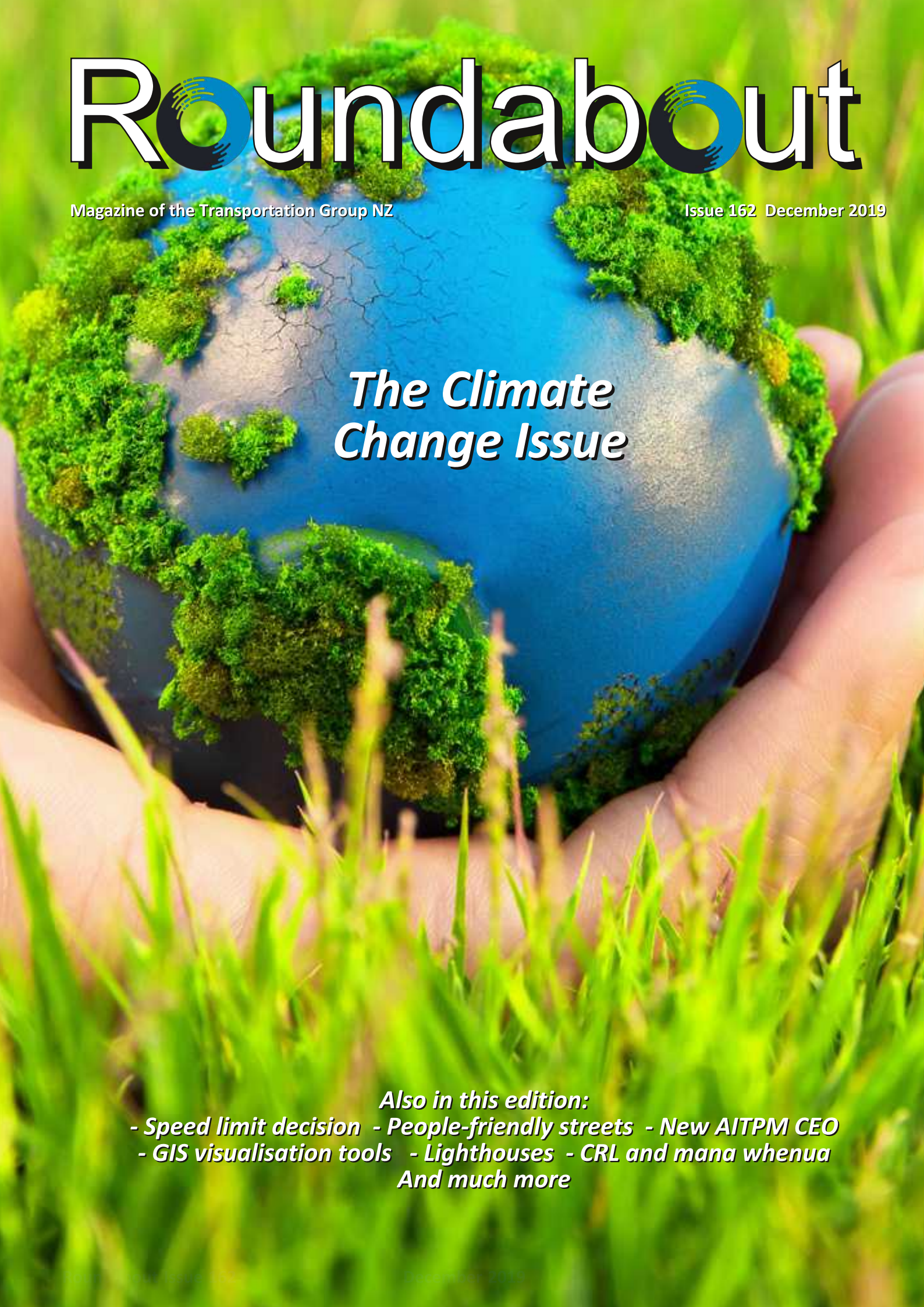
Roundabout

Magazine of the Transportation Group NZ

Issue 162 December 2019



The Climate Change Issue

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

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

Correspondence welcome, to Daniel Newcombe:
daniel.newcombe@at.govt.nz

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

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

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

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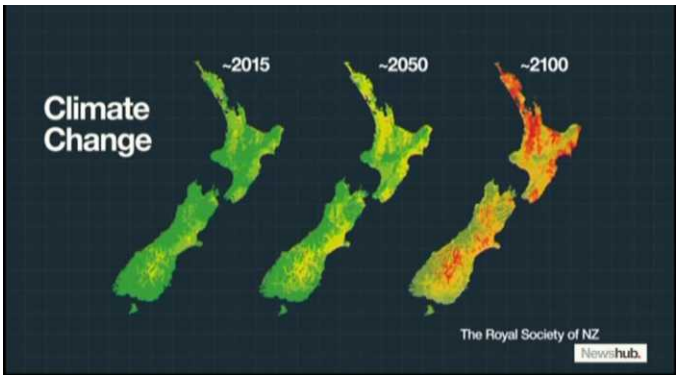
Editorial

This edition revolves around climate change.

