

Roundabout

Magazine of the Transportation Group NZ

Issue 170 December 2021



In this edition:

- Reducing our transport CO₂ emissions
- Coastal shipping and shoe cars
- Electric vehicles both big and small
- Deep learning and breaking through the asymptote
- On-demand services and Tawa!

And much more...





Editorial



Daniel Newcombe
Roundabout Editor
daniel.newcombe@atgovt.nz

I am amazed at the way so many in our profession have just carried on without pause and produced a range of fantastic advances to the way we deal with our transport needs

The end of every year brings a period of reflection.

This year, funnily enough like 2020, was pretty rough in parts. There have been ongoing struggles with the pandemic obviously, along with the challenging way some people have dealt with it.

But I am amazed at the way so many in our profession have just carried on without pause and produced a range of fantastic advances to the way we deal with our transport needs.

This edition covers updates on many of these, a lot of them from the amazing team (and supporters) in Waka Kotahi who have advanced innovative initiatives (think Play Streets or Innovating Streets) to enable better use of our streets.

As in 2020, many people have used the Covid-19 disruptions as opportunities to test and develop different ways of thinking and achieving what is best for our communities.

It is also interesting to look at examples overseas, where cities have emerged from situations much worse than ours, to reclaim and reform their streets to accommodate their new needs – outdoor dining, space for play, adaptive use of now underused areas.

We're in a different spot to them obviously – they are headed into another hard winter with growing Covid cases, whereas we're emerging blinking into a new 'traffic light' system for the summer – but there are global learnings that apply wherever people and streets meet.

Enjoy this edition's articles on these innovations, and keep thinking of new ones.

When immediate challenges are upon us it is sometimes easy to forget that as well as dealing with the pandemic we also have to adjust to longer term pressures too – climate change.

This edition we have an article from some older heads (Ross Rutherford and Doug Wilson) about how to reduce our carbon emissions.

This continues a trend this year of our Group being focused on climate change issues, which are a systemic challenge for our industry (not to mention our society). If you have thoughts or ideas in this area, just get in touch.



*Pohutukawa blooming on Auckland's Tamaki Dr
(Credit: Patrick Reynolds)*

Finally, after such a challenging year, I wish you all a relaxing and refreshing break over the coming holiday period. Let's enter 2022 with a new and engaged enthusiasm for carrying on this year's great work.

Inside this issue:

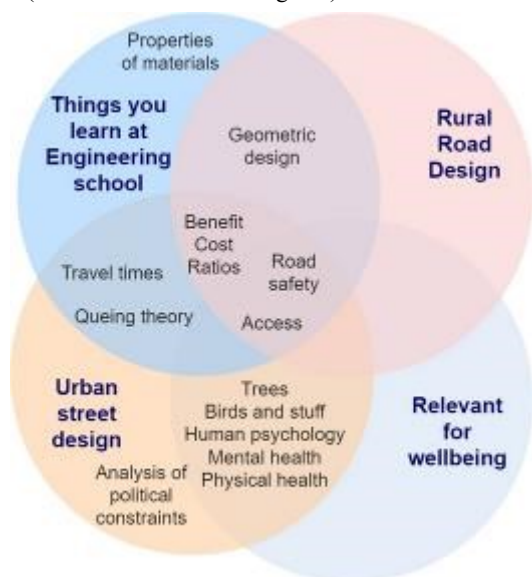
Editorial	2
Chairs Chat	3
Electric vehicles	4
Conference details	8
On demand services	12
Living bus shelter	19
Transport Planning Professionals	20

Play Street new guidelines	24
Coastal shipping	26
Protected cycle lane research	30
Deep learning	34
Reducing our Transport CO ₂ Emissions	42
City Rail Link news	50
Transport Guy	53



Chair's Chat

As a sub-group of Engineering New Zealand, the Transportation Group has an engineering bent, with more of our members having a civil engineering background than any other undergraduate degree (citation needed. That's a guess).



Engineering bias is a problem for urban street design, where the objectives are about more than keeping road users safe, and getting them places.

The main point of the venn diagram I made (for your office debating pleasure) is that almost everything you need to know about rural road design, you learn at engineering school.

Almost everything that's important for urban street design, you do not learn at engineering school. That becomes a frustration for those involved in tactical urbanism. But it's a huge challenge if we want to change the goals of transport sector investment to promote healthy urban mobility. And ultimately, the huge difference between urban and rural street design skills means that if those streets are governed by what

is essentially a National Roads Board with a different cover page then we aren't going to get what we say we want.

The gaping chasm between what's necessary for good outcomes in urban and rural transport contexts is at the heart of the challenges in 21st Century transport planning. In my Chair's Conversation series I've been exploring 'why we don't get nice things' - why our visions are disconnected from our investment in transport, certainly when it comes to climate change, wellbeing and equity.

And the insight came not from a Chair's Conversation, but from a meeting I attended on your behalf, between Engineering New Zealand and the (now former) National Party spokesperson for transport. He said that "Really the main issue for transport in the Waikato and Bay of Plenty is regional connectivity in the Golden Triangle". He thinks, or thought last week, that movement of people and freight between Hamilton, Tauranga and Auckland is 'everything'. Well, it might be for freight. But that's a rural road issue.

What's important to enable participation for a low-income solo mother of four children in suburban Hamilton, who has never been to a beach, is a world away from those regional connectivity pontifications. The problem then, is that the agency that owns and operates rural State Highways also has investment sway in urban street design and local public transport.

I absolutely believe that a national Road Controlling Authority should not be the gatekeeper of urban mobility funding. The processes and outcomes for those sectors are so fundamentally different, it makes no sense that they are merged within an engineering-centric, road asset management culture.

There are plenty of good and skilled people in our sector, doing their best, but if we don't address these fundamental biases, we will continue to get bad outcomes from transport investment.



Bridget Burdett

National Committee Chair
bburdett@mrcagney.com

"I absolutely believe that a national Road Controlling Authority should not be the gatekeeper of urban mobility funding."

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

ISSN 01 1 3-9053



Australasia's biggest ever electric bus order will remove 10,000 tonnes of emissions annually

AT's current zero-emission bus fleet was being showcased in a virtual exhibition at the United Nations Climate Change Conference (COP 26) in Glasgow. To view AT's case study in the virtual room at COP 26, please click [here](#)



Australasia's biggest electric bus order has been announced, in a partnership between Auckland Transport and NZ Bus.

This will see a further 152 battery electric buses (BEVs) on Auckland's roads and will reduce greenhouse gas emissions from the AT Metro bus fleet by an estimated 11 per cent per year – which is almost 10,000 tonnes of carbon dioxide annually.*

These BEVs will replace around 12 per cent of the diesel bus fleet in Tāmaki Makaurau, in alignment with AT's Low Emission Bus Roadmap 2020 (LEBR).

The additional BEVs will significantly boost the number of zero emission buses operating on AT bus services across Auckland with NZ Bus providing services in the city centre and across some of the city's most congested urban areas.

Mayor Phil Goff says the new electric buses will help Auckland progress its climate change goals by reducing carbon emissions from transport.

"These 152 new e-buses will replace around 12 per cent of Auckland's diesel bus fleet and reduce Auckland Transport's greenhouse gas emissions by an estimated 11 per cent annually – equivalent to almost 10,000 tonnes of carbon dioxide a year," he says.

"With transport making up more than 40 per cent of Auckland's emissions profile, it's crucial that we pull every available lever to reduce emissions. Having already halted the purchase of new diesel vehicles and rolled out 33 electric buses on more than 13 services throughout the region, this is another step towards a zero-emissions bus fleet for Tāmaki Makaurau. It's encouraging to see Auckland Transport and NZ Bus

working together to make that happen."

The BEVs will be deployed across four years, with plans for the first group to be driving the Tāmaki Link from October next year, followed by other services operated from the central or east Auckland bus depots.

AT's Chief Executive, Shane Ellison, says it is critical that carbon emissions are reduced across the globe. "As an organisation, Auckland Transport is dedicated to doing our bit by actively supporting the goals of Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan.

"We are well on our way in transitioning to an emissions-free public transport fleet by 2040, which will have a myriad of benefits for Tāmaki Makaurau – including improved air quality within the city centre and healthier communities.

"Within the last 18 months we've introduced 33 new electric services in the city, Waiheke Island, as well as the new AirportLink service connecting with electric trains at Puhinui Station for a carbon-free trip to Auckland Airport. The announcement of 152 additional electric buses is extremely positive for our city."

AT and NZ Bus have been working on plans to accelerate the BEV introduction since late 2020 following a proposal from NZ Bus to replace a significant part of its current diesel fleet with electric buses. NZ Bus Executive Director of Strategic Projects, Peter McKenzie says:

"AT and Auckland Council have been very supportive of the proposal and keen to work with us to increase the number of electric vehicles operating on AT's bus services."

Source: Auckland Transport

*relative to 2019 emissions.



Important news: Cars that look like shoes



ROAD TRAFFIC FATALITIES IN THE EU IN 2019

by road user and (other) 'main vehicle'
involved in the crash

IN A COLLISION WITH...

FATALITIES		IN A COLLISION WITH...										TOTAL
		PEDESTRIAN	BICYCLE	MOPED	MOTORBIKE	CAR	LORRY (<3.5T)	HEAVY GOODS VEHICLE (>3.5T)	BUS OR COACH	OTHER VEHICLE/ UNKNOWN	NO OTHER VEHICLE INVOLVED	
PEDESTRIANS		0	19	17	108	3 200	508	401	150	225	•	4 628
CYCLISTS		14	42	8	33	1 024	162	217	31	87	417	2 035
MOPED RIDERS		5	2	5	10	289	33	45	10	21	193	613
MOTORCYCLISTS		14	15	5	84	1 576	231	191	37	120	1 280	3 553
CAR OCCUPANTS		22	7	2	26	3 067	584	1 557	148	286	4 400	10 099
LORRY (<3.5T) OCCUPANTS		0	0	1	0	141	70	211	18	36	289	766
HEAVY GOODS VEHICLE (>3.5T) OCCUPANTS		0	0	0	0	26	17	171	4	11	124	353
BUS OR COACH OCCUPANTS		0	0	0	0	11	16	24	2	7	51	111
OTHER/UNKNOWN		0	3	3	5	191	36	42	7	36	319	642
TOTAL		55	88	41	266	9 525	1 657	2 859	407	829	7 073	22 800





New Zealand's first zero emissions truck trial kicks off

“While our focus at AT has been on the electrification of buses, it is also important that we explore other ways to support the lowering of emissions.”



Auckland Transport (AT) welcomes New Zealand's first trial of 100 per cent electric trucks.

The Auckland Inner City Zero Emissions Area (ZEA) Trial follows the arrival of the first FUSO eCanter 100 per cent electric trucks – five of which are being used by trial participants: Mainfreight, Bidfood, Toll Global Express, Owens Transport and Vector OnGas.

The one-year trial will see the integration of the fully-electric trucks into New Zealand's commercial fleet to deliver goods in the inner city.

Mayor Phil Goff says the electric trucks will pave the way for reduced carbon emissions and will contribute to improved air quality in Auckland's city centre.

“Transport makes up more than 40 per cent of Auckland's emissions profile. The shift towards emissions-free vehicles is a critical step towards meeting our climate change goals,” he says.

“This trial will complement emissions-reduction work already underway by Auckland Council and Auckland Transport, including the rollout of emissions-free electric buses across our transport network. It will also contribute towards our vision of creating a zero-emissions area in Auckland's city centre.”

Earlier this year, the Energy Efficiency and Conservation Authority (EECA) approved co-funding for the five FUSO eCanter trucks - to support the development of New Zealand's zero-emission transport fleet.

The trial will support the integration of electric trucks into transport and delivery systems, with support from EECA, commercial vehicle lease specialists TR Group, and telematics experts EROAD.

Tracey Berkahn, Auckland Transport's group manager of services and performance, says AT is proud to endorse and support the trial.

“It's really important for AT that this trial helps demonstrate the potential for electric heavy vehicles. Companies involved in the trial will have the advantage of understanding what it really takes to run electric trucks. This trial is quite unique as those involved have banded together over this common cause.”

“While our focus at AT has been on the electrification of buses, it is also important that we explore other ways to support the lowering of emissions.”

FUSO NZ's group manager of sales and customer experience, Kathy Schluter, says that the ZEA trial launch marks another significant milestone in the important journey towards successfully integrating fully-electric trucks into New Zealand's commercial fleet.

“We are incredibly proud and excited to see FUSO's eCanter leading the charge in the first trial of its kind in New Zealand.”

“The all-electric eCanter is ideal for inner city delivery – emissions-free, virtually silent, and equipped with advanced safety systems. It will deliver considerable benefits for local residents and workers along with the wide variety of freight it is built to carry.

“The trial sets the scene for the future, particularly for the early adopters who have committed to joining us on this journey. We would like to thank all of our partners in this important project and we very much look forward to seeing the results.”

Source: Auckland Transport



Manaaki Tāngata

Caring for
the People

Transportation Conference
Trinity Wharf, Tauranga
27 - 30 March, 2022

Register now for Transportation conference 2022!

Join us at Transportation 2022!

We are excited to announce registration is open for Transportation 2022!

Transportation 2022 is New Zealand's premier forum for the transportation planning, safety, engineering and design community. The conference is intended to stimulate debate and provide problem-solving and thought-leadership amongst peers within the transportation sector and related professions.

The Theme for 2022 is Caring for the People. We will share and discuss all of the ways that we care for people and our communities by working to improve health and wellbeing. To do this we will explore how transport contributes to the four dimensions of the Te Whare Tapa Whā model.

[Visit the conference registration page](#)

Registration is open!

27 - 30 March 2022
Trinity Wharf, Tauranga



Technical Tours - book when you register!

Don't miss your chance to participate in one of the technical tours on the afternoon of Tuesday 29 March. Book when you register to avoid disappointment. Options as pictured:

1. Ngatai Road Cycling Tour
2. Arataki Bus Tour
3. City Centre Walking Tour

[Learn more about the technical tours](#)





Manaaki Tāngata

Caring for
the People

Transportation Conference
Trinity Wharf, Tauranga
27 - 30 March, 2022

Stay onsite at Trinity Wharf - Special rates available

A great base for learning, exploring & relaxing

Trinity Wharf Tauranga is a stunning over-water hotel in the heart of Tauranga CBD. All rooms boast king beds, four-point bathrooms, heated floor tiles and complimentary Wi-Fi.

Very special accommodation rates have been negotiated for conference participants at Trinity Wharf. Book when registering to avoid disappointment.



Book
when you
register



Stay tuned - draft programme coming soon!

You can be sure of some great conversations and learnings across the various streams. Keep an eye out for the draft programme coming soon, featuring a number of exciting keynote speakers, workshops and more!

Thanks to our wonderful 2022 sponsors:

Platinum plus



Platinum



Gold



Silver



Exhibitor





Manaaki Tāngata

Caring for
the People

Transportation Conference
Trinity Wharf, Tauranga
27 - 30 March, 2022

Exciting Networking Opportunities

Transportation 2022 is the perfect opportunity to network with old colleagues, meet fellow participants and speakers or make new contacts.

Join us for the Welcome Function and enjoy a unique and wonderful networking event with Baywater Charters on the water.

Enjoy some platter food and drinks to celebrate the end of the first day.

Sponsored by

 **aurecon**



The Conference Dinner and 3M Awards will be celebrated with an evening on the beach. Join us and soak in the ocean views at Papamoa Surf Club.

Come dressed in a beach themed costume from any country in the world. Think of your favourite beaches (whether you've been there or dream of going there).

Sponsored by

3M

Get your
outfit ready!





In case you missed it...

Share your feedback on the draft pedestrian network guidance

Being able to safely move around our towns and cities should be something anyone is able to do, whether on foot, using a wheelchair, scooting or biking.

Waka Kotahi has released the [draft pedestrian network guidance](#) to provide best practice advice for planning, designing and creating walkable communities throughout New Zealand. Waka Kotahi has developed the draft guidance in partnership with other organisations including disability sector groups.

You can [share your feedback on the guidance](#) until the end of February 2022. More sections of the guidance will be released over the coming months.

Shaping national multimodal street design

In September, Waka Kotahi has launched the final draft of the Aotearoa Urban Street Planning and Design Guide, a New Zealand specific guidance that takes a multimodal approach to street design.



To ensure the guide is 'fit for purpose', Waka Kotahi has created a targeted survey seeking feedback from groups including Blind Low Vision NZ, Property Council, Women in Urbanism, Urban Design Forum, NZ Institute of Landscape Architects, NZ Police and others, before the final guide is approved in early 2022. The input and insights are needed to provide national guidelines and adopt principles to help support safe, well-functioning and accessible streets. If you want to know more, please email streets@nzta.govt.nz

[Read more about the Aotearoa urban street planning and design guide.](#)

New guidelines for restricting traffic for play street events.

Play Street events temporarily restrict vehicles on quiet local streets, so that tamariki and whānau can play in their neighbourhoods. They are small, resident-led, local events, held on quiet neighbourhood streets during daylight hours.

Waka Kotahi and Sport New Zealand have worked alongside councils, regional sports trusts, Healthy Families NZ, and other organisations since 2019, to make it easier for Play Streets to happen in New Zealand – developing the [guidelines for restricting traffic for Play Street events.](#)

Developed with road safety and traffic management professionals, the guidelines are underpinned by best practice traffic management. The guidelines provide a framework for councils to use to determine how they can support Play Streets in their towns. You can [read the new Play Street guidelines](#) or contact the team at playstreetguidelines@nzta.govt.nz

Watch the video below to see how Play Streets can connect your community.

<https://www.youtube.com/watch?v=2AB4Izwr5Gg>

Councils invited to apply for Streets for People

Imagine a future where children can bike, scoot, or walk to school independently, or explore their neighbourhood. Where you can hear bird song instead of car engines, and your street is a pleasant and sociable place. That future is getting closer.

