

Roundabout

Magazine of the Transportation Group NZ

Issue 167 March 2021



In this edition:

- Optimising signals in disrupted networks
 - Safe System survey results - SUVs fuel emissions
 - Why people walk - Hamilton parking charges
 - Electric cars, driverless buses and deliveries
- And much more**

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Roundabout is the magazine of the Transportation Group NZ, published quarterly. It features topical articles and other relevant tidbits from the traffic engineering and transport planning world, as well as details on the latest happenings in the NZ transportation scene.

All contributions, including articles, letters to the editor, amusing traffic related images and anecdotes are welcome. Opinions expressed in Roundabout are not necessarily the opinion of the Transportation Group NZ or the editor, except the editorial of course. There is no charge for publishing vacancies for transportation professionals, as this is considered an industry-supporting initiative.

Correspondence welcome, to Daniel Newcombe:
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Roundabout is published around the 15th of March, June, September and December each year, and contributions are due by the 10th of each publication month.

A monthly Mini-Roundabout email update is circulated on the 15th of in-between months and contributions are due by the 12th of each month.

If somehow you have come to be reading Roundabout but aren't yet a member of the Transportation Group NZ, you are most welcome to join. Just fill in an application form, available from the Group website: www.transportationgroup.nz

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Editorial



head to Christchurch for some relaxation time.

It is always eye-opening for me to return there and observe the progress – or lack of it – on various rebuild projects. I'm not a local and am blissfully unaware of the protracted issues that result in what visitors like me find at street level.

I notice the things that haven't changed – the gazillion at-grade carparks where CBD buildings used to be – and the things that have – the Riverside Market, the sprawling new suburbs where paddocks used to be – and I wonder about the story behind them.

One feature I noticed on my recent visit was an unusual road sign (yes, it's typical of a transport engineer to notice a thing like that). It was near Halswell Quarry, to the South of the city. Lovely place, big park, full of dogs of various levels of obedience.



Like many people, my world is very busy with work and family life amidst ever-challenging Covid-19 circumstances. It's good to be busy – there is always a lot to do in the transport space, regardless of pandemics – and it's good to have a job (and, obviously, a family). But recently my family and I got to take a break and

Anyway, the sign appears to be made up of other signs. Four different symbols, which usually get their own sign, all crammed into one bright sign. It was placed along a rural road alongside the park, where many walkers, cyclists and horse-riders obviously are present but the encroaching suburbs are presumably increasing traffic volumes such that some additional warning is needed. But there weren't enough posts to hold four individual signs, so they saved money and just used one?

I asked a few Cantabrians I know about the provenance of the sign but haven't got to the bottom of it yet. If you know, please drop me a line. Is it legal? Can we expect more of these condensed signs?

Another unusual sign (or unusual use for a sign) was noted on Kaiti Beach in Gisborne by Ian Appleton, who sent the below photographs. It may well be an accurate sign, but it's placement seems to reduce it's effectiveness.



I always enjoy a good, unusual sign, so please feel free to send in any interesting examples you come across. Even better if you know the back-story to them.

And perhaps one day my family will be able to go on holiday with me without worrying I'll always be photographing transport infrastructure.



Daniel Newcombe
Roundabout Editor
[@newcombe_dan](https://twitter.com/newcombe_dan)



**TRANSPORTATION
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Chair's Chat



This is my last Chair's Chat.

For the next two years you will be reading "chats" from Bridget Burdett, the new Chair as of our AGM in May.

The AGM will be held at the Transportation Group Conference and at this we will also appoint a new Vice Chair.

Nominations for Vice Chair will be called for soon and followed by voting, both online and at the AGM. There is a requirement that a candidate must have been on a branch/sub-group committee in the past, so if that sounds like you, have a think about it. If you aspire to be Chair one day, get yourself on a branch/sub-group committee to start the journey.

I read back through my two years of Chair Chats recently and a lot has happened. Of course, Covid-19 is the biggest issue to occur during this time. But with this came the opportunity to strengthen our reach to members, by holding online events that we never really did in the past.

Our conference this year has a virtual attendance option to allow people more remote and/or unable to travel the opportunity to attend. So, if you cannot attend in person have a look at that option.

One of the things I am most proud of in the last two years was promoting the Transportation Group through the Open Play Street that we held before the Christchurch Transportation Group Conference.

I remember that morning turning on the radio and hearing an announcement that "people should come on down to Colombo Street for an Open Play Street today being bought to you by the Transportation Group NZ".

Super proud moment for our group, a big thanks again to Emily Cambridge and Gemma Dioni for their drive and passion to make that event successful.



I would like to acknowledge the work of Alan Nicholson on the Transportation Group Research Advisory sub-committee, also known as RASCals.

Alan resigned from the sub-committee last month after many years of involvement. Alan has been a great voice in this area and we really appreciate his work over the years. We will be seeking others to join this sub-committee soon, so if this sounds like something that you would be interested in please contact Bridget Burdett.

So my final words.....The challenges going forward are real. We have climate change. We have the challenges that have never gone away, such as transport inequity. We are seeing approximately one person per day die on our roads. We can all make a difference in our day-to-day roles, even if you aren't a "decision maker".

I am sure that our upcoming conference will provide some inspiration to us all to keep making this world a better place and I hope to see you there!

Jeanette Ward
National Committee Chair
jeanette.ward@abley.com



**TRANSPORTATION
GROUP** NEW ZEALAND



Hawke's Bay road sign font change mystery. Is the calligrapher actually Mother Nature?

The clever calligrapher who altered the font on the road sign in Omaha might be Mother Nature herself.

Local resident Sebastiaan Verplanke, who drives past the sign every day, sent a close up picture of the sign to Hawke's Bay Today.

He said the road sign hadn't been a victim of vandalism.

"It is actually just weather damage - the letters are just peeling away from heat," Verplanke said.

Waka Kotahi NZ Transport Agency spokesman Oliver Postings said they believe it unlikely that the changes to the font are due to weather damage alone.

"This has not happened to any other sign in the region and the materials are tried and tested and used nationwide," he said.

"All signs are regularly checked for reflectivity, cleanliness and clarity."

He said the changes to the sign did not create any risk of confusion or risk to people's safety and repairing it was not a priority.

Source: Hawkes Bay Today





Decarbonising Transport

Transportation Conference 9 - 12 May 2021
Hilton, Auckland



TRANSPORTATION GROUP NEW ZEALAND



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Meet some of our fabulous keynote speakers...



Todd Litman | Victoria Transport Policy Institute

Founder and executive director of the Victoria Transport Policy Institute. Todd's research is used worldwide in transport planning and policy analysis.



Liz Yeaman | Retyna

Prior to founding Retyna in 2018, a consultancy focusing on transport electrification, Liz was General Manager Transport at the Energy Efficiency and Conservation Authority (EECA) where she led EECA's electric vehicle programme.



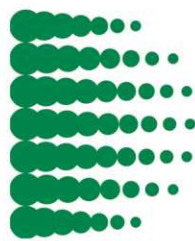
Daisy Narayanan | Sustrans, Edinburgh

Director of Urbanism for Sustrans, Daisy's role involves interweaving policy, public realm design and a broad integration of key place principles to help create liveable towns and cities.



James Moore | Jacobs

Global Solutions Director, Cities & Places. With Jacobs, James is helping lead and expand the company's Cities & Places practice worldwide, with an emphasis on urban and suburban re-positioning, redevelopment and revitalisation.



Decarbonising Transport

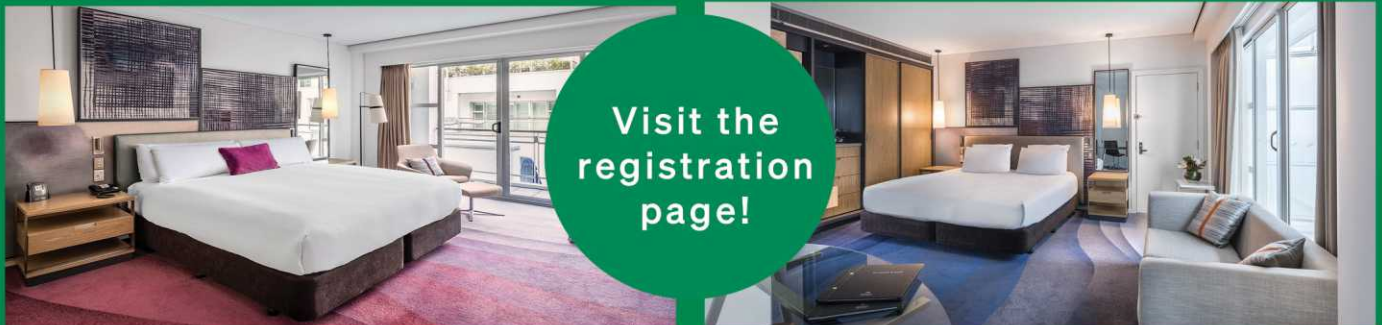
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Conference

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'Siri, define "overkill"?'



Our Profession's Participation with the Safe System Approach

(or hey, remember that survey you got early 2020 on road safety – here are the results!)

By Dan Tate

In 2018, I started my Masters in Business Administration through Massey University. The degree was the “executive” version, which is a two-year, full time course, but arranged so that you can work full time as well.

The final paper is a thesis on any business related topic and due to my interest in road safety, I decided to extend some analysis I undertook in a previous marketing paper and attempt to make an assessment of our profession's uptake of the Safe System approach. What follows is a summary of a 20,823-word thesis made up of 36 figures and 11 tables. This article will cover the key findings in a convincing way without filling the whole issue of Roundabout with academia.

If you are really interested, ontologically I used a constructivist approach acknowledging that the data gathered will be a snapshot. Epistemologically, I employed the lens of interpretivism resulting in a pragmatic research paradigm. Practically, I employed “explanatory sequential design” with elements of the “Delphi technique”, but why would you want to know that?

This article will be a quite linear description of my methodology and the results.

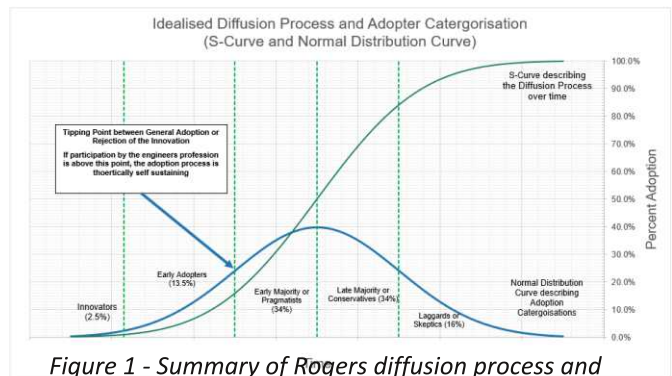
The Safe System approach has been part of the road safety conversation for the last decade as part of the Safer Journeys strategy and is being continued (in modified form) into the Road to Zero strategy for the next decade. Key to the effectiveness of the Safe System approach is the engineering profession and it is important to understand the actual uptake amongst those who have to implement the much of the physical infrastructure on the road network. I defined participation as both understanding of and commitment to the Safe System approach.

Reading the topic of adoption of ideas, the majority of the work in this field is based on Rogers' “Diffusion of Innovation” theory. Diffusion theory describes the diffusion process in five steps, specifically “(1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation” and that at the decision stage there could be either ‘adoption’, or ‘rejection’ of the innovation followed by ‘discontinuance’ when the innovation has been replaced or rejected after adoption.

Rogers' works describe the adoption rate over time as following an ‘S-curve’. Rogers also described five ‘adopter categories’. ‘Innovators’ make up the first 2.5% of adopters, ‘early adopters’ who make up the next 13.5%, ‘early majority’ who are the next 34%, ‘late

majority’ who are the 34% after the mean of the population has adopted the innovation and finally, the ‘laggards’ who are the final 16%.

An idealised version of the diffusion process and adopter categories have been described in figure 1.



The graph also includes identification of a ‘tipping point’ which describes where the adoption of innovation reaches ‘critical mass’ which is the point where the invention has been adopted by enough individuals so that diffusion becomes self-sustaining. Before this tipping point is the decision stage where the innovation could be rejected, and the population choose not to adopt it.

One of the relative advantages of narrowing the review to the engineering profession in New Zealand is that I have the potential for good access to the whole population via the Transportation Group (thanks to the Group's email contact list). This means the bulk of the data gathering could be done via an online survey; however, the question is still what to ask in the survey and how to assess any information gathered.

So, how did I do it?

The process I used was an ‘explanatory sequential design’ (figure 2) in which I started with a series of eight guided interviews (thanks again to those who participated) to try and solidify my understanding of the Safe System approach and what criteria the experts would consider to be a high level of participation.

Most of the experts pointed out that I had to “...differentiate between those who can parrot it [the Safe System approach] back and have been on courses and those who apply it and are happy to make the hard choices when applying it”. As for specific question to test participation, the common response was a variation of “... umm that’s a hard one – good luck”.

I also asked the participants to estimate the current level of participation. The estimate was between 25%

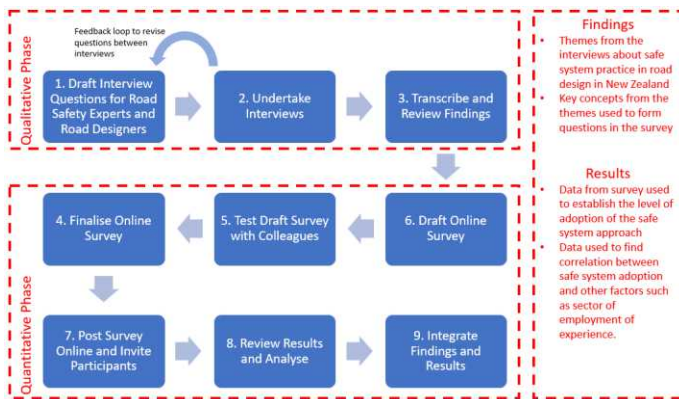


Figure 2 - Steps used in the mixed qualitative and quantitative approach

and 50% with higher estimates for the engineers in the consulting discipline specifically and a lower one for those in maintenance disciplines.

I can up with a few test questions and ran a trial survey. Once the results of the trial were reviewed, I made a few improvements and sent it out to the Transportation Group email list in Jan 2020. The final survey consisted of 16 questions.

When I closed the survey on 1 March 2020, I had received 169 responses, which was estimated to be 15% of the target population. After filtering, this was reduced by 1 to 168 responses. The one I removed was clearly based overseas and not in the target group.

How did I assess participation?

After completing 17 Masters level papers, I had become intimately familiar with the concept of a marking rubric, so I created one using the responses to three of the questions. This rubric classified the respondent's participation into five categories; 'excelling', 'competent', 'approaching understanding', 'deficits in understanding' and finally 'opposed or unaware'. The participation ranking overall was based on the lowest score for each question.

In order to preserve the technique for future reviews, I will decline from including the rubric in this article. On top of this, it is rather "controversially phrased" and some of you know where I live.

On to the results.

The survey determined that most of the sample, were either competent or excelling (67%) and I have shown

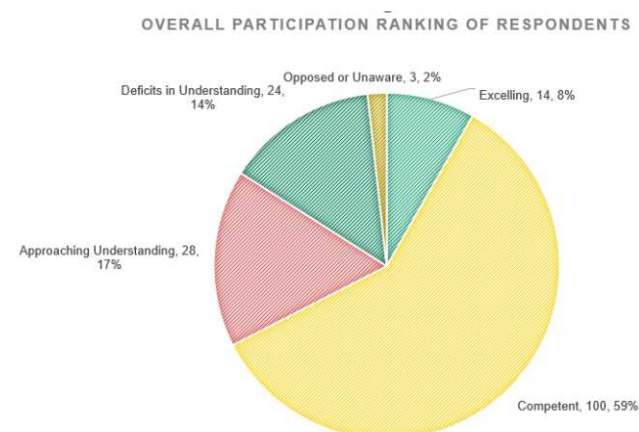


Figure 3 - Participation Ranking of Sample

this on the chart in figure 3.

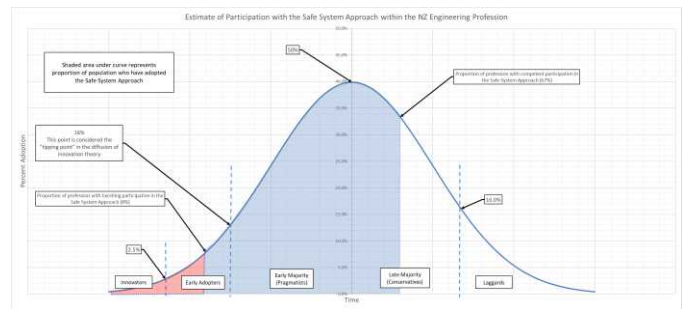


Figure 4 - The estimate of level of participation with the safe system approach

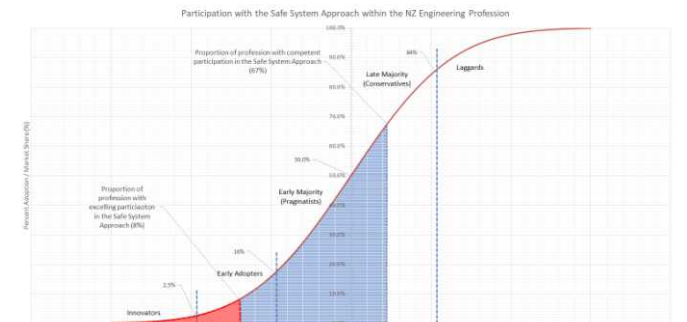


Figure 5 - The estimation of participation with the safe system approach (cumulative)

I have translated this to Rogers' innovation curve in figures and shown them on figures 4 and 5.

Participation was further tested against other factors.

- Participation ranking and attendance at the safe system engineering workshop.
 - o Most of those with deficits in understanding or who were opposed to the Safe System approach had not attended a Safe System engineering workshop.
 - o Interestingly of those with competent or excelling participation scores, only half attended Safe System engineering workshops.
- Participation ranking and experience.
 - o As would be expected, the road designers at the beginning of their career had a higher proportion of deficits in their understanding with around 30% of those sampled in the first decade of employment.

- Participation ranking and self-assessment.
 - o The majority of engineers surveyed who were confident using the Safe System approach were ranked competent or excelling for participation. The majority of those who self-assessed as having "some ability" were ranked as having a misunderstanding or insufficient knowledge along with the majority who professed no ability.

Participation and employment sector (central government, local government and consultancies) were found to be independent, therefore I could not confirm a link.

