# Roundabout

Magazine of the Transportation Group NZ

Issue 168 June 2021

## Meet our new Chair: Bridget Burdett

*In this edition:*

*- Conference recap and embarrassing photos*
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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: daniel.newcombe@at.govt.nz

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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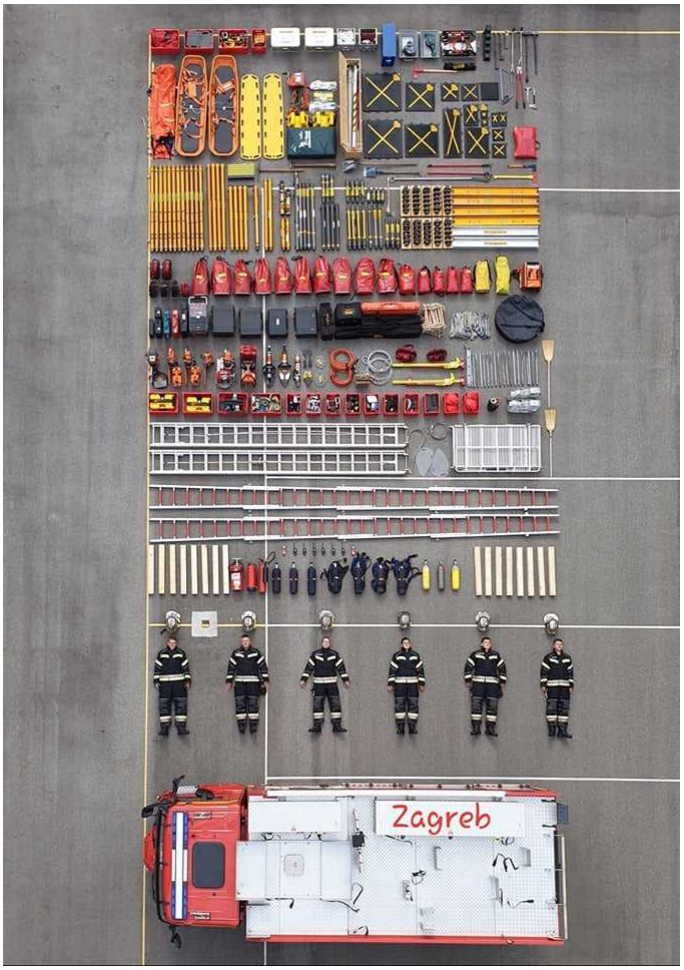
# Editorial

Another year, another conference. But it was different this time.

When we met last year in Christchurch, it was mere days before the first COVID-19 lockdown and we were at that stage unsure if we would be meeting again in person or would have to delay the conference for some time.

As we now know, NZ has done incredibly well to be pretty much back up and running during a worldwide pandemic and be able to host large in-person events (albeit with restricted attendance from overseas).

So we were able to come together, unlike almost any other country in the world, and shake (regularly sanitised) hands with colleagues as we were scanned into various crowded rooms to talk, listen and share. We eventually got used to being stalked by a nice Hardings lady with a handheld scanner, and it didn't at all make us feel like a grocery item at the checkout.




Even despite the changes created by pandemic, some other things were different. There was a strong focus on minimising emissions from travel, so numerous overseas speakers appeared via video and for the first time we accommodated virtual attendees.

And the content of the presentations was noticeably different from previous years. No longer were we told maybe we should think about trying to support more energy-efficient transport projects whilst continuing with business-as-usual planning; instead the evidence was overwhelming that reducing our carbon footprint was urgent and there were a growing range of ways we needed to do it.

The conference was notable for the lack of dissent on this issue – the focus was on what we can do about it and how quickly. I think it is a really positive sign for our industry that we could pivot so quickly to recognise the issue and the urgency, and set about coming up with plans to address it.

I spoke with our new Chair Bridget Burdett, about the possibility of next year's conference (in the Bay of Plenty) being focused on the implementation of the ideas – we seem to be done talking about whether to reduce our emissions, let's get on with doing it!

It will also be great to get some representation from decision-makers – senior management, politicians, etc. It's no good us just talking to ourselves, we need the people who can give us the go-ahead.

Councillor Pippa Coom attended the conference dinner (the second conference she has been to) and told me she sometimes feels unwelcome at the conference. I was horrified at this but couldn't get to the bottom as to why; perhaps the overly technical nature of our material, or the focus on harder engineering elements and not on wider issues like process or policy.

I think we should all make an effort to include those around us as engineers – the planners, policy makers, politicians, funders, communications and engagement folk, etc. – feel welcome to join us in conversation about making transport better. At next year's conference or in our working lives.

And finally, if you are interested in helping put Roundabout together, get in touch. We can always use a hand.

***Daniel Newcombe***
***Roundabout Editor***
***@newcombe_dan***

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# Chair's Chat

**Ehara taku toa e te toa takitahi engari he toa takimano.**

**My strength is not that of an individual but that of the collective.**

Greetings to all members and readers of Roundabout. At the Transportation Group Annual General Meeting at our conference last month (May 2021) I began a two-year term as Chair of our group.

In my address I first acknowledged the immense contribution of our previous Chair, Jeanette Ward. As the first female Chair of our Group in its more than 60 years, Jeanette was and remains a pioneer and role model for many of us, particularly for women in the transport profession. I would like to thank Jeanette once more for her energy and courage in taking on the role of Chair, and for her support and encouragement to me personally over that time.


The two-year internship as Vice Chair serves to introduce new leaders to the processes involved in running this group alongside the National Committee. I learned in that time that our membership is broad, in terms of the interests we all have in different aspects of transport.

I believe that it is also increasingly engaged in the issues of the day. We are involved in increasing numbers of submissions to Government process, and our conference themes (Equity, in 2020; and Decarbonising Transport, in 2021) have been particularly bold in the last couple of years.

There is a growing frustration, I think, that our views as professionals aren't always carried through to the outcomes that our work affects. Transport has never existed for itself, so there are always other professionals involved, as well as community representatives, and of course, politicians.

The complex nature of transport decision-making, and the growing member engagement in important issues like equity and climate change have informed my mission as Chair. I don't know why we don't get better outcomes from transport.

All of our visions and most of our policies say pretty good things about what we want from investment. We want happy, healthy, safe, liveable places, and a surviveable planet. Rather uncontroversial things, of themselves. But somewhere between the vision and the street surface, we get some pretty sad, unhealthy, unsafe, unpleasant outcomes – and the projections for the planet are not looking very 'surviveable' if you're a human with an interest in future generations.

So I have started a series of conversations with interested transport professionals (and relevant others) to uncover why that mess exists, and what we could do about it as a Group.

I'm going to schedule some of those conversations as open, online events so that any of you who would like to, can listen and be part of this journey. I don't think that I'll change the world, or even the Aotearoa transportation sector's direction significantly in two years to 2023.

However, with active and intentional collaboration, cloaked in a korowai of Manaakitanga, I absolutely believe that this Group can be part of a happier, safer, healthier future for people and planet, one street at a time.

If not now, when? If not us, who?

**Bridget Burdett**
**National Committee Chair**
**bburdett@mrcagney.com**

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## Conference presentations are now available to view

Relive the conference highlights! All presentations have been converted to PDF files and are available on the conference website under the programme page, the speakers page or the app. If there is no presentation listed it is because we have not received permission from the author to publish.

To access presentations on the event app go to 'Speakers', tap on the relevant speaker, scroll down and you will find 'Presentation'. Access it here

## Check out the conference photos!

Professional conference photos are now available to view! High resolution files are available to download, visit the link to access. For those too lazy to do so, we have shown some later in this edition of Roundabout.

# 'Trucky McTruckface' christened as one of Lower Hutt's seven new recycling trucks


Bruce Springclean, Trash Gordon and Trucky McTruckface are among the trashiest names chosen by Lower Hutt to name their new recycling trucks.

Hutt City Council's new recycling service, including seven new electric recycling trucks, is due to roll out in July.

To promote recycling in the community, Hutt City Council asked the public to submit names for each of the trucks, then put it to a final vote via Facebook.

The winning names were ***Bin Diesel, Truck Norris, Recyclosaurus Rex, Bruce Springclean, Trash Gordon, Chitty Chitty Bin Bin, and Trucky McTruckface***.

Out of all the submissions, Trucky McTruckface received the most nominations.

Hutt City Council chief executive Jo Miller said although her favourite was Bruce Springclean, she sneakily loved Trucky McTruckface too.

"The people have chosen," she said

Miller hoped naming the trucks would bring the community together, and get people talking about recycling.

"This is our city, and reducing carbon emissions comes down to our individual actions."

The names will be printed on the sides of the trucks, officially christening each one with personal flair.

# Help us with Setting Speed Limits Rule consultation

Waka Kotahi (NZTA) are consulting on a new Land Transport Rule for speed management planning in NZ: the Setting of Speed Limits 2021 Rule. Key features of this Rule include the introduction of regional speed management plans, changes to the way that speed limits are changed and recorded, and the introduction of lower speed limits around all schools. More information can be found here

Consultation on this Rule closes at 5pm Fri 25th June. As well as encouraging individual submissions, the Transportation Group are also formulating their own submission, led by Glen Koorey. Anyone who is interested in contributing to the draft submission or who would like to receive the draft for comment should contact Glen (glen@viastrada.nz , ph.027-7396905) by Sat 19th June at the latest.

# Conference award winners

**Best Roundabout Contribution**
Jeanette Ward (Abley)
Making raised intersections work for walking (June 2020)

**Transportation Group Research Award 2021**
Ellie Craft (MRCagney)
Decarbonising transport: a review of evidence and study tour to learn about different countries'
transport sector responses to climate change

**Transportation Group Tertiary Study Grant 2020**
Allie Knight (Masters at Waikato University)
For her thesis into how cyclists' behaviours, expectations, feelings of safety and attitudes whilst cycling are influenced by the presence or absence of a physical separator between them and motorised traffic

**Best Student Transportation Engineering 2020 at University of Canterbury**
Zekun Ji (University of Canterbury)

**Best Student in CIVIL 361 Transportation Engineering at University of Auckland**
Noor Azzy Binte Zulkifli (University of Auckland)

**3M Traffic Safety Innovation Award winner**
Innovating Streets for People - Nelson South
Marg Parfitt (Nelson City Council)
Sue McAuley (Nelson City Council)
Rebecca Dawkins Nelson City Council
Paul Shattock (Nelson City Council)
Matt Bruce (Nelson City Council)
James Newton (Stantec New Zealand)
Ross McPhie (Stantec New Zealand)

**3M Young Professional award**
Benjamin Walch (Abley)
Should councils measure road network CO2?

**Best Abstract Presentation**
Dr Ralph Samuelson (Victoria University of Wellington)
Dr Haobo Wang (Ministry of Transport)
Comparing Freight Transport Emissions by Mode

**Best Young Author**
Benjamin Walch (Abley)
Should councils measure road network CO2?

**Best Student presentation**
Cong Tran (University of Canterbury)
Transport electrification for sustainable urban networks

**Best Think piece**
Phil Harrison (WSP)
Charge!!

**Best Practice Paper**
Dr Gang Yu (Auckland Transport)
Matiul Kham (Auckland Transport)
Integrated Carbon Emissions Control in decision making

**Highly Commended Research Paper**
Cong Tran (University of Canterbury)
Transport electrification for sustainable urban networks

**Best Research Paper - Sponsored by Jacobs**
Dr Ralph Samuelson (Victoria University of Wellington)
Dr Haobo Wang (Ministry of Transport)
Comparing Freight Transport Emissions by Mode

**AA Award for Best Conference Paper - Sponsored by AA**
Phil Harrison (WSP)
Charge!!

**People's Choice Award – Oral**
Beth Schuck (MRCagney)
Modelling the emission impacts of transport

**People's Choice best award – Poster**
Gemma Dioni (ViaStrada)
Dr Glen Koorey (ViaStrada)
Pathways for chartered transportation professionals NZ

**People's Choice best award – Rapidfire**
Boopsie Maran (Places for Good)
Parklets: A tool for community engagement

**People's Choice best award – Soapbox**
Marinus La Rooij (TSA Advisory)
Decarbonising the freight supply chain

# Letter to the Editor

Dear editor,

In the December issue of roundabout an article was reprinted from the USA Streetsblog website with the title "Separated Bike Lanes Means Safer Streets, Study Says"

It was sub-titled A 13-year study of a dozen cities found that protected bike lanes led to a drastic decline in fatalities for all users of the road. The problem is that this is the interpretation of the blogger who is a freelance reporter and not a transportation professional. He has misunderstood the paper.

First of all I should say that it was refreshing to see this study looking at the relationship between cycling infrastructure and the safety of all road users and not just cyclists. Within the blog are the following comments attributed to one of the researchers Prof. Wesley Marshall:

*"Researchers assumed that having more cyclists on the street was spurring drivers to slow down"* — a relic of a 2017 study that found that cities with high cycling rates had fewer traffic crashes. But it turned out that wasn't the case.

Instead, researchers found that bike infrastructure, particularly physical barriers that separate bikes from speeding cars as opposed to shared or painted lanes, significantly lowered fatalities in cities that installed them."

And the conclusion that really got my attention was:
*"Perhaps even more important: Researchers found that painted bike lanes provided no improvement on road safety."*

So I emailed the authors Wesley Marshall and Nick Ferenchak to ask them about these comments. Wes responded quickly: *First out, the Streetsblog article definitely does not quote me (or Nick) as saying any of those things. Those sentences that you are attributing to me are all from the author of the Streetsblog article, Aaron Short. The only things I said are shown in direct quotes.*

One of the direct quotes in the blog puts it much better: *"If you're going out of your way to make your city safe for a broader range of cyclists … we're finding that it ends up being a safer city for everyone."*

The blog attributes the benefits only to protected bike lanes – but Wes confirmed to me that they were only 34.3 miles of protected bike lanes across 9 of the 12 cities in the study. They were lumped in with 717.5 miles of bike paths that were part of the cycling network in the analysis.

For the statisticians and modellers I include another quote from the original paper.

*In terms of bike infrastructure, the variables representing the density of protected/separated bike facilities and the density of standard bike lanes were highly correlated with one another at both the city and block group levels (Pearson correlation coefficients of 0.68 and 0.60, respectively). The results suggest that increased density of bike facilities (either protected/separated or standard bike lanes) is associated with fewer crashes across both severity levels. Since the model employing both the city and block group-level protected/separated bike facilities variables led to the strongest model fit statistics.*

The protected bike lanes and paths are such a tiny proportion of the road networks of these cities, that they cannot on their own be directly responsible for the huge disparity in fatality rates between the cities.

One variable that was studied was the density of bike lanes in the city. It showed up in simplified models and did not seem to have an effect in the final models. This seems strange as international literature is clear that bike lanes reduce injury crashes for all users on the road where they are installed by an average of 21%.

Wes said to me: *"So I would never, ever say that painted bike lanes don't improve safety, but given our results, I can say that the protected & separated bike facilities definitely seem to have a stronger association with improved safety for all road users."*

In the original paper Wes and Nick mentioned that they would like to add a variable for infrastructure quality to the study. Cities such as Portland that led the way with bike lane, raised their bike mode share from 1% to 6% - then followed them up with some protected bike lanes.

I visited Portland in 2003 and cycled a route with Roger Geller. Their painted cycle lanes are part of a comprehensive network and are of a higher standard than elsewhere in the USA. I recently reviewed a sample of roads on Google street view that showed that parking had been removed to ensure they the cyclists have enough room.

NZ and overseas research has consistently shown that the quality of provision matters. Wes agrees that bike lane design is important. *"Previously, we were focused on putting a crappy bike lane on a terrible arterial; now, we are paying attention to the parallel routes... and the walking/biking experience (and I expect safety, although too soon to tell) is much improved."*

We also agree that the provision of quality cycling infrastructure in Portland was not done in isolation. This was part of a paradigm shift in adopting progressive policies that prioritised people over cars, including speed management, removing a riverside motorway, better public transport, smart growth urban policies and parking policy reform.

So it is likely that the variable of separated paths and protected bike lanes is an indicator of something much bigger. Giving priority to the welfare and safety of citizens over the efficient operation of traffic, and a commitment to quality provision for active modes and public transport.

Finally Wes agrees that safety in numbers is a real effect that has been demonstrated at the link and intersection scale for pedestrians and cyclists. It just does not show up in this research for the safety of all users in the 12 cities studied.

Regards

***Tim Hughes, M.E.T. (Canterbury University, Cert Transportation planning Management and Control (NSW Uni) Cert Applied Statistics***
***Principal, Safe n Sussed***
***Phone: +64 (0)21 934 372***
***Email: Tim@safensussed.co.nz***


The Transportation Group provided a submission on the 2021 Draft Advice for Consultation, produced by the Climate Change Commission He Pou a Rangi (CCC).

Due to the focus of our membership, we provide our feedback on:
• Draft Advice Executive Summary – Transport
• Draft Advice Chapter 3: the path to 2035 section 3.8.1 Transport
• Draft Advice Chapter 6: Direction of policy in the Government's emissions reduction plan section 6.1.1 Transport
• Evidence report Chapter 4b (Reducing emissions – opportunities and challenges across sectors Transport, buildings and urban form) and within that chapter, restrict ourselves to transport and urban form. Section 4b. 3 Buildings are outside our area of expertise.

We commend the CCC for the quality of the consultation document and the depth of the analysis undertaken.

The CCC executive summary states:
*"We recommend 17 critical actions the Government must take to reach its climate goals."*

The summary does not mention that these actions are not included in the summary. The Table of Contents is lengthy and readers may have skipped it. It is only when the reader has made it through to later parts of the document that the structure of the document becomes clear.

The summary has three recommendations for transport as follows.

**CCC Transport Recommendation 1**
"An integrated national transport network should be developed to reduce travel by private car. There needs to be much more walking, cycling and use of public and shared transport."