Waka Kotahi is excited to launch the new Streets for People programme, inviting expressions of interest from councils across New Zealand that have activities aimed at reducing emissions within a current Regional Land Transport Plan or the National Land Transport Plan.

Streets for People continues to build tactical urbanism capability across Aotearoa and will help communities to shape more interim street improvements in their towns. [Visit the Waka Kotahi website to learn more.](#)

Councils have highlighted how being involved in the programme has opened their eyes to diverse ways of working, and the benefits of using a tactical approach. [Read more about the programme highlights and outcomes.](#)

Path Behaviour Markings Guidance

Shared paths are a great way for people to move around our towns and cities by bike or on foot, but they can also be confusing as people are unsure how to use them.

To help people, Waka Kotahi has just released the Path Behaviour Markings Guidance. The aim of the guidance is help path users understand how to use the space safely and reduce confusion. This Guidance should be used alongside good shared path design. [Read the Path Behaviour Markings Guidance.](#)



Imagine a future where children can bike, scoot, or walk to school independently, or explore their neighbourhood.

Source: Waka Kotahi



In Tawa and too far from a train station? Order a ride via a new phone app

With park and ride facilities at capacity, and steep hilly terrain, it's not surprising that a significant proportion of Tawa residents prefer to drive to work instead of catching public transport.



A ride-hailing trial for a new on-demand public transport system using multiple small buses and an app is set to commence in the Wellington suburb of Tawa.

It uses technology similar to popular ride-share apps to receive bookings, take payments and schedule pickup and drop-offs.

The trial, which is set to start in early 2022, is part of Metlink's wider strategy to enhance the coverage and accessibility of its services to connect communities and get more people out of cars and traffic and on to public transport.

Metlink's acting general manager Bonnie Parfitt said people would log into an app to book a spot on one of five smaller buses, which could hold up to 14 people, run by its existing bus operator Mana Coach Services.

The app would give an estimated pickup time – with a guaranteed wait time of no longer than 10 minutes – and an estimated arrival time at the destination.

Each journey would have a standard fare of \$2.50. The buses would be fully accessible, with Super Gold cards accepted.

During off-peak hours, people would be able to book rides from their location within Tawa, to anywhere in the area, extending to Porirua and Kenepuru Hospital.

During peak hours the service would connect residents to nearby train stations. The aim was to make public transport easier to use. Forty-four per cent of Tawa residents commuted by car, Parfitt said, and reducing this would help lower carbon emissions.

Metlink general manager Scott Gallacher said Tawa, including Grenada North, was identified as an ideal test location.

“With 63 per cent of residents living in the eastern and western parts of Tawa, many people have to walk up to 30 minutes to reach a train station.

“With park and ride facilities at capacity, and steep hilly terrain, it's not surprising that a significant proportion of Tawa residents prefer to drive to work instead of catching public transport.

“Offering passengers easier first and last mile access to the Linden and Redwood train stations is one of our key aims during the peak periods.”



On-demand trials are also occurring across the country, including in Timaru and Auckland.

Source: Stuff



On-demand rideshare service for South Auckland

AT is trialling AT Local in Conifer Grove, most of Takaanini and part of Papakura. The trial will last for 12 months, having been previously trialled on the Devonport Peninsula (2018-2021).

AT has made some changes to the service for this new trial:

- AT Local will run seven days a week
- AT Local fares will be the same as bus fares and will be included in AT's Integrated Fares system. AT Local fares will be paid by AT HOP card
- Customers will be able to book the service through a smartphone App or Call Centre
- AT Local will be suggested by the AT Journey Planner and AT Mobile where appropriate



AT Local will replace the 371 bus that connected Papakura and Takaanini stations.

AT Local has a defined Service Zone covering Conifer Grove, most of Takaanini and part of Papakura. The service can only pick up and drop off customers within this Zone.

When they book, customers will say where they want to travel from and to. They will then be given their pick-up and drop-off points. There are almost 400 drop-off and pick-up points in the Service Zone, so most customers will only have a short walk (around 120 metres or three minutes) to and from their pick-up and drop-off points.

AT Local is a rideshare service. This means when a customer is picked up there may already be other people in the vehicle, and other people may get into and out of the vehicle during a customer's trip. Operating AT Local as a rideshare service keeps it affordable for both AT and customers and helps reduce congestion.

The AT Local booking system will collect the origin and destination information for each customer wanting to use the service. The algorithm will calculate the most efficient route that is the most direct option and minimises each customer's wait and journey time.

Customers can book the service to travel asap (they may have to wait five to 15 minutes, depending on how many other people are wanting to use the service at the same time). The service can also be booked up to seven days in advance.

Customers can make group bookings for up to seven people. The AT Local smartphone App can be downloaded for free from the App Store or Google Play.

Customers who book the service through the App will have the best experience. They will:

- Track their AT Local vehicle as it comes to pick them up
- Not have to wait for a Call Centre representative to be available to take their call
- Use the App to help them navigate to the pick-up point
- Be able to book the service outside of the Call Centre open hours
- Have a true 'on-demand' experience

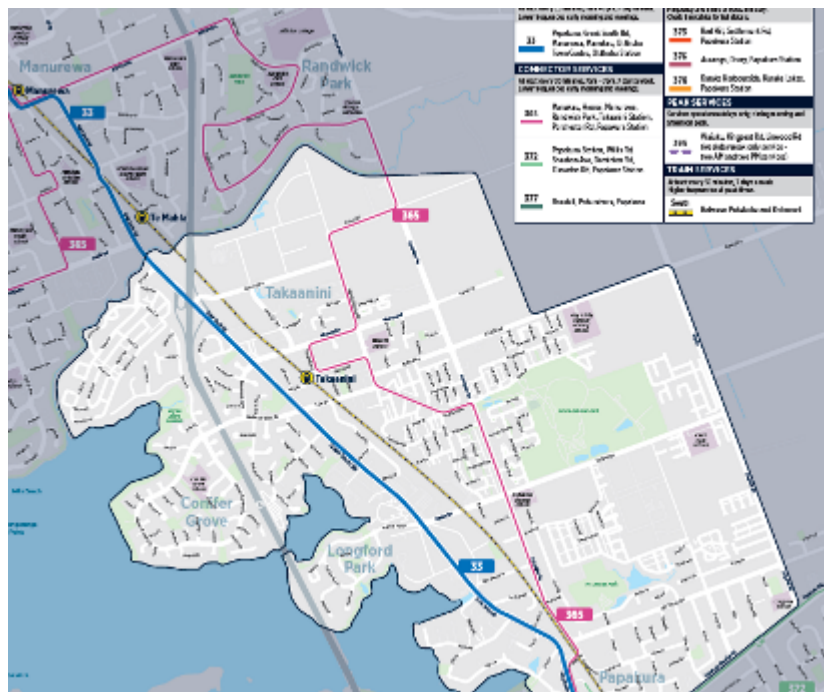
Customers sign into the App using their MyAT account details – email address and password. This is so each customer can have a single account for all of AT's online services (AT HOP, AT Park, AT Mobile and AT Local).

AT Local is operated using three electric cars and three electric vans. The vehicles are white with green AT Local branding, making them easily identifiable. The vehicles are driven by professional drivers who are employed and trained by Ritchies Murphy Transport Solutions. Customers pay the AT Local fare using their AT HOP card, and all of AT's concessions are accepted.



AT Local is operated using three electric cars and three electric vans.

Source: Auckland Transport





Breaking through the asymptote

By Bill Barclay,
Barclay Traffic
Planning

One of the more startling statistics to emerge from the First and Second World Wars is the calculation that on a single day in the Second World War Allied forces consumed some *fourteen times* the amount of fuel that was used in the entire First World War.

While magnitude of the change might be a surprise, the processes leading to it should not. The period 1914 to 1945 saw major advances in transport, such as conversion of shipping and rail from coal to oil power, and emergence of air travel as a mature technology.

These developments were accompanied by introduction of internal combustion engines and a range of complementary measures such as better fuels, airless fuel injection (diesels).

Whatever the contribution of individual components within this process, inevitably there will be limits to how long the trend can be sustained. External combustion (steam) is inefficient and does not readily scale down to engines of manageable size.

Petrol and diesel are more economical but have now been under active development for over 100 years, and every new innovation brings them closer to the practical limits of thermal efficiency.

In these circumstances the system acts as an *asymptote* in which vehicles will move closer and closer to a straight line without actually touching it.

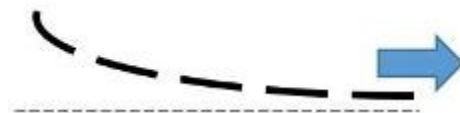


Figure: Asymptote (illustrative)

It also means a vehicle path become narrower as cars proceed. Whether the situation more is treated literally or metaphorically progress under such an incremental regime will become more and more difficult, requiring more and more effort for less and less result.

To break out of such a situation the motorist needs to make a quantum leap into a different environment where the old rules do not apply.

As an illustration consider the development of printers and typewriters over the last 100 years. At the beginning of the 20th century typewriters were slow, cumbersome and difficult to use.

As the century progressed typewriters improved, but by the 1960s still used stencils and inked ribbons for impressions and carbon paper for duplicates. Type bars were arranged in baskets, striking the paper from below or above.

Development to this point was incremental, the cumulative effects of small changes, none of which individually would represent radical change.

The world then embarked on a bewildering succession of innovations, introducing electric and electronic typewriters, golf-ball and daisy wheel typing, word processors, then dot matrix, ink jet and laser printers.

The process is now becoming fully disembodied, with internet services such as emails and on-line entry reducing the need for many documents to be printed out at all.

Whether a more incremental style of development would have led to the same end result is a matter of speculation, but progress would have undoubtedly been slower.

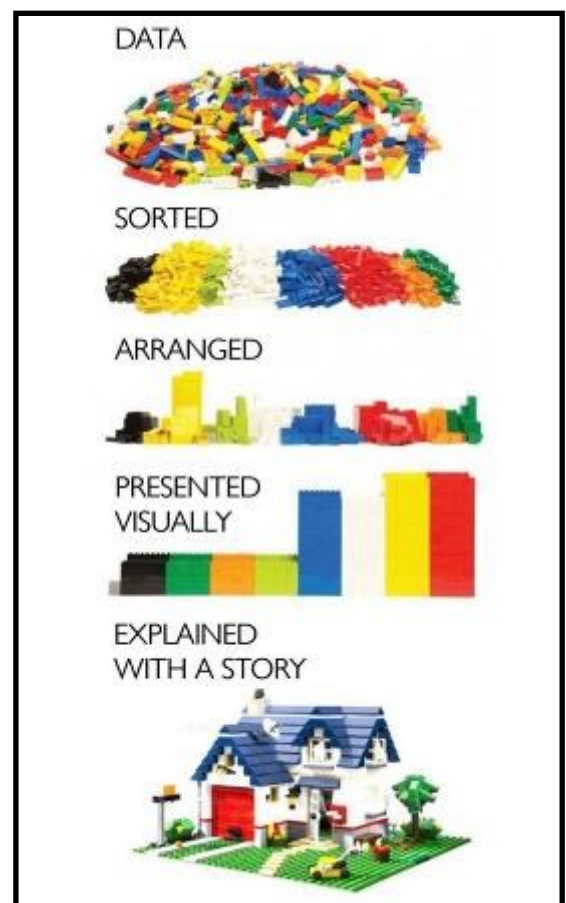
It also suggests that in the long term there only a limited scope in incremental growth. For more comprehensive change progress should be measured in the extent to which asymptotes can be abandoned and replaced by structural change.

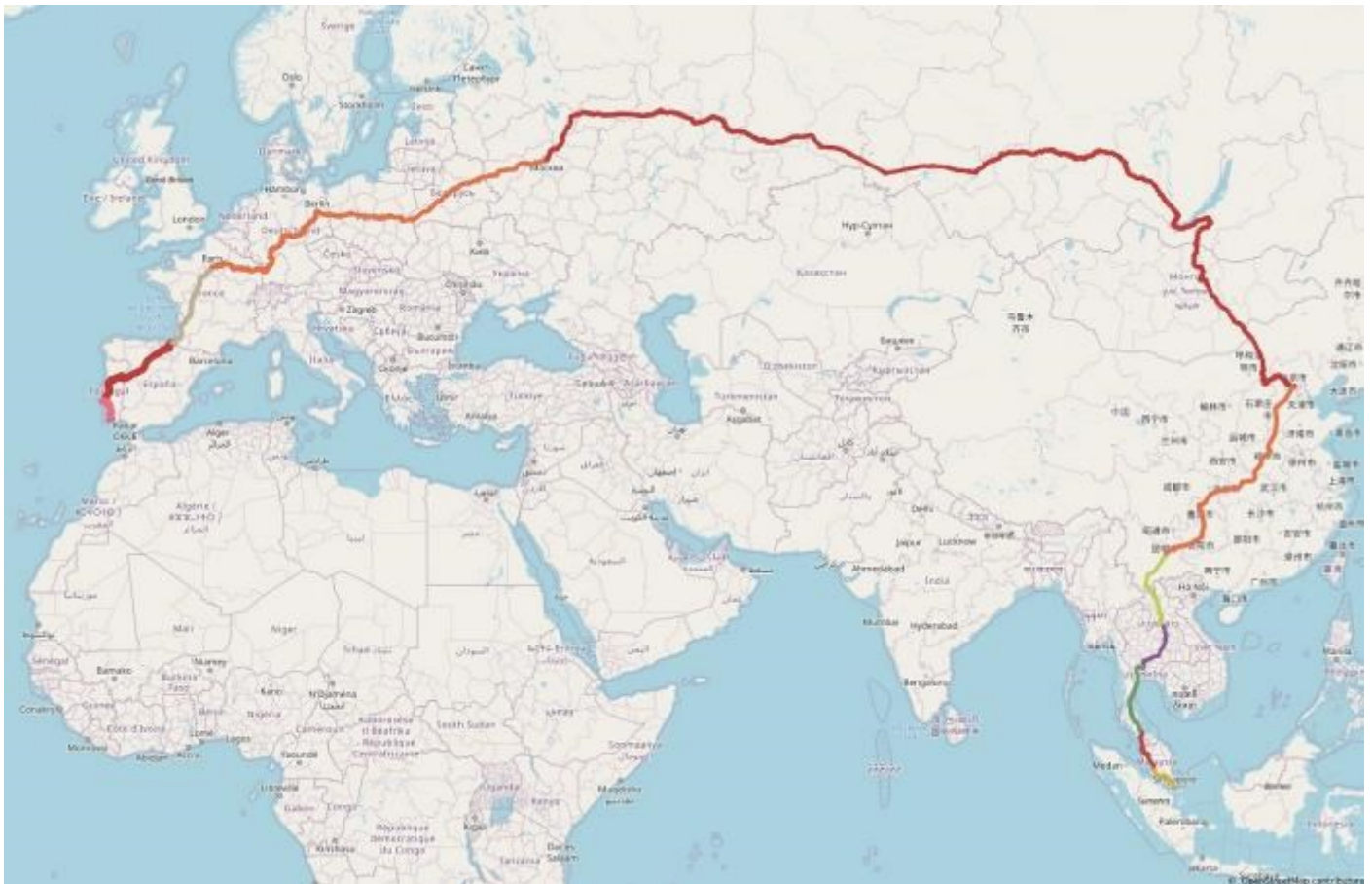
These observations are particularly relevant in the transport sector with its prodigious appetite for land, energy and resources.

In this regard the recent advent of lithium batteries has not only improved energy efficiency for existing applications it has also opened the door on new ones such as marine and aviation propulsion.

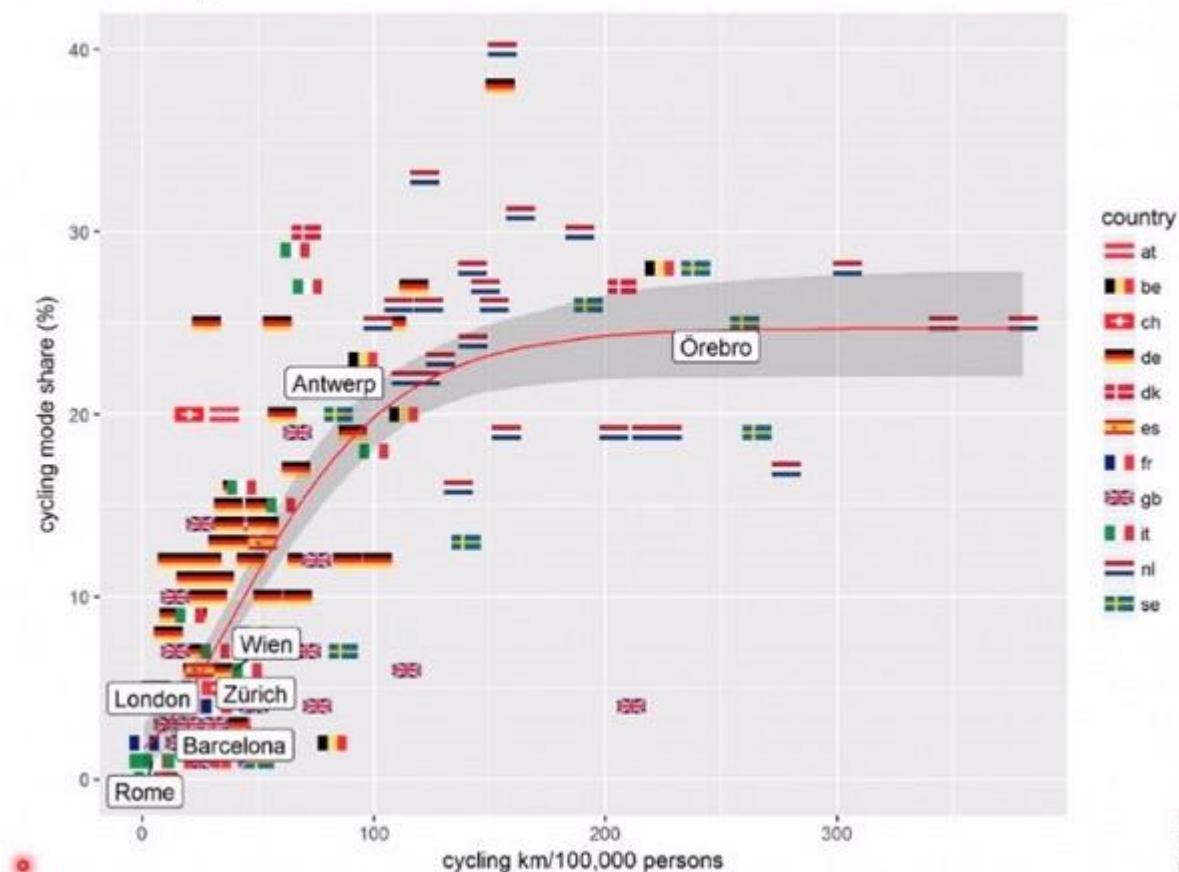
Ironically transport usage may go up not down. As the World War combatants found, versatility, reliability and performance for the new systems are not easily satisfied by incremental steps.