I also examined the participants opinions regarding barriers to the Safe System approach (figure 6). This chart only includes those with an excelling or competent participation score. Broadly, the barriers to

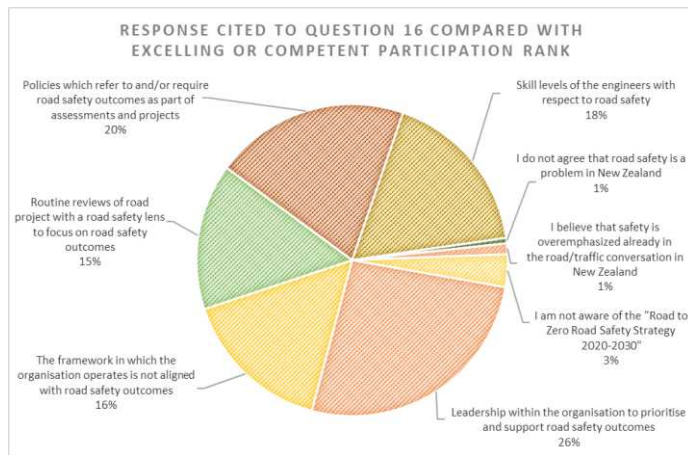


Figure 6 - Response to question 16 from those with an excelling or competent rank

the Safe System approach relate to policies, leadership and skill.

OK, so what does this all mean (potentially).

- The Safe System engineering workshop has a part to play in the education of road designers concerning the updated Safe System approach. Continuation of the Safe System engineering workshop is necessary to improve the participation in the Safe System approach by roading and traffic engineers.
- Research should be conducted into understanding how those with a high participation score obtained it without attending a Safe System engineering workshop, as this could provide other methods of disseminating the Safe System approach throughout the sector.
- Versions of the Safe System engineering workshop should be created to suit other professional groups and used to aid the implementation of the Safe System approach in other areas which influence road safety.
- The revision of the Safe System engineering workshop for other professions should focus on the first three steps of the diffusion model, namely the knowledge, persuasion and decision stages.

- These versions of the Safe System engineering workshop should be aimed at enlisting opinion leaders in these other professional groups to disseminate the Safe System approach and improve the adoption rate in that professional group.

- The Agency and Ministry of Transport should review their guidelines and policies to ensure they support the new updated Safe System approach.

- Opinion leaders opposing the Safe System approach should be sought and their objections understood and mitigated. The mitigation of the objections would be undertaken with a view to persuade them to support the Safe System approach.

- A longitudinal study of the diffusion of the updated Safe System approach would be beneficial to understand and model the diffusion process through the engineering profession.

In conclusion, based on this sample, the estimated level of engineers working in the roading and traffic field is 67% are either competent or excelling for participation with the Safe System approach. This figure is far higher than expected after the interviews with the experts and is over the tipping point of 16% postulated for the adoption of an innovation. It is expected that the remaining 'late majority' and many of the 'laggards' will eventually adopt the Safe System approach.

As leadership, organisational framework and policy alignment were cited as being barriers to the Safe System approach, the Safe System engineering workshop should be adapted to support the diffusion of innovation in other professions with a role to play in road safety. The adapted versions of the Safe System engineering workshop would also be key to the creation of opinion leaders with these sectors and they, in turn, will drive the adoption of the innovation.

In the end, the Safe System approach has been shown to work overseas and to have been adopted by the majority of road designers. With the ambitious goal set

Auckland to Hamilton train service coming soon

The new Hamilton-to-Auckland passenger train called Te Huia will start operating on Tuesday 6 April.

There will be two return services each week day (Monday – Friday) to Papakura, where commuters will transfer to local trains or take another type of transport. Each train can hold up to four bikes in a dedicated bike/pram zone.

The new service will be the first commuter train since 2001 and is greatly anticipated by Hamilton commuters who are excited to have another option to travel to work in Auckland.



Transport Intelligence Digest - February 2021



The latest Transport Intelligence Digest is now available for reading.

The Transport Intelligence Digest, is a quarterly update of the latest transport research and statistical releases. It also includes news and transport-related events in New Zealand. The February 2021 edition can be found [here](#) with prior editions [here](#).

Upcoming webinars

What does intelligent mobility through MaaS and WFH add to sustainability? - 17 March, 5 to 7 pm

With Mobility as a Service (MaaS) being a relatively recent development, Professor David Hensher of the Institute of Transport and Logistics Studies at the University of Sydney Business School will identify some of its key pre-conditions, as well as the many challenges in delivering MaaS to the market, including the hype and rhetoric.

He will also report on evidence from the recently completed Sydney MaaS trial. David will also discuss the iMOVE research he is leading on working from home and what it means for the performance of the

transport network and changes required to strategic transport model systems.

David will share a new model designed to adjust for travel demand forecasts for working from home, for commuting and non-commuting travel. Zoom Webinar registration available [HERE](#)

'Land use transport integration in Auckland: rhetoric or reality?' – Tuesday 23 March , 1pm to 2.30pm

The Urban Transport Knowledge Hub are hosting Fred Smithers from the University of Auckland to present his thesis 'Land use transport integration in Auckland: rhetoric or reality?'

This is a study about densification and commute patterns in Auckland since 2006 and their implications for policy.

This is an online event only. A link to join the event will be emailed to attendees closer to the event timing. Please ensure you join the meeting a few minutes early. To find out more and to register: <https://www.eventbrite.co.nz/e/143839550969>





Traffic signal optimisation in disrupted networks



Dana Abudayyeh, who was the recipient of a Transportation Group Tertiary Study Award, has completed her PhD on traffic signal optimisation in disrupted networks. The following is a summary of Dana's PhD thesis, along with a list of published journal and conference papers.

Transport has a critical role in economic development; an efficient transport system can enable economic growth and enhance social well-being. Road networks, as a part of a transport system, are among the most important lifeline systems.

Urban road networks experience serious congestion because of infrequent major disruptions. Due to these disruptions the traffic system performance is reduced and the travel time and emissions in a road network are increased.

This research describes a method for optimising traffic signal settings (i.e. green times and offsets) to assist drivers to avoid partial or complete blockages, to minimise the travel time or carbon dioxide emissions in the case of disruptions in road networks.

The research involved considering different capacity degradations (i.e. 25%, 50%, 75% and 100%) with various durations (4 minutes, 20 minutes, 36 minutes, and 60 minutes) within the Cambridge (UK) network. The Cross-Entropy optimisation method was applied, along with a static and then a semi-dynamic approach, to optimise traffic signal control in disrupted road networks.

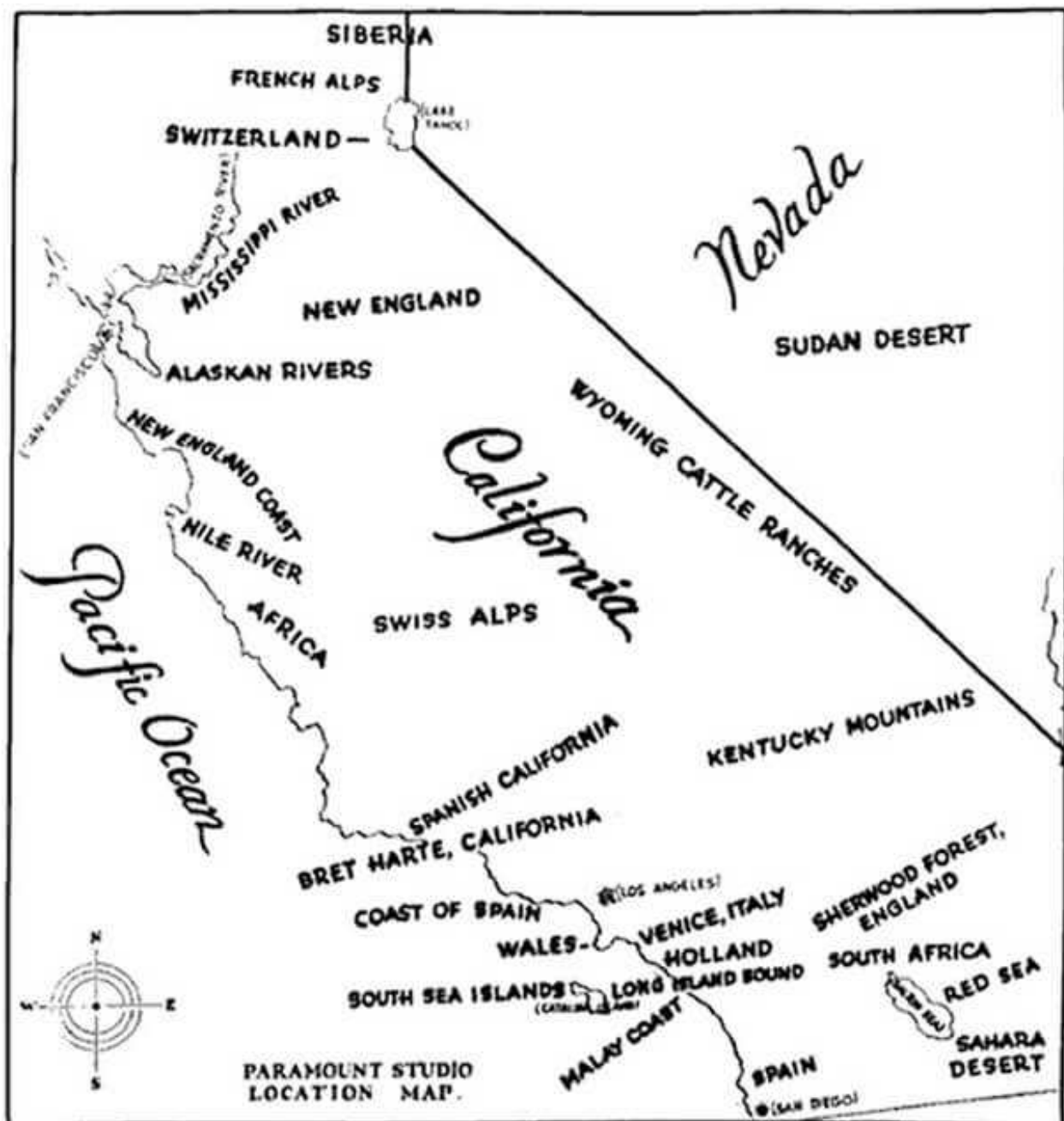
The research included investigating two objective functions: minimising the travel time or minimising carbon dioxide emissions. The results for minimising the travel time show that applying the cross-entropy method reduced the travel time in the network by almost 6% in the case of a complete capacity reduction at the most congested node in that network, compared to not optimising the signal settings.

In terms of minimising carbon dioxide emissions, applying the cross-entropy optimisation resulted in almost an 8% reduction in the carbon dioxide emissions in the network, in the case of a complete capacity reduction at the most congested node in that network.

An implication of these findings is that signal optimisation could be used as a means of reducing the impact of network disruptions on travel times and carbon dioxide emissions in disrupted networks, thereby improving network resilience and sustainability.

For further information about the study method and results, see:

- Abudayyeh, D., Nicholson, A., & Ngoduy, D. (2021). Traffic signal optimisation to improve resilience and sustainability. *Travel Behaviour and Society* 22(C), 117-128.
<https://www.sciencedirect.com/science/article/pii/S2214367X20302040>
- Abudayyeh, D. (2019). Traffic signal optimisation in disrupted networks. PhD Thesis, University of Canterbury, Christchurch, New Zealand.
<https://ir.canterbury.ac.nz/handle/10092/17754>
- Abudayyeh, D., Nicholson, A. Ngoduy, D. 2018. Traffic signal optimisation in disrupted networks using a semi-dynamic assignment. *Proceedings of the 40th Australasian Transport Research Forum (ATRF)*, Darwin, Australia.
https://www.australasiantransportresearchforum.org.au/sites/default/files/ATRF2018_Abridged_Paper_47.pdf
- Abudayyeh, D., Ngoduy, D. Nicholson, A. 2018. Traffic signal optimisation in disrupted networks with re-routing. *Transportation Research Procedia* 34 (2018), 195-202.
<https://www.sciencedirect.com/science/article/pii/S2352146518303211?via%3Dihub>
- Abudayyeh, D. 2018. Modelling disrupted networks: A literature review of modelling simulators. IPENZ Transportation Group conference. Queenstown, New Zealand.
https://www.researchgate.net/publication/326161243_Modelling_disrupted_networks_Review_modelling_simulators



There's One Big Problem With Electric Cars They're still cars.

Opinion piece: Farhad Manjoo, New York Times



I am starting to worry about the electric car.

Not the thing itself; I've found electric vehicles to be superior to their fossil-powered predecessors in just about every important way, and although I am a car-crazy Californian, I don't expect to buy a lung-destroying, pollution-spewing gas car ever again.

But electric motors are merely a power source, not a panacea. From General Motors' Super Bowl ads to President Biden's climate-change plans, plug-in cars are now being cast as a central player in America's response to a warming future — turning a perfectly reasonable technological hope into overblown hype.

The planet will be much better off if we switch to electric cars. But gauzy visions of the guilt-free highways of tomorrow could easily distract us from the larger and more entrenched problem with America's transportation system.

That problem isn't just gas-fueled cars but car-fueled lives — a view of the world in which huge private automobiles are the default method of getting around. In this way E.V.s represent a very American answer to climate change: To deal with an expensive, dangerous, extremely resource-intensive machine that has helped bring about the destruction of the planet, let's all buy this new version, which runs on a different fuel.

But while we go about the project of building electric cars into tomorrow's infrastructure — Biden has pledged to create a network of 500,000 charging stations around the country and replace the roughly 650,000 cars in the federal government's fleet with E.V.s — let's not overlook a more immediate menace on the roads today. I refer to the millions of big, inefficient trucks and S.U.V.s that are America's favorite cars, each poisoning our atmosphere for years beyond any transition to E.V.s.

The promise of electric cars grants us a little leeway to party on in the gas-guzzling present — E.V.s offer a politically simple, one-stop expiation for our unsustainable ways, so long as we all ignore the Escalade in the room.

Fixing the problems caused by cars with new and improved cars and expensive new infrastructure just for cars illustrates why we're in this mess in the first place — an entrenched culture of careless car dependency. Liberation from car culture requires a more fundamental reimagining of how we get around, with investments in walkable and bike-able roadways, smarter zoning that lets people live closer to where they work, a much greater emphasis on public transportation and above all a recognition that urban space should belong to people, not vehicles. Policy changes that reduce the amount Americans drive could lead to far greater efficiency gains than we'd get just from switching from gas to batteries.

During his time as mayor of South Bend, Ind., Pete Buttigieg, the new secretary of transportation, advocated plans to reduce car dependency. But asking Americans to begin to imagine a future of fewer, smaller cars and less driving will be a great political heave. I can already imagine the Fox News segments pillorying Biden and Mayor Pete for their "war" on S.U.V.s and pickup trucks.

I too might sound like a mirthless environmental scold. But perhaps we all need a little scolding.

Between 2009 and 2019, the average fuel economy across all vehicles increased only slightly, according to data from the Environmental Protection Agency. Our cars were getting an average of 22.4 miles per gallon in 2009, and by 2019 efficiency had grown to 24.9 m.p.g., a gain of about 11 percent.

We could have done much better, with efficiency rising perhaps as much as 4 percent or 5 percent a year, John DeCicco, a research professor emeritus at the University of Michigan Energy Institute, told me. After fuel economy standards were raised under George W. Bush and then even more under Barack Obama, manufacturers began installing a host of new technologies to make cars more efficient. Most vehicle types became significantly cleaner — average fuel economy for sedans, for instance, grew to 30.9 m.p.g. in 2019 from 25.3 m.p.g. in 2009, a gain of about 22 percent.

So how did most cars get so much better without changing the bigger picture very much at all? It's simple, DeCicco says: We ate our gains.

As cars became more efficient, people began buying larger, heavier and more powerful cars. In particular, we got hooked on sport utility vehicles and those formless blobs on wheels known as crossovers, which became one of the hottest segments of the car business. A decade ago, about half of all cars sold were sedans, which are some of the most efficient vehicles on the road, and about a quarter were S.U.V.s, which are some of the least efficient. By 2019 only a third of cars sold were sedans, and about half were small or large S.U.V.s. Given more efficient cars, we bought more car.



Federal policy hasn't helped. In 2017 the Trump administration began to undo Obama's fuel rules, a reversal that fostered uncertainty and division in the car industry and perhaps pushed carmakers to lay off new fuel-saving technologies.

The growing adoption of electric vehicles over the last decade did little to counteract these larger forces; any environmental benefits we got from zero-emission E.V.s were swamped by the much larger market shift toward bigger cars. While electric cars are important, DeCicco wrote recently on his blog, "much more stringent clean car standards are the real priority for putting the U.S. automobile fleet on track for climate protection."

Naturally, the car industry is not in favor of significantly stricter fuel standards. Carmakers expect Biden to raise fuel standards, but they are pushing for something less than the Obama rules, which would have required passenger vehicles to achieve an average of 54.5 m.p.g. by 2025.

Among environmentalists, there is more than a little suspicion that the flurry of new electric vehicle announcements — including G.M.'s pledge to sell only zero-emission passenger cars by 2035 — is a

negotiating tactic to forestall very tough fuel standards. Carmakers will gladly give us some awesome E.V.s tomorrow for lenient rules today.

There's a chance I'm being overly cynical. To the car industry's credit, the push for electric vehicles does appear to be real. Carmakers are investing hundreds of billions of dollars to bring about the electric future, and in the next few years they plan to release dozens of electric models. Ford, for instance, is pumping electrons into its most iconic models — an electric Mustang, the Mach-E, was just introduced to positive reviews, and the F-150 pickup truck, for decades the best-selling vehicle in America, will be offered in an electric version next year.

But it's worth remembering that the electric future is still just a vision, not a certainty. The car industry's electric dreams are fueled by a singular success — Tesla, Elon Musk's electric-car juggernaut. In a pandemic-crushed market otherwise brutal for the car industry, Tesla shipped just shy of half a million vehicles in 2020, about a third more than it sold in 2019.

But no other carmaker has found much luck in electric vehicles, and serious questions about the business remain. Will E.V.s become cheap and convenient enough to attract a mainstream audience? Can carmakers that now rely on big pickups and S.U.V.s for their profits make money on the electric models? How should we address the inequities in the market? At the moment, electric cars are still pricier than gas-powered alternatives, and the \$7,500 federal credit on their sales is essentially a subsidy for rich people. Is that the best use of transportation funds?

And what do we do about gas-powered cars? You may have seen that bizarre G.M. Super Bowl ad in which Will Ferrell and his celebrity pals invade Norway because it has been wildly successful at selling electric vehicles. What the ad doesn't mention is the reason so many Norwegians are buying E.V.s: The country has imposed steep taxes on gas-powered cars, accelerating the transformation to a cleaner future. Should we follow its lead?

All of these questions will affect the viability of the electric car business. Note that even Tesla has never made a profit just by selling cars. The company has amassed oodles of zero-emission regulatory credits that it sells to other carmakers; in 2020, Tesla brought in more than \$1.6 billion through credits, without which its business would have posted a net loss.

Then there are all the problems with cars that electric motors won't fix. Cars have insatiable demand for roadway and urban space, capturing our cities for their near-exclusive use. They are expensive and inefficient — the ridiculous notion of paying thousands of dollars a year for a machine that's mostly parked is no less ridiculous because the car is being charged while it's parked. And whether our cars are powered by electrons or petroleum, it's likely that more than a million people around the world will keep dying in crashes every year.