The Transportation Group supports the aim of "much more" walking, cycling, public and shared transport.

However, the "integrated national transport network" proposal is ambiguous. At present, many councils are producing "integrated transport strategies" that may or may not have sufficient detail for walking and cycling. They also may not sync with mandated Regional Public Transport Plans and Regional Rail Plans.

The Ministry of Transport is using a "mode neutrality" approach:
*"As a guiding principle for making transport decisions, 'mode neutrality' means considering all types of transport when planning, regulating and funding transport. Rather than favouring a specific type of transport, decisions are based on delivering positive social, economic and environmental outcomes (Ministry of Transport)"*

This approach is insufficient to meet the challenge of climate change. After decades of motorised road transport, we must "favour" sustainable modes of transport in order to "catch up", not just put them on a level playing field.

We recommend a better definition of an "integrated national transport network" and to help readers navigate the advice by referencing Necessary Action 2 (section 6.1.1)

We also think CCC should recommend that Government explicitly favour sustainable modes rather than maintain "mode neutrality"

**CCC Transport Recommendation 2**
"Electric vehicles are key and need to be widely adopted. We want to see the majority of the vehicles coming into New Zealand for everyday use electric by 2035. The government will need to provide support and incentives to make this happen."

The Transportation Group generally agrees with this recommendation, but as with the first recommendation, the Executive Summary should reference the place in the CCC report where the details for this are contained.

We recommend a reference where in the body of the advice the details are given.

The Transportation Group notes that the supporting evidence says:

*"There are also challenges of relying on electrification. Prioritising electric vehicle uptake continues to encourage car dependency and contributes to demand for low density development."*

We agree with this point and therefore believe that EVs are one key, not the key. We recommend the report rephrase Recommendation 2 as: "As an interim measure before mode shift to sustainable transport is widespread, electric vehicles need to be widely adopted…"

**CCC Transport Recommendation 3**
*"Use of low carbon fuels, such as biofuels and hydrogen, needs to increase, particularly in heavy trucks, trains, planes, and ships."*

As we will discuss in our response to section 6.1.1 and Evidence Report Chapter 4b, biofuels should not come at the expense of land for food production and hydrogen has serious limitations.

Given the negative impacts of biofuel production and the significant technical limitations of hydrogen for private and commercial land transport, we recommend highlighting other recommendations with potentially greater impact such as Travel Demand Management (including but not limited to new models of road pricing and denser land use development).

You can read the full submission in full **HERE**

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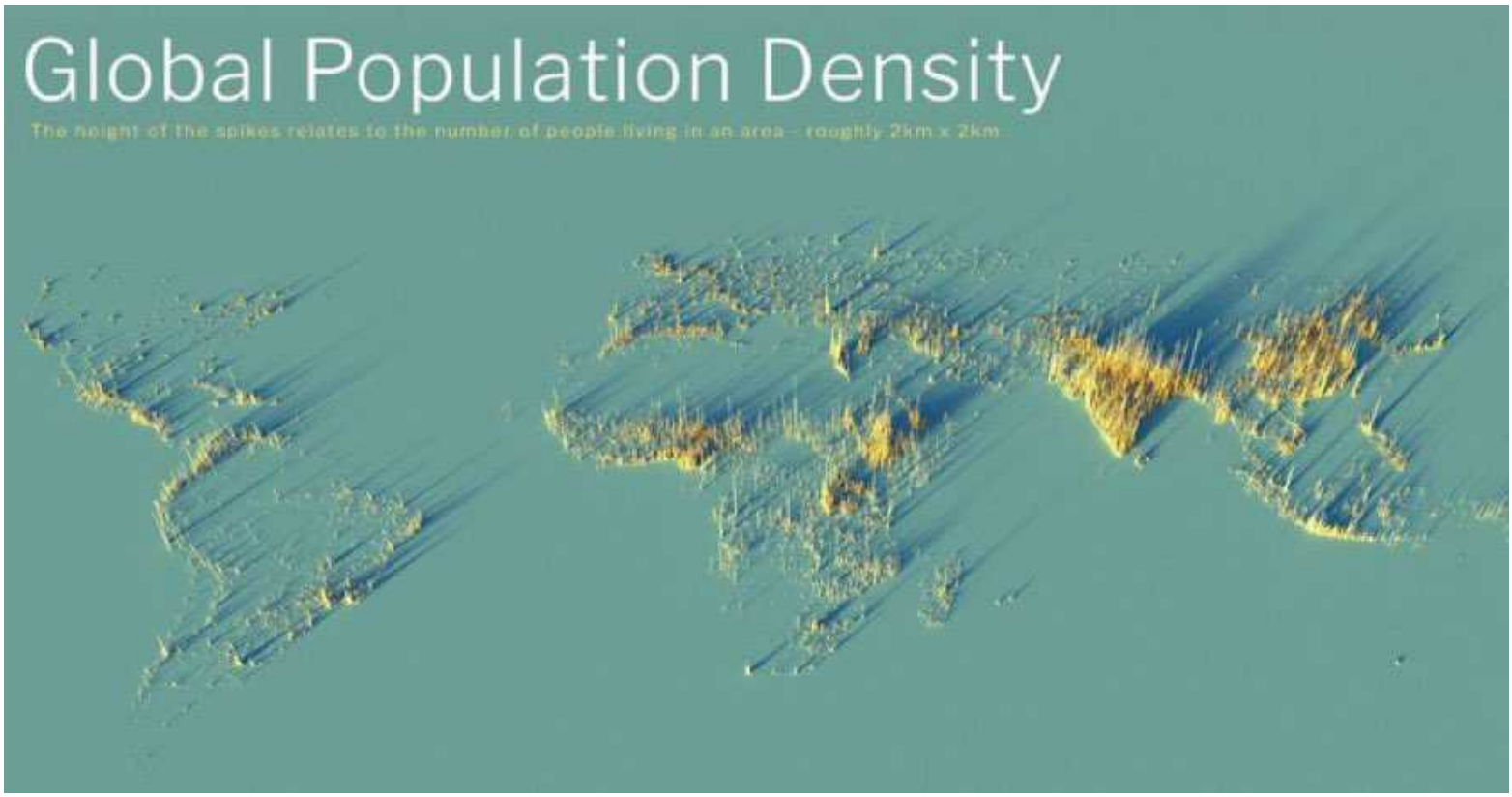


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TRANSPORTATION GROUP NEW ZEALAND

# Towards Sustainable Transportation - A charging location model for electric vehicles

*This paper won the Highly Commended Research Paper at the recent Group conference. By Cong Tran & Mehdi Keyvan-Ekbatani (Department of Civil and Natural Resources Engineering, University of Canterbury) and Dong Ngoduy (Department of Civil Engineering, Monash University)*

Although transportation has long been recognised as one of the critical factors for socio-economic development, it is responsible for many global greenhouse gas emissions and significant pollutants that cause severe health problem, especially in urban areas.

In New Zealand, road transportation emissions in 2018 were up 2.0 per cent from 2017 and up 101.6 per cent from 1990 . According to the statistics, on-road vehicles made up 42.6 per cent of all carbon dioxide emissions in 2018. Moreover, the significant increase in transport demand raises a big concern for energy security. In the US, transportation is responsible for 29 per cent of the total energy consumption, with 92 per cent related to fossil fuel.

To reduce the transportation system's side effects, electric vehicles (EVs) have emerged as a promising solution toward sustainable transportation due to their positive impact on environmental issues and energy crisis. However, the adoption of EVs is still minimal compared to conventional gasoline vehicles (GVs) due to the lack of appropriate charging infrastructure. Furthermore, the electrification of transportation may cost a significant amount of money and result in more congestion due to EVs' routing and charging behaviours.

In order to achieve a sustainable transportation system, the system planner needs to deploy the charging infrastructure to satisfy the growing demand of EVs' users while minimising the cost, congestion and environmental effect. With these considerations in mind, we suggest a new framework to strategically deploy charging facilities so that no EV runs out of energy before reaching their destination while improving the system performance.

## Electric vehicle and charging infrastructures

To be prepared for the upcoming electrification revolution of transportation, billions of dollars in subsidies for charging infrastructure have been provided by governments and automakers worldwide.

In May 2016, the New Zealand Government announced the EV Programme, which aimed to reduce some barriers and investigate ways to encourage people to buy EVs. The programme aims to achieve 64,000 EVs on roads by 2021. Besides, New Zealand already boasts more than 80 per cent of renewable electricity generation. Electrification of the transport sector, accounting for 36 per cent of energy use in New Zealand, will further drive the decarbonisation effort. The country aims to have an entire zero-emission bus fleet by 2040 .

Two necessary charging facilities are currently deployed to serve EVs' users, including low-power (level 1 and level 2 modes) and DC rapid charging (level 3 mode). While the low charging modes require several hours for a full recharge, the fast charging mode can handle the urgent need for charging with much higher installation costs.

In New Zealand, as of the end of March 2021, there are more than 350 free/paid chargers registered on PlugShare. However, EVs' widespread adoption is still limited due to their limited driving ranges, long charging time, and insufficient charging facilities.

The charging infrastructure deployment process can be stated as a chicken-and-egg dilemma. Although investment decisions of where to deploy facilities are costly and affect a long-time horizon, the charging stations need to be provided before observing the actual demand. It emphasises the stochastic nature of the charging facilities planning problem.

Finally, the electrification of transportation and infrastructure deployment also result in changes in traffic flow. Although more EVs can bring a cleaner and more energy-efficient transportation system, it sometimes may cause more congestion over the network.

Optimising the charging locations assuming that the flow pattern remains unchanged may lead to an unreliable solution or a deterioration in network performance due to some re-routing of traffic responding to the changing charging locations.

Therefore, it is crucial to develop a systematic framework for deploying charging infrastructure to minimise the capital cost and reduce the congestion and environmental cost considering the mutual interaction between charging locations and traffic flow pattern.

**The bi-level framework to deploy fast-charging facilities**

In order to capture the mutual interaction of travelling behaviours and the charging locations decision, the deployment problem has been formulated as a bi-level optimisation program with two different levels, as shown in Figure 1.

The first-level decision-maker is the upper-level decision-maker (leader) and the second level decision-maker is the lower-level decision-maker (follower). At the upper level, the planner decides where and how many chargers to be deployed to minimise the expected system cost, i.e. the charging infrastructure investment cost, the expected travel cost, and the environmental cost, according to a budget constraint and service level. The output of the upper level is the planning decisions on the charging infrastructure.

At the lower level, the traffic flow is determined by solving a traffic assignment problem. Different traffic assignment models and tools are presented in the book of Sheffi (1985). The traffic flow then will come back to the upper level as an input.

The proposed bi-level framework is strong NP-hard due to the binary-type decision variables, stochasticity, and intractable structure. Therefore, it is non-viable to find an exact global solution to the problem.

Instead, the meta-heuristic approach, such as Cross-Entropy Method, Genetic Algorithm, Hill Climbing, Simulated Annealing, etc., is usually applied to obtain a good solution in a reasonable amount of time.

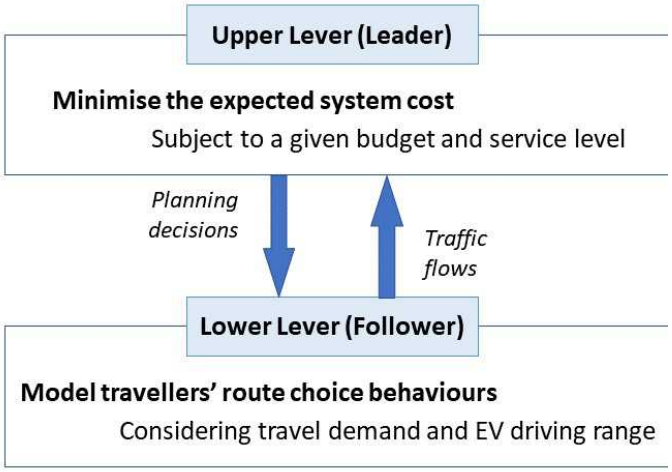



*Figure 1. The bi-level framework*

Our study adopted a relatively new approach based on the Cross-Entropy Method (CEM) initially proposed by Rubinstein & Kroese (2004) due to its robustness and insensitivity to the initial solutions.

In general, the CEM consists of two steps: (1) Generating the sample of candidate solutions using a given parameterised distribution; and (2) Updating the sampling distribution parameters to steer the problem towards the optimal solution over subsequent iterations. The details of the CEM-based algorithm applied to solve the fast-charging facility deployment problem as the bi-level program can be seen in the study of Tran et al. (2020) .

**Numerical experiment**

The purpose of numerical studies is to illustrate the effectiveness of the solution method in the different networks with different proportions of EVs and analyses the impact of EVs' proportion and optimal charging solutions on total systems costs. A medium-size test-bed network is considered. The travellers depart at nodes 1 and 2 to reach nodes 23 and 24, with the travel demand rate between each origin and destination at 5,000 vehicles per hour. Besides network configurations, other inputs and traffic parameters are also given as in Figure 2.

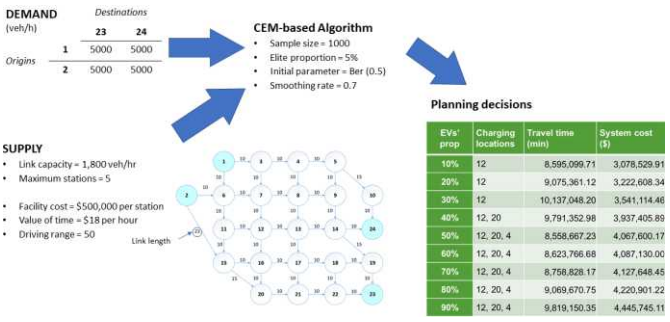



*Figure 2. Numerical experiment*

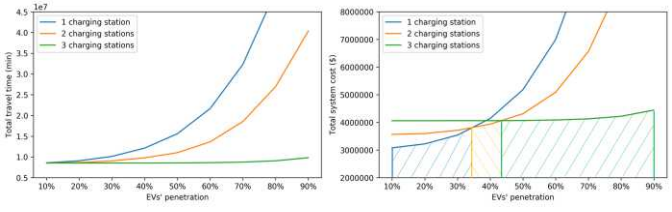



*Figure 3. The optimal no. of charging station(s) according to different levels of EVs' proportion*

As shown in Figure 2, according to each level of EVs' proportion, the planning decisions and the corresponding travel time and system cost have been identified. Moreover, Figure 3 suggests how many charging stations should be deployed according to different EVs' proportions to achieve the minimum cost.

In order to apply the proposed framework for realistic networks, the planner needs to prepare these inputs:
1. The representation of traffic network, i.e.
a. Nodes (intersections and potential locations for charging stations)
b. Links (road)
2. The travel demand of EVs and other conventional vehicles between their origins and destinations
3. The average or distribution of the driving range of EVs
*Notes: the model can capture both fixed and uncertain values of driving range.*
4. The cost and budget for deploying charging stations
In reality, these inputs and parameters can be estimated through surveys and depends on the system planner's priority.

**Concluding remarks**
To decarbonise transportation, EVs have been adopted worldwide. However, lacking charging infrastructure poses a significant challenge for the widespread adoption of EVs. Although more EVs can bring a cleaner and more energy-efficient transportation system, it sometimes may cause more congestion over the network.

Therefore, the proposed framework not only minimise the capital cost but also reduce network congestion. Numerical tests have shown that the proposed model can provide a good solution for such a complex problem.

Aligning with the NZ government policies on promoting the widespread adoption of EVs, the model can be used as a decision-making supporting tool and give the system planner key managerial insights on charging infrastructure planning. With powerful mathematical tools, the proposed model can also be developed to capture more realistic consideration and applied for logistics fleets and electric buses.

**On the Go Awards recognise outstanding walking and cycling projects**
Last month, three of the On the Go award winners were highlighted in this newsletter. This month the remaining two winners are being recognised for their dedication and contribution to supporting a healthier, cleaner and safer transport system.

*Built excellence award (walking) winner and Built excellence award (cycling) winner* - He Ara Kotahi, delivered by Palmerston North City Council and with thanks to Rangitane o Manawatū, Massey University and Linton Army Camp. He Ara Kotahi is Palmerston North's newest riverside pathway, that winds its way along the river providing breath-taking views of the river and city, before heading through farmland, native bush and pa sites. The star attraction of the walkway is the 194-metre long He Ara Kotahi Bridge, that connects the Victoria Esplanade with the other side of the Manawatu river.

*Taking communities on the journey award winner* - The Kuaka Gateway - Delivered by Waka Kotahi and WSP with thanks to Napier City Council and Napier Airport. The Kuaka Gateway was designed to improve safety at one of the top six high-risk rural intersections in New Zealand, improve regional walking and cycling connections, unlock economic growth and create an iconic northern gateway for Napier and the Heretaunga Plains.