The asymptotes need to be broken.





The new longest possible train journey in the world



Positive relationship between length of cycle network and cycle mode share



Gay Richards new Living Streets Aotearoa president



Recently Gay Richards was elected president of Living Streets Aotearoa, following the passing of Andy Smith. Below is her first message to members:

This is my first eBulletin as the new President of Living Streets and I thought I'd take a moment to introduce myself.

I've been an active member of Living Streets and on the executive for over 10 years. I got interested in supporting the rights of pedestrians because walking and public transport are my main modes of transport. I want the places where we live, work or study to be safe and pleasant places to walk, linger and spend time.

Living Streets has been an effective advocate for pedestrians with many achievements like our Golden Foot walking awards and the Walking Summits, and we successfully advocated for funding for footpath maintenance. But we still have a long way to go.

I'd like to introduce our new executive committee team who live in different places around Aotearoa and meet every month to work on our plans. Tim Jones from

Wellington is the new Vice President, Paula Wilkinson returns as our secretary, Robin Rawson is our new Treasurer, returning executive are Chris Teo-Sherrell, Carina Duke, Susan Hutchison-Daniel, Jean-Paul Thull, Peter Bos and we are rejoined by Ellen Blake.

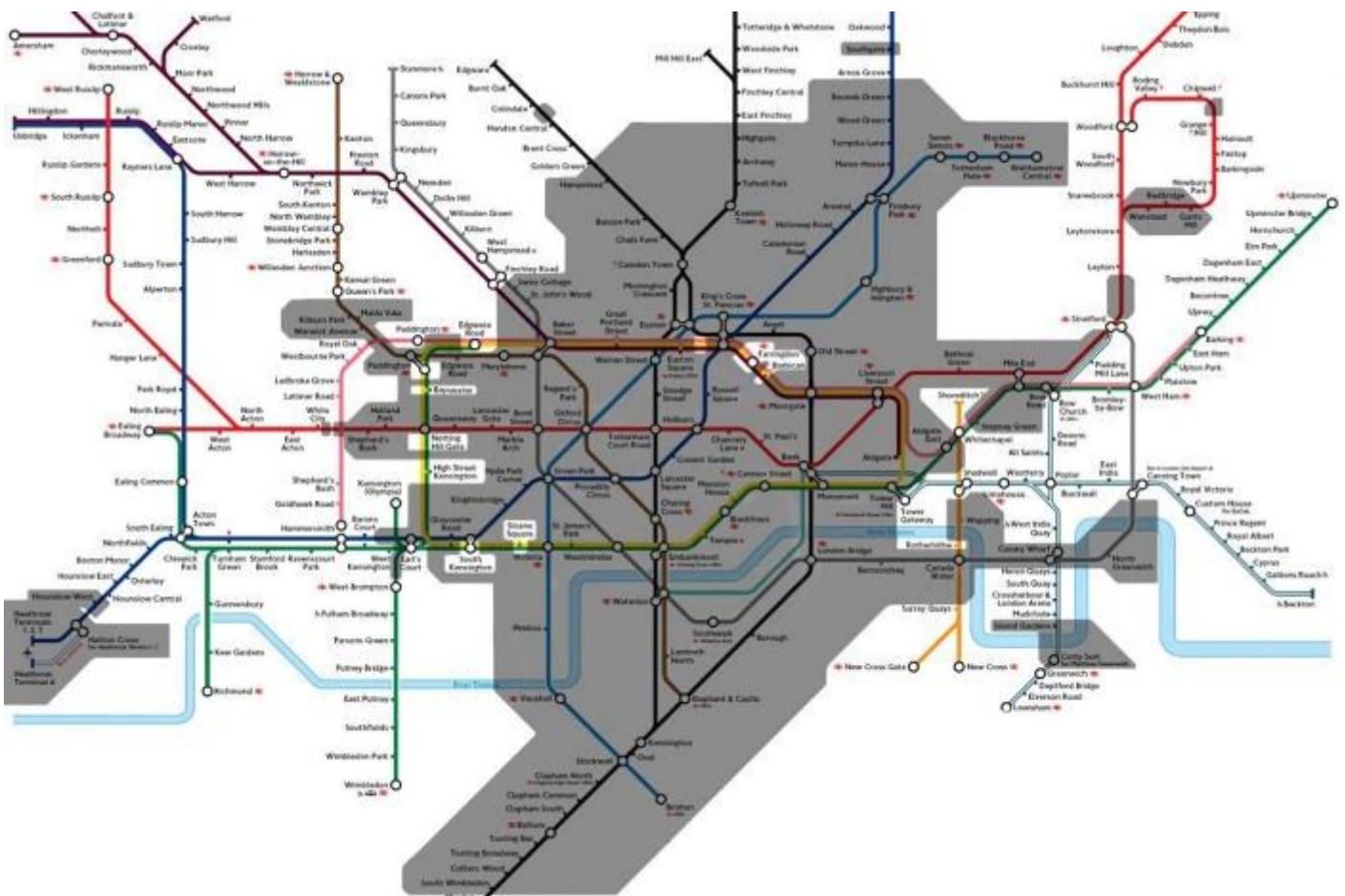
At our AGM in October, we awarded Judy MacDonald an honorary membership, joining only three others in recognition of her many years of strong advocacy and dedication to walking in Hamilton.

Our priority over the last few months has been to keep our organisation on the tracks and reorganise after the untimely death of Andy Smith, our long time President.

Two of our recent priorities have been the e-scooter legal challenge and 'footpaths for pedestrians, don't park on it', which will continue in the coming year. And we look forward to the forthcoming NZ Road Rule changes that will mean turning vehicles give way to pedestrians.

Welcome to our new members, and thank you for your continuing support in our efforts to make walking better.

Which parts of London Underground are actually underground?





Transportation Group Chair's Conversation Series 2021

As we wrap up the year, we'd like to say thanks to those who joined our Transportation Group Chair's Conversation Series 2021.

Thanks to our presenters Karen Witten, Mike Joy, Alex Macmillan, and Paul Brown for spiking a conversation with our Transportation Group chair, Bridget Burdett.

We also send thanks to the organisers and of course, those who attended encouraging great discussions with questions.

For those who missed out or would like to watch the series again, please you can [view all the Transportation Group 2021 webinars here](#).

We look forward to you joining us in next year's Transportation Group Chair's Conversation series.



The 2022 Aotearoa Bike Challenge is coming!

And this year is going to be BIG!

Ride your bike in a fun, friendly competition, win prizes and help your workplace top the leaderboards. Last year, over 24,700 people took part and we gave away over \$30,000 worth of prizes!

What is the Aotearoa Bike Challenge?

In February, individuals and their workplaces will compete to see who can earn the most points by riding and encouraging others to ride. Every kilometre and day you ride, plus every person you encourage, will earn you points and increase your chances of winning amazing prizes.



Register now

Innovative virtual consultation for Auckland's Eastern Busway

The Eastern Busway will connect Botany, Pakuranga and the surrounding suburbs to the rail network in Panmure.

The project is trying an innovative new interactive virtual tool for sharing information and gaining feedback.

[Explore our virtual consultation room](#) to give your feedback on the proposed design for the Eastern Busway between Pakuranga and Botany.



Farewell to Barb Cuthbert — Bike Auckland chair

At Bike Auckland's recent AGM, outgoing Chair extraordinaire, indefatigable Chief Enthusiasm Officer and all round awesome human being Barb Cuthbert was farewellled.

Barb led the way with love and vision, powered by the marvellous throng of advocates who've blazed the trail for BA's work. Read the farewell speeches [here](#).



"She's also a hard person to say "no" to, and for an advocacy organisation trying to get traction, that's a great strength."



Trial of free public transport coming to Wellington

Auckland Transport has also offered free fares to help public transport users make it home safer in the days leading up to the Christmas break



A trial of free or heavily discounted public transport fares was approved by the Greater Wellington Regional Council (GWRC) at a meeting recently.

It's reported the month-long trial will be used to sample new fare structures and these would apply to all bus and train services across Wellington.

News of this trial follows hot on the tails of another GRWC & Metlink trial on the use of the [Snapper card on Wellington's Johnsonville line](#) as well as removing cash from some express services.

Wellington wouldn't be the first region to offer free fares for a limited time, Auckland Transport has also offered free fares in the past to help public transport users make it home safer in the days leading up to the Christmas break.

Metlink's general manager [Scott Gallacher said to Stuff](#) the trial would help to prepare for the national integrated ticketing project, a new smartcard for pay-

ment for all public transport being developed by Waka Kotahi NZ Transport Agency.

Metlink will bring more details back to GWRC in early 2022 where the trial could also be expanded to test other changes.

The trial is being jointly funded by GWRC and Waka Kotahi and will be delivered under the National Ticketing Solution.

Waka Kotahi NZ Transport Agency has been working on a national ticketing system called Project NEXT. The new system would allow Kiwis to pay for public transport with one card wherever they are in the country.

The current completion date for the rollout of the project across Aotearoa is 2026, with the Canterbury region rollout reportedly starting in late 2022.

Source: Stuff



Limoooooooooooo



Living bus shelter trial begins

Two of Auckland's bus shelters have come to life with more than 1000 plants adorning their walls and roofs.

The living bus shelters are being trialled in Panmure and Manukau. They are part of Auckland Transport's (AT) wider effort to respond to the changing climate.

They are believed to be the first living bus shelters in Aotearoa and were celebrated at a small opening ceremony this morning.

Mayor Phil Goff says he welcomes the trial. "Green buildings provide a range of benefits—they absorb carbon, improve air quality, soak up storm-water and support biodiversity for native insects," he says.

"Increasing the amount of green space in our city will make it more pleasant, liveable and environmentally sustainable, while contributing to our other efforts to tackle climate change such as introducing zero-emission buses on our public transport network."



AT's Environmental Specialist, Dr Cathy Bebelman (pictured), says the trial will look at the viability of installing more green infrastructure throughout Tāmaki Makaurau.

"Green roofs and green walls are a really important part of how Auckland Transport responds to climate change.



"One of the significant benefits is that green infrastructure like this also reduces temperatures on hot days. In the city there are lots of hard surfaces that hold the heat in.

Plantings in these areas absorb this radiant heat, which means pedestrians and wildlife are less susceptible to the negative effects of high temperatures, like heat stroke."

The living bus shelter in Manukau has been installed on the Diorella Drive bus shelter near Redoubt North School.

Dr Cathy Bebelman has been liaising with the school's environmental team to teach children about green buildings and she says that they are "extremely enthusiastic" about the project.

"They are ambassadors for the living bus shelter and will monitor the vegetation and educate others about the trial. They are looking forward to making sure that it's looked after and respected."

The living bus shelters join an increasing number of green roofs and walls around Tāmaki Makaurau, including The Auckland Domain and Botanic Gardens, The Cloak at Auckland International Airport and the NZI Building.

Learnings from the trial will be applied to the ongoing AT work programme, Greening Our Network, which is seeking to increase the ecological function of road corridors.

Source: Auckland Transport

Increasing the amount of green space in our city will make it more pleasant, liveable and environmentally sustainable





Spotlight: Transport Planning Professionals in Aotearoa New Zealand

In the last edition of Roundabout I provided an update on the work to date so far with the Transport Planning Professional Qualification. ...well the timing hasn't quite worked for a big update before Christmas, but great conversations with professional bodies in New Zealand have been ongoing since September with a presentation to the Transportation Group National Committee and Engineering New Zealand.

Support for change has been well received and whilst things aren't quite there yet in progressing with the qualification, I am hopeful that things will move again soon.

In the meantime, I thought it was a good chance to ask others in the industry what Transport Planning is and means to them.



Sarah Loynes / Principal Transport Planner (she/her) / Waka Kotahi NZ Transport Agency

Like most people I fell into transport planning – I was an AutoCAD technician and I had mainly worked on structures and railway design when I was asked to help out on a “Safe Routes to Schools” project. I read through around 1500 forms filled in by school children (with in some cases the rather obvious help of their parents).

I really enjoyed that and my ‘boss’ for that work then stole me again to undertake analysis of the bus cordon surveys that happen around every three years in Birmingham City.

I learnt how to process and analyse data and do amazing things with pivot tables and I wrote up the reports, I just found the whole thing fascinating. Soon after that I learnt how to do my first distribution and assignment in a spreadsheet and from that point on, I never really looked back.

I have had some amazing opportunities through my passion for transport planning – it's truly a role that can take you in all kinds of directions. I was able to visit Russia and Kazakhstan and work on a project that sought to provide a new silk road. I got to see inside the bureaucratic engine room of the EU commission (assessing the economic impact of the Cohesion Fund). I can say that every job – from the strategic giants to the tiniest crossing improvement has taught me something new.

Later in my career I finally got to work closely with an engineering colleague who made me read Manual for Streets and really pay much more attention to real behaviour of drivers, pedestrians, and cyclists. We spent a great deal of time trying to convince councils to build smaller, tighter roads and think more deeply about how people really move through places. This was great time in my career, and I learnt a lot.

Some issues remain the same – the vast gap between the right thing to do and what is done. For whatever reason we have struggled as a profession to convince people that changing how they travel will have a positive impact on their lives.

I have seen many rounds of revolutionary technologies that haven't really changed much. In my experience it's the very ‘bread and butter’ interventions that make a difference; good parking management, thoughtful and frequent public transport and the creating of great streets that are interesting to walk through. Sounds easy – it's proved very difficult for the past 60 years since the age of the motor car began.

Dave Hilson / Senior Service Network Planner / Auckland Transport

Having been involved in discussion about a Transport Planning Professional qualification for Aotearoa New Zealand (as covered in the September issue of Roundabout) I had heard about Jo Draper writing an article (also in Roundabout in September) about what a transport planner does. I was looking forward to reading this, it is always interesting to read how others describe our profession.

When I read the article, I decided this was not how I would describe what I do in my role as a transport planner.

I guess this wasn't unexpected, I work in a large organisation where there are several transport planners across a number of departments. Although there may be some crossover at times, none of these other transport planners do the same job I do.

My role specifically is around planning public transport, mainly the bus network but taking into account how buses fit into the public transport network as a whole, in Auckland this includes trains and ferries. It is about ensuring that it is a bus network, not just lines on a map and some timetables.

*By Gemma Dioni,
ViaStrada
gemma@viastrada.nz*

*I can say that every
job – from the
strategic giants to the
tiniest crossing
improvement has
taught me something
new.*



First day of operation of the Hibiscus Coast Station

It is a role which requires balance and knowing that whatever you do on any given day, there will be people who don't like what you're doing.

Some people will love that you are putting a bus down their street, other residents won't want it there.

Some people think it's great that we put on a bus to a more remote area as a service, knowing it will never carry large numbers of passengers, other will see it as a waste of ratepayers' money if you aren't filling the bus.

There is overlap with other roles within the organisation. We have an excellent Engagement and Communications Team but when it comes to consultation, I like to be out there with them talking to as many people as possible.

We have a Scheduling Team; we work very closely with that team to try and get the best possible schedules without compromising our network principles.

These are just two examples (no offence to anyone within AT we work with I haven't mentioned here), there are many more.



Public engagement around proposed changes in Devonport

My pathway to becoming a transport planner was probably less than traditional, my public transport career started as a bus driver in Auckland.

This has certainly been useful, it means when I do planning, it is partly through that lens (or probably more correctly, through that windscreen).

We have tested routes with me actually driving a bus, it makes a huge difference when we go onto talk to the public or bus drivers that this has been driven by the planner, that the route is more than just a line on a map.



The 'AmBUSador', used for public events but also driven when testing proposed bus routes

These are just a few aspects of my role, I had been asked to try and keep this brief! That can be difficult when there is no such thing as a typical day in my job.

Having said that, if there was a typical day as a transport planner, I would probably be doing something else – there is enough variety to keep life very interesting.

Mark Gregory / Strategic Transport Planner / Christchurch City Council

What is Transport Planning to me? Transport Planning is my *vocation*.

Growing up in the UK, I developed an early interest in how cities and movement networks fit together.

At 16, for my GCSE graphic design project, I proposed remodelling of a major intersection to improve traffic flow, (and with thanks to the Council staff who provided support and info).

I took immense pleasure from what was effectively a *hydrodynamic based form of problem solving*.

Whilst at university – studying a degree in Urban and Transport Planning, I developed in modelling and land use/ transport interaction.

"It can be difficult when there is no such thing as a typical day in my job."



Roundabout

I had insight into the wisdom of the early 2000s – that improving traffic efficiency was neither an equitable or even effective transport solution.

However, I also had insight into the wisdom of the early 2000s – that improving *traffic efficiency* was neither an equitable or even effective transport solution. And that moving away from this means learning about *people* and some of those not-so-obvious drivers of travel behaviour.

My first professional roles were in transport data programme delivery, including analysis, validation, and studies, whilst studying MSc Transport Planning on the side. I enjoyed being part of a team developing area wide models and appraising the movement of freight through a world heritage centre.