Can we fix these issues with more advanced tech? Perhaps, someday. But we'd make better progress if we identified the correct problem: not gas, but cars.

Source: New York Times



Quantitative analysis of AT's Active Modes Survey

Walking is “in” again.

For sure, it doesn't have the technological edge of e-scooters and e-bikes, and there is hardly anything to sell around it.

However, thanks to the likes of Jan Gehl, the value of places comfortable for walking or sojourning is being acknowledged, and cities around the world have championed approaches where more walkable environments contribute to public health, a lesser reliance on cars, reduction in crashes and road harm, downtown public space freed for pocket parks or café terraces, and even economic productivity.

The modal shift towards walking for transport, as a single mode or combined with public transport, is also a key element of our collective mission of bringing greenhouse gas emissions to zero.

There is always however the old exceptionalism. You might have heard that this is not how Aotearoa works, not to mention Tamaki Makaurau. But you might be like me, equipped with a stubborn engineer-y brain, and wanting some facts before deciding (not to) act.

It turns out that several local studies suggested the importance of the convenience of driving in the modal choice, for instance, or a general appreciation for walking, both as a mode of transport and a physical activity. Evidence tends however to look at one aspect or the other, rarely asking: why do Aucklanders walk? Or rather: why don't they walk to destinations within walkable distance?

Auckland Transport's Active Modes survey has the huge

benefit of examining walking levels while also capturing a range of insights regarding:

- Users' perceptions – for instance, are destinations too far, is the terrain too hilly, or how safe is it to walk?
- Their motivators such as fitness, or “me time”; and
- Their demographic characteristics - age, gender, use of public transport.

We examined how Aucklanders' perceptions of their environments, motivations and individual characteristics associate with walking behaviour. The idea was to consider all possible explanatory variables together, using the data from over 4,000 participants.

33 variables were chosen as potential predictors to walking, and unsurprisingly, number of pairwise associations was identified between them. Machine learning was used to predict walking levels despite these associations.

Reasonable reliability of prediction was achieved, and we could find out the biggest predictors of walking levels, i.e. the variables most useful for the model to predict if someone would be in the lowest 33%, regarding walking (0 trips in the previous week) or in the highest 33% (5 and more trips).

The main predictor, by far, was the use of public transport. Specific models were then developed for the users and non-users of public transport, to understand those groups better. In both groups, walking as compared to other modes was a key element, together with the perception of safety regarding traffic, the overall satisfaction with the state of walking in Auckland and the age group helped the model predict walking levels.



Maybe because it is so ubiquitous. But research is catching up: although “walkability” is still a contested notion, work has been done on better understanding walking as a behaviour, or a choice. The Social Model of Walkability can be a helpful framework: the model links the built environment to walking, via people’s perceptions and individual characteristics.

Perceptions are examined against a hierarchy of needs regarding walking, similar to Maslow’s hierarchy of human needs. These needs span from the most basic (feasibility) to the most sophisticated (pleasure), and consider accessibility, safety, and comfort. We recently examined the state of development of the model and summarised it here.

Specific variables of importance for both groups were:

- Walking implicitly compared to driving (e.g. cheaper and/or more convenient, for instance seen as a way to avoid parking hassle), for non-users of PT;
- The motivations to walk for saving money or because of a lack of choice, for users of PT.

Surprisingly, the importance of perceived availability of destinations or internal motivations such as fitness were null in the general model and the model for non-users of PT but had a small importance for PT users.

The present study suggested adding the level of convenience, and considering how the environment provides for:

- Walking, as single mode
- Walking, as compared to other options available
- Walking combined with other modes (namely public transport).

From a transport-planning perspective, the results confirm the need to approach walking as a sub-system: as a companion mode of public transport, but also as a mode inherently compared with the other options available, namely driving. We might ask what could or should be done differently. In the paper, we suggest two direct take-aways:



1. Returning to users’ experience (UX): When prioritising interventions regarding walkability, namely retrofit, professionals should consider first those features that are perceived as barriers, by users. Some evidence already exists, and the understanding of the associations is being developed, both in New Zealand and abroad. Transport professionals should team up with their local researchers for an insight into the latest developments.

A limitation of this study is related to the cohort of participants, constituted of non-disabled adults. Going forward, it is to better understand how environment associates with walking behaviour for those living with disability, especially given that they might experience acute barriers, and that improving the environments for disabled people has wider benefits for the whole population.

2. Planning for walking in the context of the transport system: given that people examine walking as compared to the options they have available, planning for walking should also be done in the context of the wider system. This could mean both considering how planned walking connections compare with driving and how the walking network connects to the public transport network.

The findings support the importance of considering people’s perceptions of walking, or otherwise said: how the streets fulfil their needs relative to walking such as convenience or safety. The question of what people’s need are can seem both philosophical and slightly bizarre: we know so well what the drivers’ needs are, but are not sure about the most basic form of movement?

Both aspects should be updated with evidence relative to the perceptions of disabled people, and also those of children, so to implement improvements that serve the wider number of users.

Our analysis of Analysis of AT’s Active Modes survey was published and accessible for free [here](#), until 21st March.

Tamara Bozovic, AUT

This photo of Victoria Street in Christchurch was sent in recently and highlights how extraordinarily large SUVs are. These SUVs even seem oversized for the standard parking spaces they use. (I can confirm the young lady who drives the Mini gets a kick out of parking her car next to these SUVs!).

While this is amusing enough, there's also some fairly serious safety and equity aspects of large SUVs, including pedestrian injury, blind spots and greater kinetic energy in a crash.

Further, the larger weight of SUVs apparently cancels out their modern engine efficiency, meaning they are worse than older sedans for carbon use. The following article outlines some surprising trends around SUVs and it's worse than researchers expected.



SUVs second biggest cause of emissions rise, figures reveal

Growing demand for SUVs was the second largest contributor to the increase in global CO₂ emissions from 2010 to 2018, an analysis has found.

In that period, SUVs doubled their global market share from 17% to 39% and their annual emissions rose to more than 700 megatonnes of CO₂, more than the yearly total emissions of the UK and the Netherlands combined.

No energy sector except power drove a larger increase in carbon emissions, putting SUVs ahead of heavy industry (including iron, steel, cement and aluminium), aviation and shipping.

"We were quite surprised by this result ourselves," said Laura Cozzi, the chief energy modeller of the International Energy Agency, which produced the report.

The recent dramatic shift towards heavier SUVs has offset both efficiency improvements in smaller cars and carbon savings from electric vehicles.

As the global fleet of SUVs has grown, emissions from the vehicles have increased more than fourfold in eight years. If SUV drivers were a nation, they would rank seventh in the world for carbon emissions.

"An SUV is bigger, it's heavier, the aerodynamics are

poor, so as a result you get more CO₂," said Florent Grelier from the campaign group Transport & Environment.

T&E figures show the average mass of new cars rose 10% between 2000 and 2016, which the group suggested could be down to a trend towards SUVs, heavier automatic and dual-clutch gearboxes and the inclusion of other equipment including cameras and sensors.

Grelier said the global shift towards bigger cars had been observed for a while, but the effect on emissions increases compared with other industries was surprising nonetheless.

"The problem is much bigger than we expected," he said.

The global car market has been stalling in recent years, which analysts have attributed to the escalating China-US trade war and the sluggish performance of the Chinese economy in general.

The SUV segment has so far bucked this trend, however, with a record 35m vehicles sold in 2018.

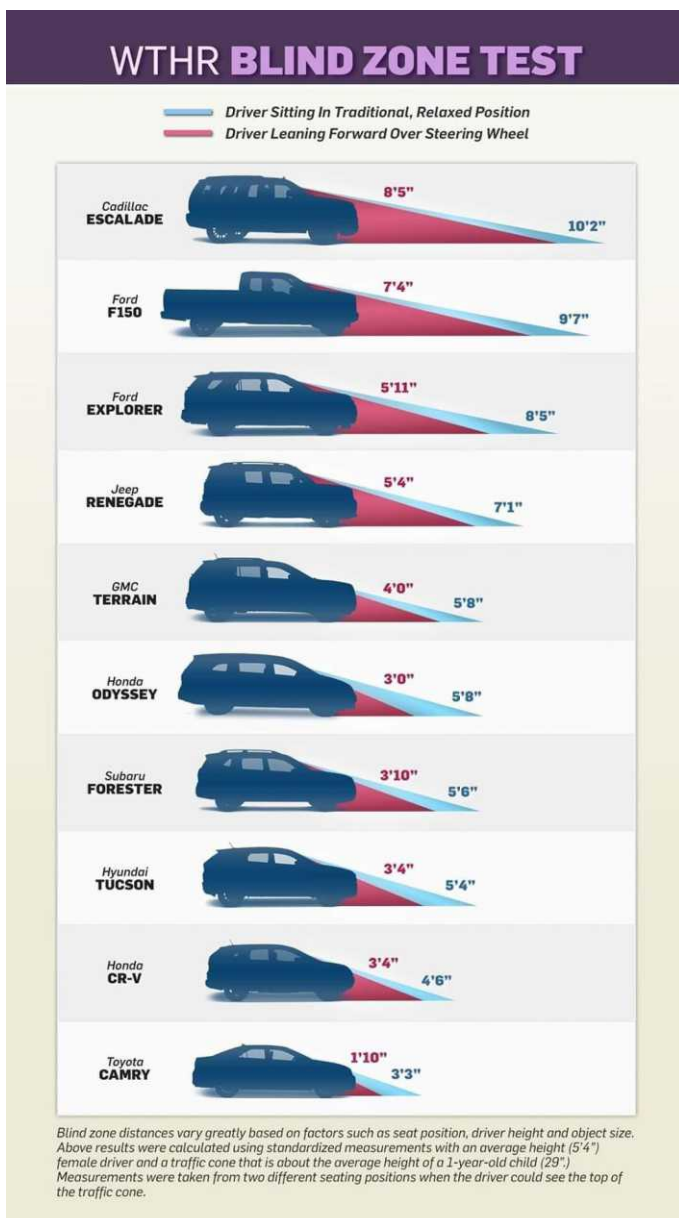
The IEA figures show that SUVs steadily increased their share across major markets all around the world, from Europe and the US to China and India.



Cozzi said this was another surprise: “We thought this was a trend that was more concentrated in a few countries ... but it’s becoming really universal.”

In the US, nearly one in two passenger cars sold today is an SUV.

The IEA’s definition of “SUV” covers a range of cars from crossovers to off-road vehicles. Popular models in the UK include the Nissan Qashqai, Hyundai Tucson and Land Rover Range Rover.



The emissions analysis considered only the carbon produced from fuel combustion, not any emissions embedded in the manufacturing of the cars – where larger models are also likely to result in more emissions.

SUVs started to become popular in the 1980s, and often earned nicknames such as “Chelsea tractor” as a result of the wealthy city suburbs they became associated with. Since then, sales have continued to rise, and the vehicles are often marketed as a status symbol.

However, opposition to SUVs in cities is also rising. Recent protests in Berlin demanded a ban on the vehicles after a driver hit and killed four pedestrians, while activists at a Frankfurt motor show protested against the vehicles’ impact on the climate. SUVs are significantly more likely to kill pedestrians in crashes, and although they are often marketed as safer, those driving them are 11% more likely to die in a crash than people in normal cars.

Cozzi said a number of factors were driving the demand for bigger cars. While perceptions of heightened safety or increased social status could play a role at the individual level, she also pointed towards manufacturers’ changing offering.

She said the difficult market situation led carmakers to look for the most profitable models in their ranges.

“There is a really big need for car manufacturers to find the margins wherever it is possible, and the SUV segment seems to be one of those places,” she said.

In the UK, the transport sector overtook energy generation as the number one source of greenhouse gas emissions in 2016.

According to a Guardian analysis of Department for Transport statistics, there are about 5 million licensed SUVs in the UK today.

The UK government has pledged to ban the sale of new petrol and diesel cars from 2040, although hybrid models would be exempt under the plan.

The Committee on Climate Change, the government’s independent adviser, says the ban should be brought forward to 2035 and include hybrid cars.

Across the EU, electric vehicles made up only 2% of new cars sold last year, but a recent from Transport & Environment suggests that figure could reach 10% by 2021.

This is due in part to EU emissions targets, phased in from next year, which will put much stricter limits on the average emissions of each manufacturer’s newly registered cars.

Experts are stressing that quick decarbonisation of the transport sector will also require a reduction in the total number of passenger cars on the road, particularly in big cities.

“We need to keep less and less space for cars so that it’s more convenient for people to use other means of transportation, whether it’s walking, cycling or public transport,” Grelier said.
 Source: Guardian





Smart motorways are dangerous, says UK police chief

A UK police and crime commissioner has written to the government to say smart motorways are "inherently unsafe and dangerous and should be abandoned". Dr Alan Billings wrote his open letter to Grant Shapps, the Secretary of State for Transport.

His comments come after a coroner found two men had been unlawfully killed on a "smart" section of the M1. The Department for Transport said "smart motorways are as safe as, or safer than, the conventional ones".

On 19 January coroner David Urpeth called for a review of the road schemes. Mr Urpeth said smart motorways without a hard shoulder carry "an ongoing risk of future deaths". He was speaking following the inquests for Jason Mercer, 44, from Rotherham and Alexandru Murgeanu, 22, of Mansfield, who died when a lorry crashed into their vehicles near Sheffield on 7 June 2019.

Now Labour's Dr Billings has told Grant Shapps: "I believe smart motorways of this kind - where what would be a hard shoulder is a live lane with occasional refuges - are inherently unsafe and dangerous and should be abandoned.

"The relevant test for us is whether someone who breaks down on this stretch of the motorway, where there is no hard shoulder, would have had a better chance of escaping death or injury had there still been a hard shoulder - and the coroner's verdict makes it clear that the answer to that question is - Yes."

"The Department for Transport and Highways England have argued all along that these sorts of motorways are actually safe, they even go as far as to say they are safer than ordinary motorways, now I think that whatever formula they are using to come to that conclusion is wrong.

"The coroner in his verdict has made it pretty clear that these two particular lives in South Yorkshire would not have come to such a sad end if there had been a hard shoulder there, so I think this is new evidence they have to take into account."

He added: "If they thought this type of motorway was even smarter, or safer, than a conventional motorway, then why not convert the entire system to smart motorways, making it safer? As soon as you say it, I think you realise it's absurd.

"I think they (smart motorways) were done originally not because it was a safer way of doing a motorway, I think it was done in order to expand the capacity, get the traffic flowing by having an extra lane, but to do it cheaply, and I think we're trading cost - cheapness - for other people's lives."

In response to Dr Billings' open letter, the Department for Transport said: "The stocktake [of smart motorways] showed that in most ways smart motorways are as safe as, or safer than, the conventional ones.

Source: BBC

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Waka Kotahi vacancy: Heavy Vehicle Certification Officer



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- Or are you a recent mechanical engineering graduate with an interest in heavy vehicles?
- Great opportunity to grow or develop your career further
- Multiple locations - at any main Waka Kotahi office

Ko wai matou - About us

Safety is a top priority for Waka Kotahi and we, as the Regulatory Services group, aim to improve safety and reduce the risk of harm by being a firm and fair regulator ensuring compliance - it is the essence of why we do what we do. For more information, please visit www.nzta.govt.nz/regulatory/

As well as stimulating work, we offer a range of benefits including ongoing professional development, the opportunity to work flexibly (within our operational requirements), four weeks annual leave, subsidised health insurance, and an active social club. For more information check out <https://www.nzta.govt.nz/careers/our-benefits/>

Te Whiwhinga mahi - The opportunity

We have two vacancies available in our Heavy Vehicle Certification team so whether you are an mechanical engineer with heavy vehicles experience or a recent mechanical engineering graduate, this could be a great opportunity for you to improve the safety of heavy vehicles on our roads.

As one of our Heavy Vehicles Certification Officers, you will be instrumental in ensuring that heavy vehicle specialist certifiers across the country are consistently applying best practice to keep heavy vehicles compliant and safe.

Safety is at the forefront of everything we do and there will be lots of variety and opportunities to develop in this role. Day to day you will be kept busy with auditing, mentoring and monitoring heavy vehicle specialist certifiers' and processing complex technical issues to ensure compliance with relevant rules, standards and guidelines.

You will also get the opportunity to contribute to technical forums and engage with internal and external stakeholders to identify risks, trends and opportunities and work closely with inspecting organisations.

Ko koe tenei - About you

To be successful in this role, you will:

- have a background and knowledge of the heavy vehicle industry
- enjoy the challenge of working out complex technical issues
- enjoy working with number and using maths to analyse bending, shear and fatigue calculations
- have proven experience conducting investigation and writing technical reports
- have effective communication and relationship management skills
- have high degree of applied knowledge and practical skills involving the understanding and application of advanced practices and procedures of heavy vehicle design and fabrication
- have a track record in building and sustaining working relationships within the transport and vehicles sector.

Qualifications - this is a necessary requirement for the role:

- A tertiary qualification in Engineering, preferably in Mechanical Engineering

Please provide your academic transcript as part of your application paperwork.

These roles can be based at one of our main centres in either Wellington, Auckland, Hamilton, or Christchurch.

You must have either NZ citizenship or permanent residency if you are currently living outside of New Zealand.

Ra Katinga - Applications close Wednesday, 31 March 2021.

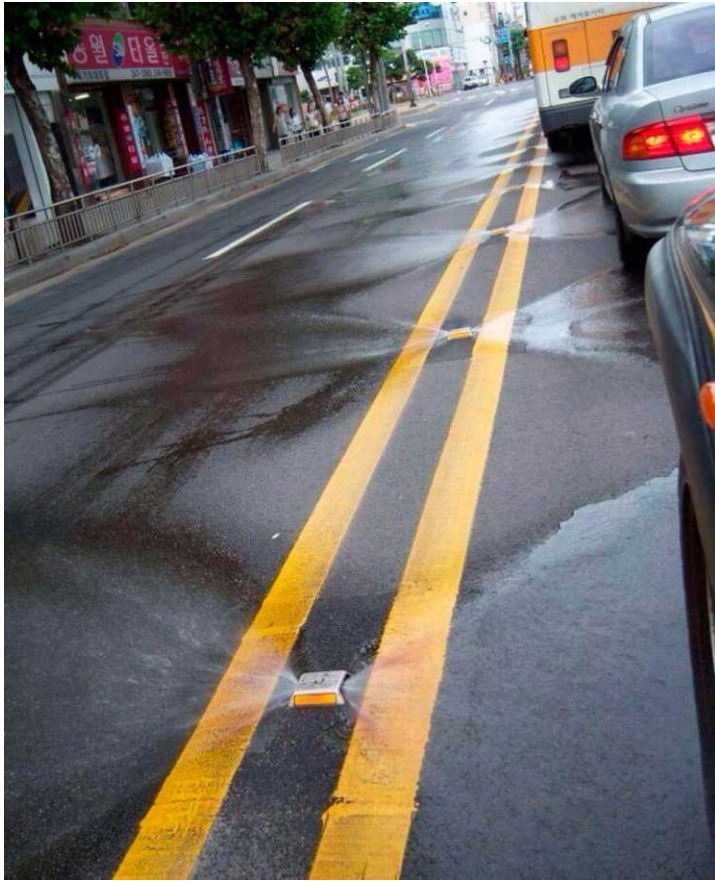
For a copy of the position description and to apply, please visit www.nzta.govt.nz/careers

For further information, email careers@nzta.govt.nz

To be considered for this position you must have a legal right to live and work in New Zealand.