# HUNDRED LARGEST ISLANDS
*of*
# THE WORLD

*by*
MAPMAKER


KALAALLIT NUNAAT
(Greenland)


NEW GUINEA


QIKIQTAALUK
(Baffin)


SUMATRA


PULAU BORNEO/
KALIMANTAN


MADAGASIKARA


HONSHU


KITLINEQ
(Victoria)


GREAT BRITAIN


ELLESMERE


SULAWESI


TE WAIPOUNAMU
(South Island)


JAVA


TE IKA-A-MAUI
(North Island)


NEWFOUNDLAND


CUBA


LUZON

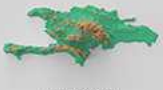

ICELAND


MINDANAO


IRELAND


HOKKAIDO


SAKHALIN


HISPANIOLA


BANKS


SRI LANKA


TASMANIA


TATLURUTIT
(Devon)


ISLA GRANDE


SEVERNY


SHUGLIAQ
(Southampton)


AXEL
HEIBERG


MELVILLE


SPITZBERGEN


KYUSHU


TAIWAN


NEW BRITAIN


HAINAN


PRINCE
OF WALES
(CANADA)


YUZHNY


VANCOUVER


TIMOR


SICILY


KUGANAJUUP
QIKIQTANGA
(Somerset)


SARDINIA


KOTELNY


SHIKOKU


HALMAHERA


SERAM


NEW
CALEDONIA


BATHURST


PRINCE
PATRICK


SUMBAWA


NORDAUSLANDET


OCTOBER
REVOLUTION


FLORES


KING WILLIAM


NEGROS


SAMAR


BANGKA


YOS SUDARSO


PANAY


ELLEF
RINGNES


PALAWAN


BOLSHEVIK


BYLOT


JAMAICA


SUMBA


VITI LEVU


HAWAI'I


CAPE
BRETON


MINDORO


PRINCE
CHARLES


KODIAK


CYPRUS


KOMSOMOLETS


CORSICA


BOUGAINVILLE


PUERTO
RICO


BURU


DISKO


CHILOE


CRETE


ANTICOSTI


CORNWALLIS


ZEALAND


LATANGAI


LEYTE


PRINCE
OF WALES
(US)


DESOLATION


ISLA SOLEDAD/
EAST FALKLAND


GRAHAM


WELLINGTON


NOVAYA
SIBIR


YELMALNER
(Melville)


COATS


PRINCE
EDWARD


VANUA LEVU


CHICHAGOF


BALI


GUADALCANAL

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calculations made using the Equal Earth Projection
digital elevation model (SRTM15PLUS) from NASA
inland shapes © OpenStreetMap contributors
original relief shading method by Daniel Huffman
hypsometric tint from Natural Earth


# Parking mad: UK man completes mission to park in every spot at local supermarket

A man has completed a six-year challenge to park in every car parking space at his local Sainsbury's.

Gareth Wild, 39, from Bromley, south-east London, said he decided to take on the challenge after noticing his preference for certain spots.

"For the last six years I've kept a spreadsheet listing every parking spot I've used at the local supermarket in a bid to park in them all," he tweeted. "This week I completed my Magnum Opus!"

"It kind of feels like the old Panini sticker albums, but a really boring version of it," the production director told the PA news agency.

"There's only so many parking spaces, why not try and get them all? "It's a collector's thing I suppose."

What followed was a thorough mapping of the 211 spots available to him on his weekly shop – with disability spaces and motorcycle bays excluded – dividing the spaces into categories A-F.


Wild completed his challenge on 24 April by slotting his car into F20, which he described as "a pig to get in". He added: "I don't want to make out this was too big a deal, but there was a moment of elation."

People responded to his thread detailing the challenge with questions including what best space in the car park was.

"It turns out there's a lot of questions about car parks," he said. "The best space is … I mean comfortably you've got to be looking at C1. C1 is just gold dust. The moment you come in through the gates it's the first thing you really sort of see as a space."

Wild said his wife is "always really supportive" while daughter Aubrey, four, regularly joins him on parking missions.

"It sort of became a thing that we would do - having her along is a bit like daddy daughter time, you know?"

On Twitter, Wild said that a Lidl close to where he lives has the potential for a repeat attempt. He also described car parks as "a good snapshot of English life".

"You get all sorts of people coming in and mingling," he said. "Some of them park like arseholes, some of them just obey the rules and follow the signs. I just like being out and about and seeing those people."
*Source: Guardian*

# Tauranga: Are e-scooter fleets set to replace car fleets?

Tauranga City Council recently introduced a fleet of four e-scooters to their list of transport options as an experiment to see if staff would choose an e-scooter over a car to travel to and from meetings during work time.

The e-scooters were introduced to new employees at the same time as the staff car fleet was, so staff could pick and choose how they travelled. In order to be able to book an e-scooter, employees were required to complete an online induction which covered conditions of use, user etiquette and relevant safety information.

The experiment has been a success, with staff choosing to hop on e-scooters for short journeys around town. While there may be some limitations with e-scooters, such as limited lifespans and maintained road worthiness, e-scooter firms such as Beam and Blip have seen these challenges as an opportunity, offering e-scooter hire to businesses with a wraparound service.

# New Zealand's first hydrogen fuel cell bus unveiled


On 30 March, Auckland Transport (AT) unveiled New Zealand's first hydrogen fuel cell bus – one of the first steps in the organisation's transition to an emissions-free fleet.

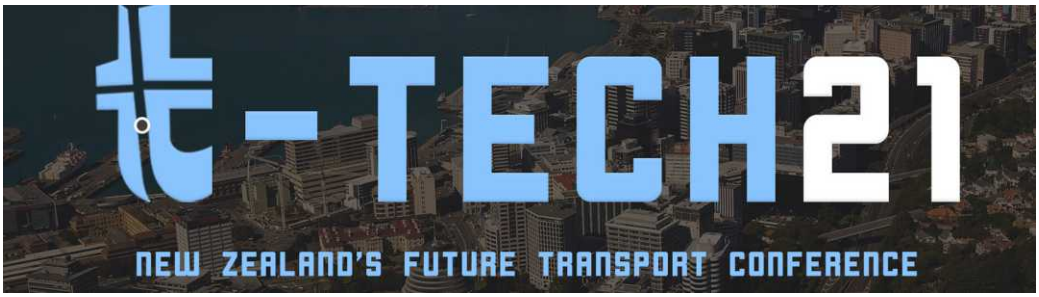
The bus was unveiled by the Minister of Transport Michael Wood and Mayor of Auckland Phil Goff at Ports of Auckland – where the bus will be refuelled with green hydrogen.

The three-axle bus, which is AT's biggest single deck bus, will be used to trial operational performance and see how operating costs compare to diesel and electric buses of a similar design. The bus will be on an initial two-year trial on route 70 from Botany to Britomart via Panmure.

Auckland Transport's Chief Executive Shane Ellison says, "In Auckland, transport makes up 40 per cent of the city's overall carbon emissions.

While our focus has been on electrification of vehicles and buses, it is important that we also explore the option of replacing diesel buses with hydrogen-powered vehicles. These produce zero-emissions and could complement our electric bus fleet…

Through the development of the Low Emission Bus Roadmap, Auckland Transport identified hydrogen as a potential fuel for Auckland's future low emission public transport fleet. The outcome of this two-year trial will help operators make informed decisions about which technology should be selected".




On 23-24 June the T-Tech conference is taking place in Te Papa.

T-Tech (ITS NZ annual conference) is New Zealand's leading forum to discuss Intelligent Transport Systems and Future Transport challenges, innovations and solutions that help make transport safer, greener and more efficient.

As part of the activities taking place there will be an opportunity to take a ride in an Ohmio AV shuttle. This will take place outside Te Papa between 10am-3pm. It's a great opportunity to experience a fully automated vehicle and get an understanding of how they could be part of our future transport system.

Registrations are still available for the conference. Speakers attending include; Angé Anczewska (Aus), General Manger, UITP Australia New Zealand, Beth Kigel (USA), VP & Director Smart and Connected Solutions, HNTB & Steering Committee, MobilityXX and Dave Ferguson (USA)Co-founder and President, Nuro.

Waka Kotahi is a sponsor of the conference.

# Transportation Group Conference 2021 – recap

New Zealand's leading conference on transport issues was held in Tāmaki Makaurau, Auckland this year. The theme "decarbonising Transport" brought together many delegates from a vast variety of industries to share their knowledge on how we can best tackle this ever pressing issue.

Over 200 delegates attended this year and got in and amongst the workshops, presentations, walking tours and social events held at this years conference. The focus on sustainability and reducing carbon emissions lead to many decisions being made on how the conference can do our best in contributing to this. For the first time we brought, virtual attendance options, electronic programmes and no waste "goodie bags".

The conference went off without a hitch (thanks Glenda). Minister of Transport Michael Wood opened the conference with a discussion on the Government's agenda towards the goal of net zero carbon emissions relating to transport by 2050. We had a range of inspiring speakers from around the world, including Todd Litman, Jon Little, Skye Duncan, Jarrett Walker and Paul Winton.

A range of conference photos are scattered throughout this edition.

TRANSPORTATION GROUP NEW ZEALAND






This year's conference dinner was held at Weta Workshop Unleashed, where delegates got to tour the workshop.



# Government looks to phase out fuel taxes, road user charges under transport review

Fuel taxes and road user charges could be abolished and drivers tracked by GPS if one of the options from a review of road taxes is adopted by the Government.

The Ministry of Transport has been quietly conducting a "future of the revenue system" work programme, for most of the Government's last term

Essentially, it is a high-level review of whether it is appropriate for the Government to rely on fuel taxes in an era when it is also trying to get people to use less fuel, and as revenue from fuel taxes declines as electric cars become more common, and public transport more widely used.

The Government currently collects about $4 billion a year from fuel taxes and road user charges. The revenue is currently used to build and maintain roads, and other transport projects.

Currently, electric vehicles are exempt from road-user charges, and do not pay fuel tax. If that exemption were ended – which the Government needs to make a decision on by the end of the year – it would need to look at new ways to pay for roads, Transport Minister Michael Wood said.

"[I]f it were not extended there would be a need to integrate EVs into paying RUC [road user charges]. I'm currently considering whether to extend that exemption – an announcement will be made in the future," Wood said.

"We do recognise that when EVs are integrated into the RUC system, there will be a need to ensure they are fairly treated. For plug-in hybrids in particular, we want to ensure there isn't a situation where they are double charged for petrol excise duty and road user charges," Wood said.

A gradual phase-out of taxes on fuel would be the biggest shake-up of funding for transport in nearly a century – the first taxes on fuel were introduced in 1927's Motor Spirits Taxation Act.

One option being considered is to replace the taxes with a GPS tracking system on cars, which could effectively toll drivers for how often they used the road. A National Party discussion document from 2019 floated a similar idea but it was not adopted as formal policy.

Ministers haven't drawn much attention to the review. Former Transport Minister Phil Twyford talked about work on reviewing transport funding in 2019 and an introductory briefing to the incoming minister Michael Wood said that officials were looking at new ways of funding the transport system.

But papers released under the Official Information Act show just how radical that shake-up could be, with the Government considering a full overhaul of the transport revenue system.

Although with fuel tax revenues are projected to continue increasing over the decade, there was no indication fuel taxes would go completely in the immediate future, with Wood saying forecasts show fuel taxes could provide steady income for a decade.

"I don't intend to make any decisions in the short-term as officials' advice is that the current revenue system to fund the NLTF is largely fit for purpose until at least the end of this decade based on forecasts," Minister for Transport Michael Wood said.

"It's important transport services and infrastructure are funded sustainably and can be forecasted accurately to give Waka Kotahi and local government certainty.

"It's also important issues around equity are considered. I'm looking forward to the report from the Transport and Infrastructure Select Committee's inquiry into congestion charging in Auckland, which should provide some useful insights which could be applied to this wider ongoing work," he said.

The review's proposal included radical GPS-based methods for charging road users, as well as new revenue tools for local councils to use to be able to pay for their share of big transport projects, such as Let's Get Wellington Moving. Officials said these projects were "putting pressure on the 'pay as you go' principle of the revenue system".

Transport officials said the current system of funding roads by effectively taxing drivers is world-leading and very effective at making sure that the people who use the roads, pay for their maintenance.

However, it's creaking at the seams.

About 95 per cent of transport revenue is collected from people who drive vehicles of some kind. That money is put into fund at Waka Kotahi- NZTA, which then pays out around $4b a year to maintain existing transport infrastructure, some of it is also used to build new infrastructure like roads or public transport.

With transport being responsible for about 47 per cent of total domestic carbon dioxide emmissionsCO2, Transport officials are keen to move at least some of those drivers into lower-emitting vehicles or public transport or electric vehicles, which are currently exempt from road user charges.

The problem is that if the Government is successful in doing so, it will blow a hole in a key source of roading revenue.

This was illustrated during the Covid-19 pandemic, which put pressure on Waka Kotahi, which was no longer collecting much revenue from taxes, but had to fork out more money to keep public transport running for essential workers, necessitating a bail-out of $1b.

"Covid-19 has demonstrated the challenges of the revenue system's reliance on road users, with travel restrictions reducing revenue from road users while also increasing the investment needed for public transport," officials said.

Officials want to know what the next transport funding system will look like. Currently, it's largely user pays: drive more or use more petrol, and you'll pay more tax.

The future system might be different entirely. The briefing asked the minister to consider what the philosophy behind the new revenue system would look like.

"Should a future revenue system be aiming to help achieve broader transport outcomes like reducing emissions or congestion? What is the potential shape of the future transport system it will help to pay for?" officials asked.

Wood is aware of those concerns, saying that a future revenue system would need to "take into account potentially conflicting objectives such as reducing emissions while at the same time raising sufficient revenue".

The other big problem is that New Zealand faces a huge infrastructure deficit, particularly in the area of transport. While giving Waka Kotahi the ability to make $4b a year by taxing cars in one way or another is good at maintaining roads, it's a very ineffective way of making large, multi-generational investments in the transport system.

Officials appear to be looking at a few funding tools. Allowing Waka Kotahi to borrow more is one idea, but officials are scared that repaying the debt could imperil funding future projects. Tolling is another option, "but is ineffective due to the substantial cost of operating a toll scheme and New Zealand's low population base".

Local government could also get a hand up, with "financing" likely tools to raise debt and capital on the table for local as well as central government.

Another idea floated by officials is to use "new and emerging technologies" to make collecting taxes on road users more "user-friendly". One idea was to use Global Navigation Satellite System technology (similar to GPS), which would presumably track the distance travelled by road users and charge them on that basis.

Officials raised concerns with this too, particularly the need to protect people's private data.
*Source: Stuff*

# Parklets: A Tool for Community Engagement

*Winner of the People's Choice Award for Best Rapid-Fire Presentation at the Group conference, by Boopsie Maran, CEO and Founder, Places for Good--Urban Strategy, Stakeholder Engagement, and Customer Service Specialists*

Imagine it. Picture it. Decarbonizing, safe, and innovative public transportation, and then imagine using a small event in a local parking spot as a tool to help you get there.

As an urban strategist and community advocate, my team is continually searching for methods to produce more effective community outreach and engagement.

When executed correctly, these novel approaches are the gateway to participatory planning that addresses a diverse range of problems and perspectives in the full context of place.

PIPPA COOM:
WAITEMATA LOCAL BOARD REPORT

**Despite being a blustery and breezy Ponsonby Market to be on the strip enjoying the vibe and entertainmen**




It was also the last Saturday for election candidates to be out campaigning. At the time of writing (20 September) I still cannot make any predictions on a, no doubt, close result but am hopeful a new government will bring much needed action and funding to transport, housing and environmental issues facing Auckland.

On Market Day I was delighted to come across Boopsie Moran's pop-up Ponsonby 'park' pictured left. In an act of tactical urbanism, she took over a parking spot outside Dizengoff Cafe to create a parklet

*Places for Good's very first parklet: A groundbreaking tactical intervention in Auckland applauded by local representative, Pippa Coom, in her official monthly report*

A parklet is what happens when you transform car storage into activated, people-friendly spaces to share. They are often actualized through a partnership between city councils and local businesses, residents, or neighbourhood associations.

Parklets can serve numerous purposes: to widen a narrow footpath, provide additional seating for a local dining spot, or, my preferred use--for stakeholder engagement and participatory street design--a place to discuss and connect; to tweak and listen to desired adaptations for areas people move to and through.

Today's city planners are discovering that routine approaches to public outreach are no longer effective. There is often a gap between transport solutions and the people they are meant to serve. Quantitative data is used to guide transportation improvement--reflecting car movement rather than the human experience.

Working in local, policy change workshops and stakeholder engagement meetings, Places for Good asks, "How are we counting feet?"

We have found parklets to be a tool that increases the diversity and inclusivity of data collection. From a 2.1 by 5.5 metre space we can do qualitative data collection through community member narratives. This tool normalises a relaxed and accessible setting for relationship-based communication, in which designers and engineers meet with the people who use the space. Parklets become an authentic and visible area where city planners meet with the public and hear narratives that can not be captured through other means, for example, from caregivers or morning commuters.

Parklets offer a safe place where constituents have a chance to feel heard. A parklet is outside and informal; a level playing field; an intimate space. Outdoor, on-site engagement is the opposite of the typical approach to public input which is reserved for a three-minute time slot at a monthly meeting. The public podium format is driven by emotion where comments and decision-making becomes focused on those individuals that have the ability, time, and courage to prepare and engage in a public meeting.

Parklets provide a shared understanding of what the problem is right here, right now.

A few key things to keep in mind for successful parklets.

**1. Location, Location, Location**

*A parklet can become an effective tool for two-way communication. Strategic placement is important so that you have that chance to create a new place where a local leader, or local politician may stumble into a local champion.*

Parklets meet the public where they are physically and emotionally.

There is often an observed lack of trust in governments by communities. However, trust can be fostered through--relationship building--intentional interactions in shared spaces. When used strategically, the parklet can become a semi-permanent headquarters--a known source for reliable project facts. With consistent planning, presence, and commitment, parklets and project teams begin to garner faith in their project.

As community advocacy project liaisons, our communication is only received and understood at the speed of trust. We work to create an inviting, fun, and interactive experience that fosters a sense of place. One of my favourite activations, the Karangahape Road Parklet, was designed to collect stories and histories. Students created a welcoming space and donned culturally-appropriate clothing to reflect the traditions of the local community. Passersby poured in to share stories at a human scale--adding messages near posted archival images to share their experiences of the history of this particular locale.

*Landscape Architecture students lounge in front of the Karangahape Road Parklet. Parklets can improve project understanding through real-time, on-site advocacy for initiatives, coupled with the ability to receive contextualized, real-time feedback.*

**2. Timing**

An effective parklet is timed on a day where people are most likely to be present like a Market Day or during a school run.