Life often turns up surprises, and in 2010 I found myself propelled to the other side of the world and working for Melbourne Local Governments in land use / transport interaction, business case for safety projects and in network planning for High performance Freight Vehicles.

I arrived in Christchurch in 2013 to an earthquake ravaged city as a network planner, and admittedly never intending to stay.

Eventually, realising that my return to the UK was unlikely, I completed a Masters in Transport Engineering at Canterbury. So, I am a Transportation Engineer as well.

I'm an advocate for Transport Planners to be skilled in multiple areas – consistent with the Chartership in Transport Planning I'm working towards through CIHT.

My areas of specialism include land use / transport intersection, as an expert witness, transport modelling, economics and systems-based planning and developing design solutions.

Almost all of this touches on stakeholder engagement and understanding the transport system through the eyes of its users.

Transportation Planning has never been more important, and we are tasked with imagining a better world, and supplying the oxygen to see it done.

Only a well-resourced, well-rounded and imaginative transport and access-based sector can approach the task of sustainability.

I'm always looking to grow and adapt, and excited to be taking the post of Principal Transport Planner at WSP in the New Year.







New Guidelines for Restricting Traffic for Play Street events



Waka Kotahi is pleased to release the [Guidelines for Restricting Traffic for Play Street events](#).

Play Street events temporarily restrict vehicles on quiet local streets, so that children and whānau can be active, socially connect, and play in their neighbourhood.

They are small, resident-led, local events, held on quiet neighbourhood streets during daylight hours. The Play Street Guidelines (the Guidelines) are for councils – they provide guidance on how to enable Play Streets, in a safe, accessible, and cost-effective way.

Play Streets can help communities re-imagine their streets and are part of the crucial work to transform our transport system to be safer, healthier, and more environmentally friendly.

Play Streets are also about enabling community connection and wellbeing, which is especially important as communities support each other through COVID-19.

A popular concept in the UK, United States, and Australia, Play Streets are a developing concept in New Zealand.

The first Play Streets in New Zealand found it challenging to navigate traditional traffic management processes and this was a significant barrier to running these events.

Waka Kotahi and Sport NZ, alongside councils, regional sports trusts, Healthy Families NZ, and other organisations, have been working together since 2019 to make it easier for Play Streets to happen.

A formal pilot took place in 2020/2021 involving seven councils and learning from the pilot informed the final Guidelines.

The Guidelines and supporting documents (e.g., example Application Form and Health & Safety Plan) can be found on the [Waka Kotahi website](#).

Seven key points about the Play Streets Guidelines

1. The Guidelines focus specifically on street selection and traffic restriction, aiming to:

- make it simpler, more accessible, and cost-effective for both councils and neighbourhoods to run Play Street events; and
- encourage fit for purpose, risk proportionate processes with an appropriate level of formality around risk management.

2. The Guidelines are a framework for enabling Play Streets – each council will need to develop processes for managing Play Streets that best suit local needs and internal requirements.

3. The risk controls outlined in the Guidelines are based on a fit-for-purpose, proportional approach to health and safety, which have been specifically developed for a narrow and well-defined low risk environment. They have been developed and reviewed by road safety and traffic management professionals and the Waka Kotahi legal team.

4. The Guidelines are aligned to the risk mitigation principles of the upcoming NZ Guide to Temporary Traffic Management and have been formally ratified as Waka Kotahi Guidance.

5. The Guidelines outline a process for resident-led traffic restriction; however, councils can decide how much support they offer Play Street hosts, both during the application process or during the event.

6. The Guidelines include clear advice on what constitutes a low-risk street and low-risk event, in order to be a suitable Play Street event and location.

7. Play Streets, as outlined in the Guidelines, do not formally close a street. Instead, a zone is created where vehicles are restricted, and safely managed, in line with traffic management principles. A process for guiding resident or emergency vehicles (if any) through the event space is described.

Source: Waka Kotahi

Play Streets can help communities re-imagine their streets and are part of the crucial work to transform our transport system to be safer, healthier, and more environmentally friendly



Signs created by activists protesting traffic in Ealing, London



"I think he missed."



‘Blue highway’: Govt moots \$25-40m coastal shipping network



A new report commissioned by Waka Kotahi makes the case for massive investment in a coastal shipping network to future-proof New Zealand's supply chain and reduce emissions

The amount of domestic freight moved by sea rather than road or rail could double in the future if a new coastal shipping network is set up.

That's one of the key conclusions of a new report on how Waka Kotahi should invest more than \$30 million in funding that had been earmarked for coastal shipping in the latest National Land Transport Programme. The report, commissioned by the transport agency and written by shipping consultants Pacific Marine Management, also finds a new feeder network oriented around hubs in Auckland and Tauranga could improve the resilience of New Zealand's supply chains.

"Investing in the blue highway will make our supply chain more resilient, which is especially important given the strains that Covid-19 and global congestion have placed on it. The Kaikōura earthquake also showed how important it is to have a reliable alternative to move freight on top of road and rail," Transport Minister Michael Wood says.

The report details challenges, like the potential closure of Marlborough's Tory Channel to Interislander ferries and other shipping, and the lack of a big dry dock in NZ.

As it stands, about 78 percent of cargo containers are moved around New Zealand by international ships – though this includes cargo indirectly imported from overseas or indirectly bound for export. As these ships become larger and more expensive to run, the chances of them helping to move domestic freight from Tauranga to Lyttelton will fall. New Zealand's smaller ports like Nelson will also struggle to accommodate the larger international ships.

The consultants say supply chain resilience is threatened by these trends. They lay out a range of observations in light of this "predicament".

"The domestic shipping network needs to be independent of the international shipping services, and of the port operations within the terminals that serve them," the report finds. This could include separate terminals at major hub ports in Auckland and Tauranga or dedicated berths within those ports.

Only one company currently operates a fully domestic shipping service in New Zealand: Pacifica/Swire Shipping. That service only runs once a week as well and is responsible for 40 percent of the domestic sea freight moved in New Zealand (or 32 percent if you consider the need to redistribute empty shipping containers around the country). The remainder is picked up by international ships, which have a reputation in the sector for being unreliable.

Right now, Sealord has eight South Island cool stores full of frozen hoki, barracuda, and jack mackerel. It has Chinese orders it would like to meet, but can't. There are two reasons: labour shortages, and the fact the fishing company can't rely on container ships to stop at Nelson.

"We've got loaded containers sitting at the wharf, we've got costs for all those containers sitting here, we've got customers waiting on them," said Doug Paulin, the chief executive. "In some instances, we've got to change the whole order process because all of a sudden we missed the vessel."

Sealord exports to 62 countries, and is entirely reliant on sea freight. But first, like other exporters, it must get its product to an international export port – most often Tauranga.

And that's getting ever more difficult. Since the deregulation of the 1990s, the number of NZ-

"We've got loaded containers sitting at the wharf, we've got costs for all those containers sitting here, we've got customers waiting on them. In some instances, we've got to change the whole order process because all of a sudden we missed the vessel."

*– Doug Paulin,
Sealord*



flagged container ships has dropped from 34 to just one, the small Pacifica Shipping-owned Moana Chief.

To serve customers like Sealord and Sanford, international shipping line Maersk has also put on ships, the Seaspun Hannover and Maersk Nadi, to do the rounds of the regional ports.

But like the Moana Chief, they're erratic: they missed eight of their last 24 scheduled stops in Nelson, Paulin said. And they are not specifically coastal feeders; they are legitimate deep sea vessels that go back and forth to the Pacific islands and part of that slow rotation is calling at minor NZ ports.

Waka Kotahi's report details proposals to invest the \$30m the Government has budgeted for coastal shipping, to help mend this broken import/export infrastructure that is so critical to NZ's economic survival.

"The international ships have less reliable timetables and are known to leave domestic cargo behind, treating such as a 'filler cargo'," the report finds.

A new coastal hub and spoke network would involve a thrice weekly reliable service. This could help New Zealand businesses make long-term commitments to use the service. Such a move would require tripling the amount of freight moved by domestic ships.

Some of this could come from the 60 or so percent of fully domestic cargo that is currently transported by international carriers.

"One logistics specialist stakeholder estimated that a more frequent service could double the amount of domestic cargo that moves by sea," the consultants wrote. Growing freight demand would account for some of the doubled cargo, but some would also come from road and rail services which tend to have higher emissions.

The domestic freight market alone probably couldn't supply enough cargo to triple the current load, however. The target volumes would also have to include at least some empty container transport and transshipment - imported cargo or containers bound for export that are swapped between ships at an intermediate port.

The estimated cost of supporting the new coastal shipping service would be \$25 to \$40 million and work would need to begin immediately.

The report also looked at ways to reduce greenhouse gas emissions. Moving freight from trucks to ships would do at least some of the work, it found.



"We want to give businesses more choice in how they move their freight. Moving more freight by ship will also help drive down emissions, as shipping has a lower emissions per tonne-kilometre than land transport, and also reduce the number of trucks on the roads, which will improve safety and reduce congestion," Wood said.

Wind propulsion - achieved via rigid sail-like wing foils or rotating cylinders called Flettner rotors - could produce 20 to 25 percent of the power needed to move ships, the report said.

But low- and zero-carbon fuels would still be needed to reach the International Maritime Organisation targets of a 2 percent annual reduction in carbon intensity between 2023 and 2026, a 40 percent reduction in carbon intensity by 2030 and a 50 to 100 percent cut in outright emissions by 2050, compared to 2008 levels.

New Zealand has opportunities to contribute here as well, the report found, with our renewable electricity enabling the production of green hydrogen or ammonia to fuel ships. Bio-fuel blends can also reduce emissions in the short-term.

The report also called for a number of assessments and business cases, including examinations of the natural disaster readiness and container terminal capacity of New Zealand's ports and an investigation into the viability of a dry dock for servicing and repairing larger ships, including the Cook Strait ferries, larger coastal vessels, tankers, cement ships and Navy and NIWA ships.

As it stands, these ships often need to be serviced overseas, burning large amounts of fuel to get there and rendering them out of service for long periods of time.

"The international ships have less reliable timetables and are known to leave domestic cargo behind"



The Government is also warned to be careful with its funding to KiwiRail.

"Another challenge that was raised by stakeholders is the potential for market share distortions created by any Government non-commercial financial support to KiwiRail," the report finds.

"The dilemma for Government is how to prevent that support, intended to revitalise the rail network, from being used to compete unfairly in the truck sector of the Cook Strait trade."

Government also needs to consider how to avoid conflicts of purpose between financial support for rail with the potential financial support for coastal shipping."

Waka Kotahi was considering the report now, Wood said, and further engagement with the shipping sector would be forthcoming in 2022.

Until Covid, the big container ships would come out from Asia and North America and after dropping off most of their cargo in Auckland, would

continue down the country offloading and on-loading goods and produce. But no longer.

The whole world is running behind schedule, and the small ports have fallen off that schedule entirely. Moreover, the new container ships that cross the Pacific Ocean are too big to dock at most regional ports.

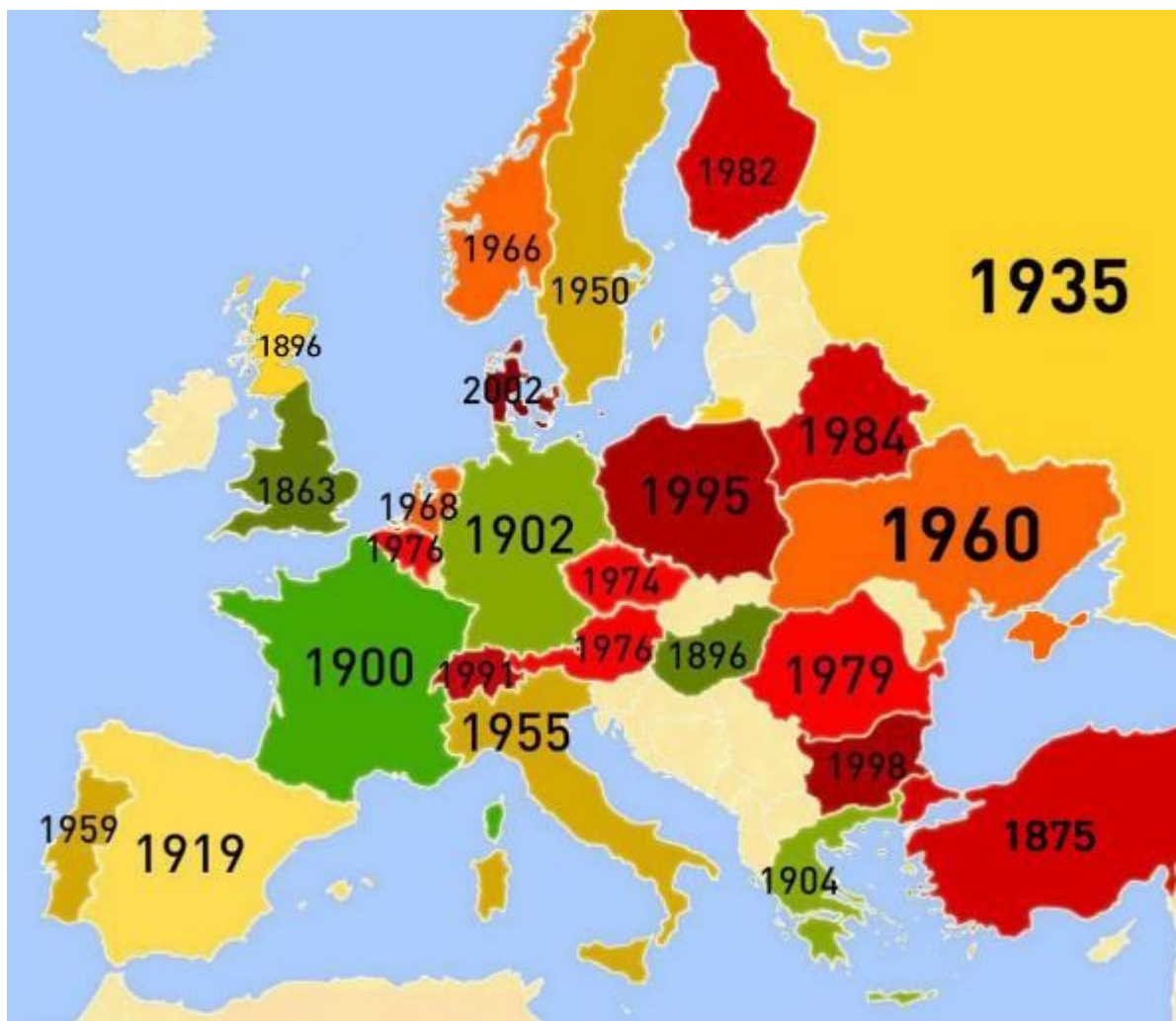
That's why Paulin welcomed Waka Kotahi's report. He just urged caution that the ministry not spread its investment so wide and shallow that little is achieved.

"If nothing was to change in the next three months, we're at risk of running out of cold storage space, and then I need to stop vessels fishing," he said.

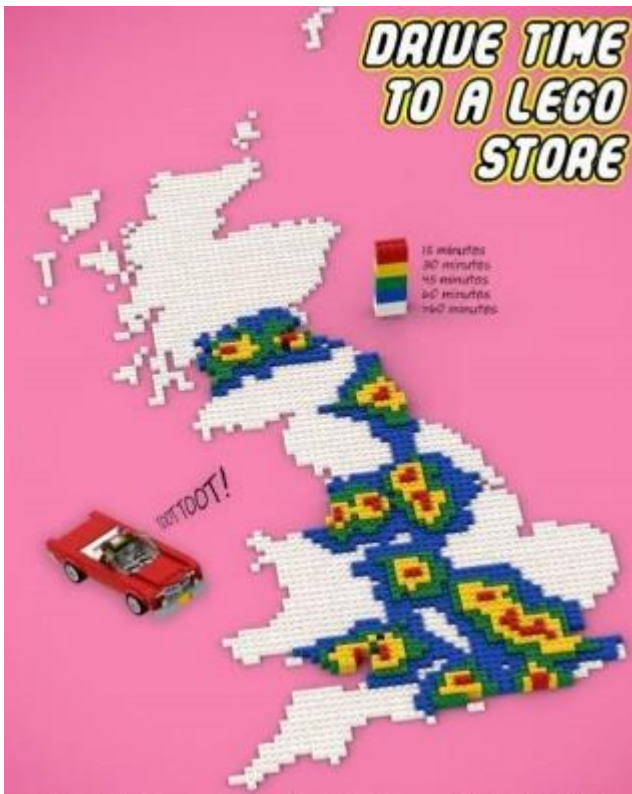
"So that's why it's critical that this coastal feeder service really is worked on – because there's a lot of industries that are in the same boat."

Source: Newsroom

"The whole world is running behind schedule, and the small ports have fallen off that schedule entirely."



Year in which each country's underground railways opened



Cool use of isochromes and Lego

NAILED IT!!!



If you happen to be in London for Christmas or know someone who is, London's festive lights are at full beam, and what better way to see the city at its most sparkly than on the bus! Transport for London have [put together the best bus routes](#) for viewing the most spectacular displays. There are some cool photos too, in case you aren't able to experience it in real life.





Protected Cycle Lanes Research

In 2020, I was lucky enough to be the recipient of the Transportation Group's tertiary study award to go towards a Master's in Science Research degree in Psychology. Below is a summary of my project.

To reduce our climate emissions, New Zealand needs to be investing in initiatives to promote different modes of transport. Many agree that cycling is a good alternative; it is relatively fast, cheap, doesn't take up a lot of space, kids can do it, it promotes positive health outcomes, bicycles don't rely on rare elements, and they produce less carbon during construction than cars. Therefore, I decided to base my Master's project on assessing the viability (and safety) of an intervention that has been heralded to increase cycling rates to see if it'd be a good fit for us; Protected Cycle Lanes (PCLs).