The National Committee had some recent correspondence on the subject, following the publication of a letter the committee signed on the Group's behalf relating to the Zero Carbon Bill.

This got me thinking about whether the understanding I have of climate change is shared across our membership.

I naïvely assumed that – due to years of increasingly concerned reporting from national and international scientific agencies – we all pretty much agreed that the climate was warming, this was due to man-made emissions and that we needed to do something (well, lots of things) to avoid or minimise the potential catastrophe we have created.



I also assumed that the only people who really argued against this were those with a vested interest in maintaining the current situation – oil companies, big emitters and the like.

But it is now apparent to me that whilst the majority of people accept the science, there are still some who challenge it. Or others who accept it, but argue against doing much about it.

Stepping back, I can see that the people most worried and demanding action are those who will be living with the climatic consequences for decades to come – the youth.

I would prefer we were not fiddling while Rome (or more accurately, multiple parts of the globe) burns

And those arguing against change, or grumbling at the difficulty of it, are typically those who won't be around to experience the worst of it – the more senior members of society who have benefited from the emissions-based economy.

At a simplistic level, the argument seems to be that making structural changes to society, industry and the economy to minimise climate change will add financial cost, and those older people resent having to pay more if they are not likely to be around to benefit from it – even though their children and grandchildren will be. So the position taken seems to be a fairly selfish one – in my opinion – although I note that there are a far more complex range of reasons why people may reject the climate change message.

This edition has some correspondence on climate change, as well as some articles on the matter. There are also some links you can click through to and explore for more information – both for and against the subject.

Having read what little I have on the subject, I am convinced climate change is underway, that mankind has triggered it through emissions, and that urgent emission reduction actions must be undertaken across the globe. NZ has a role in that, and so does our profession.

As editor, I am always happy to hear and publish counterviews on topics, however on this one I would prefer we were not fiddling while Rome (or more accurately, multiple parts of the globe) burns.

Daniel Newcombe
Roundabout Editor
@newcombe_dan

TRANSPORTATION GROUP NEW ZEALAND

Chair's Chat

Spring has been and gone and summer started with a bang in Christchurch the first week of December.

Great to see lots of people walking and cycling around enjoying it. I have been cycling some of the new cycleways recently and what really stands out to me is that they have greatly improved the walking environment as well.

There are new crossings in locations that have always been grim for pedestrians. My street has been rebuilt as a 'neighbourhood greenway' as part of the Heathcote Expressway cycleway and what a transformation! (See the before and after images).

At one end of my street there is a large refuge island on the intersecting road that restricts motor vehicle access to left in left out but provides a much better place to cross the road.

For years I had to teach my kids to sprint across this road when we were heading to the park. I'm surprised more people aren't queuing up to have a cycleway down their street.

There is less traffic noise and more people noise, like laughter! I sit on my veranda and watch people walk, cycle, skateboard and scooter past having fun...I love it!

One thing I have noticed though, and not just on cycleways, is that we need to think more cleverly about traffic signs. Such as where they are placed, maybe less of them, and where feasible signs could share the same post.

I have been cycling some of the new cycleways recently and what really stands out to me is that they have greatly improved the walking environment as well

One neighbour saw another signpost foundation being poured on the corner and said "That's probably a sign to watch out for signs", so the public do notice this. I know there are legal constraints but maybe the rules need changing.

Twice a year Engineering NZ hold a forum for technical interest groups (TIGs). These are usually a day long and held in Wellington.

I attended the Spring Forum on behalf of our group. The Transportation Group is the largest TIG, a couple of groups such as SESOC have more members, but they are incorporated societies.

Various ENZ staff updated us on what they have been up to, most of which are covered in the latest ENZ magazine. A pitch was made for CPEng practice area assessors, some more transport assessors would be great!

An interesting statistic with CPEng was that engineers applying had an average of 10 years experience.