Most of Places for Good's parklets go through multiple iterations to ensure a quality understanding of time and place before setting-up the full kit of furniture, bunting, and community engagement specialists.

Whenever a parklet is set up in a commercial district, we only move forward with the full support of neighbouring businesses.

The benefit is twofold, we are able to get approval for potential "disturbances," like a band or DJ and the businesses have advance notice to prepare special promos, such as a lunch special.

This often adds to the buzz around the community programme.

Depending on project scale, parklets can have weekly or monthly drop-in-and-share sessions.

**3. Community engagement**


*Ehara taku toa, I te toa takitahi engari he toa takimano*
*Success is not the work of one but the work of many*

If you're concerned about being left alone in your parklet, why not work with a school? Consider adding collaborative measures where students contribute to the design or programming. For the Kowhai Intermediate Parklet, as a tool to address safer routes to and from school, we connected with The Pallet Kingdom, artists, added games, gifted children's books, and included the seating built for and by the school community, providing a deeper understanding of the concept and purpose of Park(ing) Day.

*Engage with local schools and community groups for buy-in and stronger community connections.*

At Places for Good, we have had government and community partners offer muffins, ice blocks, and even typewriter poetry for anyone brave enough to come out into the street for a bit of a korero (chat).

**4. An active parklet is an effective parklet**
How do you help people feel your point? Program it, entice people in, distract, draw in, welcome playfulness.

By disrupting streets and introducing a novel atmosphere you have an opportunity to reach the public and engage feedback. Look to activate outdoor spaces and include new innovative ways for people to visually see they are heard.


*A visual representation of how individuals feel is more easily shared and understood than technical agenda items in a town hall room out of context.*

Providing people with an opportunity for comfort when sharing their personal stories is also paramount. When community members sit, lean back, and get comfortable--they share. The hero piece I place in all our parklets is an inviting chair with a back.

Even if they come in angry, make sure there is that comfortable spot waiting for them, so that they can tell their side of the story.

Remember what you are there to achieve above all else in a parklet--a connection to the human experience in a place where people are able to **feel your point and you are there to hear theirs.**


*The Safer Schools team in front of Auckland Transport's Viaduct headquarters models the effectiveness of a parklet as a tool for human connection.*

# Sustainable Business Network launches Climate Action Toolbox


After six months in development, the Sustainable Business Network has just launched a free Climate Action Toolbox in association with their partners MBIE, EECA, Waka Kotahi, NZTE, BNZ and Meridian Energy.

The toolbox is designed to be a one-stop shop that will give small businesses from any sector advice, resources and knowledge on how to act on climate change and reduce their carbon emissions.

It starts with a simple self-assessment to help identify key areas within your business where emissions can be reduced.

Your business will then be provided with a tailored range of options to help you bring this goal to life, with step-by-step guides on ways you can take action, along with links to other information to help you.

You can save your action plan so you can review and update it anytime. So, what are you waiting for? Click here to find out how you can get started.

Sustainable Business Network

# Google Maps to start showing eco-friendly routes

Google Maps will start directing drivers to routes it calculates to be the most eco-friendly based on a list of factors. The search engine said it will highlight journeys that generate the lowest carbon footprint using mainly traffic data and road inclines.

Google said the feature would launch first in the US later this year "with a global expansion on the way".

The new feature is part of its commitment to fight climate change.

When launched, the default route on the Google Maps app will be the "eco-friendly" option, unless users choose to opt out of it. When alternative routes are significantly faster, Google will offer choices and let users compare estimated emissions.

"What we are seeing is for around half of routes, we are able to find an option more eco-friendly with minimal or no time-cost trade-off," Russell Dicker, a director of product at Google said.

The search engine, owned by Alphabet, said it uses emissions data based on testing across different types of cars and road types, drawing on insights from the US government's National Renewable Energy Lab (NREL). Its road data factors in slopes and inclines from its own Street View cars feature along with aerial and satellite imagery.

"This is a great example of three trends coming together - the data, sustainability and consumer choice," said Siddharth Pathak, a partner at consultancy firm Kearney.

"It will also push those on the fence to make a deliberate choice of speed over sustainability and often cost."

From June, Google will start warning drivers about to travel through low emissions zones where some vehicles are restricted. These are common in countries such as Germany, France, the Netherlands, Spain and the UK.

"From Amsterdam to Jakarta, cities around the world have established low emission zones - areas that restrict polluting vehicles like certain diesel cars or cars with specific emissions stickers to help keep the air clean,"


Google said in a blog post.

"To support these efforts, we're working on alerts to help drivers better understand when they'll be navigating through one of these zones."

Google Maps users will be also able to compare car, cycling, public transport and other travel options in one place instead of toggling between different sections in a new feature being launched this year.

The US tech giant says it has long developed sustainable practices to benefit the environment, and has pledging to be carbon-free by 2030 to helping cities track greenhouse gas emissions.

*Iranian regional rug patterns*

Keep up to date with ENZ Transportation Group happenings:

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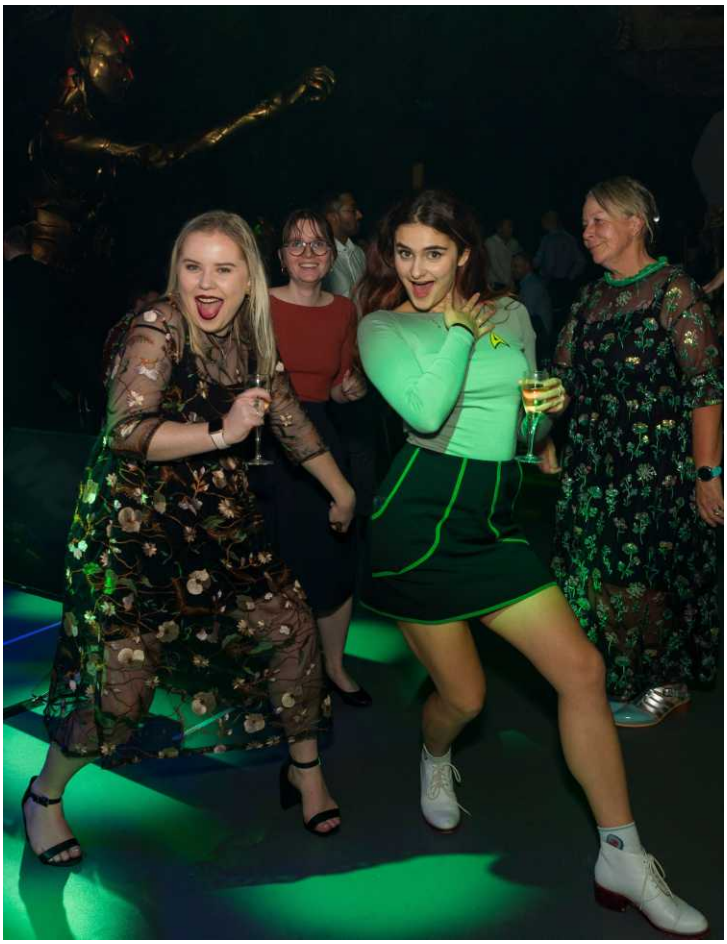



3

# Charge!

## Can Charging Users Reduce Transport Carbon Emissions?

*This article by Phil Harrison (WSP) won several awards at the recent Group conference.*

In the fight to reduce carbon emissions from the transport sector in New Zealand, and in Auckland in particular, is the use of targeted taxes / road pricing / congestion charging a viable, effective and efficient tool? This paper seeks to answer these questions and to propose ideas that could have real impact on the transport sector carbon emissions.

**NZ Transport Sector Trends**

**More CO2.** The NZ road transport sector was responsible for emitting about 15 million tonnes of carbon dioxide equivalent (CO2-e) in 2019, nearly twice the 1990 figure. (Ministry for the Environment 2021).

**More Driving.** Despite some improvement in vehicle efficiency, carbon emissions from transport are increasing in NZ. Total vehicle kilometres travelled in NZ increased by 33% between 2001 and 2019, despite five years without increase following the 2009 global financial crisis (Figure 1). While growth in light passenger vehicles has been only 22%, the highest increases were in bus (+122%) and light commercial (+84%).

**Bigger Engines.** The growth in light commercial km is matched by a dramatic increase in the proportion of distance travelled by larger engine vehicles (Figure 2). The distance travelled by vehicles with engines 2000-3000cc increased by 75% between 2001 and 2018 and the increase in over 3000cc mileage was 34%, while vehicles with engines smaller than 2000cc showed very small growth (7%) over this period.

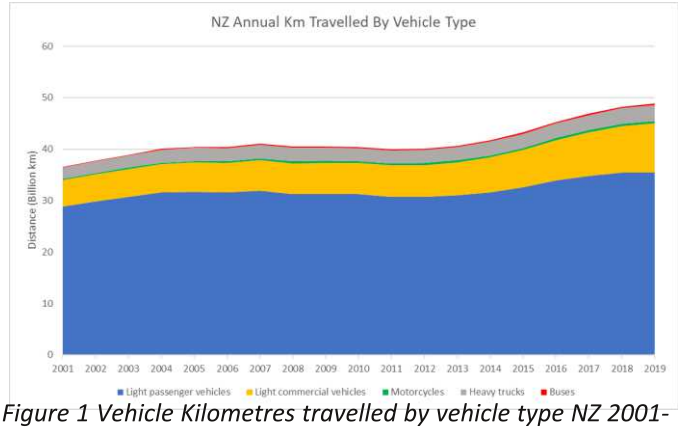



*Figure 1 Vehicle Kilometres travelled by vehicle type NZ 2001-2019 (Ministry of Transport 2021)*

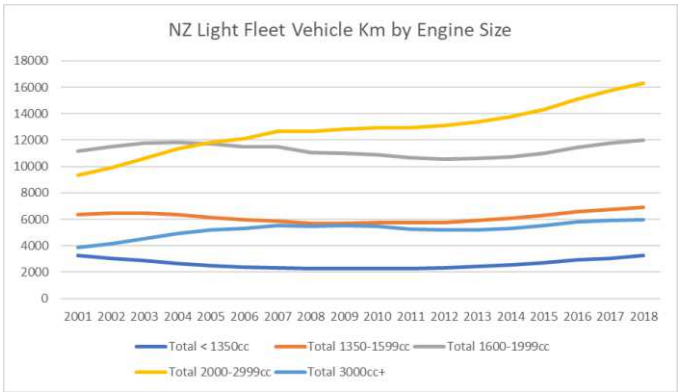



*Figure 2 Light Fleet Vehicle Kilometres travelled by engine size NZ 2001-2019 (Ministry of Transport 2021)*

Analysis of new vehicles available in the market in 2021 (UK Department for Transport 2021) shows a wide range of fuel consumption and CO2 emissions, from nil for all electric vehicles up to 384 g/km for the 6.6 litre Rolls Royce Ghost. Figure 3 shows the range of CO2 emissions from the models currently available in the UK, with examples of the models within emission bands shown.

The red text shows the highest selling models in New Zealand, with the Ford Ranger and Toyota Hilux being the biggest selling models over the last three years (2018-2020) (Motor Industry Association NZ) and also being well on the high side of average in terms of CO2 emissions per km.

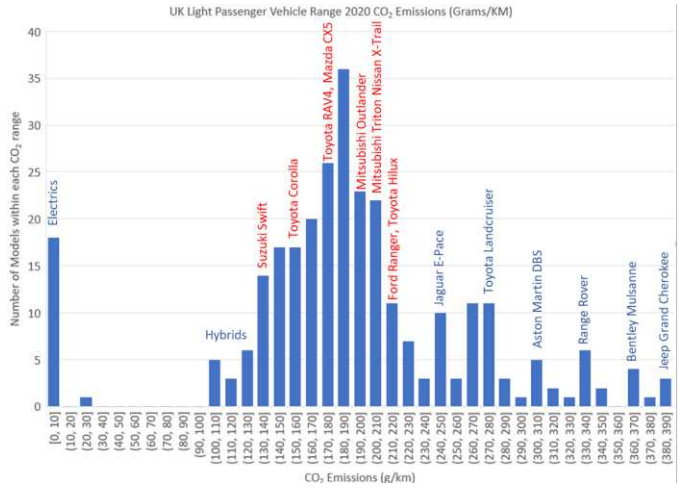



*Figure 3 CO2 emissions from the 2020 UK vehicle model range (UK Department for Transport 2020)*

## CHARGING AS A MEANS OF ROAD TRAFFIC CARBON REDUCTION

To reduce carbon emissions from road transport, there are several avenues in terms of taxing, charging or pricing that might be utilised, with different objectives and resultant outcomes. This section discusses examples of vehicle sales tax, fuel tax, congestion charging and emissions-linked charging.

### Vehicle Sales Duty

The average light vehicle in New Zealand currently has carbon dioxide emissions of about 171 grams per kilometre. The Government is aiming to get that down for new vehicles to 105g/km by 2025, a standard met by Japan in 2014 and Europe in 2020.

The Government are working to introduce the "Clean Car Import Standard" aimed at achieving the overall reduction on average emissions from the NZ vehicle fleet over time. It is intended that the Clean Car Standard will decrease the price of low emission vehicles, including electric vehicles (EVs), and increase the price of higher-emission vehicles, both new and imported used.

Previous indications have suggested that it could mean about $8,000 off the price of new or near-new imported EVs. Fuel-efficient petrol and hybrid cars would also be cheaper, while the heaviest polluters would cost $3,000 more. Vehicles with middling fuel efficiency would face neither a discount nor a fee.

This proposal has the potential to assist in reducing the carbon emissions from road transport over the medium to long term but is unlikely to make a dramatic impact in the short term, given that the average age of the NZ light passenger fleet is about 15 years and this has been increasing rather than reducing over the last few years.

There is a notable current gap in the availability of fuel efficient single and double cab utes, which account for the #1,2,5,6 and 9th highest selling light vehicles in NZ over the past three years (Figure 5). These five models have an average CO2 emission of over 200g/km. It is debateable whether a $3,000 tax on top of a $60,000 price tag for a new Ford Ranger is likely to change a prospective purchaser's choice, but if a hybrid version of the same model (rumoured to be launched in 2022) was to become similarly priced due to a relative $11,000 tax difference, it would perhaps then be more likely that more customers would choose the lower emitting variant.

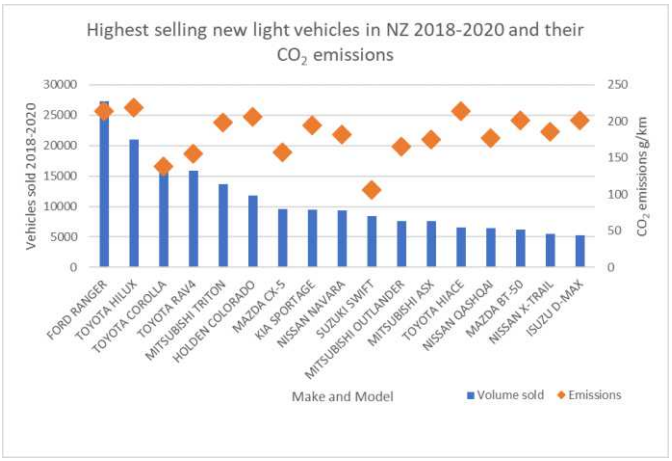



*Figure 4 Highest selling light vehicles in NZ 2018-2020 (MIA 2021)*

### Fuel Tax

NZ has had a fuel excise tax for many years, currently the total tax proportion of retail petrol price is about $1.15 per litre. In July 2018, Auckland Council imposed a Regional Fuel tax of 10 cents per litre on top of the general excise tax, hypothecated towards upgrades to the Auckland transport system, including both road and public transport projects.

There are several advantages to a fuel tax compared to other road charging schemes, in terms of delivering on the objective of carbon reduction from road transport, namely:

- It is a true user pays system, the more fuel used by an individual (or company) the more tax is paid. Thus, drivers with high mileage and drivers of fuel inefficient vehicles, who emit the most CO2, will pay the most tax.
- It is relatively easy to implement and collect through retail sales.
- It is easily understood by users

The LTNZ Research Report 331 "Impacts of fuel price changes on New Zealand Transport" (Kennedy and Wallis, 2007) concluded that petrol prices have a discernible impact on petrol consumption, but that the "elasticity" (or likelihood of behaviour change) varied between urban peak, urban off peak and rural travel,

with urban peak travel (mainly commuting) being less responsive, despite often having more available alternatives such as public transport.

Kennedy and Wallis' modelling suggested that the impacts of a 10% (real) rise in petrol prices on consumption per capita would be a fall in consumption between 1.5% and 2%. Current retail fuel prices (February 2021) in Auckland are about $2.10 per litre for 91 Octane. A 10% increase would thus be about an extra 20 cents per litre, double the Regional Fuel Tax (RFT) of 10 cents per litre introduced in July 2018.

The price of fuel in Auckland has varied considerably, with retail petrol price increasing from about $1.60 per litre in 2009 to nearly $2.50 in late 2018 after the introduction of the RFT (Figure 5). Over this period, petrol sales have remained fairly constant, while diesel sales have increased steadily, reflecting the fleet changes shown in Figure 2.

Figure 5 shows that there were two periods when total fuel sales decreased, one in 2012, when 91 Octane petrol started to regularly cost more than $2 per litre and diesel over $1.50, and again in late 2018, after the introduction of the Regional Fuel tax. This indicates some price sensitivity in fuel consumption as forecast by Kennedy and Wallis. However, to make a significant impact on carbon emissions, a fuel tax would need to be much higher than the Auckland RFT.

To achieve a 20% reduction in transport carbon emissions, for example, Kennedy and Wallis' model suggests a doubling in fuel price would be required (e.g. a tax increase of about $2/l for petrol and $1.50 for diesel). While this level of taxation could raise considerable funds to invest in alternatives to driving, it seems unlikely that such a large tax would have much political or public support.