This intervention is said to be effective at increasing cycling because many people feel unsafe cycling next to traffic and having physical separation helps them feel safer. Mostly, the literature has supported their reputation. In some cases, PCLs have been shown to increase cycling rates (especially if paired with other interventions) and reduce cyclists' crash and injury rates. However, not all studies have been positive. Some have suggested that crash rates or injury intensity have increased in areas with PCLs.

Most studies looking into why this might be happening have focused on bidirectional cycle lanes and the strain this causes to drivers' cognitive and visual workloads when turning into and out of side streets and drive-ways. This line of inquiry makes a lot of sense when considering that most crashes are caused by drivers who fail to see or stop for cyclists when cyclists have the right of way. However, I was interested in whether something about their design affected cyclists, which could be contributing to some crashes.

We see an occurrence in car drivers where in some lanes they drive faster, which different theorists have attributed to feeling safer or having a smaller mental workload. To me, it didn't seem like a stretch to think that if cyclists felt safer in PCLs and caused them to worry less about surrounding hazards, then they might cycle faster, making it harder for cyclists to avoid intercepting vehicles. If cyclists travel faster in PCLs and feel safer in them, I thought it necessary to know; not to ban their construction as, after all, we want people to

feel safer cycling so that more do. But if it was known PCLs encouraged cycling speed, and people in New Zealand felt safer using them, we could encourage their use and factor this into their design.

To investigate my hypotheses, I first issued a nationwide online questionnaire followed by an on-road experiment with a post-ride questionnaire. Initially, my plan only involved an on-road experiment, but due to the 2020 Covid-19 level 4 lockdown, I decided to try and collect some online data in case it couldn't take place.

After considering my options for structuring the questionnaire, I settled on using first-hand footage of cycling and asking participants to rate the footage on various scales after 'putting themselves in the perspective of the cyclist'. However, my ability to travel around the country to obtain footage for the questionnaire was restricted. Additionally, at the time Kirikiriroa (where I live) didn't have any PCLs.

Luckily for me, I was able to use some footage taken from Auckland, Wellington and Christchurch from a recent cycling levels of service project undertaken for Waka Kotahi. After sifting through *many* videos, I settled on ten for the questionnaire. Four videos were taken on lanes with physical separators, four with painted bike lanes and two were taken on roads that had no cycling-specific space (see the photos below for some screenshots).



Additionally, I grouped the painted and protected lanes in pairs to reflect shared aspects of their conditions; for example, if the lanes were in a town centre, industrial area, residential area, or connector road. As far as possible, I tried to match the videos for similar traffic levels and hazards too; however, exact matches could not be obtained as participants in uncontrolled traffic conditions took them.

The point of the pairs was to make sure the differences in responses between the roads came from the type of cycle lane and not another aspect of the environment. I also wanted to see how different built environments and traffic conditions interacted with the presence of PCLs to affect participants' speed choices and feelings of safety.

The questionnaire was structured in a way where participants would be randomly shown one of the videos, followed by several questions about what the respond-

*By Allie Knight,
Waikato University*

Control roads in on-road experiment





If roads had low traffic levels and were in residential areas, participants gave them a similar safety rating to a street with a protected cycle lane.

ents thought of the footage. Generally, the questions aimed to gather whether participants thought they'd feel safe cycling on that road, if they were willing to let their children bike on it, how fast they thought they'd go, and other items to supplement these questions (getting at *why* participants thought these things).

As mentioned, after the questionnaire, I was able to do an on-road experiment. After searching all over New Zealand for a good test route where I could compare cyclists' attitudes and behaviours with the different separators, I found a spot in Central Māngere that was the closest fit to what I was looking for (refer to photos above of the routes). Participants were asked to bike along two different routes; one had lots of protected cycle lanes and another mostly painted cycle lanes.

There were quiet, un-laned residential streets in both routes to act as control conditions as I was told the roads with PCLs were quieter on account of traffic calming that happened after installation. Additionally, cameras were attached to the helmets participants wore to record the conditions of their ride, and a phone was mounted to their handlebars to give them directions and to record their speed.

The post-ride questionnaire was similar to the online questionnaire, as the same information was being sought, and so the results could be compared to one another.

The only difference was that the questions were about the route they just rode. Participants completed this questionnaire after each route, so the memory of the ride was as fresh as possible. Twenty-four cyclists took part; interestingly, most were from the wider Auckland region who came in to do the experiment, with very few living in Māngere themselves.

My main findings

The results in each study largely reflected one another, which was especially so for the first question. For example, in both, adults in New Zealand felt safer cycling on cycle lanes with protectors, and they were more willing to let their children bike on them than painted cycle lanes. Overall, this is good news to planners who want to see a mode shift occur in the country, as adding separators seem to make the idea of cycling more acceptable for adults and for letting their kids use them.

Additionally, if roads had low traffic levels and were in residential areas, participants gave them a similar safety rating to a street with a PCL. What the protectors seemed to offer is a feeling of safety on roads that people would otherwise feel unsafe on.

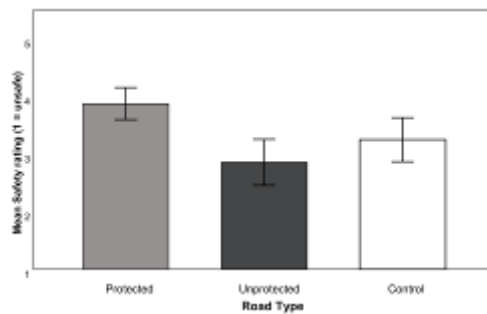
Another unsurprising finding is that adults showed greater reluctance to let children bike on the road than how safe they rated it for themselves (see figure for a comparison between the two below).



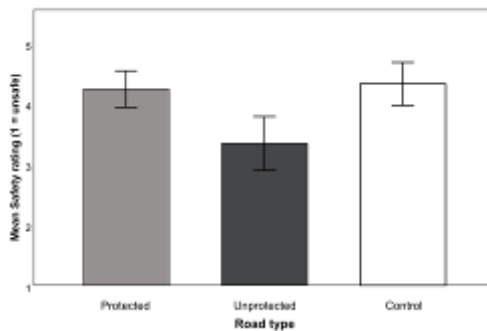
Generally, there wasn't a significant difference in how fast participants *thought* they'd go or went on each street.

the middle of the street to get around them, which may have lowered their speeds in anticipation for more hazards or as a reaction to them.

Safety ratings for online questionnaire



Safety ratings for on-road experiment



Determining if cyclists actually go faster on different bike lanes was less straightforward to assess. There was no general relationship between the type of cycle lane and speed. However, the road participants went the fastest on was rated very high in terms of safety (control road), and the road they cycled the slowest on was rated lowly (unprotected road). Additionally, several confounding factors occurred in data collection, which could have interfered with the results.

In addition, several participants mentioned that the interaction between hazards in the cycle lane and the concrete bollards made them concerned they wouldn't be able to avoid hazards without colliding with the barriers.

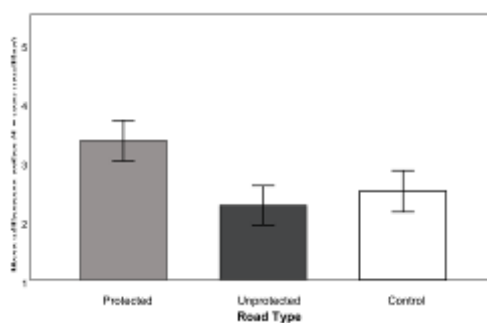
Conversely, in the control roads, there was a lot of room to cycle in, and very few cars shared the space with participants. What this finding says to me is that the built environment probably does influence cyclists' speeds as it does with car drivers, but additional conditions can change the interaction.

For example, in another area where there is less driving, maintenance of PCLs and enforced parking restrictions, the paths might encourage faster speeds as those using them may not be as vigilant to upcoming hazards.

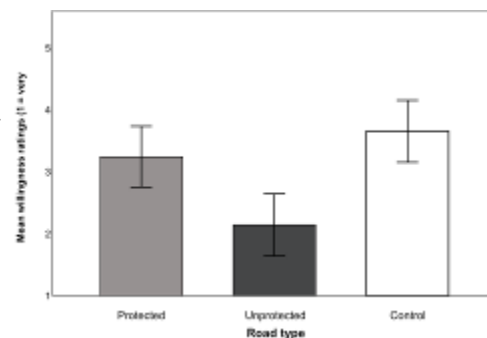
Overall, the findings of my thesis provide support for installing more PCLs in New Zealand. As in overseas, participants in the online survey and the on-road experiment saw PCLs as safer than painted cycle lanes, they were more willing to let their kids bike in them, and cyclists' speeds didn't notably change.

In saying that, I think the results between infrastructure and speed need to be looked at in context. As mentioned, contextual factors likely affected my results, so I don't feel confident my study could observe what it set out to.

Willingness ratings for online questionnaire



Willingness ratings for on-road experiment



Half of me is disappointed by this, as (after spending a lot of time thinking about this relationship) I *really* want to know whether different types of separation and bike lanes affect speed. I also believe we must know about this relationship if we intend to transition to systems that normalise commuter cycling, as not knowing, would then create issues into the future.

The other half of me liked encountering the messiness of measuring transport outcomes in the real world. Conducting experiments in labs can't always tell you how an intervention will change people's behaviour as it's always joining a system. For example, when the PCLs were built, it probably wasn't the planners' idea that supermarket trolleys and cars would be parked in them!

The experience left me with only more questions about how the surrounding transport network, car culture and factors unknown to me interact to keep more locals from using them, and therefore, respecting them less than spaces cars occupy.

Clearly, more needs to be understood and done to increase cycling rates in New Zealand, and, after this experience, I hope to be a part of it.

The confounding factor I saw as the biggest was the presence of debris and parked cars in the PCLs, which was present for most, if not all, participants. These hazards meant that participants often had to shift into



Transport photos of the world: Trees





Prediction of transportation sensor data with a spatio-temporal deep learning model

By **Dale Townsend**,
Hamilton City
Council and
Chaitanya Joshi,
School of Computing
and Mathematical
Sciences, The
University of Waikato

There is a growing importance to turn data into visible information that is openly available to our community to unlock opportunities for fast growth, efficiency, and optimisation. The ability to understand results of our analysis from a probabilistic perspective is valuable in both justifying the spend and better targeting that infrastructure to give a better outcome to the community.

A class of models known as Bayesian deep learning can provide this for transportation data analysis. The deep learning framework allows for accurate capture of the spatial and temporal dependencies and Bayesian layers in the network construct probability distributions over each parameter, which could then be used to quantify the prediction uncertainty using prediction intervals. By better understanding the uncertainty in a model, more informed decisions can be made by using the likely range within which the data will fall.

In recent years, travel delay in Hamilton has increased across both peak and off-peak times. Intersection Level of Service, as defined by the HCM guidelines, show that several intersections are operating at a poor level of service. The reason for a poor level of service at these intersections consists of several factors, which cannot be fully understood from analysis of the data without a spatio-temporal context. By viewing inbound links to an intersection and how delay propagates from their upstream links, delay can be analysed spatially and the concentration of delay across time in the peaks can be found.

The below map shows downstream links leading to the link shown in black, on Wairere Drive (L). Links at $K=1$ (dark red) have the most influence on L, as traffic propagates through the network and heads towards the bridge. Those further back at $K=2$ and $K=3$ have less influence, although are still important to include in the model.



At Hamilton City Council we have developed a model to predict variables on the transport network in a spatio-temporal manner. It can be generalised to several applications and problems facing transportation analysis. One of those is in predicting delay on the transport network given historical data and observed delay in the surrounding area. It is often the case that unexpected delay on a given street will have a significant flow on

effect to nearby streets, as traffic is pushed onto parts of the network that operate on a previously expected level of traffic. Small increases in volume on these areas of the network can have significant effects on travel delay, which then propagates downstream through the network.

The ability to use spatial and temporal information allows for detailed analysis of these effects when unusual delay is encountered, and therefore a better understanding of how traffic flows. A second, future application is in the analysis of road closures and prediction of their effects. By analysing the change in traffic flows in the immediate area of a closed road, we can better understand how a change in one part of the network affects nearby streets.

Deep learning models have proven to be capable in capturing the highly non-linear spatio-temporal effects in traffic forecasting. Simple feed forward neural networks were first explored for travel time estimation and have since been extended to several other deep-learning based models including fuzzy NN's, recurrent, deep belief networks, auto-encoders and generative adversarial networks (GAN's). Recurrent neural networks in various forms, including LSTM and GRU variants, have been successfully applied to traffic forecasting due to their ability to capture temporal dependencies in the data. They have been used in forecasting traffic speeds, travel time, and volume.

We used a graph-convolutional LSTM model (GC-LSTM) to capture weights for the surrounding links in the network and feed these weights into the time series prediction model. The graph convolution utilises the inherent directed graph structure of the road network (as seen in the map earlier). Because

both downstream and upstream links have a large effect on a given link at varying levels of time, it is important to use observed data from the surrounding network to better inform a prediction. The addition of Bayesian layers creates a probability distribution over each weight parameter in the network as well as the predictions.

The level of probability can be set so that a credible interval of a desired width is obtained. A 90% credible interval is often used as a measure of uncertainty around the prediction.

The model accuracy was evaluated with P , defined as the percentage of predictions within 10% of the observed delay. An additional measure of MPE (mean percentage error) is used, defined as the average percentage error between the predicted and actual values:

$$MPE = \frac{1}{N} \sum_{i=1}^n \frac{y_t - \hat{y}_t}{y_t} * 100\%,$$



where y_t is the actual delay and \hat{y}_t is the predicted delay. Both P and MPE are shown in the table below.

Peak	P – GC-LSTM	P – LSTM	MPE – GC-LSTM	MPE – LSTM
AM (7am-9am)	80.4%	74.3%	12%	22%
Inter Peak (10am-12pm)	88.6%	87.1%	5%	6%
PM Peak (4pm-6pm)	79.7%	74.2%	11%	13%

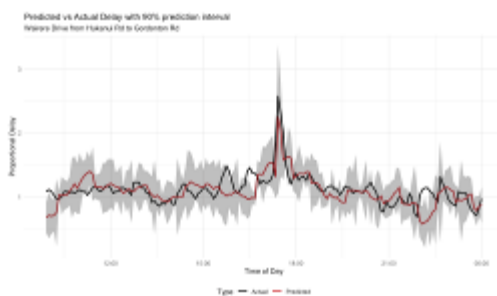


The model has a noticeable improvement in prediction accuracy over a standard LSTM. There is a 5.9% increase in predictions within 10% (P) during the AM peak. This highlights the strong spatial dependencies present in the dataset, and corresponds with the intuition of traffic flow propagation through the network. Links up to 3 hops from a given link have an influence on delay, with links further upstream having a negligible effect.

The model is able to accurately capture high levels of delay in the AM and PM peak, while the LSTM model is unable to capture the full extent of the observed delay.

In addition, periods of high delay which are not usually observed on a link are able to be captured through the spatial structure of the network, where this delay is first seen on links upstream in the network.

A credible interval can be constructed through the integration of Bayesian layers in the network, which are able to produce probability distributions over each weight and the subsequent predictions in the model.



For any given link in the model, the upper and lower bounds at a specified credible interval can be obtained. Above are the actual vs predicted results for a section of Wairere Drive over two days, with a 90% prediction interval shown in grey. This link typically experiences high delay in the AM peak.

As seen above, the credible interval remains at a similar width throughout the day, indicating high prediction certainty even during peak periods.

During the peak periods, the spikes in delay are seen on adjacent links first before affecting a given link. The model is able to capture this increase on delay on these links via the graph structure, further informing the prediction and acting as an advance warning of the upcoming delay.

Because the majority of traffic analysis is carried out for these peak periods, having a narrow credible interval allows for more certain decision making and accounting for possible variation around the model prediction.

By capturing uncertainty in the model predictions, greater confidence can be given to decisions made from the model. Uncertainty can be captured in a deep learning model by estimating the true posterior of each weight in the network. This is accomplished by the Bayes by Backprop algorithm, which uses a form of variational inference to optimise a variational distribution against the true posterior.

By maximising the evidence lower bound (ELBO), an approximation to the posterior distribution is obtained. The result is a probability distribution on each prediction in the model calculated from the posterior distribution of weights in the model. A desired credible interval can then be obtained.

Our GC-LSTM model with Bayesian layers offers a robust model for predicting traffic delay in Hamilton City. The results can be analysed to gain a better understanding of how traffic delay propagates through the network, in addition to the spatio-temporal interactions present in the data.

The probability distributions obtained on the predictions offer a level of confidence when making decisions based on the data, and as a result better outcomes for the community when planning infrastructure.

“It is often the case that unexpected delay on a given street will have a significant flow on effect to nearby streets.”



How Innovating Streets is blossoming into Streets for People

Slower vehicle speeds were reported by 24 of 44 projects – like Tasman District Council’s Croucher-D’Arcy Neighbourhood, which dramatically lowered speeds from 44-48km/hr to 22km/hr on three residential streets around a school.

Across 2020-2021 Waka Kotahi NZ Transport Agency’s Innovating Streets for People programme invited councils to try more nimble ways to create safer, more accessible and more liveable streets and public spaces.

With a 90% funding assistance rate, a pot of \$29m, and a time-frame of one financial year, the pilot programme attracted 160 applications. Ultimately 78 projects in 32 towns and cities got the go-ahead, most of which involved physical changes to streets and town centres. (Other projects tested processes for street events, resulting for example in new guidelines for [play streets](#)).

Projects that made street changes ranged in size from parking spaces to whole neighbourhoods, in budget from \$40,000 to \$1m, and in scope from parklets and traffic-calming devices to pop-up cycleway networks and fully designed town squares.

Overall, a total of about 89km of interim treatments were installed around the country, of which 79% remain substantially in place.

The key elements throughout were **tactical urbanism** – using adaptable, low-cost materials to test changes to public space – and **co-design**, a collaborative approach that invites community knowledge and experience into the process.