Enjoy summer and keep well and safe!

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

The ends of a building block need not be bland

AT makes speed limit decision

After considering close to 12,000 public submissions and reviewing technical reports, Auckland Transport's Board approved Speed Limits Bylaw 2019 bylaw recently which will reduce speed limits on around 10 per cent of Auckland's urban and rural roads.

The speed limit changes target the highest-risk roads in the region and are expected to stop approximately 87 death or serious injuries over the next five years.

The changes are in response to an alarming, and growing, trend of deaths and serious injuries (DSI). Auckland currently has around three times the rate of DSI than other parts of New Zealand – on average two people are killed or seriously injured every day.

Following public feedback, some changes were made. Most of Auckland's city centre will have a speed limit of 30km/h (the current 10km/h combined pedestrian and vehicle zones will remain), however, the decision has been made to reduce Hobson, Fanshawe and Nelson streets to 40km/h instead of 30km/h. In addition, AT will implement engineering treatments on these arterials to protect vulnerable road users like pedestrians and people on bikes.

The board decided to leave existing speed limits on 20 roads, mostly in rural areas in the south, which had originally been proposed for speed limit reductions.

Due to the scale of the change with new road signage and traffic calming measures being installed, the Safe Speeds Bylaw will be introduced in a phased approach. Further information on the phasing of the changes will be provided by Auckland Transport as plans are finalised and confirmed. The changes are likely to be implemented between mid-2020 and mid-2021.

AT received 2,158 comments on roads and areas that were not proposed to have speed limit changes in this bylaw. Many of these comments were requests for additional speed limit changes. All of the feedback will be taken into consideration as part of any future speed limit changes.

Auckland Transport Chairman Dr Lester Levy says the response to the extensive consultation on the bylaw was clear – Aucklanders want safer roads and streets for all users, especially vulnerable pedestrians, cyclists and motorcyclists.

"The evidence from our own trials and overseas experience shows that drivers who make mistakes at lower speeds have better outcomes," Dr Levy says.

"AT and supporters of lower speeds have a message for Auckland drivers: if you value life, reduce your speed."

The safe-speeds programme is based on the view that drivers in town centres and on rural roads should travel at a speed that is safe and appropriate for the road conditions.

On Queen Street, there's been 36 percent reduction in deaths and serious injuries since 30km/h speeds were adopted in 2008.

AT recognises that as Auckland has grown and changed and a blanket two-speed limit approach – 50km/h for urban areas and 100km/h for rural roads – no longer suits high-density areas with multiple users and the many hilly and twisty rural roads throughout the region.

In September 2019, Auckland became a Vision Zero region.

In the Vision Zero approach to road safety, four areas are equally important: safer roads, vehicles, speeds and people. Improvements in each of these areas such as upgrading high-risk rural roads, adopting safe car systems, setting appropriate speeds for roads and ensuring compliance with road rules – will all contribute to a safer road system and reduce the number of deaths and serious injuries.

While many Auckland rural roads are not suited for high speeds, they are also not engineered in a way to naturally encourage drivers to slow down. As a result, there are high crash risk routes and levels of fatalities and serious injuries that are disproportionate to the volumes of traffic on these routes.

AT has planned a $700 million road safety programme through to 2028 to deliver major, minor and mass-action safety engineering projects at high risk locations across the network. Funding will come from the Government and Auckland Council, and includes $216 million from the Regional Fuel Tax.

"From safety upgrades, including a $120 million investment in intersections, to a $35 million on safety improvements for pedestrians and people on bikes, we're creating safer roads for drivers and for those road users who are most vulnerable," Dr Levy says.

Equity in Transportation

Transportation Conference

10 – 13 March 2020
Christchurch Town Hall

Transportation 2020 invites you to register now!

Programme is on the website now

3M Transportation Dinner

We hope you can join us at the conference dinner, on Thursday evening.

Join us on stage at the Isaac Theatre Royal for the 3M Conference Dinner on Thursday 12 March.

Come dressed as someone from the roaring 20's (a nod to the past, now and the future).

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Full	$1200
Single day	$675
Student full	$500
Student day	$300
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Exhibitor	$575

Special dates of interest

- Early bird registrations close 1 Feb 2020
- Applications for young professional & student registrations close 1 Feb 2020
- Close of 3M Award entries 1 Feb 2020

Sponsorship opportunities

We wish to acknowledge the contribution of our sponsors, past and present, whose contributions are instrumental in helping us run what we hope are stimulating, rewarding and enjoyable conferences.