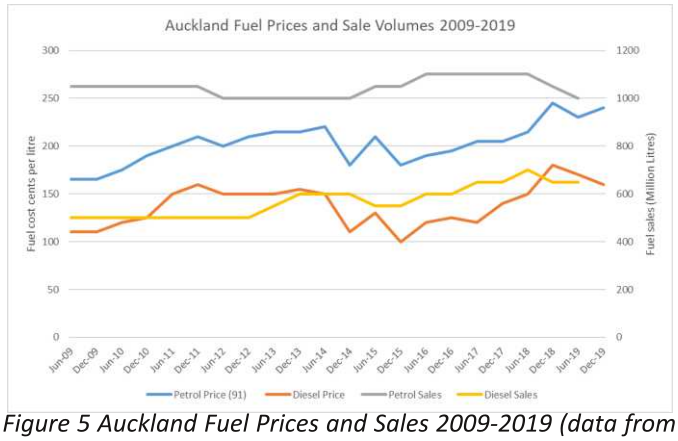



*Figure 5 Auckland Fuel Prices and Sales 2009-2019 (data from Auckland Transport)*

**Congestion Charging**

Congestion pricing is aimed at improving the performance of the transport network by charging some or all road users a fee to drive on all or certain roads within a defined area, usually during peak demand periods.

Congestion charging is, as it says on the label, designed specifically to reduce congestion in cities, rather than to reduce fuel use or CO2 emissions. Reduced emissions are usually a desirable by-product rather than a stated objective.

One problem with charging to reduce congestion is that drivers will often seek alternatives, in terms of route or time, to avoid the charge, rather than the desired response of changing to more efficient modes or not making the trip at all. This can result in a small reduction in total trips, and some increased trip lengths including the use of less suitable local roads if this avoids the charge.

Another problem is that reduced congestion can attract new trips that are less price sensitive and more time sensitive (like taxis and couriers), so that the capacity freed up by the charge is reduced over time. London addressed this by reallocating street space to buses and active modes, reducing vehicle capacity. While this led to fewer vehicles within the cordon, the travel times within the cordon did not improve as expected by the public.

The Singapore system started with a manual charging system as long ago as 1975, converting to electronic road pricing (ERP) in 1998. The Singapore system charges for the use of a network of expressways and arterial roads at peak periods. The LTA reports that the ERP scheme has resulted in traffic decrease of about 13% during operational hours. Other studies have suggested that the scheme merely moved congestion to other non-charged roads or at other times.

In Stockholm, where the objectives were to reduce traffic congestion, improve urban environment, and support urban highway projects and PT infrastructure, the reported effect on vehicle emissions has been a reduction by 10-15% in the inner city. This is attributed to a reduction in (non-exempt) vehicles crossing the cordon of about 20%. The charge is between NZ$2 and $6 for every crossing of the cordon, with a maximum daily charge of about NZ$17.

In London, the scheme objectives were to reduce high traffic flows in central London area and raise investment funds for London's transport system. 2010 reporting (C40.org, 2011) suggests a 16% reduction in road transport CO2 emissions within the charging zone, amounting to 30,000 tonnes annually. Approximately half of this was due to 75,000 fewer vehicles daily and half due to the remaining traffic experiencing less congestion. The London-wide CO2 reduction is estimated at around 100,000 tonnes, ~1% of London's total road traffic CO2.

The daily charge for driving within the zone is now £15 ($30). Free access to the congestion charge zone is granted to all-electric cars, some plug-in hybrids, and any vehicle that emits 75 g/km or less of CO2 and have a minimum 20-mile zero emission capable range. This free access is planned to be removed at the end of 2025.

**London Emissions-Linked Charging Schemes**

As of 2019, there are now three separate pricing mechanisms in London, the central London Congestion Charge, and the Low and Ultra-Low Emissions Zones.

Designed to improve air quality in the city, London has introduced more stringent vehicle emission regulations over the past 12 years, introducing the Low Emission Zone in 2008, followed by the Toxicity Charge (T-charge) in 2017, and latterly the ULEZ.

On 8 April 2019, the Ultra-Low Emission Zone (ULEZ) was introduced, which applies 24/7 to vehicles which do not meet the emissions standards: Euro 4 standards for petrol vehicles, and Euro VI for diesel and large vehicles. The purpose of the ULEZ is to improve air quality in and around central London by reducing the number of older more polluting vehicles that enter the central zone. Unlike the Congestion Charge (which operates Monday to Friday between 07:00 and 18:00) the ULEZ operates 24 hours a day, every day of the year. Vehicles that do not meet the standards must pay £12.50 per day for cars, motorcycles and vans and £100 per day for lorries, buses and coaches.

December 2020 monitoring report shows the non-compliant vehicle detection proportion down to 15% (from 39% in March 2019 and 26% in September 2019) and that CO2 emissions in the central zone are estimated to have reduced by 12,300 tonnes, a reduction of 6 per cent because of the ULEZ (London.gov.uk Feb 2021).

**Future Strategies**

With London aiming to be a carbon zero city by 2050, further evolution of congestion and emissions charging is planned. The London Environmental Strategy proposes that between 2020 and 2035, the GLA will develop a new, more sophisticated way of paying for road use, integrating existing and proposed emissions-based and congestion charging schemes.

**AUCKLAND'S CONGESTION CHARGING PLAN**

The Congestion Question (TCQ) project is a technical investigation to consider whether there is a case for introducing a congestion pricing scheme for Auckland and test the effectiveness of charging options.

Like the schemes reviewed in the previous section, the Auckland proposal is designed and evaluated against its ability to reduce the attractiveness of driving, especially commuting into the city centre. The objectives of the scheme are well demonstrated in the evaluation criteria used to assess options, and the weightings given to them as follows:

1. effectiveness in reducing congestion (65%)
2. economic, social, environmental and safety considerations (20%)
3. efficiency, flexibility and wider considerations (15%).

These weighted evaluation criteria suggest that the environmental impact (e.g. reduced CO2 emissions) is not an important objective for the Congestion Question study, as one fourth of 20% suggesting that improved environmental outcomes is worth just 5%, with compared to reduced congestion (lower travel times) being 65%.

Options were evaluated using various metrics and the city centre cordon and the strategic corridors options are recommended to take forward to the next stage. In terms of CO2 reduction, none of the shortlisted options showed a greater than 1% reduction in CO2 emissions, with the city centre cordon reduction being just 0.1% and the strategic corridors being 0.8% reduction (Figure 8).

| Evaluation metric | Shortlist option | | | | |
|---|---|---|---|---|---|
| | City Centre Cordon | Isthmus Area | Strategic Corridors | Combination | Regional Network |
| **Transport assessment** | | | | | |
| No. of vehicle trips reduces by: | 0.4% | 4.7% | 1.3% | 1.7% | 2.2% |
| Average vehicle travel time reduces by: | 0.8% | 5.4% | 6.7% | 7.6% | 8.2% |
| Total travel time delay reduces by: | 4.2% | 26% | 30.4% | 34.6% | 32.8% |
| Time spent in severe congestion reduces by: | 2.5% | 13.8% | 16.1% | 19.0% | 20.3% |
| Freight vehicle kilometres travelled (VKT) in severe congestion reduces by: | 1.6% | 10.7% | 22.4% | 25.7% | 23.9% |
| No. of jobs accessible within a 30 minute drive increases by: | 1.9% | 17.9% | 14.6% | 18.9% | 17.1% |
| $CO_2$ emissions reduced by: | 0.1% | 0.3% | 0.8% | 0.7% | 0.8% |
| Other emissions (VOC, $NO_x$, $PM_{10}$, $PM_{2.5}$) reduce by: | 0.1% | 0.3% | 0.7% | 0.8% | 0.8% |

*Figure 8 Congestion Question Short List Evaluation results (Congestion Question Main Findings Report July 2020)*

The Congestion Question study has recommended a way forward for Auckland road pricing which is forecast to be effective in reducing congestion. However, the Government's priorities have shifted away from reducing congestion towards reducing carbon emissions.

Are the original terms of reference for the study still valid in 2021? If reducing CO2 emissions were a specific objective and given a higher weighting, what different options may have emerged into the short list? What would be an appropriate target for carbon emissions from a charging scheme?

**CONCLUSIONS AND RECOMMENDATIONS**

The CO2 emissions from road transport in New Zealand are increasing and recent trends suggest that emissions are likely to get worse before it gets better, as more kilometres are driven, and less efficient vehicles dominate our sales figures.

This paper has looked at a wide range of existing and proposed 'charging" schemes: vehicle purchase incentives, fuel taxes, road and congestion pricing, and emissions penalties.

Of these, only the proposed NZ Clean Car Import Standard is specifically designed to result in reduced CO2 emissions from road transport, the others are designed to raise funds for transport improvements, to reduce traffic congestion, or to improve air quality.

Any reductions in CO2 emissions arising from fewer vehicle trips of more efficient vehicle choices are a desirable but relatively minor outcome in these schemes.

The overwhelming conclusion from this overview is that there are a several fiscal levers to pull that could change behaviours sufficiently to result in a substantial reduction in CO2 emissions from road transport in Auckland. The key to developing an effective yet socially acceptable charging scheme appears to lie in establishing the appropriate objectives for a scheme so that it can be designed to deliver upon the desired outcome of CO2 reduction, rather than relying on reduced CO2 emission as a by-product of a scheme designed to deliver different outcomes.

The **recommendations** of this review of the potential for charging mechanisms to deliver CO2 reductions are therefore:

1. The NZ Clean Car Import standard, including the discount for low emission vehicles, has potential to substantially improve the fuel efficiency of the NZ fleet over time, and as a net cost neutral scheme should be implemented alongside any other direct charging scheme.

2. Fuel taxes are an appropriate and simple method of raising revenue for transport system funding and both national and regional fuel taxation impose a tax that is equitably relative to total fuel use, so should help encourage both less driving and more economical vehicle choices. However, a very substantial increase in fuel tax would be required to deliver a meaningful reduction in fuel use and CO2 emissions in isolation of other measures.

3. The Auckland Congestion Charge proposal should be redesigned to improve the outcomes for reduced CO2 emissions. A hybrid scheme that includes tiered charges for road use relative to the CO2 emissions of the vehicle being used could result in both positive outcomes for reduced congestion and substantial decreases in CO2 emissions. The type of scheme under investigation to combine / replace the London Congestion Charge and ULEZ schemes might be applicable to Auckland if specifically designed to reduce CO2 emissions.

A combination of all three, designed as a single package, ought to provide enough levers to positively influence people's decisions about how, where and when to travel. Crucially the system needs to be developed with the focussed outcome of reducing CO2 emissions from road transport as its primary objective. Reducing congestion in our cities and on our busiest highways could be a secondary objective.


If successful in Auckland, the hybrid carbon / congestion pricing scheme could be rolled out nationwide, potentially with GPS development, as proposed for Singapore. This could start with the other major city centres, followed by our most congested inter-city highways.

***Charge!***


# Putting people first: Innovating Streets for People—Nelson South

*In May, the Innovating Streets for People - Nelson South project was awarded the **3M Transport Award for Traffic Safety Innovation**. This collaborative project, primarily funded by Waka Kotahi and led by Nelson City Council, aims to make residential streets more liveable in a Nelson neighbourhood.*

## Problem

Nelson South is a residential neighbourhood southwest of Nelson city centre. The main road servicing the area is Waimea Road, which also functions as the main inland route between Nelson City and Stoke.

The road regularly sees high volumes of traffic and congestion during peak hours, and commuters often seek opportunities to cut the queues by 'rat running' down residential side streets. These side streets consist of older roads designed primarily for vehicles, with narrow foot paths and little infrastructure in place for active modes of transport.

This car-focused infrastructure combined with high through-traffic volumes created a disruptive and unsafe environment for residents living in the area. At a Council Regional Transport Committee meeting in 2019, a community group made up of residents and the Nelson South Kindergarten called for changes to their streets to make them safer and more liveable.

Nelson City Council conducted an initial analysis in response to the community concerns, which formed the basis of an application to Waka Kotahi's Innovating Streets for People funding programme.

Council's application was successful, and a collaborative partnership was developed between Waka Kotahi, who covered up to 90 per cent of the project costs, Nelson City Council, who led the project and provided the remaining costs, Stantec, an engineering consultancy that developed project designs and led community engagement, and members of the Nelson South community.

## Approach

The project was undertaken in two phases and used innovative forms of community engagement focused on collaborative design, tactical urban solutions, and collaboration with community organisations such as the Kindergarten and nearby intermediate school.

The first phase sought a reduction in through-traffic to create safer roads and a more liveable environment for residents. The second phase is focused on improving active transport connections within the area and is ongoing.

Phase One began with engagement with community members through a survey and a community-established Facebook page, where residents expressed feeling unsafe in their neighbourhoods. Baseline traffic count data confirmed residents' concerns, showing an average speed range of 40-43kph, with a max recorded speed of 100-110kph.

*"We are really concerned about the safety of our tamariki who go to the kindy. We see them run down the hill and we are worried that one of them is going to get hit. Staff side-view mirrors have been swiped off several times by cars coming down the street.*

*We really want to see something done to make this street safer and easier for our families to walk and scooter."*

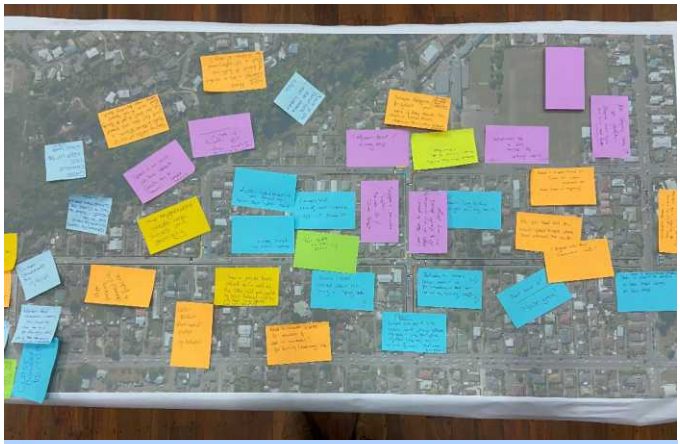
*- Nelson South Kindergarten, February 2020*

*"I live in a flat within the neighbourhood with my two children. We walk to Victory School everyday, and my son bikes up and down the street with his friends. I worry about him being safe. I walk to Victory Community Centre a lot for my English classes, and to friends' houses on the street for Church and visiting. The traffic is very fast." – Community member, February 2020*

The team hosted several engagement pop-up events to better understand the community's needs and help people to play a role in developing solutions to the problem. The first event was held at Nelson South Kindergarten in July 2020.

With the help of the community representative, the project team identified that English was a second language for many residents in the area, so invitations for the event were written in English, Te Reo, Spanish and Chin, enabling a wider group of people to attend, tell their stories, and contribute to solutions.

At the event, options to slow traffic for Phase One were presented on a large map for community members to view, discuss with their neighbours and project team, and make suggestions. Options were also conveyed using Minecraft and a Lego display to ensure younger people could also contribute.



Residents and project staff met again at a community barbeque in December 2020. The barbeque allowed residents to provide feedback on Phase One and provide ideas for Phase Two. Residents were also surveyed through a questionnaire to gauge their thoughts on the solutions and what changes should be made moving forward.

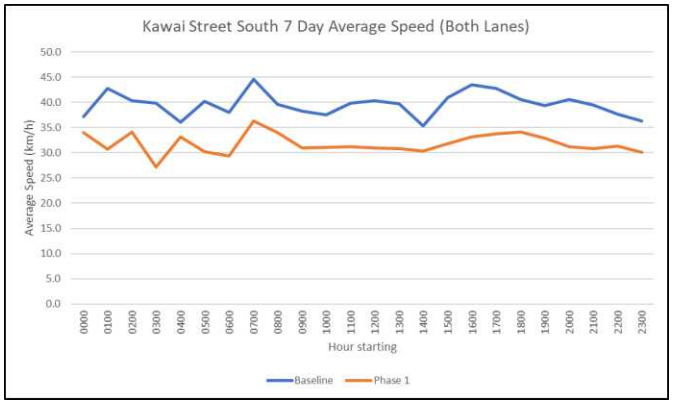
Feedback from another interactive co-design evening with the community and the local intermediate school showed that reading and interpreting traditional plans was challenging for some community members. This inspired the project team to set up a live demonstration, which would allow school children and residents to use new road layouts in person. The team closed the road for one day and trialled some of the tactical solutions for residents and found this to be a more effective way for people to understand the proposals and provide feedback to the team.

Hearing directly from community members was critical in identifying the challenges they faced while travelling around their local area and working through potential solutions. One elderly local who is vision impaired and delivers community newspapers found the three main intersections difficult to cross due to the speed and volume of traffic. To address this issue, the team trialled raised speed humps/pedestrian crossings to create a four-way stop at these intersections.

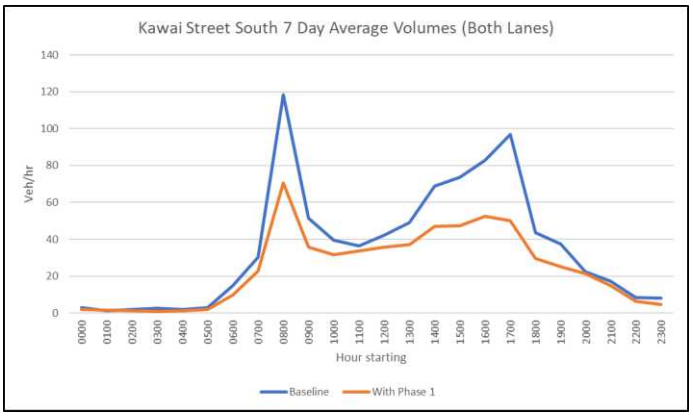

Nelson South Kindergarten staff and parents at the event expressed concerns over the safety of children coming and going from the Kindergarten on Kawai Street South. To slow traffic midblock, especially near the Kindergarten, the team created community spaces on the roads with brightly coloured planter boxes and picnic tables for residents to use. These temporary spaces were designed to be adaptable to changes in national road design guides and capable of including other elements like community art or large trees in planters.