Please note that we may begin shortlisting as we receive applications. We encourage early applications as we may withdraw the advertising at any time.

NZ Transport Agency is an equal opportunity employer (EOE). At the Agency we recognise the importance of diversity and inclusion and are committed to providing a working environment that embraces these values. Please do let us know if you need any support or have any access requirements that will help you through the recruitment process.



Self-cleaning roads in South Korea



Assorted Images





When It Rains, Rotterdam's Bikers Get To Go Through Lights Faster

If you want to increase bike riding, you have to make it easier to ride—even in bad weather.

Since 2004, Rotterdam has seen a 60% increase in cycling. More than three-quarters of the city's residents own a bike—and they have plenty of places to ride. Holland's second city has 360 miles of bike lanes, including several dedicated "freeways."

Many cities would be happy enough with that, but not Rotterdam. It now wants to encourage cycling even when conditions aren't perfect: for example, when it's raining.

Last November, it installed the first "regensors" (rain sensors) at a downtown intersection. Now, when it starts to shower, the traffic lights prioritize cyclists so

they don't wait so long to cross. At the same time, car drivers need to wait a little longer, because they are inside and can stay dry.

"We want to give priority to cyclists," says city spokesperson Anna Feiner. "'Giving priority to cyclists' is literally the title of our plan for the city."

Though many cities are now adding bike lanes, Dutch and Danish cities distinguish themselves by having dedicated lanes, traffic lights, and other infrastructure (like this lovely bridge). The aim is to keep bikes and cars separate, so cyclists feel safer and can ride uninterrupted. In Denmark's second largest city, Aarhus, they're even experimenting with wheel-mounted RFID tags that automatically turn lights green as cyclists ride through.



Only one Rotterdam intersection has the regensors so far. But it's likely that, after a six month trial, they'll be installed in other places as well, Feiner says. A relatively mild drizzle is enough to set off the pilot devices, but it's possible to make the equipment less sensitive. At the moment, the equipment halves waiting times for cyclists, from 80 seconds normally to 40 seconds.

When can we have regensors in New York and other U.S. cities? We probably need to ask for better bike lanes first.

Source: Fast Company

Meter running out on free parking on CBD fringe, Hamilton mayor says commuters must pay 'true cost'

The days of free parking on the CBD's fringe look numbered as Hamilton politicians hunt for new ways to boost the council's coffers.

A proposal to introduce paid commuter parking on the outskirts of the central city could force hundreds of city workers to rethink their daily commutes and is already attracting some heavyweight political support.

City bosses hope the proposal, which is included in the council's draft long-term plan, will raise \$1.6 million in revenue a year and is part of wider moves to shake up parking in and around the CBD. But whether Hamilton commuters will be keen to dig into their back pockets to pay for all-day parking is questionable, as new figures show a growing unwillingness among the public to shell out for parking fines.

Hamilton Mayor Paula Southgate said elected members should be looking at every source of revenue they can as the council works out its long-term budgets.

Although cities are transitioning to other modes of transport, such as cycling and buses, people are still reliant on cars.

"They [city workers] have got to park somewhere, so the question is what is a reasonable cost for being able to park close to town? If they want to park, they need to be prepared to pay the true cost of that," Southgate said.

"After all, if they leased a space in one of the commercial buildings, that has a price attached."

If given the green light, paid commuter parking on the CBD fringe won't be introduced until 2022 as staff flesh out the details and identify what streets to include.

Council's infrastructure operations general manager, Eeva-Liisa Wright, said the CBD is experiencing increasing traffic congestion. More all-day parking would enable commuters to travel into the wider city area, then walk, bike, scoot or bus into the CBD, Wright said.

Meanwhile, council staffers are working through a proposal to convert under-utilised two-hour free parking spaces in the CBD into all-day paid commuter parking. This initiative is expected to eventually boost the council's parking revenue by \$400,000.

Council staffers will report back to elected members in February, setting out proposed commuter parking zone fees. A November council report suggested 112 commuter spaces be made available in the first phase, priced at \$4 a day.

Two-hour free parking in the central city began as a trial in 2017 and has since been extended through to June 2021. Councillor Rob Pascoe, who chairs the council's finance committee, questions how much the trial is costing the city and the extent to which central city businesses benefit from the scheme.

"The one bit that's missing is the evidence as to whether or not the central city retailers are better off," Pascoe said.

"The reason why it was a trial for a couple of years, and the trial has been extended, it's been mainly on the basis of trying to get evidence – Visa card, Mastercard evidence – that in fact sales in the CBD are actually up. I'm still asking that question and not really getting any response at all."

Extending the two-hour free parking trial was backed by the Hamilton Central Business Association, with members saying it contributes to the vibrancy of the central city.

General manager Vanessa Williams said feedback from retailers and hospitality bosses about the initiative has been "overwhelmingly positive". Allowing shoppers two-hour free parking in the CBD helps create a level playing field with other shopping destinations.

"Two hours is a good amount of time for people to be able to shop, but also allows for that turnover four times a day," Williams said.

"Someone coming in to the central city to spend the entire day is really encouraged to park in a car park building."

New council data obtained under the Official Information Act show a growing reluctance by city commuters to pay parking fines.

During the 2014 – 2015 financial year, the council issued 20,137 tickets, with 94.6 per cent of fines paid. But in the 2019 – 2020 financial year, that payment rate had crashed to 72 per cent. Motorists fined for parking in disabled parks are even more reluctant to cough up, with just 60.9 per cent paying their tickets in 2019 – 2020. This compares to a payment rate of 93 per cent in 2014 – 2015.

Jason Harrison, council's city transportation unit manager, said staff have noticed people are less prompt in paying fines but believes the significant drop-off in payments this year is related to Covid-19.

"I would just have to say, look, the financial year 2020, I would put a line through because I would say there's an anomaly in there which is Covid-19," Harrison said.

Motorists who don't pay their parking fines promptly are sent a reminder notice after 29 days. Beginning in January, the council will pass on unpaid fines to a debt collection agency after 60 days. Unpaid fines are lodged with the Justice Ministry after 156 days. Pascoe said any reluctance by motorists to pay fines needs to be watched closely by elected members.

"We're trying to find as many streams of revenue and maximise what we're entitled to charge and collect. So, yes, this is a concern."

Source: Stuff

The history of the electric car is longer than you might think



When the Australian Labor party announced its plan to boost the number of electric cars over the next decade, an election campaign battleground opened up.

Prime Minister Scott Morrison accused his rival of wanting to "end the weekend when it comes to his policy on electric vehicles"; Bill Shorten returned fire by accusing the Government of running a "scare campaign".

But electric cars aren't new — they've been around for more than a century.

And for a moment at the advent of the automobile industry, they even threatened to become the dominant mode of transport.

From the late 19th century, electric cars began to trickle onto the streets of major American cities, representing a formidable part of the automobile trade. A carriage could now be transported by electricity instead of horse — the culmination of centuries of technological innovation and invention.

The electric car soon became the favoured method of personal transportation, well and truly surpassing its underdeveloped, gas-guzzling counterpart.

"In 1901, 38 per cent of the cars were electric, and 20 per cent or so were petrol, and in the middle, there was the outgoing technology of steam," says technologist and historian David Kirsch.

"If you'd asked the great experts of their age in 1900 which technology would come to dominate the motor-based transportation, I think most learned people would have said electricity."

But history would prove them wrong. Advances in internal combustion engines in the first decade of the 20th century lessened the relative advantages of the electric car.

"The unexpected progress of internal combustion ... surprised everybody by making extraordinary advances in that first decade," Professor Kirsch says.

"By 1910 you had the Model T, the iconic universal vehicle that was able to do almost everything that an electric vehicle could do and more."

The Electric Vehicle Company, doomed to become a victim of its own business malpractice, was partly responsible for the demise of the product it was named for.

Founded in the final years of the 19th century, it rose to prominence with its Electrobats, considered the first truly useful electric car for day-to-day transportation.

The company pioneered a taxi system of leased vehicles that used service stations for quick battery changes and repair work.

In 1899 a syndicate of prominent car manufacturers took over the rising company to form the Lead Cab Trust, which hoped to develop a monopoly across the US.

It was the largest motor car manufacturer in the USA, but lost its position only two years later. It faced rising competition from petrol-powered cars, but also hefty legal cases targeting its monopolistic practices.

The great hope of electric vehicles did not outlast the first decade of the 20th century.

The oil crash of the 1970s renewed attempts to reinvigorate the electric car. But it wasn't until 2008 that the first viable option emerged, thanks to Elon Musk's Tesla Motors.

Its Roadster was the first serial production, all-electric car to use lithium-ion battery cells. It could travel a game-changing 320 kilometres per charge. In 2016

Norway made the decision to ban the sales of petrol and diesel powered vehicles by 2025.

China, India, Germany, France, and Britain have since followed suit, with slightly less ambitious deadlines. Sensing the oncoming change in the market, manufacturers are readily moving towards an electric future.



By 2017 Tesla's global sales passed 250,000 units, in a market that now includes the Nissan Leaf and the Chevy Bolt, amongst others. That same year, Volvo announced it would produce only electric and hybrid vehicles, making it the first major automaker to abandon cars powered solely by the internal combustion engine.

"The recent announcement from Volvo strikes me as an acknowledgement that electrification is becoming normalised, at least for Volvo," Professor Kirsch says.

Into the future, electric car manufacturers must work out how to survive in a global auto industry that "has long struggled with over-capacity, and relatively low profit margins".

"The question now is managing that transition in some way, figuring out how to survive, how to make money through the transition and to envision a future for each company."

Labor's target is for half of all new cars sold in Australia by 2030 to be electric. The Government has criticised Labor's ambitions, but Senate Estimates has heard the Coalition's own target is between 25 and 50 per cent. While announcing Labor's plan, Mr Shorten suggested that it might be time to see car manufacturing return to Australia.

"If electric vehicles are part of our future, we are going to provide cheap finance so I would like to see us making electric cars in Australia," he said.

But Professor Kirsch believes that might be an over-zealous proposal.

"Australia has a long history of vehicle manufacture, which came to an end a couple of years ago, in part because of globalisation of the vehicle production process and massive oversupply," he says.

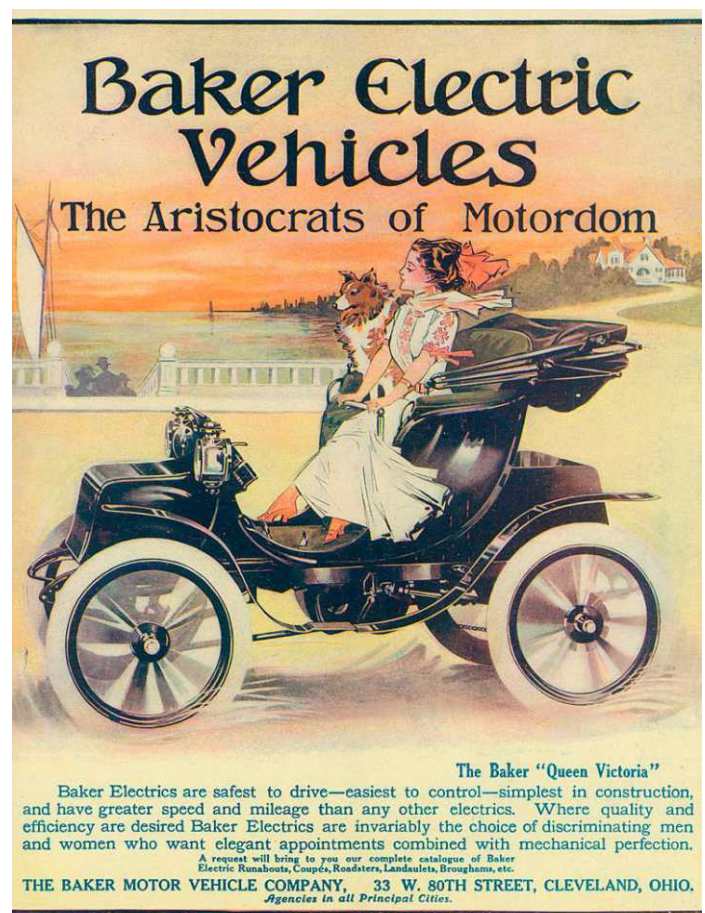
Instead, he suggests that Australia's real opportunity comes from its unique supply of lithium, the chemical used in the manufacturing of electric vehicle batteries.

"The lithium deposits speak to a unique opportunity for Australia because those are particularly valuable resources as we look out at the likely development of the global battery industry," Professor Kirsch says.

"I think that's a possibility looking forward, or I would say it's a better option than trying to resuscitate final assembly in Australia."

But as we move forward, Professor Kirsch says the ultimate warning from technological history is to be ready for anything.

"The horseless carriage was a crude approximation of what the modern automobile looks like," he says.

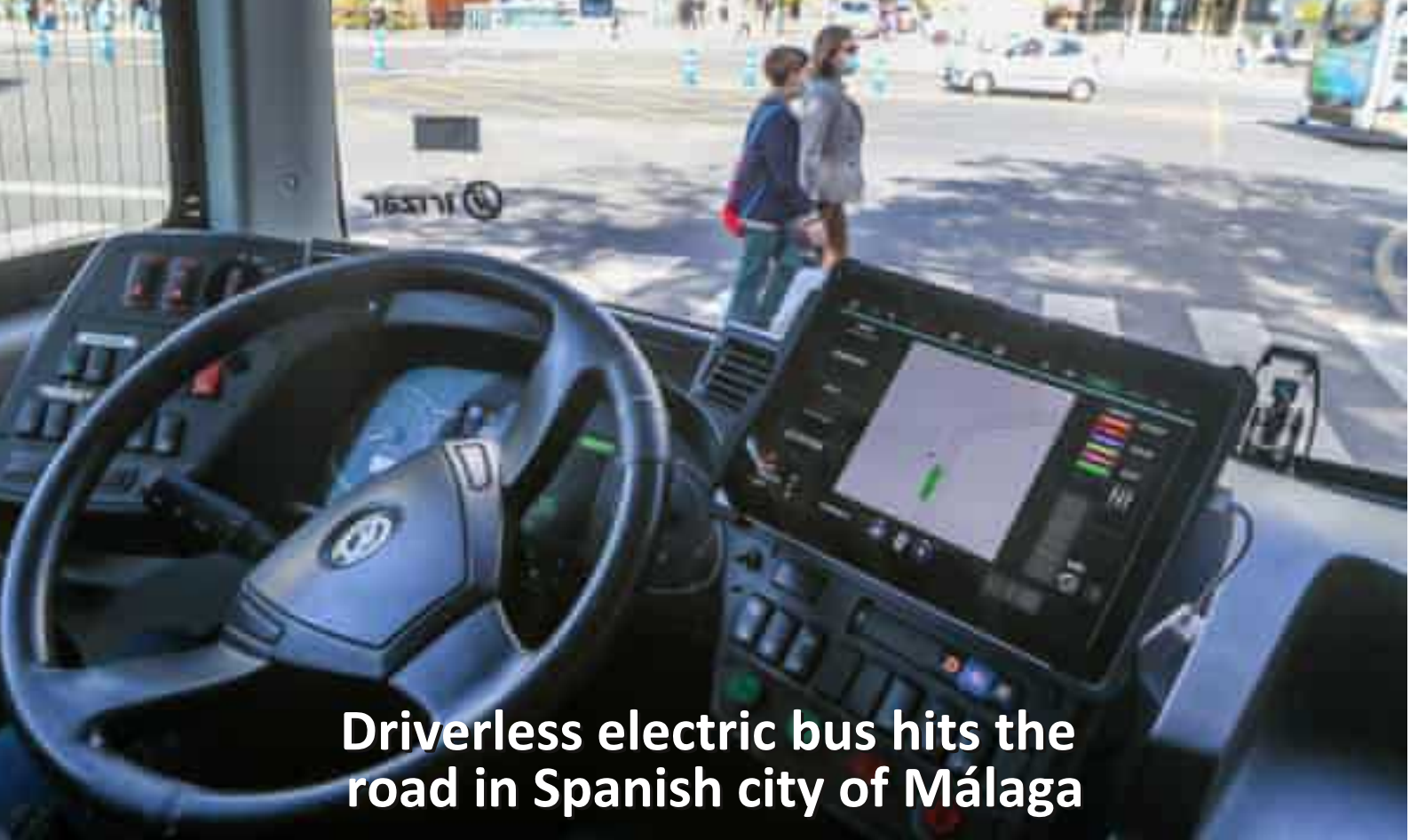


"It involved taking a 19th century carriage that had a horse and just removing the horse.

It was preposterous on its face but within a few years we had a whole new set of designs and products that we were using in a very different way.

"Technology surprises us, and we shouldn't be surprised but we always are, that we can't predict the future."

Source: ABC Australia



Driverless electric bus hits the road in Spanish city of Málaga

A new driverless electric bus has begun operating in the southern Spanish city of Málaga, in the first such project in Europe.

The bus is equipped with sensors and cameras and links Málaga's port to the city centre on an 8km loop it does six times a day.

"The bus knows at all times where it is and what is around it," said Rafael Durban Carmona, who heads the southern division of Spanish transport company Avanza, which leads the public-private consortium behind the project. It could "interact with traffic lights" that were also equipped with sensors that alert the bus when they turn red, he told Agence France-Presse.

The bus uses artificial intelligence to improve its "decisions" based on data recorded along the route.

The 12-metre vehicle, which looks like a normal bus, can carry 60 passengers and was developed by the Spanish company Irizar.

Other driverless pilot projects already exist in Europe, but none of them involves a regular-size urban bus that runs on a normal street with other vehicles. Despite the advanced technology, there is a driver at the wheel to take control if necessary since Spanish law does not currently allow vehicles to operate without drivers.

"We put it in automatic mode and it runs completely autonomously," says Cristobal Maldonado, the driver.

The project received funding from the Spanish government and was coordinated with several universities.




Last month, Singapore launched a self-driving bus trial with passengers booking through an app and the bus taking them around Singapore's Science Park, a hi-tech business hub, during off-peak hours. China has also tested driverless taxis in several cities.

An Uber self-driving car hit and killed a woman crossing the street in the US in 2018, in what is believed to be the first death involving an autonomous vehicle.