We have added some new packages and these are available on the conference website.

We look forward to seeing you in Christchurch!

https://www.tgconference.co.nz/

ITE Update

Welcome to first, and hopefully ongoing series of inputs to help introduce the ITE (full legal name being Institute of Transportation Engineers) to Roundabout readers.

Although ITE has 'Engineers' in the formal title, don't be fooled or restricted by this.

ITE is a global community of transport professionals from many disciplines and are involved in almost every aspect of the wider global transportation sector.

ITE has its origins in the US, but has members spread throughout some 90 countries across the globe, and has been active in NZ for many years.

We have sought to work alongside Engineering NZ to help spread worldwide knowledge for use in our NZ context and to provide professional connections and networking to transport professionals here.

The NZ part of ITE falls under the ITE-ANZ Section banner (yes, with Australia), with many members in Melbourne and others spread around the rest of the 'lucky' country. The figure below gives a snapshot of ITE membership worldwide.

In terms of the NZ membership, I'm the current NZ Representative on the ITE-ANZ Section Board, with Don McKenzie as the current (although finishing shortly), Global District Director.

Don has been heavily involved in many international ITE issues and development that he will cover in a recap of his 'year that was'.

Don has also been instrumental in helping set up the first NZ ITE student chapter, in Christchurch – UC Trans (with our plans also extending to exploring a similar chapter at the University of Auckland in the not too distant future).

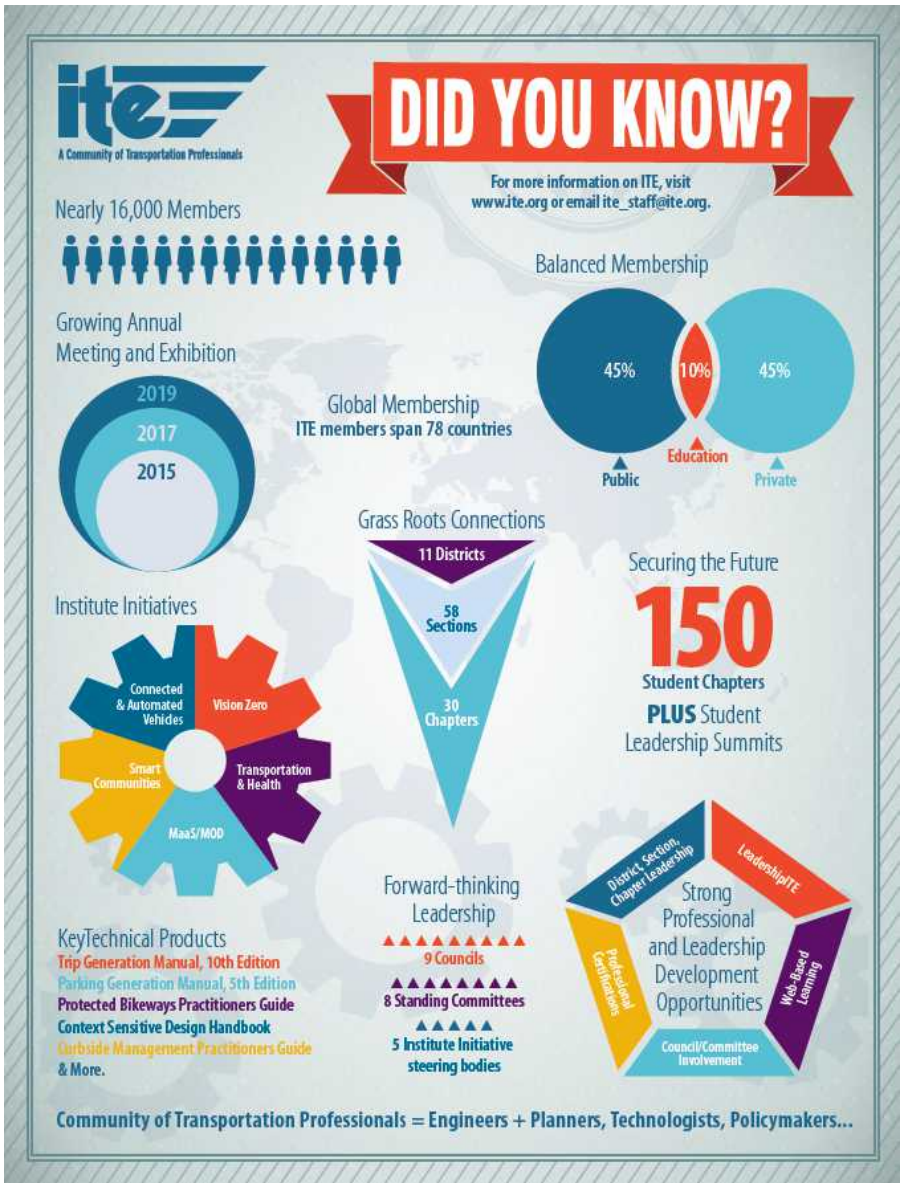
It's been great to see students getting interested and involved in the local and global transport community, and Don and I hope to get a few more ITE members in Christchurch to help provide some assistance and professional mentoring with this group over the coming years.