**Results**

Traffic monitoring from before and after the tactical urban solutions were implemented show over a 37.5 per cent reduction in average speed along Kawai Street South by the Kindergarten to just 25kph.




Further detailed evaluation of traffic counts shows a 30 per cent reduction in traffic volumes, with a noticeable reduction during peak hours. Data from within the project area that has not seen changes show speeds have not reduced, although traffic volumes have, demonstrating clear evidence of the effect of the tactical urbanism solutions.




**Moving forward**

The team has learned a great many lessons from this project. Feedback from the community showed that some members did not feel they were sufficiently involved or informed during Phase One. To address this issue for Phase Two, the team went door-to-door to invite residents to a drop-in meeting at Nelson Intermediate School and advertised the event online, through community posters on street lampposts, letter drops, and media coverage.

Other lessons revolved around the selection of materials and colour pallets used, and the way the thinking behind the project was communicated to residents. Nelson City Council Project lead Marg Parfitt said there was initially strong pushback from some residents who were surprised by or even objected to the installation of brightly coloured plastic planters and picnic tables.

“These tools were always meant to be temporary solutions to enable quick and nimble changes to the environment to test different concepts.

“When we focused our engagement to include a better explanation of this process and that these temporary solutions were only a trial to inform future permanent solutions, residents were more supportive of the project and the improved outcomes we were all seeking for the neighbourhood.”

The team is excited to take what they’ve learned thus far into Phase Two of the project, where the focus will be on improving active transport options and creating more urban green space. The team will be setting up a bike library at the intermediate school for students to use and working with Enviroschools to turn a section of wasteland near the intermediate school and a neighbouring shared pathway into a pollinator park.

In recognition of the team’s efforts, the 3M Traffic Safety Innovation Award for 2021, which recognises exemplary innovation and effectiveness to save lives and injuries on roads, was awarded to the project at the Engineering NZ Transportation Group’s annual conference in Auckland in May.

Transportation Group National Chair Bridget Burdett said the award was a way to congratulate Nelson City Council “for developing such an innovative and effective project, which could be applied to residential areas in other parts of the country”.

Marg said winning the 3M award was very humbling and the result of a great deal of hard but important work by the entire team.

“This has not been easy,” she said, “and like many places around New Zealand that are trialling this type of intervention, we have been subject to some abuse and vandalism.

However, steadfast leadership from Council and those in the community who requested the project enabled us to press on, and the data is now telling our story.

“We have a road that has safer speeds, less rat running through-traffic and residents that are reclaiming this area as a place for people first and cars second.”

Marg said it was important that trials throughout New Zealand continue.

“If societies are to achieve a modal shift and progress toward carbon reduction targets, we must keep having these conversations around the reallocation of road space.

“We hope this project and the lessons learned throughout can be of use to others around the country or world attempting to make the needs of people primary in their neighbourhoods and cities.”

3M Traffic Safety Innovation Award

# World's first ship tunnel gets the green light

After decades of planning and design, the world's first ship tunnel has been given the go-ahead in Norway.

The 1.7km tunnel will be built into mountains in the Stadhavet peninsula to give ships a safer passage through the often treacherous Stadhavet Sea.

At 37 metres high and 26.5 metres wide, the tunnel will cost at least 2.8 billion Norwegian kroner (NZ$460 million).

Construction is due to begin next year, and temporary project manager Terje Andreassen from the Norwegian Coastal Administration, said the process to find a contractor has begun.''

"If everything goes according to plan, the world's first full-scale ship tunnel will be completed in 2025/2026," said Andreassen.

The Stadhavet Sea is said to be the most exposed and most dangerous area along the coast of Norway.

A plan was drafted to Norway's Ministry of Transport and Communications in 2017, which has now agreed to the budget for the tunnel.

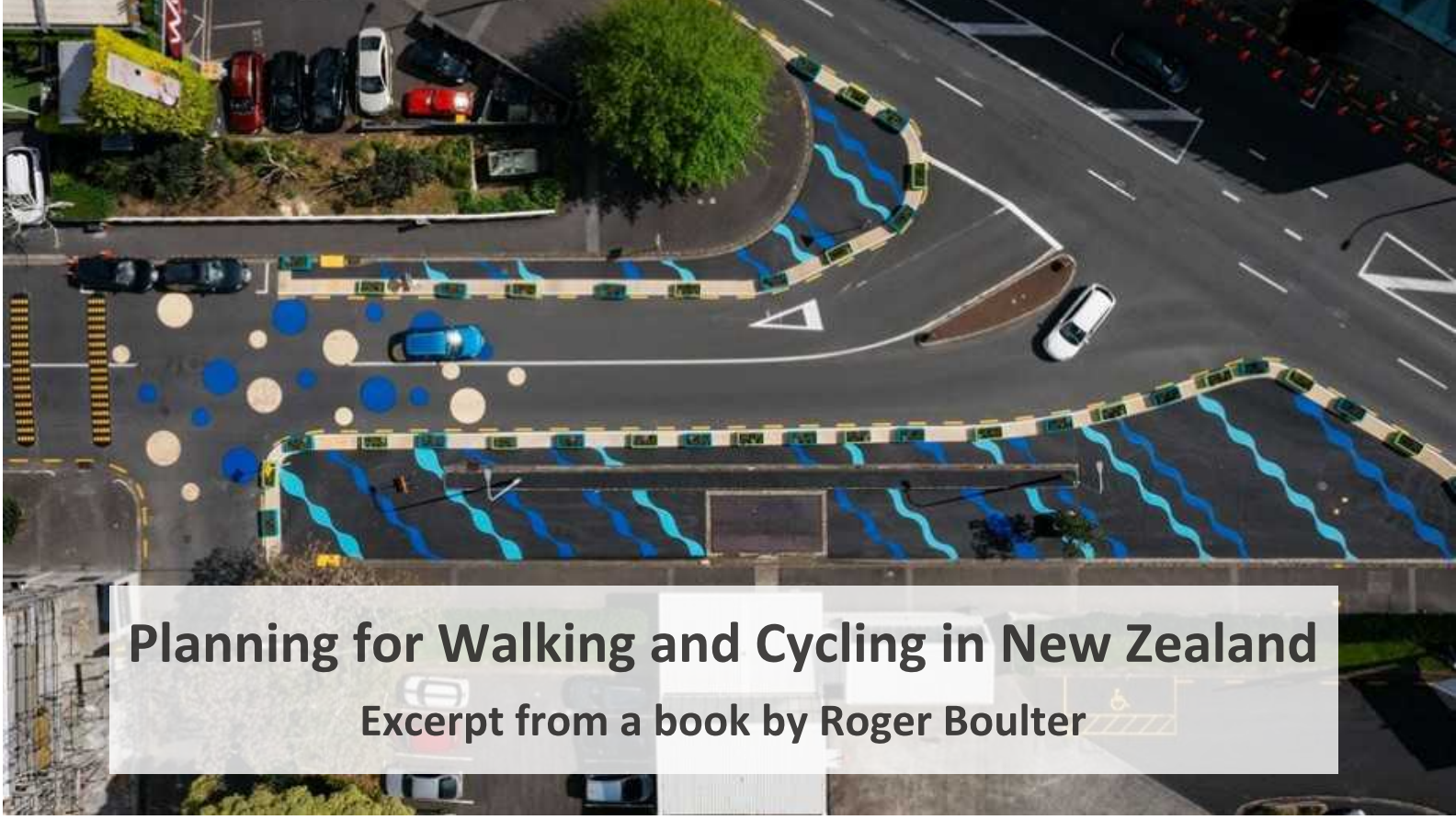
"Based on the allocation letter, we will now start the processes of acquisitioning properties in the area where the ship tunnel will be located, as well as put in place a project organisation, prepare a tender basis and initiate a tender," Andreassen said.

Construction will involve conventional blasting using underground drilling rigs and pallet rigs.

While there have been tunnels built around the world to accommodate smaller boats and barges, this is the first to serve large ships. It is hoped it could lead to a high-speed ferry service in the area.

"It's a project that has been planned for decades. So it's very pleasant to finally be able to start the construction work in one year," Andreassen told CNN Travel.

**Key figures**
Length: 1700 metres.
Height between ground and ceiling: 50 metres.
Width between tunnel walls: 36 metres.
Height from sea surface to ceiling: 33 metres
Sailing height: 33 metres
Cross-sectional area: 1661 m2.
Volume of solid rock to be removed: Approx. 3 million m3. Equivalent to approximately 8 million tonnes of blasted rock.
Construction time: Approx. 3-4 years.



# Planning for Walking and Cycling in New Zealand

## Excerpt 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 last of four articles outlining some issues it covers.

**Concluding with the good news . . .**

This is the last of four articles, written specially for Roundabout, on my draft book Planning for Walking and Cycling in New Zealand.

I hope you've enjoyed them. Each article has covered at least about 10-20 pages of the 100-page book draft, which you can read on my website. But be quick: I'm now giving it a major revamp which I hope would be the last before formal publication.

Cycling has been very much in the news in recent weeks – especially in connection with the Auckland Harbour Bridge. This beautifully illustrates one of my book's concluding themes: how very majorly public perceptions of transport have changed over the past two or three decades, meaning the time may be right for the priority changes I'm suggesting.

At, say, the turn of the century, it would have been unthinkable for a proposed second harbour crossing to have been for anything but road motor vehicles. Yet we already have suggestions for heavy rail to the North Shore; a Minister of Transport (no less) announcing government funding for a dedicated walking and cycling bridge; an established, successful and widely-supported North Shore busway; and official/ semi-official recent talk of a bridge or bridges for light rail and fast bus.

Talk of 'liberating' a Harbour Bridge lane for cycling has not only found support from cycling advocates, but seriously positive comments from senior NZ Herald commentator Simon Wilson and high-profile former Auckland politician Sir Bob Harvey.

A couple of decades ago, these ideas would have struggled to get serious discussion, let alone official consideration or voted funding. So my book's main theme -- that we should turn conventional transport planning priorities on their head so that planning for the car is fitted around the higher priorities of planning for walking, cycling and public transport (rather than the other way around) – may be 'on the right side of history'.

Yes, there has been 'bikelash', with some critics portraying the Harbour Bridge protesters as 'the lycra brigade' (they weren't; watch the video), and others mounting a petition to register and charge 'free-loading' cyclists for road use (space does not allow me to debunk this old and regularly-recurring canard, but look no further than Glen Koorey's excellent critique of it).

Even the recent 'roads for cars' vandalism of an Onehanga Innovating Streets trial project could be seen as good news. This time they realise it has serious intent behind it. A couple of decades ago the idea of putting boxes and brightly-coloured polka dots all over a roadway would have been met with gales of laughter.

This time the Community Board withdrew the scheme, but the bright, bold and sudden Innovating Streets projects are becoming more common, more widely accepted, and I can't see a 'sorry for inconveniencing you' response lasting very long.

Then there are age-based attitudes. Today's young adults have grown up knowing that if you don't acquire the major financial burden of your own car you are hindered from fully participating in day-to-day life. So many don't want to own one, a major turn-around in attitudes.

Whereas in the 1960s/70s car ownership was seen as young adults' aspiration and desired status symbol


(some of us are old enough to remember that), could it now be said that not owning one is what today's young adults aspire to? And that Innovating Streets is one means of reaching out towards achieving that?

So bikes, walking and traffic-free streets are more normalised (even if we still depend on our cars). Some public transport may be moving up-market (like that North Shore busway; even if much public transport still struggles with a 'loser-cruiser' image). It's a few years now since cycling's 'new golf' positive image started to elbow out its older image as 'for the poor and the nutty'.

A 'road user hierarchy', whereby walking and cycling have first priority when space demand for all forms of transport cannot be met – in place of car traffic having default priority – is not a new idea.

This has been widely adopted in official circles and then promptly ignored, but now the climate may be right for it to be applied. We've already seen the conventional 'road hierarchy' (arterial/ collector/ local roads) for motor traffic replaced with initiatives such as the One Network Road Classification, Network Operating Plans/ Frameworks and 'Link and Place'.

Now may be the time to ensure conflicting priority choices are explicitly made – and, more importantly, reflected in what happens 'on the ground' – rather than just being presented alongside each other with priority choices between them being effectively fudged.

The time may be right to explicitly distance ourselves from early 20th century ideas, still immensely influential in transport planning, that planning for mass volume motor traffic movement via traffic modelling and a 'road hierarchy' based network represents 'progress' and 'advancement' beyond 'outmoded' walking, cycling and public transport.

In the last 20 years more and more town and city centre public space has been devoted to people on foot. Public squares have been changed from de facto car parks to attractive walking spaces. Although we've seen the 'footpath wars' between walking advocates and some cycling advocates over footpath cycling legalisation, there are signs of hope.

The Auckland Harbour Bridge campaigns have been led by Andy Smith, a leader within walking advocacy group Living Streets Aotearoa, and Bevan Woodward, who in the past has played a leading role in the Cycling Action Network, apparently 'singing off the same hymn sheet'.

A major problem behind the 'footpath wars' has been people talking past each other, the one side citing crash and injury data and the other the effects of people being potentially deterred from walking through feeling unsafe. Another part of the problem has been the relative power of the respective lobbies.

We have heard far more about how cyclists are deterred from cycling on roadways than about how (for example) disabled or elderly people are socially excluded through feeling intimidated from venturing out of their homes onto footpaths by the thought of able-bodied, adult and potentially fast cyclists. Let's hope that the Smith/ Woodward positive co-working may be the shape of how these two lobbies may work in harmony with, not against, each other.

If planning for cycling (or cycling advocacy) is based around a cry of 'we want cycleways' (or 'pop-up bike lane' publicity events) progress will always be limited. Christchurch, for example, has some great cycleways, but its overall transport planning remains based around motorways and the car, and some major Christchurch roads are still built without even basic, on-road, 'cycling facilities'.

The late May/ early June frenzy of media discussion and official announcements surrounding cycling and the Auckland Harbour Bridge – just the latest expression of recent decades' seismic changes in public attitudes about transport – suggest to me that the time is now right to turn transport planning priorities on their head in the ways I have suggested in my draft book.

# Branch updates

**Auckland/Northland branch**
Climate Change Acknowledgement – Working on a draft to then distribute to Akl Branch Committee for feedback then look to send to National for feedback and possible ratification and then distribute to entire membership seeking ratification. Assuming all that happens then look to put on our website

Careers evening at Auckland University planned in the near future. Working through 'University of Auckland Event's team' to ensure good participation and ability to access university students email addresses

Cancellation of Onehunga Low traffic Neighbourhood event – missed opportunity for lessons learned. Unfortunately team organising and client did not wish to discuss the project so as to share lessons learned

**Waikato/Bay of Plenty branch**
The Waikato/Bay of Plenty Transport Group held a couple of events over the last few months that have been great learning and networking opportunities for members. We hosted a presentation by Andrew McKillop (Waka Kotahi) who gave us an update on the One Network Framework.

Members from Hamilton and Tauranga were able to listen and engage in Andrew's presentation via video conference between the two locations. The second event was more hands on with a site visit to the Innovating Streets trial project in Cambridge.

We heard from Bryan Hudson (Waipa DC) and Ben Frost (Beca) about how the project came about, the design innovations and the outcomes. Keep an eye out for the annual quiz night jointly hosted with NZPI in the next few months.

**Canterbury/West Coast branch**
The Canterbury West Coast branch had a social event in May with an engaging, honest and powerful presentation by Jeanine Foster (Waka Kotahi). Jeanine is clearly passionate about 'DSI hunting' in her role as Local Road Programme Lead for the Road to Zero - Speed and Infrastructure Programme. Thanks again to Jeanine for her time and energy she brings to this critical work. Thanks also to our members who came with good questions, open discussion and inclination to socialise!

Your branch committee are already planning a local conference speakers event where we will announce a life membership award, the annual TG Quiz Night, and an Age Friendly Ōtautahi workshop-style event for later in the year (1 October as the UN International Day of Older Persons). Members please sing out if you would like to be involved.