Lack of regulation and concerns over safety on the part of the general public are two factors often cited by experts that stand in the way of the proliferation of driverless vehicles.

Source: Guardian



Nuro set to be California's first driverless delivery service

California has given the go-ahead for a commercial driverless delivery service for the first time.

Robotics start-up Nuro plans to start its driverless delivery operations as early as next year. It previously tested its R2 vehicles in the state in April, but the permit will let it charge people for its service.

The firm's vehicles will be limited to 56km/h, and will be restricted to operating in "fair weather" conditions.

"Issuing the first deployment permit is a significant milestone in the evolution of autonomous vehicles in California," said California Department of Motor Vehicles director Steve Gordon.

"We will continue to keep the safety of the motoring public in mind as this technology develops."

Nuro was founded by two former Google engineers and has funding from Japanese firm Softbank. Its vehicles are designed to operate without a driver or passengers in them.

The R2 uses radar, thermal imaging and 360-degree

cameras to direct its movement. And it lacks a steering wheel, pedals or side-view mirrors.

The vehicle has an egg-shaped frame that is smaller than most cars in the US. It also has two temperature-controlled compartments for deliveries. Doors raise up to reveal the items once a code has been entered by the recipient.

During a previous trial in Houston, Texas, in February, the R2 delivered pizza for Domino's Pizza, groceries from supermarket chain Kroger and goods for Walmart.

Even so, one transport expert said safety issues would continue to be a concern.

"It will be very limited to begin with while the technology is thoroughly evaluated," said Prof David Bailey from the University of Birmingham.

"So, for example, the vehicles will only be allowed on 'surface streets' with their speed limited to 56km/h, and the smaller Nuro delivery bots will be limited to just 40km/h

"It's essentially a limited trial, but still a significant step towards a driverless future."

In October, driverless taxis began operating in Phoenix, Arizona, as part of Google's Waymo service.

A similar service, backed by the online tech and retail giant Alibaba, is currently being trialled in China's biggest city, Shanghai.

They mark just two of numerous trials involving various autonomous vehicles across the world.

Source:BBC





Decarbonising Transport

Transportation
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Meet some of our fabulous keynote speakers...



Todd Litman | Victoria Transport Policy Institute

Founder and executive director of the Victoria Transport Policy Institute. Todd's research is used worldwide in transport planning and policy analysis.



Liz Yeaman | Retyna

Prior to founding Retyna in 2018, a consultancy focusing on transport electrification, Liz was General Manager Transport at the Energy Efficiency and Conservation Authority (EECA) where she led EECA's electric vehicle programme.



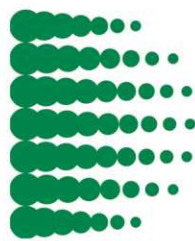
Daisy Narayanan | Sustrans, Edinburgh

Director of Urbanism for Sustrans, Daisy's role involves interweaving policy, public realm design and a broad integration of key place principles to help create liveable towns and cities.



James Moore | Jacobs

Global Solutions Director, Cities & Places. With Jacobs, James is helping lead and expand the company's Cities & Places practice worldwide, with an emphasis on urban and suburban re-positioning, redevelopment and revitalisation.



Decarbonising Transport

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9 - 12 May 2021
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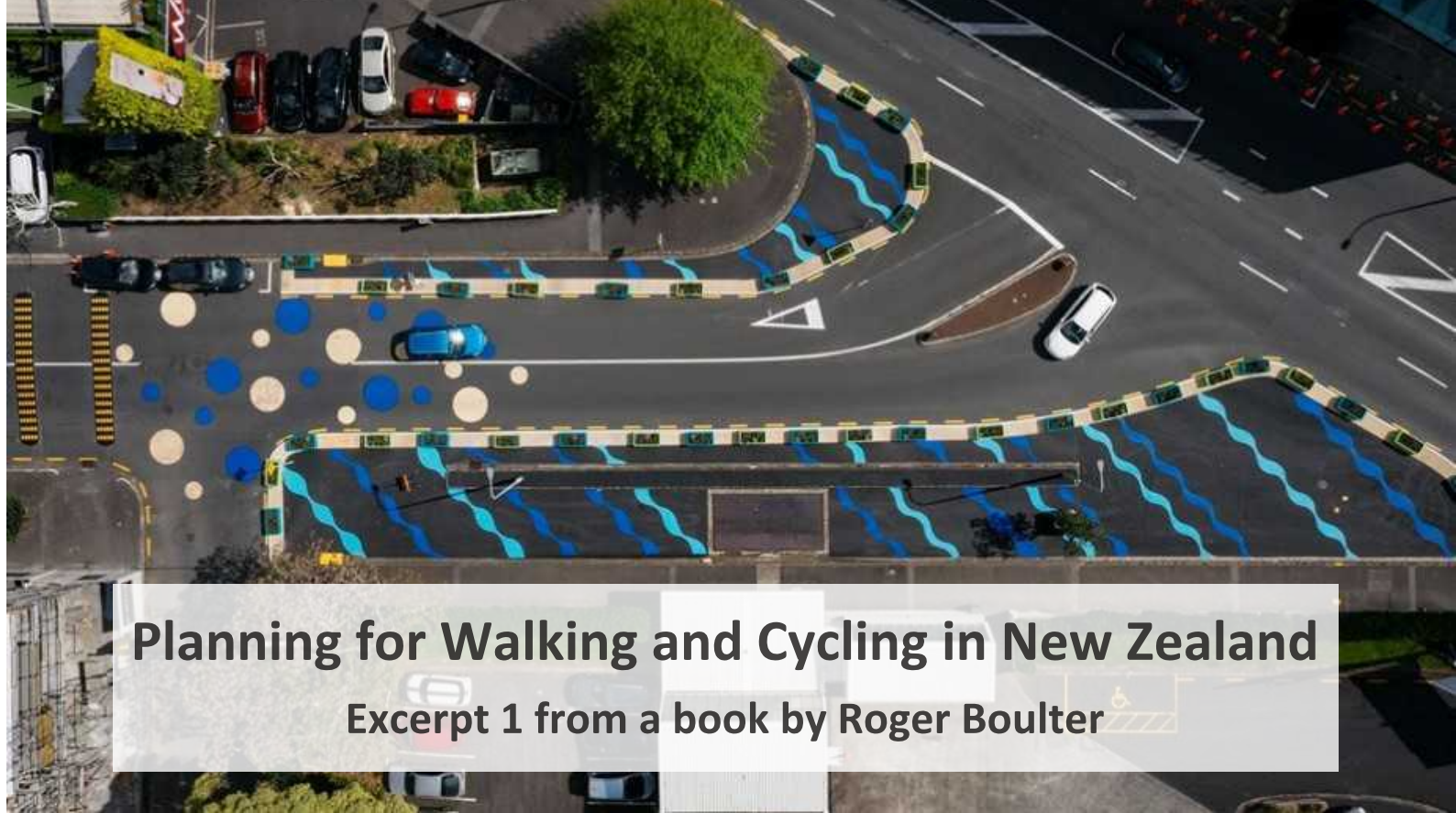
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Planning for Walking and Cycling in New Zealand

Excerpt 1 from a book by Roger Boulter

This draft book by Roger Boulter (free to download from www.boulter.co.nz) won a 2020 WSP Golden Foot Award (in the Research Category). This is the third of four articles outlining some issues it covers.

‘Integration’ and emerging change

Experience has shown that the best way to help walking and cycling (i.e. more usage, less crashes and injuries) is to tackle (downwards) motor traffic volumes and speeds. That implies planning for all transport together, not in separate programmes mode-by-mode.

‘Integrated’ transport, from about 1990 through to today’s *One Network Road Classification* and *Network Operating Frameworks/ Plans*, has not been as radical or effective as it might seem.

Through the 1980s traffic modelling had become sophisticated enough for public transport to be modelled as to its potential to take some of the forecast travel demand. This was a major advance and, in an age now conscious of environmental effects, seemingly a ‘win-win’. Early ‘integrated’ transport planning studies typically saw a roading authority (e.g. a city council) collaborate with a public transport authority (e.g. a regional council) to produce an agreed combined programme.

From the start these were criticised for being closed (between participating authorities) and pragmatic, with trade-off between projects taking the place of dispassionate analysis. The lay public had little chance to contribute. Walking and cycling were completely missing, because these studies were driven by usage data and there was typically none of this on walking or cycling.

Today’s *Auckland Transport Alignment Project* and *Let’s Get Wellington Moving* exercises have the same motive of reaching agreement between disparate agencies which might otherwise fight each other. The former emerged from contrasting objectives (government

state highways, Auckland Council Central Rail Link), as did the latter prompted by defeat of the Basin Reserve SH1 proposal.

These more recent New Zealand exercises, like the earlier ones, risk incoherence through trying to please the interests of different forms of transport together. For example, the consultation options for *Let’s Get Wellington Moving* did not allow a choice between roads and public transport; just between different levels of mixed roading + public transport investment project packages.

Even though the corridors coming into Wellington (Palmerston North-Kapiti-Porirua and Wairarapa-Hutt Valley) strongly influence congestion within Wellington CBD, choices between roads-based and rail-based investment on these corridors were excluded by the drawing of a study boundary at Ngauranga, close into Wellington CBD.

If these sort of questions are not faced, ‘integrated’ sets of proposals may typically include some new state highway building, some public transport improvements, and some new cycleways, but with the different elements undermining each other (e.g. new public transport services struggle for viability because new roads make it easy to drive).

In this case, we may continue to reap the same congested roads, infrequent or poor public transport, and unappealing cycleways we have always had. Walking, being at least as much about place-making and lingering as it is about movement, is at particular risk of being neglected in these large-infrastructure-based programmes.

One Network Road Classification and *Network Operating Plans and Frameworks* are ambitious in theory but may fail to deliver in practice. Apart from the classic road hierarchy distinction between arterial, collector and local access roads for general motor

traffic, there will typically be a bus route network, a cycle route network and possibly other networks too (e.g. 'last mile' freight delivery).

Typically, the different types of network are plotted on a map, but meeting all the requirements listed may in practical terms be impossible. For example, a road may be an arterial road (implies capacity to ensure efficient movement) a bus route (may imply bus priority in congested locations) a cycle route (may imply separated paths) and a walking route (may imply decent footpaths and road crossings).

There may physically not be road reserve widths for all of these (and underground services) to be accommodated. Without clear criteria to guide decisions on space allocation, the outcome may not satisfy all needs (and by default priority may continue to be given to mass private car transport).

Classic historic road network planning according to a 'road hierarchy' envisaged buses using the middle 'collector' road category; a legacy from the (1960s) view of public transport as a supplementary, minority form of transport for those without access to cars. Bus planning, however, is today a lot more complex and pro-active. Route types may vary from fast and direct through to localised. Crucial in this is the level of right-of-way accorded the public transport service in road space use, but allowance is not made for this in classic road-hierarchy-based road network planning.

Cycle route planning has varied, including 'back street routes' (rarely able to deliver an acceptable level of service, so falling out of favour from the 1990s) and more direct routes within arterial road reserves but separated from the roadway. Typically missing from 'integrated' road network planning in New Zealand has been the 'filtered permeability' route network concept.

This provides high connectivity for walking and cycling, but directs cars onto the arterial road network in a much less direct pattern. Walking and cycling become much more attractive relative to driving, and this was central to the Netherlands' very high walking and cycling levels. More recent examples of this concept are the Barcelona 'Super-Blocks' and Ghent's 'Circulation Plan'.

Classic tension between the traffic engineering view of a road as a movement corridor and the architects/urban design view of it as a 'place' has seen an attempt to reconcile two different ways of classifying roads in matrix form: the 'Link and Place' methodology.

This, however, is complex to apply. Road hierarchy categories (the 'link' element) may be already developed to a high level of sophistication, but with the 'place' element less well-defined, leading to this theoretically-sound technique failing in practical application.

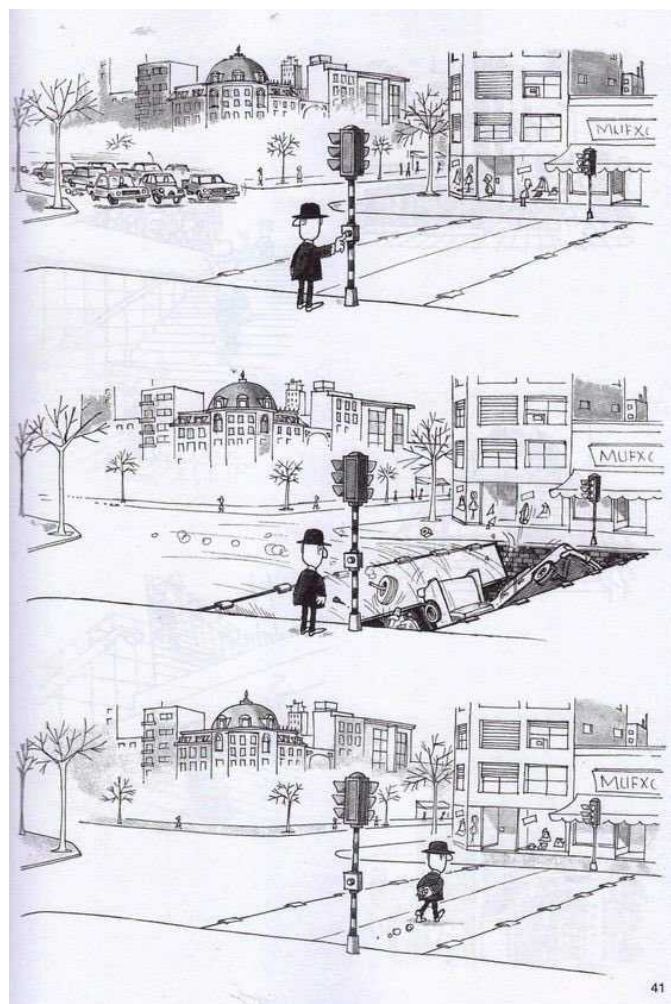
'Autonomous vehicles' are subject to significant hype, yet without much serious evaluation as to their integration with other forms of transport. Without being Luddites (against change on principle) autonomous vehicle technology must 'earn its keep' under proper scrutiny.

Sweeping claims it will render public transport redundant, solve road safety issues through eliminating 'human error', and eliminating car parking need through continuous circulation, aren't difficult to debunk with some properly rigorous evaluation. Those old enough to remember the 1960s will remember similarly unreal hype attached to the 'liberating' prospect of rising car ownership.

A very significant factor in evaluating the prospect of autonomous vehicles should be effect on walking and cycling. If walking and cycling, being the most human-scale forms of transport and so deserving of a central place in transport planning, are adversely affected, this may be sufficient reason to modify or abandon a proposal.

Claims autonomous vehicles will automatically stop when a pedestrian steps in front of them would render all roads zebra crossings, cause gridlock and would not be allowed. The alternative would be to restrict where people on foot are allowed to cross a road, something which (across a whole road network) may seriously damage the freedom of movement which is at the heart of walking's attractiveness.

Cyclists may be similarly restricted because of their small size and different on-road behaviour; this has already become an issue in the Netherlands. The rising issue of 'low-powered vehicles' (e.g. e-scooters) also need properly rigorous evaluation, including questioning a common tacit assumption that they will, or should, use roadside footpaths rather than roadways.



Auckland/Northland branch

Panel Discussion - Coping With a Black Swan Event - Auckland Airports Experience

Hosted by the Auckland Branch of the Transportation Group jointly with the Institute of Transportation Engineers

Thursday 25th March, 5:30pm – 7:00pm

1 CPD hour

Venue is Mott MacDonald's offices located on Level 2 of the Mason Bros. Building at 139 Pakenham Street West, Wynyard Quarter

Join Tim McKenzie, Infrastructure Programme Director, to hear about the experiences of the Auckland Airport as it was faced with a response to a Black Swan event. Going from 1.9 million passenger in the month of January 2020 to around 40,000 passengers in the month of April 2020.

Tim will talk about how this situation impacted the airport, how they responded, some of the challenges they had to overcome, some opportunities that were presented by the situation and some lessons learned about how to respond to a Black Swan Event.

The Auckland Branch and ITE will sponsor nibbles and refreshments prior to the commencement of the panel discussion. Open to members only. Register [here](#)

Conference Organising Committee

As an organising committee, our aim is to bring inspiring insight that conversation to this year's Transportation Group conference that aligns with the theme of "Decarbonising Transport".

The organising committee's roles are as follows:

Shendi Mani – Conference Convenor ensures meetings are organised and keep everything on track throughout the year based on our organising programme.

David Matthews – Auckland Chair, raises any matters to national when required, has also facilitated in the organising of conference.

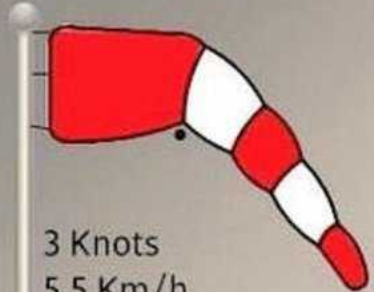
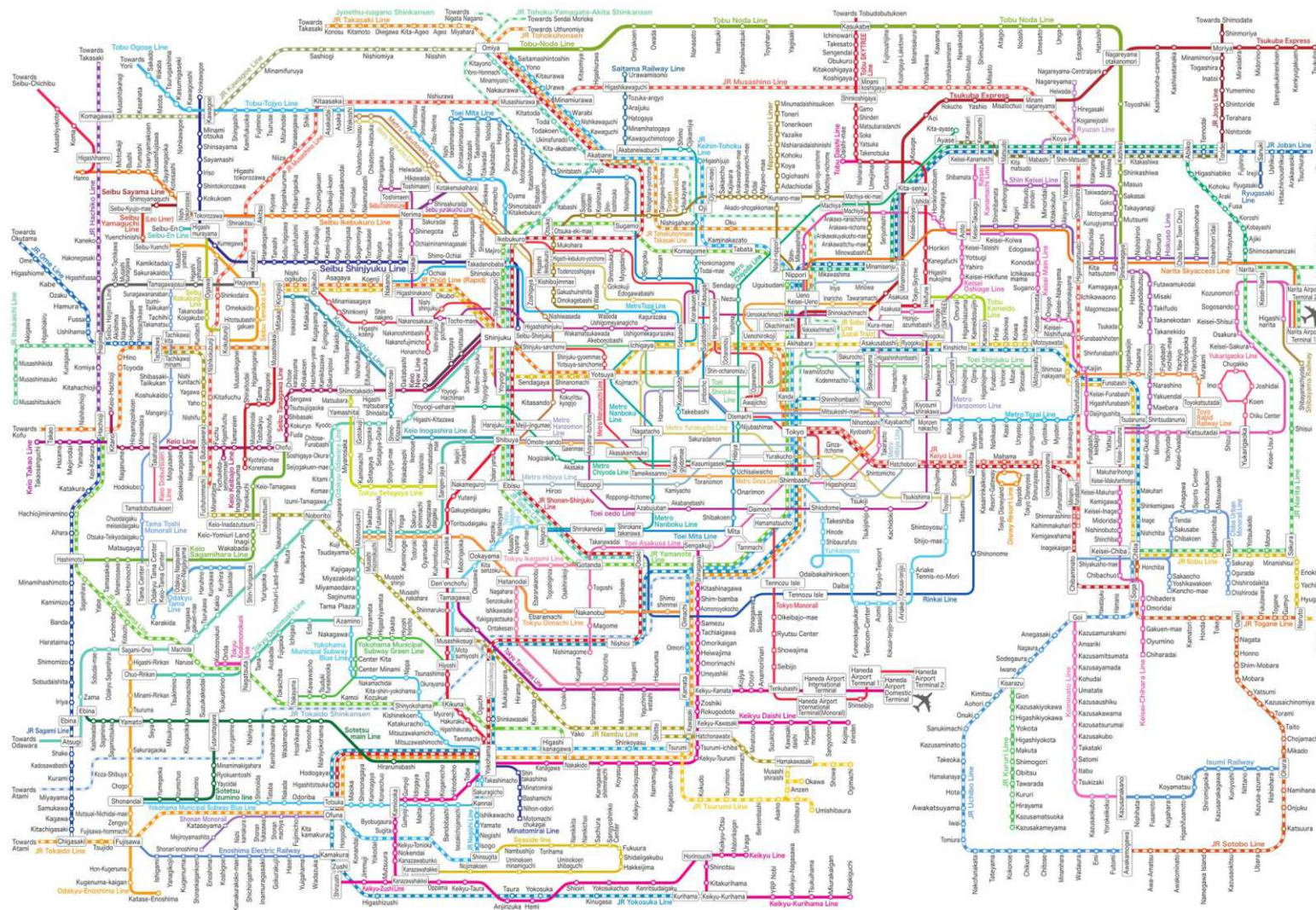
Matthew Hoyle – Programme Convener, is in charge of the conference programme, they ensure the programme is completed at an appropriate and timely manner.

