3 to 14 months (Table 6). The estimated life expectancy lost because of air pollution (0.8–40 days) and traffic accidents (5–9 days) was much smaller. On average, the benefits of cycling were about 9 times larger than the risks of cycling, compared with car driving for the individuals making the shift, calculated as 337,896/(28,135 + 9,639). The estimated number of life years gained still exceeded the losses when the lowest estimate for physical activity was compared with the highest estimate for air pollution and traffic accidents (benefits/risks ratio of 2).

News › Health

Cycling to work 'could halve risk of cancer and heart disease'

'There's an urgent need to improve road conditions for cyclists,' says cycling charity

Katie Forster | @katieforster | a day ago |

Cycling to work can bring major health benefits *Getty Images*

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Cycling to work is linked to a lower risk of developing cancer by 45 per cent and cardiovascular disease by 46 per cent, according to a study of a quarter of a million people (Celis-Morales er al, 2017, British Medical Journal).

Moving beyond safety to comfort – it's cultural

Language and imagery matters

- Safe → comfortable
- Cyclists → people on bikes
- Lycra and fluro → everyday clothing
- Cycleways → liveable communities

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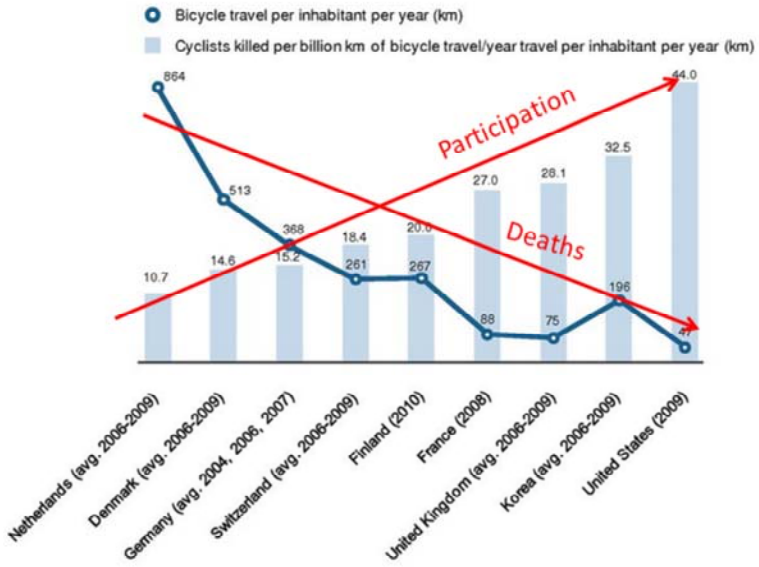
So its important for us to start to reshape perceptions around cycling, so more people can get out and reap the benefits. We've been working hard at the NZTA to start re-shaping our perceptions of cycling. Of course doing that alongside major investment in new infrastructure that's making it safer and more attractive to ride, as well as other education and encouragement programmes.

Photo library and key messages, language. The 'cyclist' swear jar. Sounds silly, but it all contributes to a sense of 'other' which for us has been strongly associated with 'dangerous and strange looking' – so not an aspiration 'other.'

Frocks on Bikes – Wellington increases, safety rates.

Safety in numbers



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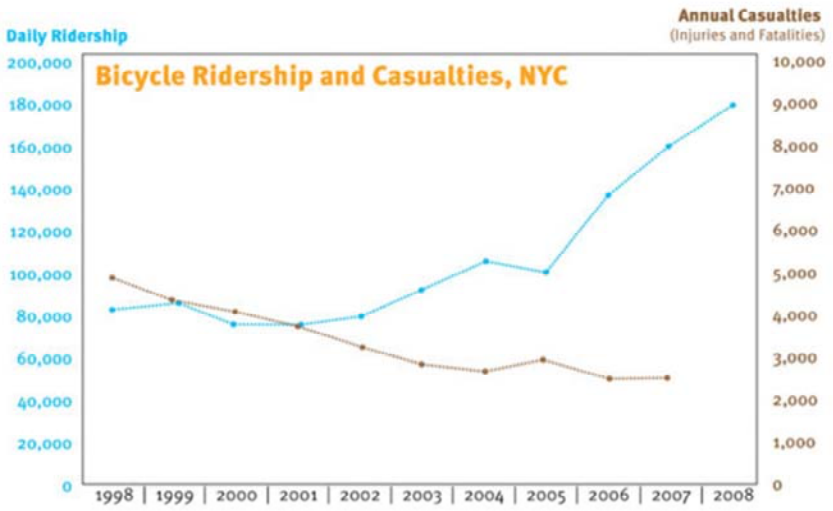
Special good bonus news. More people, safety increases – our rate goes down (as well as all those health benefits).

New York



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Been shown repeatedly around the world. Number of reasons, still some contention – visibility increases and more people around, start to expect to see them on the network and less 'whoops, I didn't see you'. Also, more people riding means there are more people driving on networks who have experience of riding on the network too. Richard Owen will be discussing later in this session.

What's the formula for safety in numbers?

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+

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Questions?

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End on something aspirational – moved to comfort.