A major aim of the pilot programme was to build capacity and capability for innovative street reform across the country, and identify barriers within the system. It’s also delivered a strong reference base of [local case studies](#), plus [a pipeline of shovel-ready projects](#) that are giving towns and cities a head start on their long-term plans.

Each project came with a monitoring and evaluation plan, to track the changes and assess the outcomes. Early results from 44 projects were collated by Waka Kotahi and Mackie Research into [an illuminating programme-wide summary](#), essential reading for anyone looking to trial tactical methods to bring forward the benefits of long-term plans. (In particular, pp22-23 has a handy overview of what works and what doesn’t).

Effective demonstration events or [street change] trials were confirmed as those which captured attention, effectively illustrated proposed changes and benefits, enabled immediate feedback, informed design refinements, and signaled a responsive approach.
[\(Innovating Streets for People 2020/2021 Programme Evaluation Executive Summary\)](#)

Data tells the story

While each project had its own distinctive flavour and context, common outcomes emerge from the collated data, especially around safety and wellbeing:

- **slower vehicle speeds** were reported by 24 of 44 projects – like Tasman District Council’s Croucher-D’Arcy Neighbourhood, which dramatically lowered speeds from 44-48km/hr to 22km/hr on three residential streets around a school.

- a similar number recorded **more people walking or cycling** thanks to **safer and more accessible environments for walking and cycling**. Waipā District Council saw 300+ people per day using Cambridge’s pop-up cycleways, while Wellington’s Brooklyn Road interim cycleway was rated as safer for everyone on the road by 64% of those surveyed, sparking a move to a more permanent solution.

- **lower traffic volumes** were a feature of 15 projects, including Gore City Council’s Streets Alive project, where a local circulation plan reduced heavy vehicle traffic by 38% on local roads and 53% on residential streets.

Bringing people back together in public spaces was another welcome effect seen across the programme. Town centre initiatives like Thames’ Create the Vibe, Matamata’s Hetana Street and Whanganui’s Drews Ave created attractive spaces that fostered events and social interaction, highlighted mana whenua narratives via murals and street art, and helped boost retail and community resilience.

Tactical, adaptable, flexible materials

The beauty of tactical design is that it lifts plans off the page, giving people a real-life preview of a proposed change. It’s also easy to tweak elements in response to public feedback, which in turn helps build confidence for a more enduring design.

While temporary materials are generally quicker and more affordable to work with, aesthetics matter, and were shown to have a significant influence on public support and acceptance. A day-glo flexi-stick can become a lightning rod if it distracts from the wider project goals of safety, access, and mode shift.

Making materials consistent with context helped smooth the way to public understanding, with Whanganui’s Drews Ave a stellar example of matching design to the environment.

At the same time, sometimes a very basic treatment suited the location, enabling a project to get up and running without fuss, as with Wellington’s Brooklyn Road cycleway.

Project teams reported that cheaper materials sometimes came with hidden costs when it came to logistics.

Pressures on supply lines led to creative workarounds that in some cases produced more appealing and effective outcomes, e.g. when bespoke wooden elements replaced unobtainable thermoplastic ones.



Processes: engaging, partnering, and responding

One of the most important lessons learned from the 2020-2021 programme is that projects must have a local mandate and a clear rationale. In short, people really need to understand and agree on why a particular project is happening – why here, why now, and why in this temporary form?

Establishing and aligning with local objectives and network plans is therefore a vital first step. Also important: leveraging existing networks of interest, support and advocacy, from school communities keen to ensure safer travels for children, to local leaders who can help guide the discussion.

Participants also highlighted a need to ensure clear and continuous communications throughout the lifetime of a project, to clarify the ‘why’, inform people about the process, address misinformation, manage expectations, and ensure a range of voices can be heard.

There was also a strong call for an overarching communications strategy that would establish ‘the national context for local action’, helping people to see how a hyperlocal project ties in to wider goals of safer streets, low-carbon transport and providing more travel choices.

Creating a community of practice

The 2020-2021 programme created a nationwide network of hundreds of participants, who’ve gained on-the-ground experience and grown into a skilled, mutually supportive and enthusiastic community of practice along the way.

Participants met online for regular ‘Innovating Streets University’ sessions which featured subject-matter experts, showcases of local projects-in-progress, and international guest speakers at the leading edge of tactical urbanism. These sessions also offered a chance to share insights, bond about bumps in the road, compare solutions and celebrate successes.

One thing that became very clear – and will remain vital in the next phase – is the importance of securing and supporting a team for the duration of the project. Tactical street reform is a relatively new process; and while creatively satisfying and effective, it can be challenging at both the personal and system levels. Having a dedicated and well-resourced team on the job is essential.

Top lessons from the 2020-2021 programme evaluation

- Go in with a dedicated and well-resourced team
- Ensure your project ties into local plans
- Make clear why you’re taking a tactical approach and what that means to the community
- Leverage local resources, and seek partnerships
- Front-foot your communications and engagement
- Agree beforehand on what success will look like
- Match your materials to the context
- Expect uncertainty, anticipate complexity, lead with optimism!

Streets For People: the next phase

Applications are now open for the next phase of the programme, [Streets For People](#).

Councils are invited to complete the [expression of interest form](#) and return it to Waka Kotahi by **Tuesday 22 February 2022 by 5pm**.

There’s a strong safety and climate action context to this round: Waka Kotahi is keen to see strategic alignment with both the Road to Zero safety strategy and the proposed Emissions Reduction Plan, which highlights road reallocation as a key strategy for climate action.

‘Streets for People will support councils keen to accelerate the successful delivery of an approved local strategy or plan by introducing low-carbon transport choices and street spaces that enhance community connection.’

[\(Streets for People 2021-2024 Brochure\)](#)

The funding pool is similar to last time, with \$30m set aside from the NLTP and a Funding Assistance Rate of up to 90%.

One key difference is the longer timeframe: the new programme runs through to June 2024, giving councils more scope to build strong foundations for delivering on bold climate action in the future.

Kathryn King, Urban Mobility Manager for Waka Kotahi said: “Streets for People has built on the learnings from the last programme and will provide councils, funded and those that are not, with a support framework that builds capability and achieves the accelerated changes needed to meet our carbon emission reduction goals.”

The funding process is split into three steps, each being a gateway to the next stage.

- The EOI establishes whether a council is ready, with processes in place and the willingness to get tactical.
- Successful applicants move on to **Phase 1 - Funding the Foundations (pre-implementation)**, which invites council leadership, with support from Waka Kotahi staff and external experts, to present their proposal to Waka Kotahi leadership.
- For **Phase 2 - Funding the Projects (implementation)** successful councils will work through a readiness programme with the Waka Kotahi team, to ensure they have a team in place and understand the key factors for success before getting underway.

Additionally, a support programme will be developed for councils who are not successful in securing funding but would still like to build capability within their organisation

USEFUL LINKS

Streets for People homepage: <https://www.nzta.govt.nz/roads-and-rail/streets-for-people/>

Streets for People 2021-24: all about the programme and how to apply <https://www.nzta.govt.nz/roads-and-rail/streets-for-people-programme-2021-2024/>

Innovating Streets 2020/2021 Programme Evaluation Executive Summary: <https://www.nzta.govt.nz/assets/Roads-and-Rail/streets-for-people/innovating-streets-for-people-2020-2021-programme-evaluation-executive-summary.pdf>

Innovating Streets 2020/2021 Featured Projects: <https://www.nzta.govt.nz/roads-and-rail/streets-for-people/featured-projects/>

Play Street Guidelines: <https://www.nzta.govt.nz/roads-and-rail/play-street-guidelines/>



Outdoor spaces for health, economic recovery, and social connection

Cities, near and far, continue to adapt to life with COVID-19 by creatively using street space, enabling people to get around and socialise safely.

by getting outside will be key. It is the perfect time for towns and cities to look for creative ways to enable their communities to get around in ways that are good for their health and the environment.

[Check NACTO's photo library for inspiration.](#)

Cycling Code wins at Plain English Awards

Earlier this year, the Code for Cycling was released following an extensive rewrite which aimed to make it easier to understand and more accessible.

The hard work of the team has now been recognised at the Plain English Awards, winning the Best Plain English Turnaround Award 2021 and being finalists in the Best Plain English Document – public sector 2021.

“We stripped the original document right down to its core purpose – a plain English translation of the legislation,” said Elizabeth Claridge, Senior Advisor Behaviour and Choice.

“We ran surveys and focus groups to find out which type of language and tone worked best with our audience, as well as to understand how it was performing against its purpose and what people were actually using it for.”

“Thank you to all the wonderful people who responded to our surveys and focus groups — we could not have done it without them.”

Read the [Code for Cycling online](#).

Path Behaviour Markings Guidance

Shared paths are a great way for people to move around our towns and cities by bike or on foot, but they can also be confusing as people are unsure how to use them.

To help people, Waka Kotahi has just released the Path Behaviour Markings Guidance. The aim of the guidance is help path users understand how to use the space safely and reduce confusion.

This Guidance should be used alongside good shared path design.

[Read the Path Behaviour Markings Guidance.](#)

Throughout 2020, cities all over the world rapidly reallocated street space from vehicles to people, enabling them to make socially distanced essential journeys.

Throughout 2020, cities all over the world rapidly reallocated street space from vehicles to people, enabling them to make socially distanced essential journeys. Similar innovations continue to play a role in social and economic recovery after months of lockdowns, and as a strategy to manage the health risks of potential outbreaks.

From New York to London, outdoor dining has been a hit and described as a COVID ‘bright spot’.

[Vilnius \(Lithuania's capital\) was turned into a giant open-air café](#) whereby restaurants and bars across the city were allowed to set-up tables and serve customers outside, as the country gradually eased lockdown restrictions.

There is a growing desire to keep slow streets, parklets, temporary bike lanes and outdoor dining areas with many cities looking at how they can adopt a more permanent solution.

Los Angeles, a city typically stereotyped as one of the most car centric in the world, [added 50 miles of slow streets in 30 neighbourhoods](#). With more demand from neighbourhood groups than funding available, the LA Department of Transportation had to stop adding new routes.

Paris took the bold move [to create 650km of temporary cycleways](#) during the initial lockdowns in 2020 receiving praise worldwide. And, while the process has not been without challenges, these have progressed to over 50km of new permanent bike paths.

Closer to home, [Australia has launched a nation-wide Play Streets campaign](#) to re-create social connections in neighbourhoods, in recognition of the challenging mental health burden of COVID-19.

As Aotearoa works through this next phase of COVID-19, ventilation and reducing the chance of transmission



New guidance reflects shift to multimodal street design

Waka Kotahi has just launched the final draft of the Aotearoa Urban Street Planning and Design Guide, a New Zealand specific guidance that takes a multimodal approach to street design.

Waka Kotahi Urban Design champion Kevin Reid says the guide is an important part of bridging the gap between planning and design, and the connections between the Safe System, mode shift and our environmental performance. "Our design guidance needs to naturally lead transport planners, designers and engineers to safe street designs that reflect the local context, recognising that roads and streets have a place function, as well as a movement function.

"Waka Kotahi is operating with a strong mandate for improvement and change, both in terms of delivering a transport system that reduces harm and one that reduces our dependency in urban areas on private cars. This reduction in exposure to harm has the added benefit to support public health, environmental and access outcomes."

[Read more](#)

Active transport network key part of Hamilton's newest suburb

Hamiltonians living within the new Peacocke neighbourhood will be able to walk, bike and scoot more easily as the transport network is being designed to encourage active transport choices.

This month Hamilton City Council's Strategic Growth Committee approved an investigation into the next stage of the Peacocke transport network which includes the design for the east-west arterial road (Whatukooruru Drive) and the likely creation of a new shared walking and cycling pathway using two bridges on top of wastewater pipelines across gullies.



The full scope of the new work will include two kilometres of off-road paths, two gully crossing bridges with connection to existing shared paths in Sandford Park and beyond. Path users will be able to enjoy the protected gully areas safely, without impacting the native fauna or environment.

Committee Chair Councillor Dave McPherson said: "Delivering crucial infrastructure, pro-

moting active travel options and protecting the environment in one project is a hefty challenge which our staff have delivered on here. Active and public transport have been primary considerations for the transport network in Peacocke since the start, and that was reflected in the design for Whatukooruru Drive."

[Read more](#)

Shaping national street design guide

A targeted survey is helping ensure the Aotearoa urban street planning and design guide is 'fit for purpose'.

Building on sector engagement in early 2021, we are seeking feedback from groups including Blind Low Vision NZ, Property Council, Women in Urbanism, Urban Design Forum, NZ Institute of Landscape Architects, NZ Police and others, before we approve the final guide in early 2022. The survey asks questions on the guide's potential role and use for each organisation.

Input and insights are needed to provide national guidelines and adopt principles to help support safe, well-functioning and accessible streets. Collaboration on the guide's shared challenges, and a future community of practice are also part of the survey. If you want to know more, please email streets@nzta.govt.nz

The guide was released as a final draft in September. [Read more about the Aotearoa urban street planning and design guide.](#)

New bike trail connecting communities in Timaru through to Pleasant Point

A new bike trail from Washdyke to Pleasant Point has opened in Timaru. The 3m wide path follows the old railway corridor and provides a safe connection for people walking and cycling between the towns.

With strong community support, the trail has



been a great partnership effort, with funding from Waka Kotahi and Timaru District Council. Fulton Hogan pitched in to construct 3km of the trail.

This bike trail is the first stage of the [Central South Trail](#) which aims to create a connected cycle trail from Timaru through to Tekapo.



Source: Waka Kotahi



The bikelash paradox: how cycle lanes enrage some but win votes

By Janette Sadik-Khan and Seth Solomonow



Every politician knows the word “bikelash”. From Milan to London, from Sydney to Vancouver, reallocating public space from motor vehicles for people to walk and cycle will inevitably send some residents into paroxysms of anger.

But a persistent theme is that voters have time and again reelected the mayors responsible for ambitious road reclamations, often with overwhelming majorities. Although many presume these policies are toxic, projects that make cities more liveable have been shown to be good urban policy and good politics.

Milan’s mayor, Giuseppe Sala, earlier this month won reelection after reclaiming 22,000 sq meters of vehicle lanes to create 38 neighbourhood plazas over three years and 22 miles (35km) of cycling and walking space on main travel corridors [during the pandemic](#).

This citywide reordering of streets put half of Milan’s 1.35 million residents within walking distance of new public space. The measures were strongly opposed by some residents concerned about the loss of parking and driving space, but Milanese voters ultimately rewarded Sala with [56% of the vote](#).

“It’s easy to argue about parking,” said Sala. “But it’s difficult to dispute a new city space filled with people and with signs of life commerce and a sustainable purpose where there was nothing before. It’s critical to act to meet the climate and sustainability moment with something meaningful that people can see, feel and use.”

Next month, the mayors of two cities in North America – Mike Duggan in Detroit and Valérie Plante in Montreal – will test whether voters reward their pedestrian and bike-friendly policies.

London’s mayor, Sadiq Khan, won reelection in May after [creating or completing 160 miles \(260km\) of new](#)

[bike routes](#). Faced with an opponent who vocally opposed improvements for cycling and walking, the Labour mayor won 55% of the vote in the runoff.

Voters in Paris last year returned the socialist mayor Anne Hidalgo to a second term after a radical remaking of the city’s landscape before and during the pandemic. Hidalgo has spurred a cycling golden age, building hundreds of kilometres of bike lanes, turning the crosstown Rue de Rivoli into a churning bike- and bus-priority corridor, and pedestrianised a highway along the right bank of the Seine. Intense opposition and driver protests did not translate into votes: Hidalgo won by a margin of 18 percentage points in the second round of voting.

The Barcelona mayor, Ada Colau, in 2019 [was reelected](#) by the city’s council after expanding citywide biking corridors and creating innovative “[superblocks](#)” – pedestrian-priority neighbourhood streets that are furnished with chairs, tables and playground equipment to calm traffic and create community space. She and her government have gone on to more than double the bike network and reallocate 30,000 sq metres of road space from cars.

And in Oslo, the city council reelected mayor Marianne Borgen in 2019 after introducing policies that removed [most of the city’s downtown parking spaces](#) to ease pollution. [Clover Moore in Sydney](#) has already won three reelections despite strong blowback to her pro-cycling agenda; she is now running to win a fifth term in December. Tel Aviv’s electorate reelected [Ron Huldai](#) partly owing to his bike-lane and pedestrian space actions.

Voters consistently remind us that it is they and not the pundits, tweeters or headline-writers who decide elections. Though road reclamations reliably serve as public-relation challenges for cities, experience shows that residents adapt quickly to road changes and predictions

Janette Sadik-Khan is a former commissioner of the New York Department of Transportation and a principal with Bloomberg Associates. Seth Solomonow is an adviser and strategist with Bloomberg Associates, specialising in public space and sustainable transport infrastructure. The authors provided pro bono advice to Sala and Duggan on their public space plans.



of traffic nightmares and business failures do not come to pass.

The authors of this article experienced this directly as New York City's transportation commissioner and department spokesperson under mayor Mike Bloomberg, who won a third term in 2009 just months after pedestrianising Broadway at Times Square and after building 200 miles (322km) of bike lanes in two years.

The improvements to street space won over residents. In the final [New York Times poll](#) of the Bloomberg era in 2013, 72% of New Yorkers supported the creation of plazas across the city, 73% supported the city's new bikeshare system and 64% supported the bike lanes.

If these margins were votes, bikes and pedestrian space would be elected mayor in a landslide.

Experience often overtakes fears after projects have time to become part of daily life in cities. Studies of [New York](#), [London](#), [Toronto](#), [San Francisco](#) and [other American cities](#) determined that pedestrian and cycling infrastructure increased retail sales by making streets and the stores along them better for shoppers on foot, bike and public transport.

In Detroit, Duggan will be hoping to see similar support after he oversaw the largest one-year buildout of protected bike paths in the US and creat-

ed a network of plazas and downtown pedestrian space. Plante's path to reelection in Montreal on 7 November is being challenged by Denis Coderre, who has criticised her bike- and pedestrian-friendly policies.