Ellie Craft – Sponsorship Lead, gets into contract of any sponsors the committee sees fit to contact.

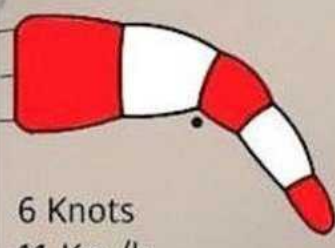
Shane Ingley – Treasurer, ensures the budget is being kept on top of.

Lewis Thorwaldon, Tiffany Robinson, Twan van Duivenbooden, Madi Salter and Alexander Hall have all helped in various tasks along the year.

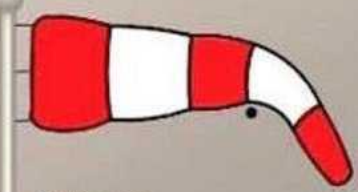




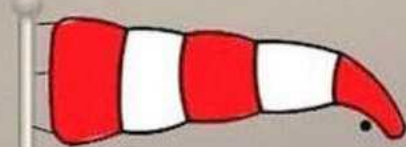
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Urban Street Design Workshops 2021

Healthy cities and towns need street networks that provide safe and comfortable places to live, work, enjoy and connect.

This means streets that service all users of various modes, and streets that stimulate the adoption of sustainable transport. But how do you organise the competing demands for space on our urban road corridors? How do you make streets more accessible to everyone?

That is what the new Urban Street Design workshop addresses, developed in collaboration with Waka Kotahi NZ Transport Agency based on evolving guidance on multi-modal urban street design.

Over two days, expert practitioners from Waka Kotahi, Abley, MRCagney and ViaStrada introduce best practice and advice, based on international good practice and the results of local implementation and trials. Knowledge and experience is shared via presentations and discussions. Design exercises in groups then give participants the opportunity to apply the knowledge to practical situations.



Christchurch participants work on their design exercises

Topics addressed in the workshop are:

- current regulatory and policy context for urban transport development
- principles of good street design practice
- urban network planning (land use and transport integration, speed management)
- general approaches to roadway design and road space allocation
- planning and design for inclusive access
- planning and design for walking, cycling, micro-mobility and public transport
- design for motor vehicles and driving (parking, servicing, use of design vehicles etc.)
- street design issues such as urban design, lighting and security, wayfinding, audit and review
- implementation issues such as pilots, trials and monitoring.

Projects and examples given are based around both existing street reconfigurations/ reconstructions and new “greenfield” developments. The participants also take part in a field tour of nearby streets.

After a successful 2020 pilot, our first workshop for 2021 was recently held in Christchurch in early March. Despite a few last-minute headaches due to the



Lorelei explains some bus stop design details

increase in Covid lockdown levels, 15 participants joined 3 presenters in-person and some remote presenters for a very productive two days discussing street design concepts and getting to apply it in practice via a field tour and major project exercises.

(Perhaps I should say we had 16 “participants” as we were very fortunate to be joined on this workshop by young Lucy, a daughter of one of the attendees. She was very well behaved, but let us know if she disagreed with our choice of street treatment...)



Jeanette and Lucy discuss the finer points of street design...

Coming up soon are two more workshops:

- **Auckland: 8-9 April** (late fee after 25 March)
- **Wellington: 19-20 April** (late fee after 6 April)

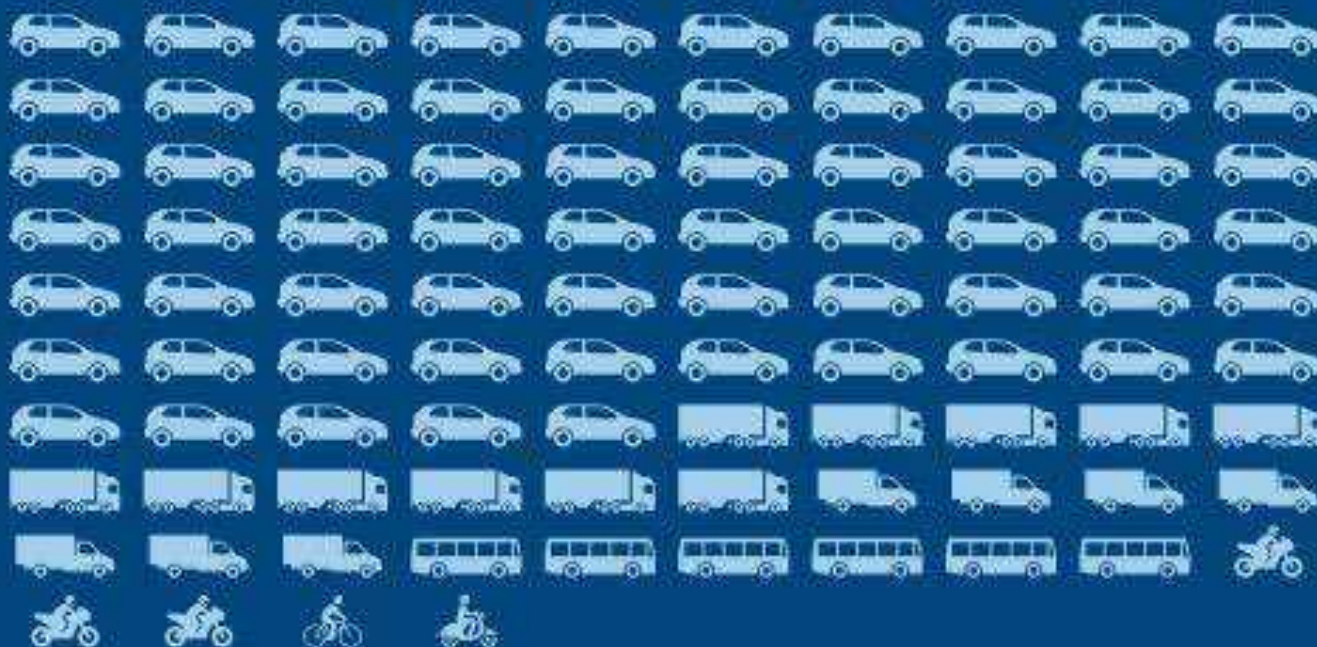
For the Auckland workshop, we are also trying out the use of virtual attendance by some participants, although numbers will be limited to manage logistics.

The standard rate for these workshops is \$975+GST. For registrations not received by the cut-off dates (see above), a late fee of \$100+GST will also apply.

For more information, visit <https://viastrada.nz/street-design>. To register your interest in these workshops or for further enquiries, please contact registrations@viastrada.nz

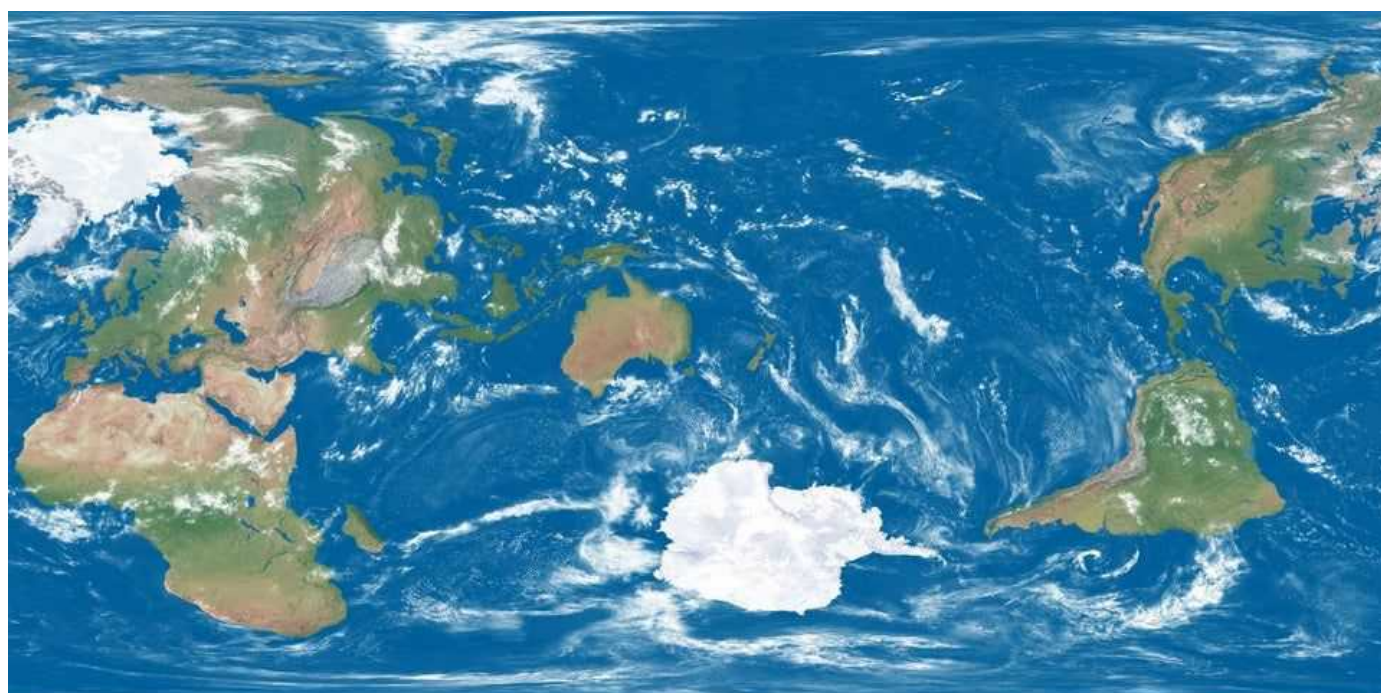
What kills pedestrians

In **every 100 crashes** where a pedestrian is killed, the **other vehicle involved** was a



2% involve other vehicles not included above

4% involved 3 or more vehicles



Delivery Platform Algorithms Don't Work Without Drivers' Deep Local Knowledge



The piercing bell from her phone alerts Marina, a driver for mobility platform Gojek, that she has been matched to a food order. (Marina is a pseudonym.)

She has 12 seconds to decide whether to accept it, so she goes through some quick calculations. The pickup location is Grand Indonesia, a mammoth Jakarta mall known for its elite customer base and complex layout. Even though its restaurants rely on motorbike delivery services to keep them ticking, Grand Indonesia has no convenient parking spaces for motorbike taxi drivers.

Luckily, Marina knows some local motorbike taxi groups in the area who could look after her motorbike as she picks up the order. But the route to the customer would take her past Monas, a national monument in the center of Jakarta. A political demonstration has closed off a lot of the streets in the area, according to the news floating around driver WhatsApp groups.

Nevertheless, she decides to accept. En route, she shares her live location and destination information with her driver community's WhatsApp group — a common practice for online motorbike taxi drivers in Jakarta.

Hundreds of highly organized WhatsApp groups form the backbone of the platform driver communities in Jakarta, becoming a space where drivers get advice on their work strategies, ask for help in the event of accidents, and, as in Marina's case, solicit information about the neighborhoods they are about to venture into for order completion.

There, she is informed that the drop-off point is near a

zonah merah—a red zone where online platform drivers cannot enter due to long-standing agreements between conventional motorbikes taxi drivers and their “digital” counterparts.

She messages the customer on the app requesting that they collect their order 500 feet away from the zonah merah. Grudgingly, the customer agrees, but Marina worries the request may cause the customer to leave her a poor rating.

The multitude of decisions Marina had to make for this order is representative of the limitations of an algorithmic vision of urban space the mobility platform deploys—a flattened, idealized geography where frictions do not exist, only supply and demand. In this world, the former appears to move easily through mapped streets to the latter.

Drivers in Jakarta, though, know better. Over the course of my multiple fieldwork visits to Jakarta between 2019–20, Marina and other Grab and Gojek drivers shared with me their understanding of urban space.

It is infused with social relationships and infrastructural hurdles. To do their jobs, they must think every day about which routes have the most potholes and which traffic signals stay red the longest. Their mental maps of the city note what places have unfriendly security, where they might encounter violent traditional motorbike drivers, specific agreements they have to comply by, friendly roadside restaurants that would let them rest. They must compensate for inaccurate geolocations caused by GPS signals blocked by nearby infrastructure.

Much has been written about the frictionless technology of ride-hail platforms celebrated by customers and technologists alike. Startups like Gojek and Grab have become decacorns (companies with valuations of \$10 billion or more) on the basis of finally providing a simple technological solution to the chaotic mobility markets of the developing world.

Yet their elegance is powered by and relies on the human mediations of the drivers on the street. It is the local markets they claim to replace that have often furnished drivers with the knowledge of local physical and social constraints.

In Jakarta, the seamlessness of the operation of both digitized and nondigitized bike taxi markets depends on particularities of street network morphologies, traffic conditions, and spatial clustering of bike taxis on streets. It is the task of the driver to bring together the two visions of urban space: the abstract and the grounded.

Yet the celebration of digitization renders the driver completely invisible—even though it is their knowledge and ingenuities that allow the technologies to appear frictionless. Even as algorithms become more complex, that local, granular knowledge is difficult to replicate.

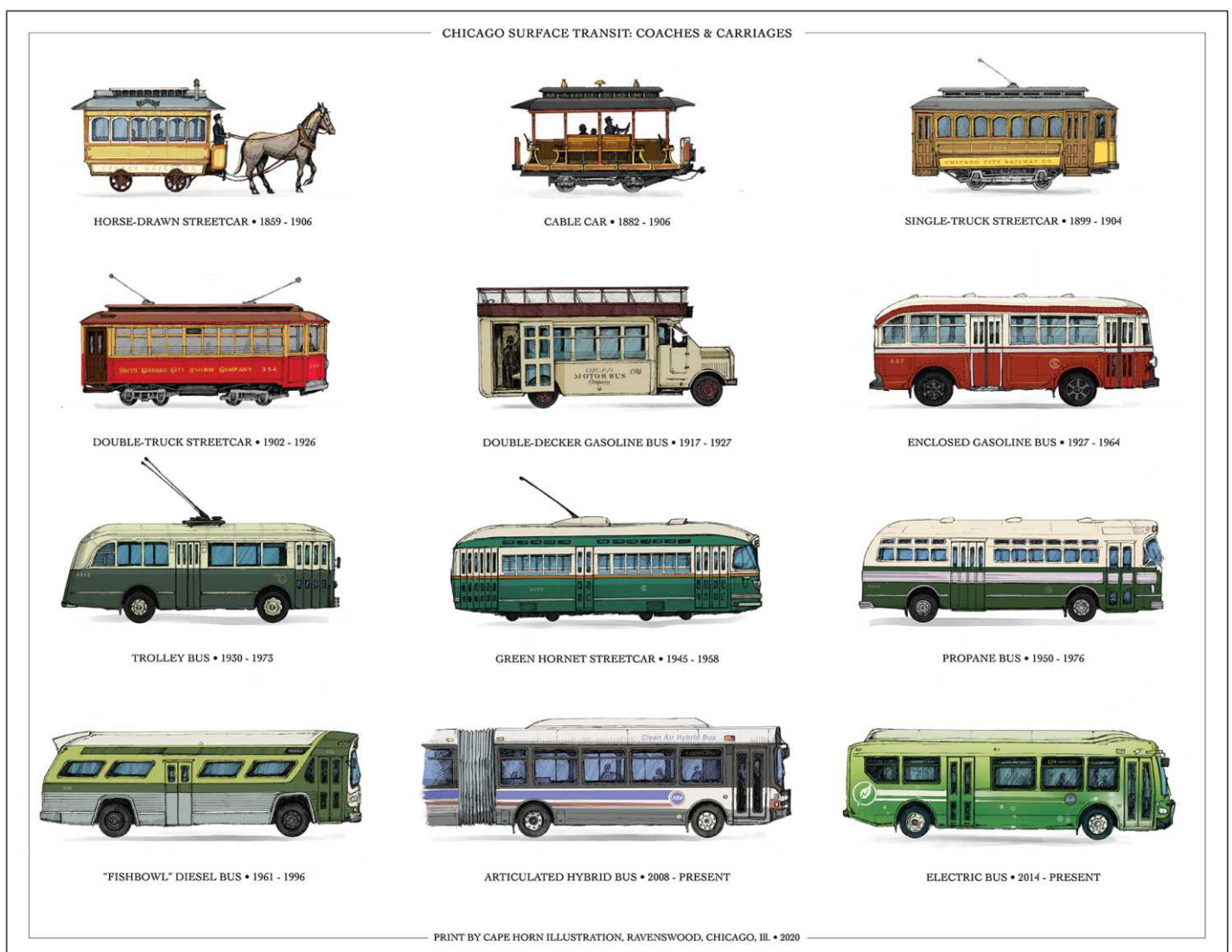
There will always be unknown optimizations algorithms will miss and real-time hurdles that tech firms, no matter how organized, will remain unaware of.

This deployment of techno-solutionism via a contextless algorithm is particularly pernicious when we consider that the assumed view from nowhere is indeed a view from somewhere: Silicon Valley. Even homegrown startups in emerging markets inherit Silicon Valley's belief in "technological fixes" independent of context.