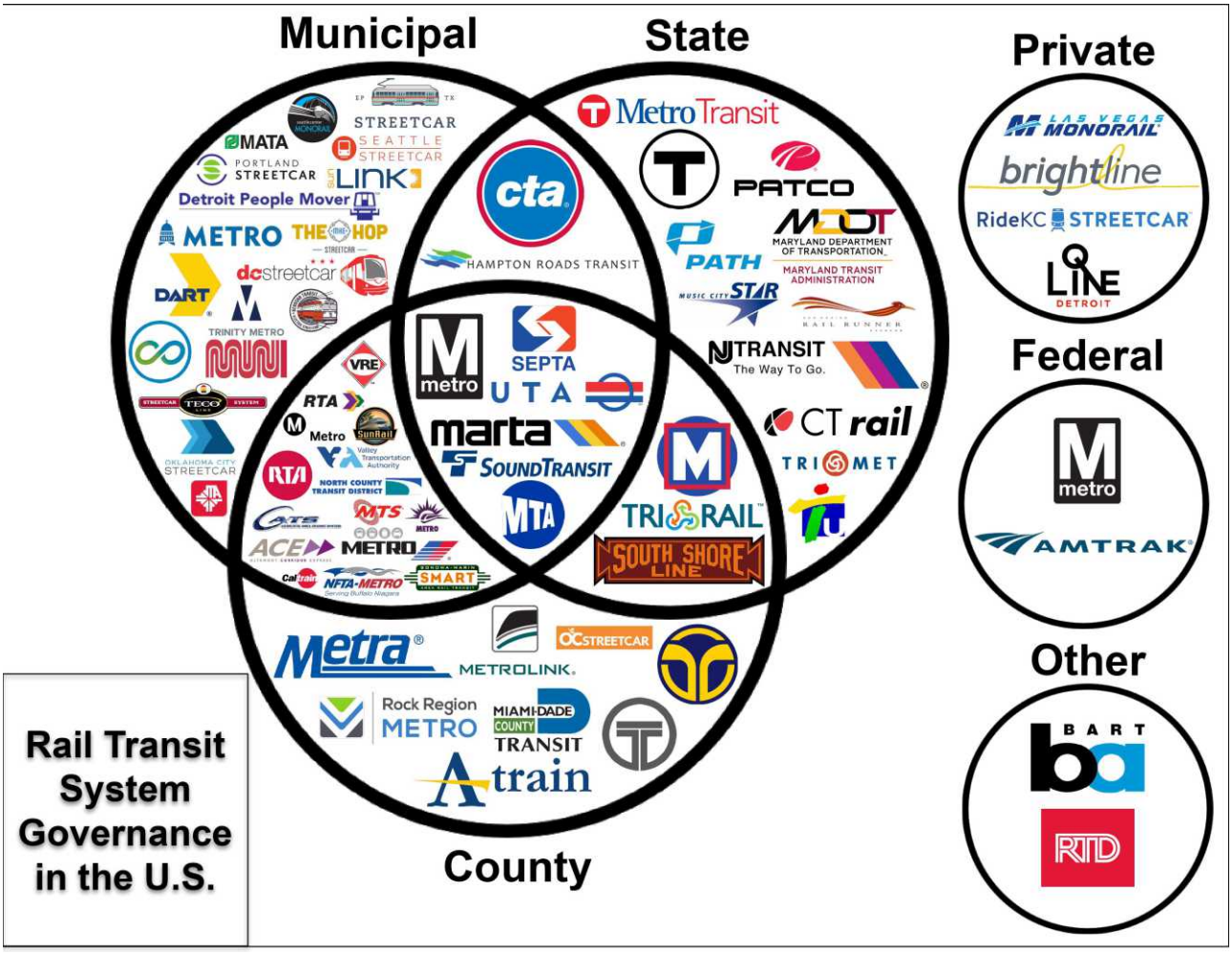
There are several important submissions open right now and we're doing our best to advocate for our industry and members. Our committee is helping with the MOT Submission on 'Hīkina te Kohupara – Kia mauri ora ai te iwi - Transport Emissions: Pathways to Net Zero by 2050'. Please add your edits or send your comments through (see email sent on 4 June requesting feedback). These submissions are important yet time consuming – so a huge thanks to all who help and give feedback!

**NZMUGs update**
NZMUGs planning for a 6-7 September conference. Plan A is a physical conference in Chch which we will likely record. Plan B is an entirely online conference as per 2020. Call for Sponsors and Call for Speakers will be out shortly.

We have commissioned some research on micro-time-of-day choice, which is underway and will be presented at the conference.

Stantec have been commissioned by WK to update the Monetised Benefits and Costs Manual chapter relating to demands and sensitivity tests. We are meeting to discuss how this might change our approach to developing forecasting guidance.

*Grand Central Station, New York, 1929*



# Innovating Streets Update: Tactical Projects Under Way

*Create the Vibe Thames multi-level seating blocks with built-in storage and herb gardens; and painted concrete pipes as planters and seating. (Image: Thames-Coromandel District Council)*

The Innovating Streets programme is now in full-on delivery mode, with dozens of pilot projects and events being rolled out, monitored, adapted and evaluated in locations around the country.

With over 70 projects funded, 33 councils involved, and 40 projects on the ground already, this phase is really where the rubber – along with many other tactical materials – hits the road.

The temporary and flexible approach lets communities try out different ways to make streets and public spaces more welcoming, more climate-resilient, and safer for everyone who uses them.

*Kathryn King, Urban Mobility Manager for Waka Kotahi NZ Transport Agency, on site in Takaka, Golden Bay. (Image: Waka Kotahi NZ Transport Agency)*

All projects need to be up and running by the end of June, and "they can stay in place as long as makes sense," says Urban Mobility Manager for Waka Kotahi NZ Transport Agency, Kathryn King. "We simply recommend materials are scoped and a maintenance plan in place to keep it looking good."

The programme empowers councils to design with communities, and use feedback and data to home in on what works. Testing different layouts in an agile way allows councils to make a head-start on their longer-term plans. Likewise, it enables communities to enjoy some of the benefits now, while working towards more permanent solutions.

While each project has its own context and experiences, there is also significant overlap. A several hundred strong Community of Practice, composed of delivery teams from around the motu, meets online monthly to compare notes and pool insights.

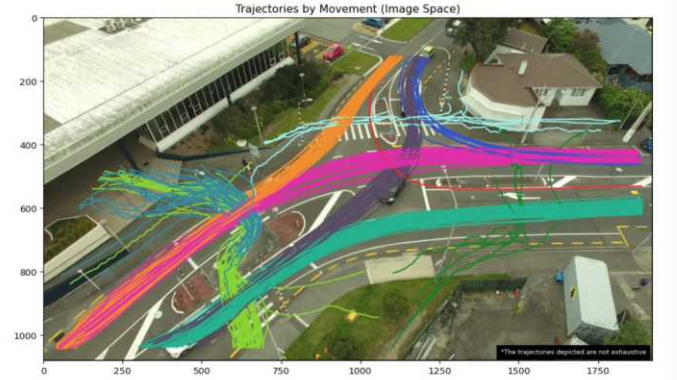
Sharing and amalgamating breakthroughs from across the programme should help everyone's budgets go further, faster, in coming years.

Data from projects that have already been in place for some time is encouraging. For example:

**Lower traffic speeds and volumes:** in Nelson South, a traffic-calming project has reduced average speeds past a kindergarten by 37.5%. (See related article in this issue)

**Higher uptake of walking and cycling**: in Cambridge, a pop-up cycleway to the primary school has seen a 56% increase in bike trips.

**Fewer near misses:** at Waterloo Station in Lower Hutt, the tactical layout has resulted in an overall reduction in speed, up to 30% reduction in near misses for all users, and a dramatic reduction in near misses for pedestrians (75%).




*Distribution of all movements at Waterloo Station, taken from drone footage of this intersection (Image: Hutt City Council)*

Although it's too early to draw conclusions across the board, it's clear that early positive momentum, bolstered by clear and concerted leadership, helps lead to more of the same. And, while a few projects have run into initial concerns (with a couple halted in mid-rollout), the majority are finding ways forward – adapting designs as planned, and evolving in response to feedback and data.

*Planters read to go for Māngere East, hand-painted with help from local community members and pupils of Mangere East Primary School (Images: John Potter/ Boffa Miskell)*

Some of the most intriguing lessons have been around materials. Street designs and placemaking installations are being brought to life with a combination of prefabricated elements, locally produced items, and creative re-use.

*Wooden bike lane separators in Napier. (Image: John Lieswyn)*

Because project teams need to hit the ground running and work within budget, availability and affordability are key features.

Hi-vis bollards, brightly coloured 'place kit' planters, and sinuous wave delineators are handy, eye-catching, and available off-the-shelf, but not without supply chain issues. Luckily, local procurement and community involvement have brought good old Kiwi ingenuity to the fore.

*Planters, street art and wave delineators on Ferry Road in Christchurch. (Image: John Lieswyn)*

*Street mural by Pauly B on Rostrevor Street in Hamilton (Image: Waka Kotahi NZ Transport Agency)*

For example, concrete pipes and stock feed tanks have been repurposed as sturdy planters that function as ideal canvases for local artwork, including by children.

Wood is a popular material in various forms: bespoke seating with built-in storage in Thames (created by a local engineering company); attractive planters (those installed in Richmond were crafted by the local Men's Shed), and sturdy sleepers as protective delineators for bike lanes in Napier and Henderson.


*Planter boxes made by the Men's Shed, on location in Richmond. (Image: Waka Kotahi NZ Transport Agency)*

The latter are a tenth the price of concrete 'tim-tam' separators, making them a logical addition to official lists of tactical urbanism materials.

Project teams have also found workable alternatives to temporary plastic speed bumps and crossing tables.

Asphalt over paper turns out to be less damaging to the existing road surface and much less labour-intensive (and quieter) to install, allowing for faster delivery, which saves on both time and budget. The asphalt material can also be removed and reused, and there's less chance of loose parts making their way into the drains.

*Street art and timber delineators in Henderson. (Images: Eke Panuku)*

Also inspiring is the degree to which artwork is livening up the project zones, including murals in Thames, Kopeopeo, Gore and more, and street art in Hamilton, Matamata, Onehunga, Golden Bay and elsewhere.

Many of these works have been led and created by local iwi with reference to history and geography of the place, and have been produced with the help of rangatahi from local schools and community art hubs.


*Create the Vibe Thames multi-level seating blocks with built-in storage and herb gardens; and painted concrete pipes as planters and seating. (Image: Thames-Coromandel District Council)*

Of course, learning 'on the go' comes with challenges as well as rewards. It's important to acknowledge that these projects, while temporary in nature and agile by design, have been time and energy-intensive. Project teams have been working hard to be as responsive and resourceful as possible within tight timelines.

That said, the rapid collaborative learning and shared insights are helping to streamline fresh approaches and inform future planning, giving councils greater capacity to make street improvements at scale and at pace. And transforming business-as-usual with more nimble approaches will be key to meeting targets for mode-shift and emissions reduction.

For example, at least one of the participating councils is now operationalising a tactical approach in its Asset Management Plan, which will help routine maintenance and renewals projects address safety, access, and sustainability.

Another has said that if they had used the traditional approach to street changes they would have got the design wrong and had to alter the layout after implementing a permanent solution, which would have been costly. Of the many diverse results of the Innovating Streets programme, folding tactical tools into wider strategy and long-term plans may well be the most tangible and lasting of all.

**LINKS**

Innovating Streets website

Video of Innovating Streets projects underway

Tactical Urbanism Handbook

# The rise of the Transport Professional

*This article by Gemma Dioni (Senior Transportation Engineer & Planner at ViaStrada) won the People's Choice award for best poster at the recent conference. You can link to the paper and poster here and feedback is always welcome.*

My paper was motivated by an increasing frustration that regardless of a couple of degrees and more years in the industry that I would like to admit, I am unable to be professionally recognised through the traditional ways of 'Chartership' or 'Full Membership'.

This is because when I boarded that train excited to be heading off to university, realising that I would never realise my childhood dream of becoming a dancer or pop star, I hadn't chosen a 'Washington Accord' degree to study.

Who knew these things existed at 18 years of age. Inspired by one of my lecturer's passion for people and places, I knew that planning and design of the places that we live, work and play in, was what I wanted to do and how we got around was of particular interest. A wonderful first job and a Masters degree motivated me to follow my pathway into working in transportation.

Many who know me, know I am very passionate about good quality inclusive design. I plan networks and design systems for people to be able to get around, ideally by other means than a car, after all I didn't get my first car until I was in my 30's, so I knew there was another way.

My belief, if it isn't going to work for my niece or my nana to get around safely and confidently, it's probably a 'no go' in my book.

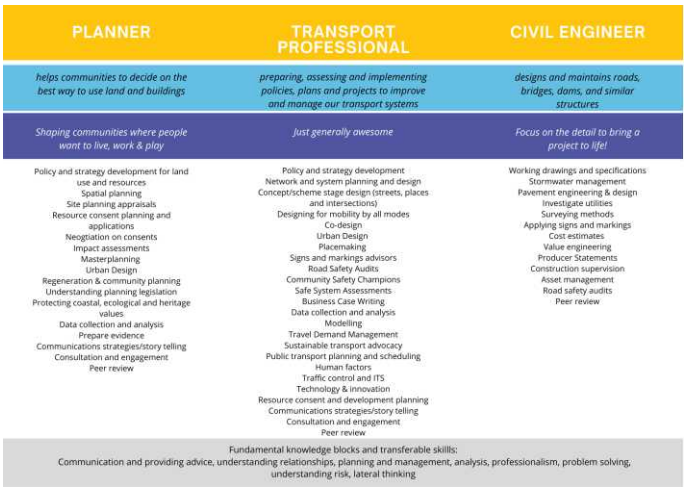
I work in the field of transport planning, placemaking, road safety and safe systems, and designing for and promoting active modes. My job title says Transportation Engineer and Planner but does this really reflect what I do?

In a recent conversation, a transport professional suggested they felt more like a social scientist than an 'engineer'. Plangineer was also used as another term for our hybrid profession.

We work in an area of tension between innovation and standards, safety and efficiency, movement and place, are we more 'equal opportunities advisors' or 'urban magicians'. Where do we sit in the spectrum of planning and engineering?

Whatever our job title, we all want to live in vibrant and active centres that work well for everybody moving around and to do that we need a wider range of voices around the table. Having diversity enhances the conversation but are we all equal at the table?

Whilst my skills may be recognised by more traditional planners and engineers, are they valued in the same way as a Chartered Professional Engineer or a Full Member of the NZ Planning Institute?




*Blurred lines or a clear case for recognition and accountability*

The job title becomes more relevant when we want to be considered possibly as an engineer but don't want to pursue the status of it because it is too difficult.

Every person reading this probably has something to contribute to the conversation and offer something to our industry and I would imagine that a fair amount of you have come from non-traditional engineering or planning degree routes.

I know this as I did a survey of Transportation Group members which some of you may have completed.

Following on from the paper and poster session at the 2021 Transportation Group conference, I now know there are even more of you who come from a range of backgrounds and that you are all motivated to deliver low carbon vibrant cities.

I will hold every attendee accountable to recommending good choices through their work.

It seems that the only people who ask us to be accountable for our decisions is the general public through consultation.

They often ask why we design and implement infrastructure to move more people around by lower carbon active modes, sometimes this is because they are concerned about the loss of a parking space or two.

Why as an industry are we not more accountable when people continue to suffer trauma as a result of a trade-off or compromise, or children still can't walk to school safely because the modelling shows a reduced Level of Service for vehicles if we install a new signalised crossing, or not raising a crossing to actually slow traffic in our centres because of the status of the road or the perceived lost time for having to slow down.

Just to re-iterate, this conversation is not about amending existing pathways for Chartership status for Engineers or full membership for Planners.
This is about a new approach to give recognition to and for continuing professional development to all people working in the transport profession that is accepted by our peers as an alternative to the traditional status.

It also allows for more integrity and accountability. It may also help with attracting and retaining new thinking by a more diverse workforce.

Initially I wanted to start a conversation on how we as an industry can certify, encourage, build capability and mana for people right across the spectrum of expertise, so I was very pleased to discover that others are also having this conversation within their workplaces and organisations.

Not only is the conversation about creating pathways for chartership or certification, but it is also about recognising the need for ongoing continual professional development that is relevant and of a high quality.

*Transport people learning great things (photo credit: Jeanette Ward)*

Currently, there is limited industry training in New Zealand in certain areas, so how do we contribute to an overall approach of building knowledge and capability within the industry, possibly even with higher competency requirements for some areas of our work.

Anyone who is currently working through renewing their STMS warrant will know that there has been an incredible uplift in the requirements to ensure safety for people working on the road. What about for people travelling daily on the same road?

Any certification needs to be developed by the industry, so it is used by the industry. How progressive would it be to open a tender or receive a brief from a client for a transport project where the required competency and team should include a Certified Transport Planner not a Professional Civil Engineer.

There are so many organisations within our industry that can begin to make this happen and start to champion a clear way forward for professional development, recognition of who you are and what you do, being accountable for decisions we make and working within our competencies.


*Beneficial for all but how to make it work*

One option from overseas that I have heard groups discussing is the Transport Planning Professional qualification. To give kudos to this in New Zealand, we will require an independent body to oversee this qualification to ensure consistency across the board to give the certification integrity.

How can we use other organisations to support the qualification or leverage from some of the continuous professional development that they provide?

So the big question is, where to from here?

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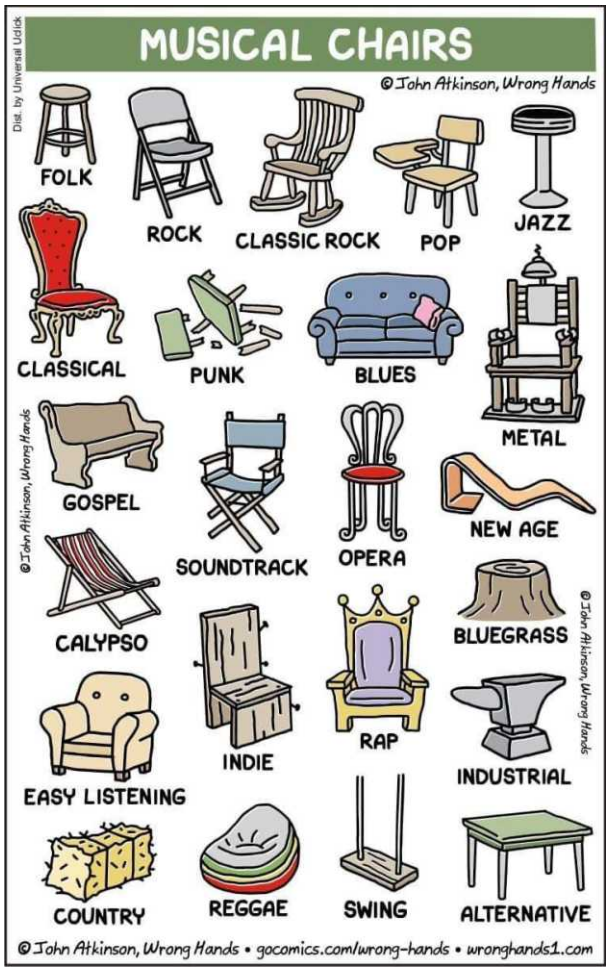


# Active Modes Infrastructure Group (AMIG) Update

AMIG has seen a couple of 3-hour video meetings since our last report, on 1st April and 3rd June. Here's what got discussed at these meetings:

• At long last, there is a new **AMIG website**, being hosted now by Waka Kotahi NZTA. You can find it at: https://nzta.govt.nz/walking-cycling-and-public-transport/active-modes-infrastructure-group/ (or look at the bottom of the "Walking, cycling and public transport" section of their website). There you will find background info about the group, copies of all the meeting minutes, and other useful links.