Critics have [portrayed](#) Plante as out of touch with ordinary residents, but even her opponent is careful to promise that he would not reverse her signature protected bike lane on St Denis Street.

Bikelash can be exhaustingly repetitive, to the point where even media writers are tired of the ritual of discussing bike lanes solely in terms of controversy.

Reflecting on a decade of bike controversies across Canada, Toronto's the Globe and Mail this month asked: "[Is the war against bike lanes finally over?](#)"

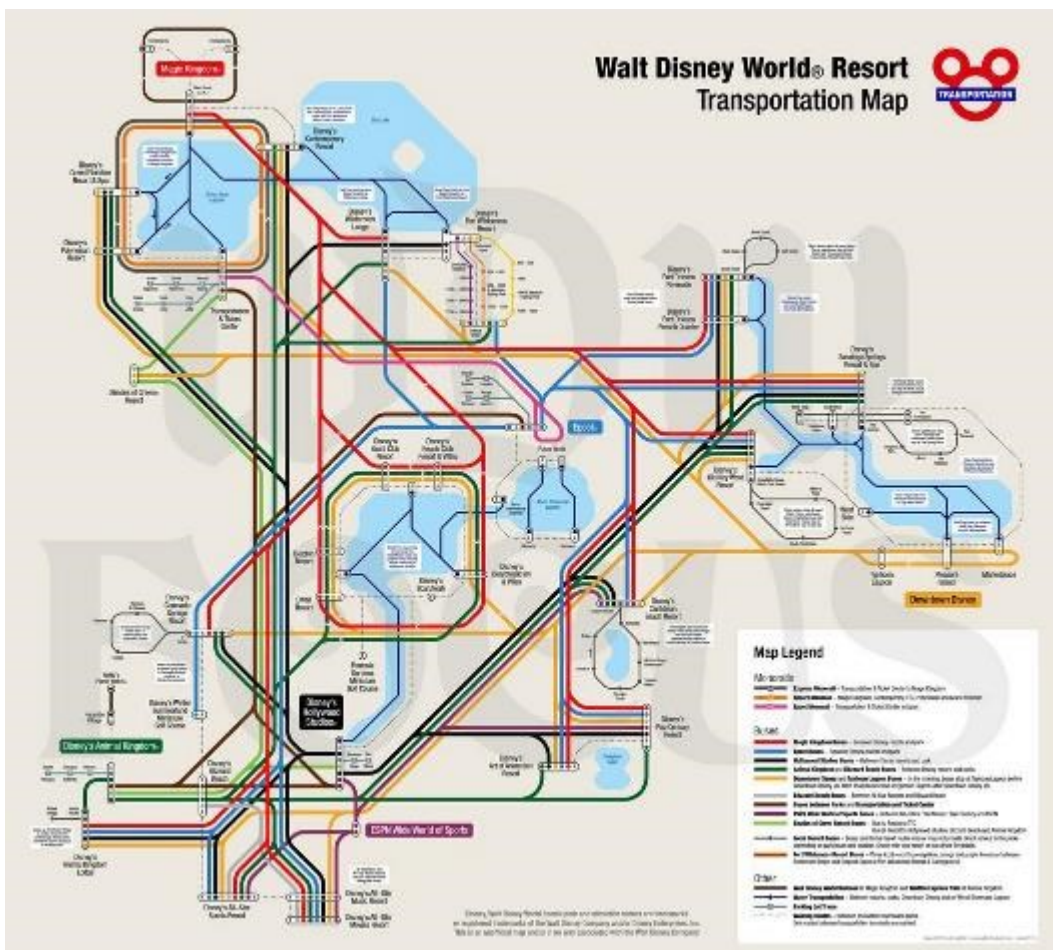
Perhaps not quite yet, but the editorial took the view that bike lanes had "grown from political flash-points – and ideological signifiers – to standard-issue civic infrastructure".

It added: "The arguments over bike lanes are settled. They're becoming what they should have long been: an ordinary way of getting around our cities."

They are also an increasingly ordinary way for mayors to win elections.

Source: *Guardian*

It's easy to argue about parking, but it's difficult to dispute a new city space filled with people and with signs of life commerce and a sustainable purpose where there was nothing before



Orlando's Disney World boasts a 12-train-set monorail, along with 325 buses. If Disney World was a city, this would be the 16th most ridden transit system in the US.



Reducing our Transport CO₂ Emissions

*By Ross Rutherford BSc(Hons) MSc CMEngNZ(Ret)
Doug Wilson (PhD), BE(Hons), NZCE(Civil).*



Introduction

This report is part of Engineers for Social Responsibility Inc response to the urgent need for Aotearoa New Zealand to significantly reduce its greenhouse gas emissions to meet its climate change obligations.

The report outlines some key measures to reduce the high carbon dioxide emissions of our transport sector. It has been prepared by two professional engineers with extensive experience in transportation engineering and planning, both of whom are committee members of the society.

An 'all of sector' strategy approach is required that includes encouraging changes in current learned travel behaviours. This strategy, in order of preference, should encourage communities and businesses to **avoid** travel, **shift** travel to more shared and low emission modes and **reduce** emissions from essential travel.

The five critical elements of an effective response to substantially reducing the nation's transport CO₂ emissions are discussed below. They are:

1. Funding
2. Travel demand management
3. Public transport
4. Integrating land use development and transport
5. Electric vehicles and biofuels.

Funding

The Government Policy Statement (GPS) on Land Transport Funding must clearly and unequivocally prioritise funding from the Land Transport Fund and from the Government (taxpayer-sourced funds) for those transport projects and other activities which are specifically aimed at reducing CO₂ emissions.

Instruct Waka Kotahi (NZ Transport Agency) to place a lower priority on adding road capacity to reduce travel time by private vehicles. Instead, give high priority to measures to improve public transport and encourage walking and cycling, while continuing to encourage the development and implementation of measures to improve safety.

In addition, increase funding for the application of "smart" technology to make more effective use of the available road networks. This could include improving the efficiency of

traffic signals; making more use of contra-flow lanes; and peak period demand management via congestion pricing (discussed further below).

Facilitate the efficient movement of freight through measures which prioritise freight movement on key freight routes (e.g. by giving trucks priority over other vehicles), or reduce congestion through measures other than adding to urban road capacity for general traffic movement.

Major investment in the rail network is required to reduce travel times between major urban centres and ports with initial priority to the Tauranga-Hamilton-Auckland-Whangarei region. This will encourage more use of rail freight for longer-distance travel. When combined with locating stations close to population centres, it can also facilitate increased use of land-based public transport for inter-city/long distance passenger travel, reducing the need to fly or drive between cities.

Change funding sources from petrol tax to distance-based charging for all vehicles including differential charge by time of day, vehicle type, emissions, and, potentially, road type. This will place funding on a more sustainable, fair and equitable basis as petrol-driven cars are replaced by electric vehicles. It would also reduce the potential for electric vehicle owners to increase commute distances due to their much lower operating costs hence adding to urban sprawl. In the short term, the distance-based charges could be waived for electric vehicles as an incentive to encourage increased uptake.

Travel Demand Management

Congestion pricing should be introduced in the major urban centres. This can be expected to reduce peak period traffic congestion and encourage use of alternatives to the single occupancy private car during these periods. It would also benefit road freight through reduced and more consistent travel times. The net funds collected should be used to fund appropriate high priority transport projects and to offset increased travel costs for low-income car drivers with no realistic travel alternative.

The use of available road space on arterial roads should be prioritised in favour of buses and other high occupancy vehicles in recognition of their greater efficiency, and bicycles in recognition of their environmental benefits.

Engineers for Social Responsibility Inc. is an independent group of engineers who consider that being knowledgeable in the field of technology means that they also have a special obligation to the public at large. This includes raising the awareness of the engineering profession to the consequences of its activities and explaining and discussing the ramifications of developments in engineering and engineering works to the public. The society was formed around 40 years ago around the issue of nuclear energy and is currently focusing on the climate crisis.

Micromobility refers to a range of small, lightweight vehicles operating at speeds typically below 25 km/h (15 mph) and driven by users personally (unlike rickshaws). Micromobility devices include bicycles, e-bikes, electric scooters, electric skateboards, shared bicycles, and electric pedal assisted (pedelec) bicycles. Reference: *Institute for Transportation and Development Policy (2019). "The Electric Assist: Leveraging E-bikes and E-scooters for More Livable Cities". Retrieved April 7, 2020.*



E-scooters and other micro-mobility devices are increasing in use and will, where appropriate, need to be accommodated without compromising pedestrian safety.

In town centres and particularly in major retail streets/high streets more space should be allocated to pedestrians where feasible. There should be frequent, safe pedestrian crossing facilities to encourage and facilitate movement between both sides of the road. Speeds should be kept low (30km/h or less) to enable cycles to safely share road space with other vehicles and improve overall perceived road safety.

Traffic data collection must be expanded to include pedestrian, bicycle and micro-mobility travel to ensure their needs are fully recognised and accounted for. More data on safety incidents between pedestrians, cyclists and micro-mobility devices on footpaths and shared off-road paths is also required.

Public parking in town centres should be priced to prioritise a shift to public transport and active modes. Long stay/commuter parking should be located in fringe areas. In metropolitan centres with good public transport access, required minimum parking rates in new developments (and changes of use) should be replaced by maximum parking rates. These reduce the effective subsidisation of car use through the provision of ample

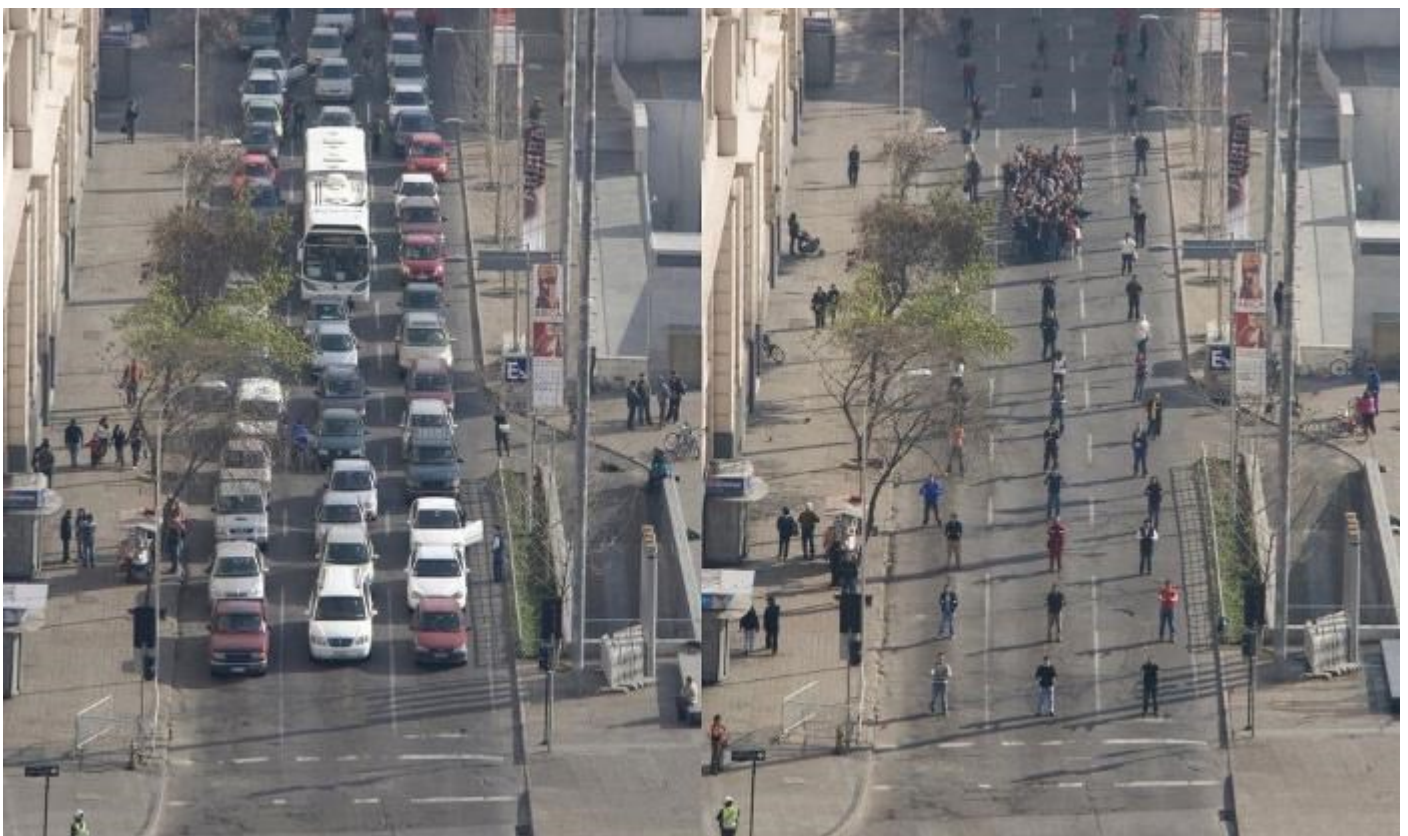
off-street parking. They also reduce development costs by reducing the number of parking spaces that must be provided by a new development. This in turn, helps to reduce apartment costs in these centres.

Shared private vehicle ownership should be promoted more extensively emphasising its potential for reducing vehicle ownership costs. Shared ownership reduces parking demands and can help reduce vehicle use.

Public Transport

Public transport should offer an attractive, competitive, equitable and accessible alternative to travel by private car for all users (including the disabled). In the larger cities the major routes should provide reliable, frequent service with quality station facilities. They should by-pass traffic congestion to reduce travel times relative to the car and improve reliability.

The historical focus on services to city centres needs to be modified. Such services do not serve cross-town movement or movement within communities well. In addition, one consequence of the significant increase in working from home due initially to Covid-19 is that city centres are not likely to provide the numbers of jobs in the future previously assumed.





The most cost-effective public transport routes link several activity centres which generate a 2-way demand at peak times. A tidal-flow service catering for, say, city centre commuters has high demand in one direction but low reverse patronage which results in an inefficient use of vehicles and higher operating costs.

Bus priority measures are a good, low cost means of enabling buses to by-pass traffic queues, but have their limitations and need to be enforced, particularly when limited to peak period operation. Where appropriate, they can encourage higher car occupancies as T3 or T2 lanes. Key advantages of Bus/T2/T3 lanes are that they can be formed at relatively low cost and in a short time frame.

Buses remain in the fleet for a long period (typically 12-15 years) and bus operators should be encouraged and incentivised to replace diesel buses (high emitters) with low emission vehicles (electric or hybrid) when replacing vehicles in their fleet. New technologies being progressively developed, such as inductive wireless power charging at bus stations can reduce the weight of batteries and extend battery range and downtime of bus operations.

The most effective public transport services have separate, dedicated, grade-separated right-of-way. These can be underground in tunnels or above ground on viaducts. Viaducts are much less expensive than tunnels. Vancouver, Canada and Copenhagen, Denmark have good examples of the use of viaducts to provide rail-based, fully-automated public transport services supported by high-density development round stations.

An alternative is to provide public transport with a dedicated at-grade facility available 24/7.

Auckland's Northern Busway is a very good example of such a facility. Its success is due to offering fast, reliable service by-passing lengthy traffic queues combined with quality stations, feeder bus services, park-and-ride at some stations, and the opportunity of avoiding high parking costs in the Auckland City Centre. As it operates adjacent to a motorway, delays at traffic-signal controlled intersections are avoided or substantially reduced.

Another option is to provide a dedicated 2-way right-of-way in the centre of an arterial road, separated from general traffic. This could be based on light rail or high-capacity buses (including in the future for flexible and lower cost 'trackless trams'). The right-of-way should provide sufficient width for station platforms and for road widening at intersections to accommodate right-turn (and u-turn) vehicles. The facility should be accompanied by good urban design including relatively wide footpaths, cycle lanes, street trees etc. A road reserve width of at least 27-28m is needed for such a facility. As many arterial road reserves in New Zealand are only 20.1m, this would require expensive and disruptive road widening in areas such as much of Auckland's Central Isthmus.

Many existing residential developments were designed assuming high car ownership. They are low density, often with extensive use of cul-de-sacs, and are separated from shops, services and places of employment. Such areas are difficult and relatively expensive to serve by conventional bus services.

There is a clear need for innovative solutions to provide realistic options for residents of such areas if car use is to be significantly reduced. These can include partial redesign that allow for active mode (walking and cycling) and micro-mobility connectivity with reduced trip distances, and the incorporation of shared electric shuttles (potentially in the future autonomous) that enable frequent first and last kilometre access to mass rapid transit stations and replace the need for large buses with low occupancy in low density residential areas.

Land Use/Transport Integration

Higher density mixed use development is essential for existing town and regional centres which are well served by frequent public transport services providing access to a wide range of destinations. This should be combined with a quality urban environment which encourages walking and cycling.

The highest density should be located within 5 minutes easy walking distance (400–500m) of the town centre and public transport. The next band of higher density development should be between 5 and 10 minutes walking distance to the town centre.





It should be ensured that residents are within a reasonable walking or cycling distance of shops and services.

New urban residential development should be planned along the same lines with high quality mixed land use developments (e.g. with employment, retail, commercial and residential) that include transit oriented development around mass rapid transit stations with good access and connectivity. Community based services and centres should also be planned and provided that encourage inter-generational community residents to be able to work, play, go to school, and care for each other locally (including the disabled).

It should be ensured that residents are within a reasonable walking or cycling distance of shops and services. Streets should be relatively narrow to encourage lower speeds, and should be tree lined with relatively wide footpaths. Cycle lanes should be provided where appropriate.

Public transport should be made available in phase with new development to encourage residents to use public transport as soon as they move in and not get used to automatically using car travel.

Electric Vehicles, Biofuels, Hydrogen and Energy for Transport

A rapid conversion of the private car fleet to electric vehicles is a key component of the nation's greenhouse gas emissions reduction strategy. Until electric vehicle prices come close to parity with internal combustion vehicles, financial incentives will continue to be needed.