Western biases can then seep into assumptions about mobility in different places. For example, until recently, Google Maps did not discriminate between impassable streets of informal settlements and wide main roads. (I became well acquainted with this particular design flaw when it ended up with me getting someone's car stuck within the narrow confines of a winding informal settlement.)

These gaps eventually have to be resolved by the on-ground workers whose livelihood is suddenly dependent on such incomplete algorithmic visions.

Digital platforms, then, have not removed frictions—they have shifted them on to someone else.
Source: Slate



Innovating streets for people



Making it faster and easier to make our streets safer and more liveable



West Quay, Napier – improvements to the hospitality quarter have been introduced turning the area into a more people friendly precinct.



Waka Kotahi has welcomed the decision by an Expert Consenting Panel to approve the Ngā Ūranga ki Pito-One (Ngauranga to Petone) section of Te Ara Tupua - the shared path connecting Wellington and Lower Hutt.



Pop-up parklets, Wellington - Wellington City Council launched three parklets in Newtown, Allen Street and Te Aro (which has a garden-watering bike), creating more space for people outside local businesses



Waka Kotahi Director of Regional Relationships Emma Speight says: “Te Ara Tupua will make cycling, walking and running between Wellington and the Hutt Valley a safe and attractive option for more people. By 2030 we estimate around 2,200 weekday cycle trips on the new path – more than three times the number of cycle trips made on State Highway 2 today.

“This will be the Wellington region’s largest ever walking and cycling project, made even more complex by the need to work in the harbour’s coastal environment. The consent decision reflects the hard work by Waka Kotahi and our partners over the last few years to ensure we get the right environmental outcomes as part of this essential transport link.”

‘Streets Alive’, Gore – Gore District Council will soon be rolling out a number of initiatives including street art, wayfinding signage and pocket parks, making the town more inviting and safer for all users.

Kathryn King, Urban Mobility Manager says: “The Innovating Streets programme is trialling around 70 projects all over the country. It’s fantastic to see how the projects are helping make streets safer and more accessible and so far, feedback has been positive.”

The project is expected to support about 330 jobs, counting those directly employed by the project and in businesses providing supplies and services to the project.

If funding is approved, the first enabling work on the project could begin in mid-2021. The project will take about three years to complete.

Waka Kotahi is working with KiwiRail to improve the safety of railway level crossings on or near state highways across the country as part of the Safe Network Programme. The programme is helping to deliver better safety outcomes for communities.

As part of the railway level crossing safety upgrades some projects have included the installation of automatic pedestrian gates. A pair of gates has recently been installed at the busy Carmen Road crossing on State Highway 1 in Christchurch - the first to be implemented on a state highway in Christchurch, and only the second to be installed in the region.

The purpose of the gates is to physically stop pedestrians from entering the tracks when a train is approaching, making it safer for everyone.

Other level crossing upgrades being introduced include installing flashing lights and bells to grab people's attention as they approach the crossing, or simply removing overgrown vegetation to improve visibility of the crossing.

David Van Staden, Safe Network Programme Director said: "There are too many people being killed and seriously injured at level crossings. These improvements are a step towards our goal of Vision Zero, where no one is killed or seriously injured on our roads."



The new Christchurch Northern Corridor motorway and shared path have officially opened.

This project opens up many options for people to cycle, e-bike, walk and catch a bus between North Canterbury and the central city. The northern corridor will help move freight and free up existing local roads, improving safety for people driving and cycling in the process.

The off-road shared path runs along the entire length of the new motorway, and then connects to new and existing paths both north to Waimakariri and south to central Christchurch. With the increase of e-bikes, commuting from Belfast and north of the Waimakariri River is now a real possibility. The new clip-on path over the Waimakariri River provides access over the river for all cycle skill levels.



After being awarded New Zealand's most beautiful city for the second year in a row, Whanganui now has a new attraction for visitors and the community to enjoy. Late November saw the official opening of the 130m long bridge over the Whanganui River and 5km off-road cycle trail from Upokongaro to Whanganui.

The new bridge and path provides people walking or cycling with a safer option to travel for the last 10km into Whanganui.

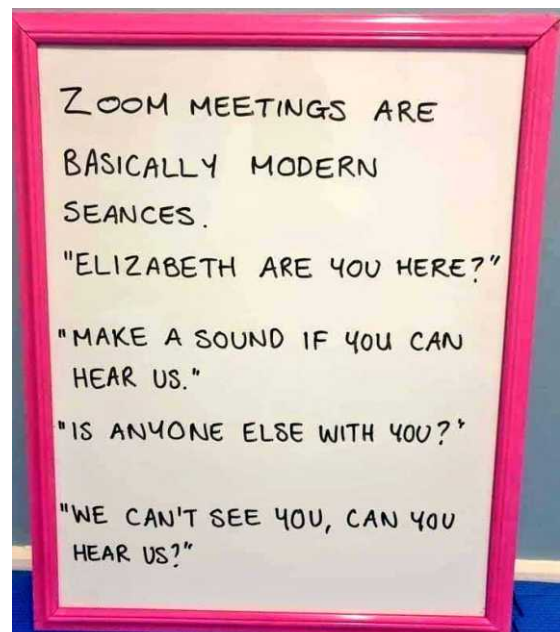
The project was funded by Waka Kotahi, Ministry of Business, Innovation and Employment and Whanganui District Council and forms part of the Mountains to Sea Cycle Trail and will also be part of Te Araroa hiking Trail and the Tour Aotearoa cycle route.



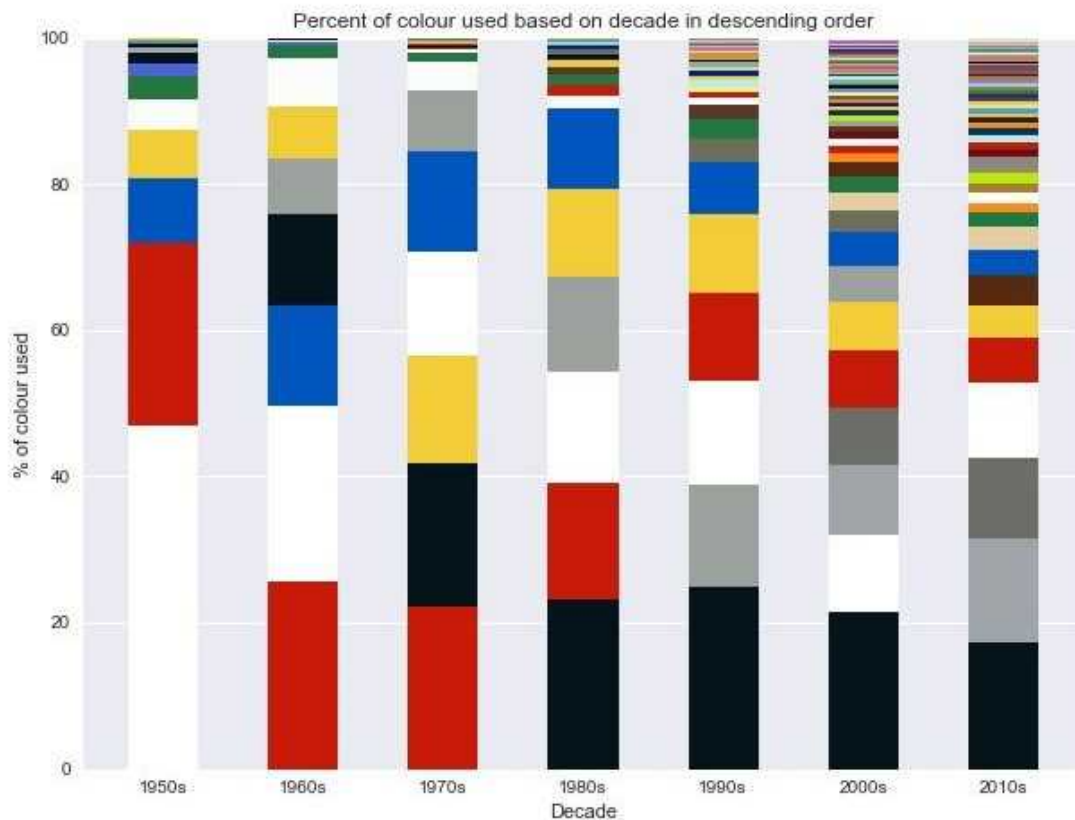
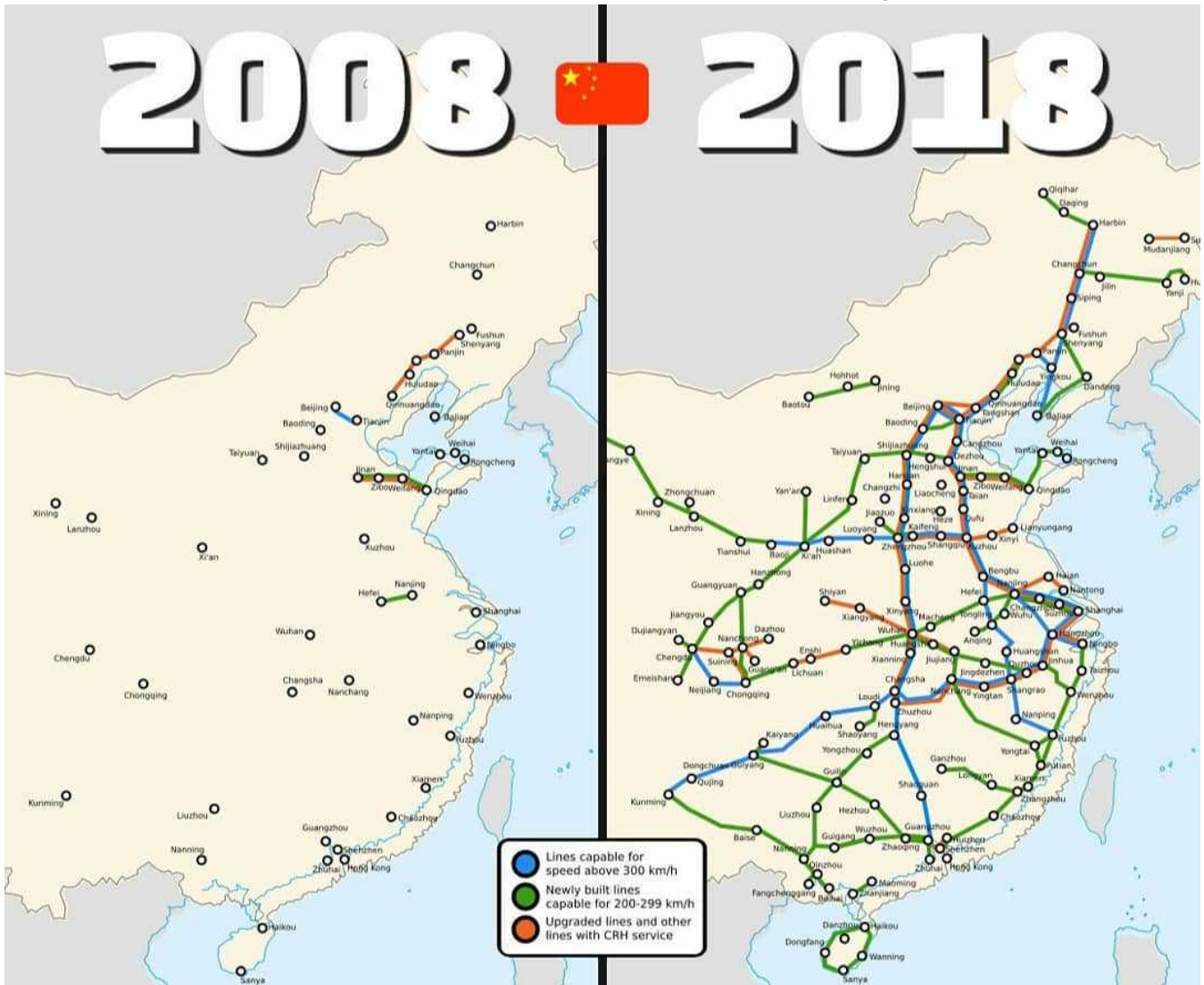
A new section of shared pathway for people walking and cycling in Kaikōura is now open. The section runs alongside SH1 into South Bay and completes the Kaikōura Cycling Club's 48km biking loop track.

This track runs all the way from Kaikōura township to the Hāpuku River, along the Kowhai River, and back to the town.

The section was completed as part of the North Canterbury Transport Infrastructure Recovery (NCTIR) Alliance improvements work following the Kaikōura earthquake in 2016.



Chinese rail network development

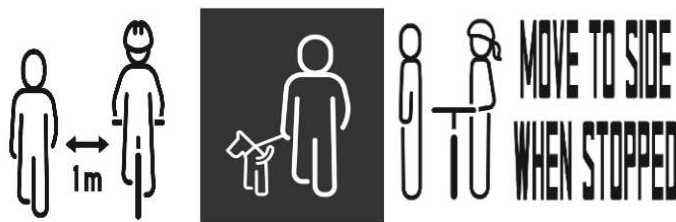


Lego colours through the decades

Active Modes Infrastructure Group (AMIG) Update

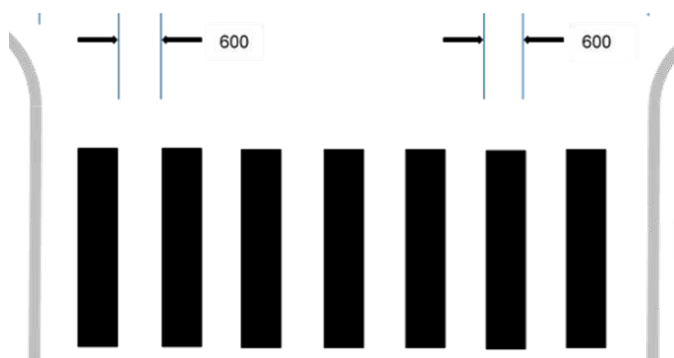
Another year and AMIG is back in session, with the 3-hour video-chat session back on Feb 4th. Another busy agenda kept us busy for the duration; here's what got discussed at that meeting:

- With recent work completed on shared path behaviour markings designed to encourage keeping left and slowing down, attention is now turning to what other messages could be graphically represented more clearly, such as “give space”, “move off path when stopped” or “control your dog”. Some user testing of preferences/understanding of potential designs is underway.



- Some ongoing work is developing guidance for assessing safer rural cycling provision. A couple of challenges identified are how to count cycle numbers in remote numbers cost-effectively (i.e. without installing counters) and how to determine the relative risk of riders and motor vehicles being in the same place on a narrow road at the same time. Some draft spreadsheet tools are being developed to help with this. Other issues raised include the appropriate height of roadside safety barriers and ensuring that shoulders reveals were well bedded in for cycling on.

- The group was reminded about the recent changes (gazetted in January) to dimensions for pedestrian (zebra) crossings, that make the white stripes more prominent. New crossings should have 600mm wide stripes, although an interim 450mm wide design can be used on existing crossings. For more details, see <https://gazette.govt.nz/notice/id/2021-au89>.



- The perennial problem of getting consistency around coloured surfaces is slowly coming to a consensus at the national level, with agreement on green being used to highlight special vehicle lanes and cycling-specific facilities, while red denotes transition zones on roadways (eg speed/school zones) or where there is high conflict potential with pedestrians. As well as updating national guidance accordingly, a Technical Note on this will probably be developed and circulated to the industry.



- The use of planter boxes as potential cycleway separators was raised by one RCA. Various issues were discussed, including the choice of colour/delineation and the ability for them to “nudge” by motor vehicles. Fortunately, there is some guidance coming soon on the use of various traffic control devices like this for interim street treatments.



- Other items discussed briefly at the last AMIG meeting included path ramp platform designs in the Building Code, progress (or not) on the Accessible Streets legislation package, and walking/cycling issues as part of the current COPTTM review.

It's pleasing to also see the publication (finally) of the Traffic Control Devices Manual Part 5 (between intersections), with a sub-sectioned HTML version of the current single PDF document also planned. The two-monthly cycle of AMIG meetings will continue with the next one on 1st April.

For RCAs who would like to be added to the group, contact co-convenors Wayne Newman (RCA Forum; wayne@cresmere.co.nz) or Gerry Dance (NZTA; Gerry.Dance@nzta.govt.nz).

Group members can also talk with me about raising any ideas or issues on your behalf at AMIG as well.

Glen Koorey (Transportation Group AMIG rep),
ViaStrada (glen@viastrada.nz, ph.027-739-6905)



Actions to reach our 2050 carbon neutral target

The Government has announced action on climate change with a raft of measures that will help meet New Zealand's 2050 carbon neutral target including the decarbonisation of the public transport bus fleet.

Prime Minister Jacinda Ardern said, "Transport makes up our second highest amount of emissions after agriculture, so it's important we reduce emissions from our vehicle fleet".

The Government is committing \$50 million to help councils fully decarbonise the public transport bus fleet by 2035. By meeting the target to decarbonise the bus fleet, up to 4.5 million tonnes of CO2 emissions can be prevented, which will make an important contribution towards meeting climate targets.

Other actions include an agreement in principle to mandate a lower emitting biofuel blend across the transport sector, and the introduction of a Clean Car Import Standard to reduce emissions and Kiwis' fuel costs.

The Waka Kotahi Sustainability Action Plan, Toitū Te Taiao sets out what Waka Kotahi will do to enable a reduction in land transport carbon emissions. Our vision is for a low carbon, safe and healthy land transport system by 2050.

Toitū Te Taiao, outlines how we have to 'Avoid, Shift, and Improve' the transport system to reduce carbon emissions. While a lot of our work is focused on better land use, transport integration and mode shift, reducing emissions from our vehicle fleet is also a critical component.

Encouraging more walking and cycling in Dunedin

Waka Kotahi is delivering two separate multi-million-dollar shared path projects with huge potential to encourage more people to walk and cycle in Dunedin.

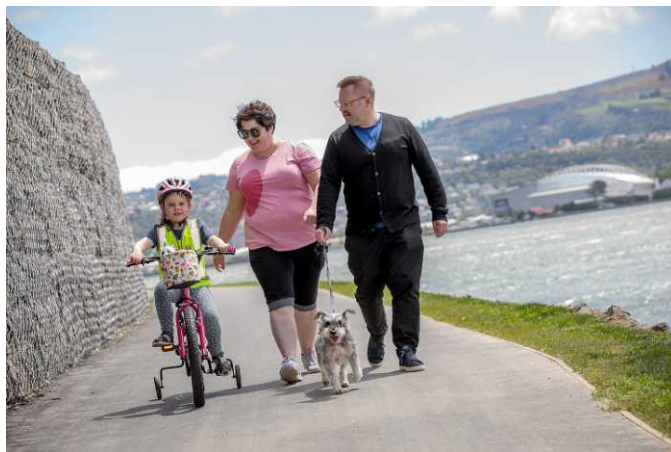
Scheduled for completion in the next couple of years, the two shared paths on opposite sides of the Otago Harbour will provide great walking and cycling experiences that will motivate people to get out of their cars and onto their feet or bikes.