• There has been quite a bit of work lately trying to finalise the key design aspects of **cycleway interaction with bus stops**. The wide variety of scenarios mean that several different design options need to be presented in the coming national guidance. Some interesting research from various Wellington sites surveyed was also presented. Particular attention is being given to conflict points where passengers step on/off, speed management of cycles through the area, and sightlines around bus shelters.

• As part of the coming pedestrian design guidance, a new **crossing facility selection flowchart** is being prepared, as well as a technical advice note for pedestrian (zebra) crossing designs – watch this space. It was also noted that some existing zebra crossings are being re-marked messily using the new 600mm stripes (discussed last issue), rather than the interim 450mm stripes – the new design is not needed until a full reseal or reconstruction is undertaken.


• Many no-exit roads for traffic have connections through for walking/cycling. In Christchurch, a **modified NO EXIT sign** has been used to indicate this, and the question has been raised about providing a standard design nationally. While there is some support for this concept, for major walking/cycling routes it is preferred that more conventional wayfinding signage is used to indicate these.

• Have you used the CNG's **Separated Cycleways Options Tool** (SCOT)? This spreadsheet tool helps people assess the relative risk of one-way vs two-way cycleway options, based on traffic/cycle volumes and numbers of side-roads and accessways. If you're struggling to find it, the Cycling Network Guidance website now has a new "Guidance notes and tools" link on the top menu where you can quickly find this and many other useful technical notes, spreadsheet tools and guidance notes in one place.

• Some preliminary results were presented at June AMIG about recent trials of **dragon's teeth markings** near speed zones and pedestrian crossings. The results from ~15 sites around the country show generally a 1-5 km/h speed reduction. However, the markings need to be more conspicuous at higher speed (e.g. rural) locations and sites do need to be wary of any surrounding sign/marking clutter

• Some work has started looking into guidance for **pathway visibility at driveways**; this is becoming a growing problem with greater numbers of users of footpaths, shared paths and cycle paths. Some preliminary thoughts have been identifying what kind of visibility splay triangles might be needed to help manage this – and how to reflect it in District Plans.

• Other items discussed briefly at the last two AMIG meetings included revised guidance on shared/separated path widths and user volumes, new guidance for use of non-permanent TCD materials (e.g. for pilots), draft technical advice on facilities for mobility scooters, the legality of enforcing Advanced Stop Boxes (ASBs), markings for in-ground cycle loop detectors, and progress updates on the many Innovating Streets trials around the country.

• Finally, look out for the first sections of the **Pedestrian Network Guidance** (PNG) to be live on the Waka Kotahi website from 1st July: https://nzta.govt.nz/png...

The two-monthly cycle of online AMIG meetings will continue with the next one on 5th August. After that an actual in-person meeting is planned for Napier/Hastings in mid-November. RCA members who would like to be added to the group can contact co-convenors Wayne Newman (RCA Forum; wayne@cresmere.co.nz) or Gerry Dance (NZTA; Gerry.Dance@nzta.govt.nz). Other TGNZ members are always welcome to 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*


**Communities benefiting from piloting street changes**
Communities experiencing Innovating Streets pilots are seeing positive outcomes including slower car speeds near schools and in residential areas, increased options for cycling and walking, and more spaces for communities to come together.

*Thames* - The community in Thames has been benefiting from the alteration to the town centre, that has seen a busy, dangerous junction turned into the central hub of the town. With custom-made seating and festive lighting, the area has quickly been adopted as a community meeting point, a place that all generations have found use for.

*Hamilton* – Rostrevor Street has been brought alive with the completion of street art by local artist PaulyB. The street is now a visual delight that connects Hinemoa and Boyes Parks, creating a more appealing way to move around the city.

*Cambridge* – The Streets for People pilot has seen an increase of people walking and cycling, and a reduction in car speeds. The number of children walking or scooting to school has increased by 58%, with parents feeling confident to allow their children to bike or scoot on the separated cycleway.

*Invercargill* – Te Waka o Waihopai has installed a separated cycleway, connecting the city centre to Queens Park and the Otepuni, and is already getting positive feedback. One person has said for the first time in 30 years he feels safe when going to work on his bike.

To encourage more feedback and celebrate the pilot, a community event was held recently with over 2,000 people turning out to have a go on the new cycle route and celebrate the change to the city.

**South Auckland shared path gets the thumbs up**
Those looking to bike, walk or scooter between Takanini and Papakura in southern Auckland can now take in picturesque views of the Manukau Harbour as they travel along a new shared path.

The Southern Path which connects communities along the Southern Motorway was officially opened earlier this month.

To celebrate the new path, social enterprise group, Got to Get Out on behalf of Auckland Transport, organised its biggest ride to date, with 55 riders taking to the path to try it out.

Event organiser and founder of Got to Get Out, Robert Bruce, said: “I was amazed when over 50 people rsvp’d to attend. Clearly Aucklanders were excited to ride the path after watching it be built.

“Feedback on the day was that the path is beautifully made and easy to ride, with awesome features such as the spiral bridge.”

Nature-loving Robert also enjoyed the native planting along the path, that brings a softer edge to the path.

Waka Kotahi National Manager Infrastructure Delivery Andy Thackwray said: “This path provides a missing link across the harbour and connects in with a city-wide cycling and walking network being developed, which encourages communities to use more active modes when travelling shorter distances.”

Up until now walking and cycling in the area has been limited, with few facilities and safety challenges including a lack of safe motorway crossing points.

The new path provides more reliable and safe transport options and is expected to be a popular recreational choice for locals, getting them out and about for exercise with their friends and whānau.

Got to Get Out organise outdoor activities that bring people together and focus on improving mental heath.

**West Coast Kawatiri Trail brought together by new Nile Bridge**
People wanting to walk or bike the Kawatiri Coastal Trail from Westport to Charleston can now safely cross the Nile River without having to use the State Highway 6 road bridge.

As West Coasters are very proud of their history, the location of the cycleway crossing was decided in order to bring back to life a historic 19th century gold rush trail.

Built at the same spot the first bridge was constructed on in 1866, the Nile Bridge is the latest phase on the family friendly Grade 2 track to be completed.

Ann Neill, Principal Heritage Specialist for Waka Kotahi, said: "The original idea was to build the new bridge using the historic remains of the first suspension bridge on the site. However, research found that the former bridge towers and cable anchors were an archaeological site and protected under the Heritage NZ Pouhere Taonga Act. To avoid damaging the historic remains, the design team lengthened the deck span and moved the towers back by 2.5m - an excellent example of sustainability and adaptive reuse."

Following a dedicated cycle path, the heritage trail offers riders an invigorating experience along a truly spectacular coastline. The breath-taking route meanders an enviable mix of rugged cliffs, crashing seas, wildlife, forest, suspension bridges, boardwalks, pristine wetlands, shelters and interpretive signage brimming with remarkable stories and local secrets. When completed it is hoped it will receive Great Ride Status.

The trail is expected to be completed by June 2022 and the bridge will be officially opened next month.

## Next steps announced for Te Ara Tupua

The Ngā Ūranga ki Pito-One (Ngauranga to Petone) section of Te Ara Tupua has hit another milestone. Following the approval of the project's consents under the COVID-19 Recovery (Fast-Track Consenting) Act in February, funding has been approved to construct the project.

This transformation project will provide a key connection in Wellington's walking and cycling network, enabling more people to walk or bike. It is expected to support around 330 jobs including those employed directly in the project and in its supply chain.

The preferred alliance team is made up of Downer NZ, HEB Construction and Tonkin + Taylor, who will be supported by Isthmus, Boffa Miskell and Holmes Consulting.

**Speed limited consultation now open**

Consultation on the proposed Setting of Speed Limits Rule 2021 has opened. The proposed rule changes, if implemented, will provide an opportunity for road controlling authorities to make some significant changes to the way they undertake speed management in the future to support safer and healthier communities.

The proposals introduce more flexibility on speed limit setting at 60, 70, 80 and 90kph, as well as setting out a transition for safer speed limits around schools.

If introduced, Regional Transport Committees would have a new function to consolidate and consult on their regional speed management plan. The rule also proposes strengthening partnerships with Māori when it comes to speed changes.

The consultation runs until 25 June. See more HERE

**Lake Dunstan Trail - the ultimate bike trial opens 8 May**

There are regular bike trails and then there's the new Lake Dunstan Trail that has just been completed between Clyde and Cromwell.

The trail offers an easy 55km ride (Grade 1-2) for people cycling and walking through unique and fascinating landscapes characteristic of Central Otago as it journeys along Lake Dunstan, the Kawarau River and the mighty Clutha River Mata-au.

The Lake Dunstan Trail extends and complements the well-established Great Rides in Central Otago and the Southern Lakes.

It also provides a key link with the Otago Central Rail Trail and the Roxburgh Gorge Trail, both of which are part of Nga Haerenga - New Zealand Cycle Trails.

# City Rail Link update

The Tunnel Boring Machine (TBM), named Dame Whina Cooper, has started its historic and transformational journey below Auckland's skyline to excavate the City Rail Link tunnels – New Zealand's first underground railway.

"Progress over the first initial metres is cautious but steady while our crews bed down getting used to the machine and conditions underground," says Francois Dudouit, Project Director for the Link Alliance. "Happily we – the project team and wider Auckland - have plenty to celebrate. When the work's done, Dame Whina Cooper's legacy will be a world class railway for Auckland, and travelling around the city will never be the same again."

Tunnel excavations have started from City Rail Link's Mt Eden site. Its first destination is the Karangahape Station, 830 metres away. From there it bores on to the Aotea Station in central Auckland – a total journey for the TBM of 1.6 kilometres - to join the section of CRL tunnels already built from the Britomart transport hub.

After Transport Minister Michael Wood and Auckland Mayor Phil Goff ceremonially turned on the TBM for the first time earlier this month, final commissioning checks, which included excavating the first few metres of tunnel, were completed successfully.

"It's not unlike getting a new car – we have a bespoke TBM built just for the soil conditions in this part of Auckland and we needed to make absolutely sure everything is working properly," Mr Dudouit says. "We are not ready to 'put the foot' down just yet and we'll take the first stages pretty slowly at first."

The TBM will travel at an average of 15 metres a day and with a top speed of 32 metres a day, operating 24 hours a day, 7 days a week at peak. Next week, tunnel excavations will ramp up when the TBM starts operating 24 hours a day, 5 days a week.

Underground, the TBM has three tasks: cutting the spoil, removing the spoil by conveyor built to the surface, and installing the concrete segments - 14,735 in total – that will line the twin rail tunnels.

CRL's Dame Whina Cooper is 130 metres long it will not completely disappear underground until the end of June. It will breakthrough at Karangahape this spring, and at Aotea towards the end of the year. The TBM will then be moved back to Mt Eden and will start boring the second tunnel next year.

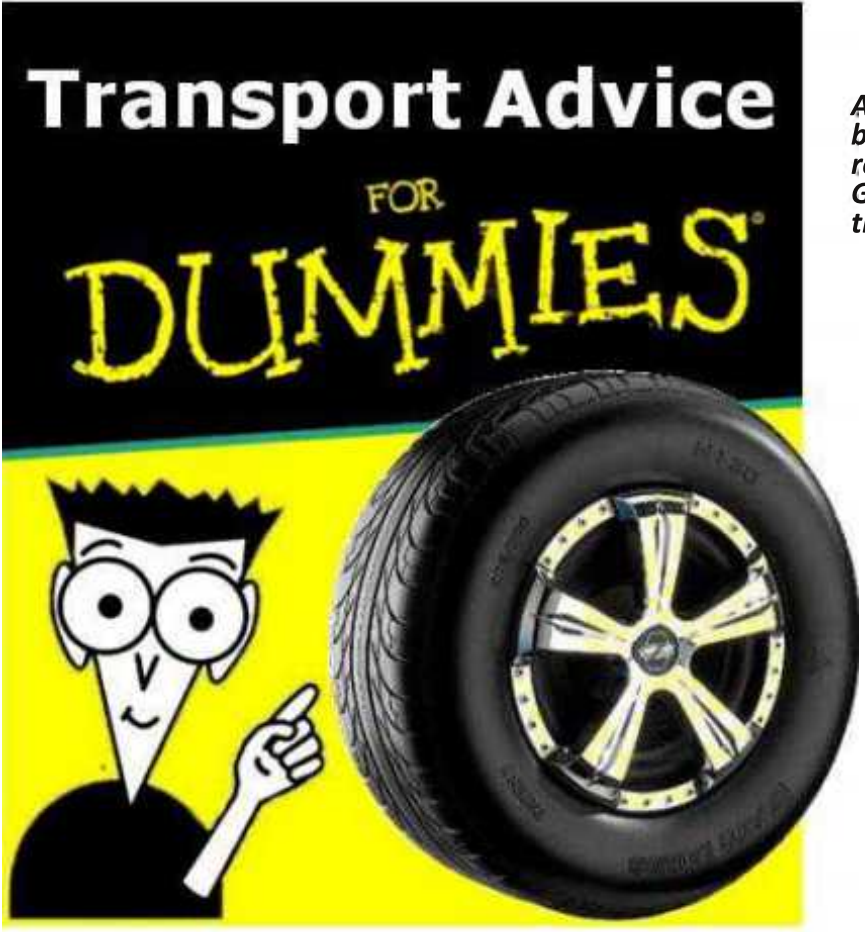

This edition has some famous cities at night, as viewed from the International Space Station. Can you match them. There is New York, Barcelona, San Fransico, London and Tokyo. Have you seen other interesting photos? Send your own photos to: daniel.newcombe@at.govt.nz

# Roundabout of the month


This edition's roundabout is more like a cycle lane around a traffic island. In fact, it **is** a cycle lane around a traffiic island. Kind of makes you wonder what the point of it is. Seen a better pic? Email: daniel.newcombe@at.govt.nz

# Caption competition

This edition's caption competition was taken at the recent Group conference dinner, of Tauranga City Council's Sarah Dove and a, um, friend. 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




***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**

Why the big focus on reducing the amount of carbon dioxide coming out of car exhausts? We still sell fizzy drinks which get their bubbles from carbon dioxide. Why isn't the Group arguing to ban fizzy drinks?

**Clint, Taupo**

**Dear Clump**

Absolutely. For consistency the Group must pursue fizzy drink eradication. Or perhaps it is smarter to repurpose the carbon dioxide coming out of exhausts and pump it straight into flavoured water and create our our transport-based fizzy drinks. Any takers?

**~Transport Guy**

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**Dear Transport Guy**

I attended the Group conference in Auckland recently. I missed the start where they explained things but every time I went to attend a session, a nice lady from Hardings tested my temperature with a handheld scanner, presumably to check if I had COVID-19 and was running a fever.

Every single time it beeped 'positive' and I had to rush off for a COVID-19 test, each of which was negative. I hardly got to see any speeches and the back of my nose is really sore. Can you please ask the team to get more accurate temperature readers next year?

**Dave, Hahei**

**Dear Depraved**

I'm torn. Obviously I need to thank you for being so diligent at getting tested and protecting us from potential illness.

But also I need to somehow advise you that it was the barcode on your lanyard being scanned, to ensure you were the right person going to the right place. Perhaps you should arrive earlier to the next conference and hear the instructions.

**~Transport Guy**

**Dear Transport Guy**

That guy dressed up all in gold at the conference dinner - what was that all about?

**Belinda, Cromwell**

**Dear Blindly**

I really hope he was trying to be an Oscar Award for the 'red carpet' theme. Otherwise he was really into some kinky stuff and was clearly at the wrong gathering.

**~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...

# Group Contact Details


**Transportation Group National Committee**
**National Chairperson**: John Lieswyn john@viastrada.nz
**Vice Chairperson:** Bridget Burdett bburdett@mrcagney.com
**Immediate Past Chair:** Jeanette Ward jeanette@abley.com
**Auckland Branch Chair:** Stephanie Spedding stephanie.spedding@jacobs.com
**Waikato/Bay of Plenty Branch Chair:** Craig Richards craig.richards@beca.com
**Central Branch Chair**: Thomas Small thomas.small@jacobs.com
**Canterbury/West Coast Branch Chair:** Grace Ryan grace.ryan@ghd.com
**Southern Branch Chair:** Lisa Clifford lisa.clifford@nzta.govt.nz
**Website Administrator:** Vacant
**Modelling User Group:** Nathan Harper nathan.harper@aecom.com
**Signal Network User Group:** Daniel Burgess daniel.burgess@nzta.govt.nz
**Active Modes Infrastructure Group:** Glen Koorey glen@viastrada.nz
**Research Sub-committee:** Bridget Burdett bburdett@mrcagney.com
**TDB rep:** Tony.Brennand@nzta.govt.nz

**Branch Administrators**
**Auckland:** Chun-Lin Lee chun-lin.lee@stantec.com
**Waikato/Bay of Plenty:** Sarah Dove s.dove@harrisongrierson.com
**Central:** Josephine Draper josephine.draper@abley.com
**Canterbury/West Coast:** Grace Ryan grace.ryan@ghd.com
**Southern:** TBA


**Roundabout Editorial Team**
**Editor:** Daniel Newcombe daniel.newcombe@at.govt.nz
**Immediate past editor and dogsbody:** Bridget Burdett bburdett@mrcagney.com
**Additional dogsbody:** John Lieswyn john@viastrada.nz

# Kids explain traffic engineering

*“We should ban petrol cars and only have electric ones that can fly. And if that isn't possible we should just all ride e-bikes."*