On-street and in the near future, wireless charging points will be required particularly in higher density areas where sufficient private charging points may not be available. Fast-charging in road and off-road facilities must be provided in sufficient numbers and at appropriate locations to cater for inter-urban/long-distance travel and the expected increase in electric vehicle fleets.

Medium sized electric commercial truck vehicles are now already viable to serve urban logistics (<16tonnes). Fully automated electrically powered delivery vehicles are currently being trialled overseas.

Increased energy capacity from renewable sources (solar and wind) should be planned and developed directly in locations of high demand for charging (e.g. electric charging service stations adjacent motorways and inter-city free-ways) without the need for power distribution long distances from demand.

Biofuels should be produced in New Zealand for heavy goods vehicles to supplement and eventually replace diesel for the existing fleet, and for larger aircraft to supplement and eventually replace oil-derived aviation fuel. Research and trials should continue with hydrogen fuel cell technology especially for heavy goods vehicles to address current barriers of cost, required associated infrastructure and safety concerns as it is likely both hydrogen and electric solutions will be required.

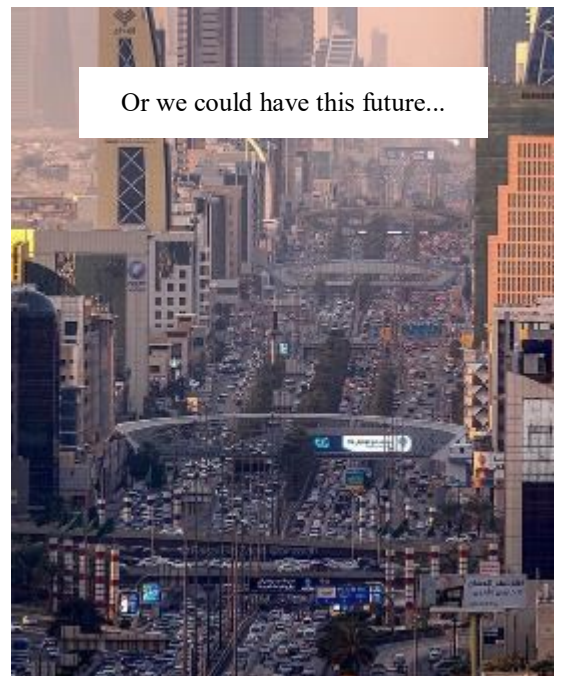
Summary

Urgent action is required to decarbonise transport in New Zealand to meet greenhouse gas emission targets set by the Climate Change Commission and/or the IPCC.

A Government-led approach is needed that prioritises investment in transport and renewable energy infrastructure that reduces transport emissions and incentivises required behavioural shifts.

Encouraging and enabling innovation in research and monitoring and evaluation of practice will help to incentivise industry, community and private transport users to adopt more sustainable mobility (i.e. improving sustainable access both physically and digitally).

Or we could have this future...





"10 years ago, people said we were crazy to pedestrianize Broadway. Today, it would be crazy to bring the cars back."
@JSadikKhan



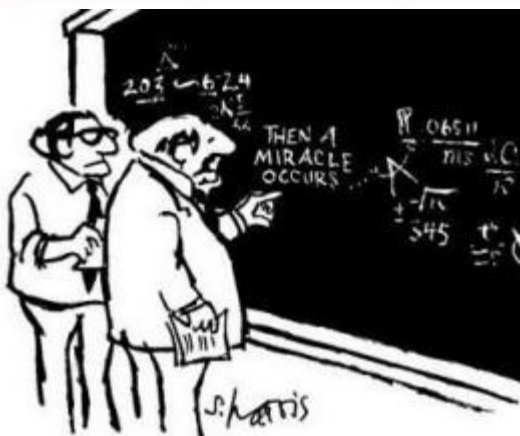
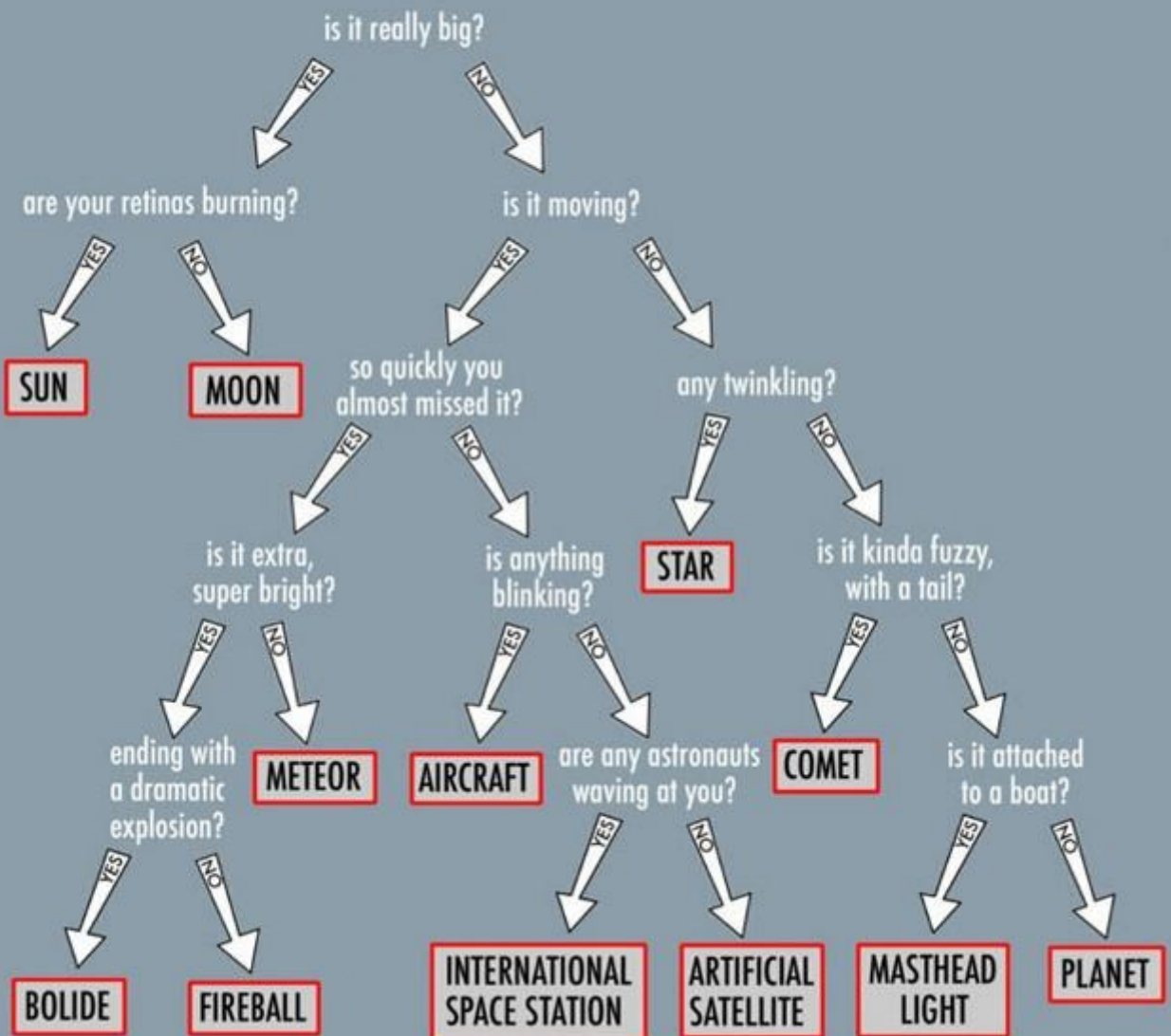


The Failure Page





HOW TO IDENTIFY THAT LIGHT IN THE SKY



"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."



"I'm sorry, that's incorrect. Release the bees."



City Rail Link update



KiwiRail, Auckland Transport and City Rail Link are finalising plans for an unprecedented Christmas works programme to improve and upgrade the Auckland metro rail network.

While Aucklanders enjoy the summer holidays and patronage on the network is traditionally light, the network will temporarily close so that work on several projects can go ahead safely and efficiently between 26 December and 23 January.

KiwiRail will have more than 1000 people working across the network and City Rail Link (CRL) will have 200 at its Mt Eden site.

“With the Government’s \$1.5 billion investment in Auckland’s rail network, there is a massive programme underway to develop a world-class rail service for Aucklanders,” says KiwiRail Capital Projects and Asset Development Manager David Gordon.

“The Christmas shutdown allows us to get a huge amount of work done over a short period of time. Our projects would take years longer to complete without the ability to make big strides during intermittent shutdowns so we thank Aucklanders for their understanding.

“It will take a few years but, once complete, the network will allow a more frequent and more reliable train services for Auckland Transport’s passenger trains and greater capacity for freight trains.”

KiwiRail will focus its Christmas works on the project to bring electrification to the line between Papakura and Pukekohe, continue construction on the third main line through the busiest part of the network between Westfield and Wiri, replacing track in the complex entry to Britomart Station, and carrying out necessary track repairs across the metro area. Years of under-investment in the track infrastructure, while more and more services run through Auckland, means parts of the network are in urgent need of modernising. All this work needs to be complete or well advanced before City Rail Link (CRL) opens.

The CRL project team will use the summer closure to accelerate work at the big and complex Mt Eden site where tunnelling operations are based. CRL is being connected to the North Auckland/Western Line and a new Mt Eden Station is under construction.

“It allows us to build construction momentum again after all of Covid’s disruptions,” says Francois Du-douit, Project Director for the Link Alliance delivering the main CRL contract. “Getting the job done as quickly and as safely as we can benefits wider Auckland, and, just as importantly, helps reduce disruption for our neighbours.”

To achieve the most work in the available time, the network will close to all passenger trains with buses replacing trains on all lines from 26 December to 16 January.

From 17 January to 23 January track work will continue at Britomart Station and at CRL’s Mt Eden site. Buses will replace trains on the Western Line, and between Newmarket and Britomart for other services. Eastern Line trains will use The Strand Station in Parnell during this time.

Auckland Transport would like to remind customers that scheduled buses may be quicker for some customers than the rail replacement services. Customers are encouraged to use the Journey Planner or AT Mobile app to find the most suitable alternative.

“Working on a network that operates 24/7, 365 days a year is a complex undertaking, which is why we try to do as much as possible during network closures,” says Mr Gordon.

“We plan works in a way that minimises overall disruption and we will give commuters and rail corridor neighbours notice of the changes that are likely to affect them.

“However, we know that some inconvenience and noise is inevitable, and we apologise in advance for that and thank Aucklanders for their patience.”

For more information about bus replacements, please see: [AT.govt.nz/railclosures](https://at.govt.nz/railclosures)

For more information about Auckland rail improvement work over the Christmas shutdown: www.kiwirail.co.nz/akl

Work on one of the most complex engineering challenges undertaken in New Zealand ended recently with completion of City Rail Link’s (CRL) C1 contract at Britomart Station.

“Over 5-years of exceptional and inventive work pushing construction techniques to new limits delivered an outstanding result – preserving Auckland’s historic past while building a world class railway for a modern

Over Christmas, KiwiRail will have more than 1000 people working across the network and City Rail Link will have 200 at its Mt Eden site.



city,” says City Rail Link Ltd Chief Executive, Dr Sean Sweeney. “There is a lot our C1 workers, and wider New Zealand, to be proud of.”

C1 was one of the earliest contracts for New Zealand’s largest transport infrastructure project to revitalize the city’s rail network.

Critical to CRL’s success was turning the dead end Britomart Station in Auckland’s downtown into a two-way through station with twin rail tunnels built in the basement of the city’s imposing and historic Chief Post Office (CPO).

Work began in 2016 when the CPO, the main entrance to the Britomart Station, was closed. CRL Ltd and its contractors, Downer NZ and Soletanche Bachy JV, built the tunnels in the 109-year-old heritage-listed building, across the lower end of Queen Street and below the Commercial Bay office and retail development to connect with CRL tunnels in Albert Street.

“Achieving all that required some astonishing engineering - we pushed accepted construction boundaries with some amazing innovative techniques,” Dr Sweeney says.

- Fourteen thousand tonnes of a building with a top heritage rating were safely transferred on to temporary foundations
- machinery was modified specifically for use in confined conditions under the CPO
- special grade steel manufactured in New Zealand for the first time teams was used in the contract
- Workers had to contend with muddy reclaimed land with the old building perched on temporary foundations just a few centimetres above them
- Britomart Station remained fully operational with a connecting door separating busy platforms from a construction site.
- Delivery was challenged by multiple covid level-4 shutdowns in Auckland

“Great collaboration produced a great ‘can do’ attitude,” Dr Sweeney says.

Years of planning, design and partnerships involving CRL Ltd and its contractors with Heritage NZ, Auckland Council, Auckland Transport, the Commercial Bay developers and other neighbours, and Tāmaki Makaurau Iwi were the foundations for a positive outcome.

Around 10,000 Aucklanders were given a ‘sneak peek’ behind the project’s hoardings when they walked a section of Britomart tunnels in November, 2019.

The project handed back to Auckland a fully restored CPO last April. The building has resumed its role as the “front door” for the Britomart Station.

Traffic-congested Lower Queen Street in front of the CPO has been replaced by a striking people-friendly square known as Te Komititanga, Meaning to mix or to merge. The layout of Te Komititanga’s basalt pavers was designed by Mana Whenua artists and weavers.

Dr Sweeney says C1 ticked many other boxes: sustainability, preserving fragments of Auckland’s past uncovered during construction, cultural and social impacts including job creation opportunities and an improved environment.

“C1 set very high standards and new benchmarks for other CRL contracts, and for the wider infrastructure industry,” he says.

“Great collaboration produced a great ‘can do’ attitude”



Image from 2019 showing the curving rail tunnels emerging from under the CPO and through the basement of what was to become the Commercial Bay tower



Transportation Group National Committee



National Chairperson: Bridget Burdett

bburdett@mrcagney.com

Vice Chairperson: John Lieswyn john@viastrada.nz

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: David Huang

David.huang@jacobs.com

Canterbury/West Coast Branch Chair: Grace Ryan

grace.ryan@ghd.com

Southern Branch Chair: Lisa Clifford

lisa.clifford@nzta.govt.nz

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 Tony.Brennand@nzta.govt.nz

Branch Administrators



Auckland: Chun-Lin Lee chun-

lin.lee@stantec.com

Waikato/Bay of Plenty: Sarah Dove

s.dove@harrisonsgrrierson.com

Central: Josephine Draper

josephine.draper@abley.com

Canterbury/West Coast: Grace Ryan

grace.ryan@ghd.com

Southern: TBA

Roundabout Editor: Daniel Newcombe

daniel.newcombe@at.govt.nz

Find us on the web:
Transportationgroup.nz

So you mean
to tell me a
stress ball
isn't for
throwing at
people who
stress you out



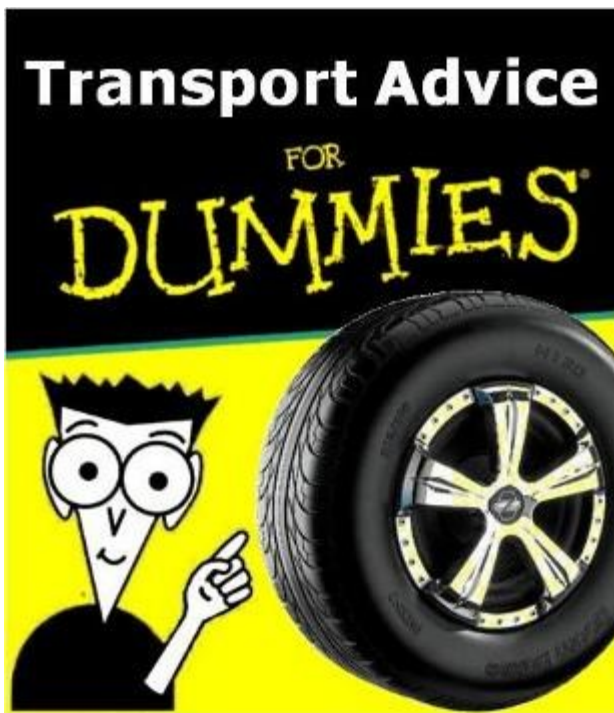
Unicorns come in different sizes



Unicorn

High-capacity
assault unicorn

High speed
under water
unicorn



A tongue-in-cheek column on transport matters by The Transport Guy. The contents do not represent the views of the Transportation Group, or anyone else for that matter. Follow the advice at your own risk. If you have a question for The Transport Guy, no matter how stupid, email it to transportfordummies@gmail.com and he'll do his best to answer.

Dear Transport Guy

Everywhere I look, people are proposing light rail as some kind of transport silver bullet. Have you seen the cost of light rail? For that amount of money we could have heaps of motorways instead!

Brian, Wellington

Dear Boring

I don't think you are making the point you think you are.

The Transport Guy



Dear Transport Guy

When will Transmission Gully be open? Wasn't it meant to be by now?

Jane, Upper Hutt

Dear Jam

Well, the pandemic gets the blame but the truth is more complicated.

Due to the unique financial arrangements – which we were assured would save the taxpayer money – there are stiff penalties the construction firm must pay for

late completion (hurrah!), unless it is not their fault, in which case they must be paid for the extra time they have worked (boo!), except that the construction team was granted an exemption to keep working during lockdown (hurrah!) but the extra social distancing restrictions have made the work sites far less efficient and it is taking a lot longer (boo!), and there is a hefty completion payment due on day of opening (boo!) but this wasn't budgeted for, so we don't have the money for it (also boo!), but the contract says we can spread payment out over a longer period (hurrah!) but with interest charges that increases the total we pay (boo!).

Overall, we can't afford to keep paying for it to be built, and we can't afford to have it open.

Overall, we can't afford to keep paying for it to be built, and we can't afford to have it open.



Kids explain traffic engineering



“Even while you are building stuff or running stuff, you still have time for Christmas.”