The centrepiece of the \$31million SH88 Dunedin to Port Chalmers safety improvements project is the construction of the final 5km leg of a shared walking and cycling path between Dunedin and Port Chalmers. Scheduled to open in mid-2022, the path will offer a safe alternative for people walking and cycling to using State Highway 88, which is the busy main road freight route to Port Otago.

Directly across the harbour, work is progressing well on the final stages of the \$63million 14km Otago Peninsula Connection, a Dunedin City Council project co-funded by Waka Kotahi.

A 6m wide harbour reclamation includes a shared walking and cycling path, a new sea wall, and raises the road.

This will provide protection from storm events and sea-level rise on the main road link between Dunedin and the Otago Peninsula. Road shoulder widening has created the space for a 3m wide shared path.



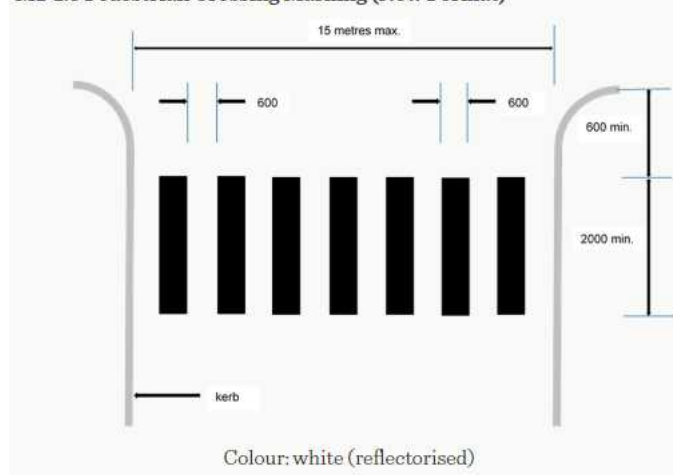
An unbeatable harbourside walk – a section of the new shared path between Dunedin and Macandrew Bay. Photo credit: Dunedin City Council.

Zebra crossings get more white in their stripe

A new Pedestrian Crossing marking aims to make zebra crossings safer for pedestrians by widening the stripes of white paint from 300mm to 600mm in line with best-practice in Australia. The white stripes are what makes a crossing stand out and by making them wider, they become more visible to drivers.

The formal gazette notice with the technical details includes guidance for an interim design for councils wanting to retrofit their current zebra crossings in advance of new ones.

M1-1.3 Pedestrian Crossing Marking (New Format)



Waka Kotahi is continually updating walking and cycling design guidance.



New section of the Alps 2 Ocean Cycle Trail open

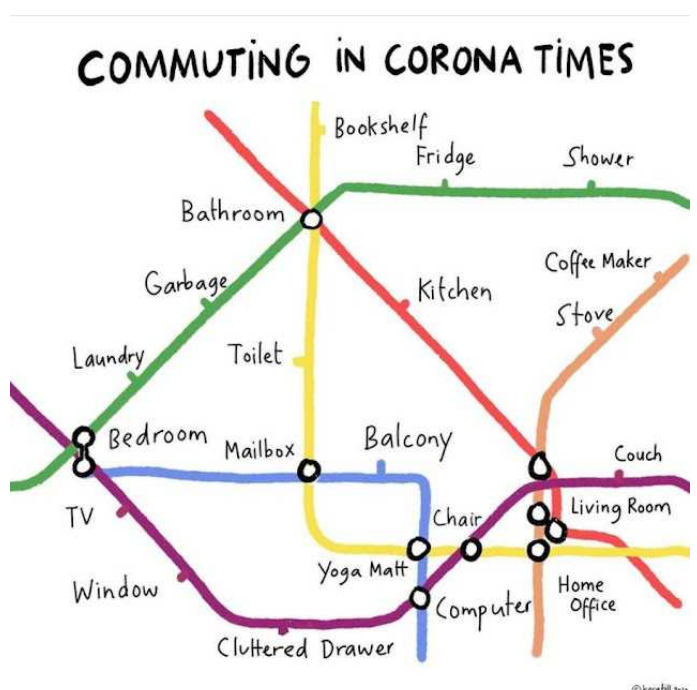
In December a new off-road section of the Alps 2 Ocean Cycle Trail was opened, moving riders safely off State Highway 83.

The Alps 2 Ocean Cycle Trail is the longest of the 22 Great Rides in New Zealand spanning 315km from the Mackenzie District, which is recognised as a Dark Sky Reserve, to the Waitaki District, an aspiring UNESCO Geopark.

The new section creates a safer ride for all to enjoy. It is Grade 3 (intermediate). Starting at the Sailors Cutting

car park on the shores of Lake Benmore, the 16km section combines purpose-built gravel cycle trail with DOC's Benmore Peninsula track and finishes at the car park above Benmore Dam. The section weaves through the high country of the Waitaki Lakes District following the Ahuriri arm of Lake Benmore with deep clear waters and golden tussock providing stunning backdrops.

Great Rides, along with Heartland Rides and urban rides in towns and cities, make up the New Zealand Cycling Network. Waka Kotahi is working with local government and community groups to connect this cycling network across the country.





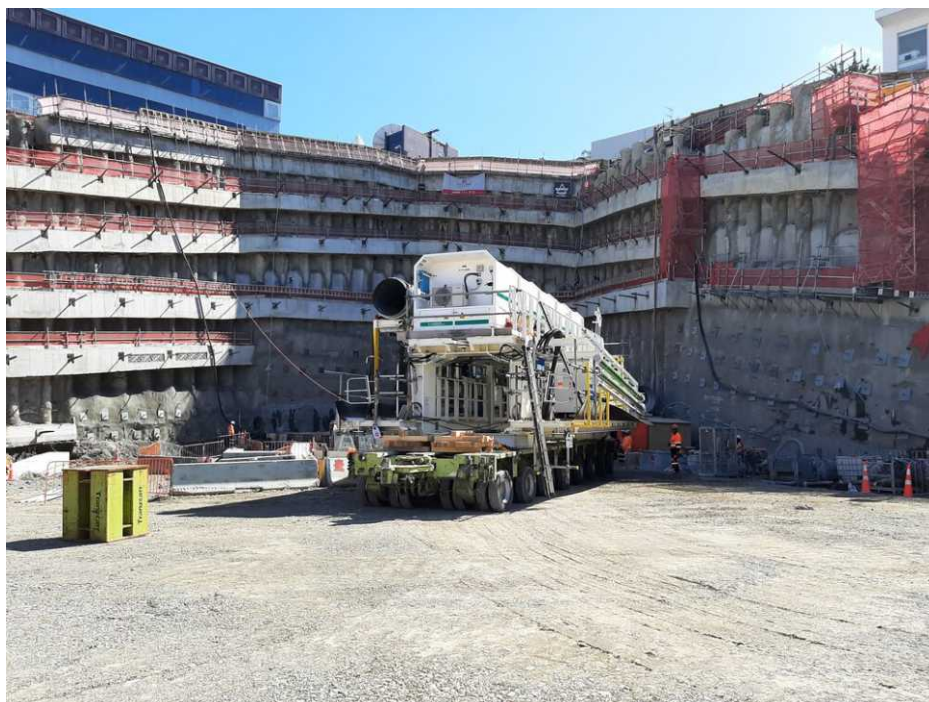
City Rail Link update

The massive job of putting together the giant Tunnel Boring Machine (TBM) that will help transform the way Aucklanders travel around their city is underway at City Rail Link's Mt Eden site.

"We've started joining up the first sections or gantries of what will become a travelling factory 135 metres long when we finish," says Florent Detraux, Tunnelling Project Manager for the Link Alliance.

"We did all the unwrapping a few weeks back and now there's the excitement of putting our mechanical 'present' together – moving the gantries to the portal as we join up them up. It's amazing watching the different sections grow into this fantastic machine."

A truck with a multi-wheeled hydraulic trailer has moved the first four of the TBM's 11 gantries, into position near the entrance to the CRL tunnel's southern portal.



"Moving and aligning them into place is both a big and delicate operation," Mr Detraux says. "Mt Eden's a very busy construction site - there would be about 10 separate pieces of works going on around us at the moment – and the gantries weighing approximately 70 tonnes each are moved across uneven ground."

"The team had to build a dedicated road and ramp down to the portal to support the move. Concrete slabs were poured by the portal, and rail tracks installed to position the gantries correctly."

All 11 gantries will be in place by mid-March. The TBM's final piece, the front section or shield, will then be connected. The shield weighs almost 500 tonnes and to move it into position will be another challenging and impressive operation.

The gantries provide the hydraulic, mechanical and electrical power the shield will need to excavate the tunnels, remove the excavated spoil, and install the precast concrete segments that will line the tunnels.

The gantries also carry all the 'mod cons' the TBM's tunnellers will need underground - a small office, canteen, a refuge chamber if there is an emergency, and a toilet.

"Once the shield and all the gantries are connected, we will then put the completed TBM through some pretty vigorous tests and commissioning to ensure it is safe to begin its journey through the first tunnel," Mr Detraux says.



This edition's set of photos are of trees which have slowly absorbed 'No trespassing' signs. Have you seen other good examples of nature reclaiming signage? Send your own photos to:
daniel.newcombe@at.govt.nz





Roundabout of the month



The photo for this edition is a bit special. Its an underground roundabout, under the Atlantic Ocean part of new 11km sub-sea Eysturoy tunnel connecting to the Faroe Islands. Seen a better pic? Email: daniel.newcombe@at.govt.nz

THE ETYMOLOGY OF PASTA



@etymology_nerd

@etymologynerd



BUCATINI

From Italian *bucare*, "to pierce"



LINGUINE

Means "little tongues" in Italian



RAVIOLI

Possibly from Italian *rava*, "turnip"



CANNELLONI

Means "large tubes" in Italian



MACCHERONI

Possibly from Italian *maccare*, "to bruise"



RIGATONI

From Italian *rigare*, "to draw a line"



CAVATELLI

Means "little hollows" in Italian



ORECCHIETTE

Means "little ears" in Italian



SPAGHETTI

Traces to Italian *spago*, "cord"



CONCHIGLIE

From the Italian word *conchiglia*, "seashell"



ORZO

Name means "barley" in Italian



SPÄTZLE

German for "little sparrows"



FARFALLE

An Italian word for "butterflies"



PACCHERI

Traces to Italian *pacca*, "slap"



STROZZAPRETI

Means "priest stranglers" in Italian



FETTUCCINE

From Italian *fetta*, "slice"



PAPPARDELLE

From Italian *pappare*, "to eat hungrily"



TAGLIATELLE

From Italian *tagliare*, "to cut"



FUSILLI

From Italian *fuso*, meaning "spindle"



PENNE

From Italian *penna*, "quill"



TORTELLINI

Means "small cakes" in Italian



LASAGNA

From Italian – name means "cooking pot"



PTITIM

Literally means "flakes" in Hebrew

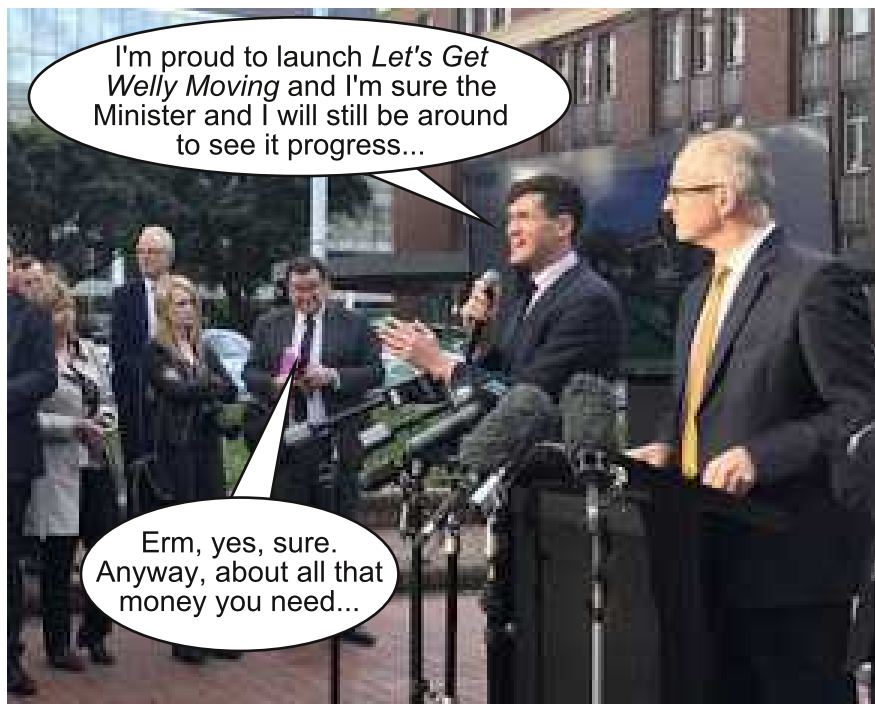


VERMICELLI

Italian for "little worms"

Caption competition

It seems only yesterday that Let's Get Wellington Moving was launched by Wellington mayor Justin Lester and Transport Minister Phil Twyford. So much has happened since this photo was taken. A caption suggestion has been made. If you have a caption suggestion, or a photo of your own you want captioning, send it to daniel.newcombe@at.govt.nz



The passenger steamer SS Warrimoo was quietly knifing its way through the waters of the mid-Pacific on its way from Vancouver to Australia. The navigator had just finished working out a star fix and brought Captain John D.S. Phillips, the result. The Warrimoo's position was LAT 0° 31' N and LONG 179 30' W. The date was 31 December 1899. "Know what this means?" First Mate Payton broke in, "We're only a few miles from the intersection of the Equator and the International Date Line". Captain Phillips was prankish enough to take full advantage of the opportunity for achieving the navigational freak of a lifetime. He called his navigators to the bridge to check & double check the ship's position. He changed course slightly so as to bear directly on his mark. Then he adjusted the engine speed. The calm weather & clear night worked in his favor. At midnight the SS Warrimoo lay on the Equator at exactly the point where it crossed the International Date Line! The consequences of this bizarre position were many:

The forward part (bow) of the ship was in the Southern Hemisphere & in the middle of summer. The rear (stern) was in the Northern Hemisphere & in the middle of winter.

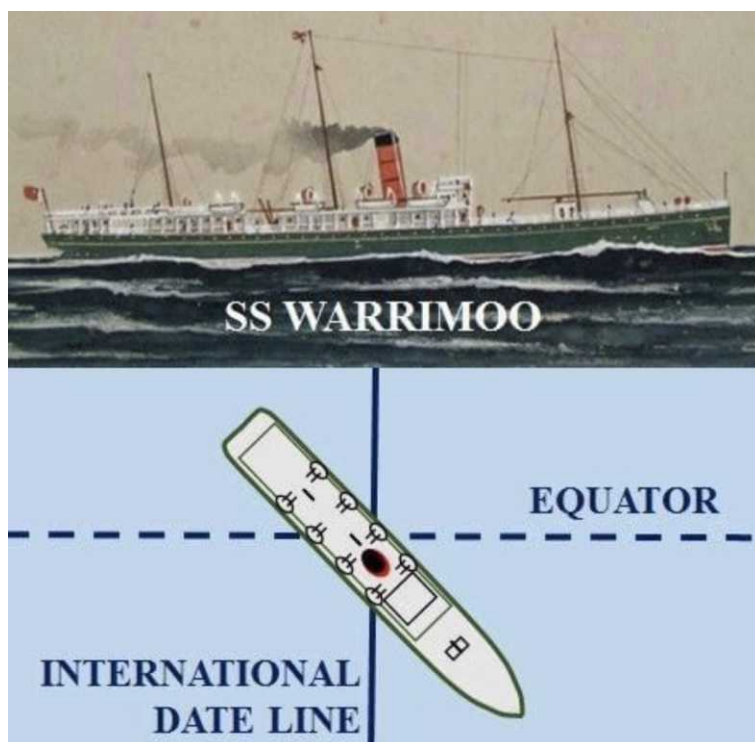
The date in the aft part of the ship was 31 December 1899.

In the bow (forward) part it was 1 January 1900.

This ship was therefore not only in:

Two different days,
Two different months,
Two different years,
Two different seasons

But in two different centuries - all at the same time!



Transport Advice

FOR DUMMIES



A tongue-in-cheek column on transport matters by The Transport Guy. The contents do not represent the views of the Transportation Group NZ, Engineering NZ, or anyone else for that matter. Follow the advice at your own risk.

Dear Transport Guy

Public transport use has been way down after the lockdowns in 2020. Cycling volumes were up. Traffic volumes were down but came right back up in most cases. How can we rely on our modeling projections for 30 years in the future, if we can't even work out what will happen next year?

Nathan, Hamilton

Dear Napalm

Its quite simple really. You pay a consultant to develop a new model. Then during the time they are creating it, some other variable will change and you'll need to pay them to change it again. Obviously it will still be wrong by the time its done, but at least you will have kept some of the transport industry employed for a few more weeks.

~Transport Guy

Dear Transport Guy

I see that Transmission Gully is costing even more money. I thought Public-Private Partnerships (PPPs) were meant to be better deals for the public? Wouldn't it have been cheaper just to pay for it the old fashioned way?

Chris, Hataitai

Dear Crisis

Ha! The 'old fashioned way' is to still have a cost blow-out. But don't worry, although the unforeseen costs would have paid for years of safety or active mode programmes, if there is one thing we've learned over the years its that cost blow-outs are only outrageous when they happen to a cycling project.

~Transport Guy

**Traffic levels up
35% in 20 years**

Expect delays

Dear Transport Guy

I've been keen to try out some 'tactical urbanism' treatments. I've heard that they are a cheap and quick way of achieving positive road safety and urban realm outcomes. I've got no experience in this area. Can you help?

Blair, Dunedin

Dear Blergh

Great idea! Tactical urbanism is the new black. Some tips for you: try narrowing lane widths to slow traffic - I find widths of less than a metre really do the trick. Portable plastic planter boxes are great for creating temporary buildouts, but if you don't have any, a rusty derelict car also works. Painted dots spread all over the road have been popular, but sometimes don't slow down traffic, so try using deep pot-holes instead - each one filled with different colour of water.



My favourite tactical urbanism technique is to set up a fake toll booth. Not only does it slow down traffic, it also raises some funds to fill in those pot-holes I suggested before.

~Transport Guy

Do you have a dumb question for Transport Guy? Email it to: transportfordummies@gmail.com and he'll do his best to answer...



2017

2020

2025

2030

2050



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Engineer graduated from online
classes be like...



It's a five minute walk from my house to
the pub.

It's a 35 minute walk from the pub to my
house.

The difference is staggering.

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Kids explain traffic engineering

"If you have a car but could catch the bus, you should catch the bus because it will save the traffic"