In the months ahead, we aim to add some international transport flavour and links to projects and resources being produced in other parts of the world.

Perhaps some of these can help inform and inspire NZ's finest to develop innovative and future focused transportation solutions.

In the meantime, if you have any questions about ITE, please contact me directly and I'll try and help.

David Mitchell
ITE-ANZ NZ Representative
David.mitchell@nzta.govt.nz



How easy is it to walk* to your destinations or your bus stop?

I am a PhD student and would like to find out how you see your walking environment and how you choose (not to) walk.
I would like to interview:

- **adults** who **walk* at least sometimes for transport,**
- living in **Kingsland, Mt Eden, Mt Roskill or Papakura**.

Interviews will be face to face, and participants will receive a $30 koha for their time. The findings will help Auckland become easier to get around.

Possibly interested? feel free to contact me for a chat:

Tamara Bozovic
email: tamara.bozovic@aut.ac.nz
phone: 021 212 35 03.

* "Walk" includes of course the use of a wheelchair or any device helping you get around

Approved by the Auckland University of Technology Ethics Committee / Ethics Application 18/431

Manila transport crisis: Commuters outraged by 'leave earlier' advice

The Filipino president's spokesman has been criticised for dismissing commuters' concerns in Manila - one of the world's most gridlocked cities.

Train breakdowns and worsening traffic have put commuters on edge. But Salvador Panelo - Rodrigo Duterte's spokesman - told commuters if they wanted to arrive earlier, they should set off earlier.

That led to many frustrated Filipinos accusing Mr Panelo of being "out of touch with reality".

One resident said that it already took students three hours to reach class. The situation was worsened recently by three major train breakdowns.

And Mr Panelo's boss, President Duterte, was not spared from criticism, either. His government recently bought an ex-US military plane for $39.9m to use as his private jet.

The government said the jet, set to be delivered next year, would also be used by other senior officials and in crisis situations. But that didn't pacify some Filipinos.

"Manila traffic is getting worse and worse and [the administration] is rewarding themselves with junkets and jets. It's insane," said one tweet.

Manila - which, in the wider metropolitan area, has a population of more than 12 million - is one of the most densely populated cities in the world.

It suffers from gridlock and in 2015 was named the worst city to drive in. But Mr Panelo seemed less than sympathetic.

"What do they mean by transportation crisis? I just see traffic," local media quoted him as saying. "There is transportation, we all manage to get a ride. People get to where they need to go. There is a solution here, if you want to arrive early (at) your destination, then you go there earlier."

His comments were not received well.

"There is a transport crisis in Manila, there always has been," said student activist John Gemuel Maramba. "Students leave at 5am for an 8am class. Millions rely on public transport to get to school and work, yet are subjected to the horrors of excruciatingly slow traffic, overcrowded public vehicles and malfunctioning trains. There is a lot of stress and rage that stems from the poor systems."

Many Filipinos took to social media to express outrage at Mr Panelo's "insensitive" remarks.

"The mass transportation crisis is real," wrote one Twitter user. "Don't agree with some high official who tells who otherwise, who himself doesn't even use public transportation to get around."

Mr Panelo has since promised to take public transportation to the presidential palace on Friday.

"The challenge to commute is accepted," he said. "I'll take the jeepney [a type of bus] and the train in going to work."

Many Filipinos also brought up President Rodrigo Duterte's private plane. "The budget for health and education was cut for this," tweeted medical student Iya Elago. But one commenter did offer a solution - for her, at least.

"I just work from home," she said. "It eliminates the need for me to deal with people and stress."

Source: BBC

Keep up to date with ENZ Transportation Group happenings:

www.transportationgroup.nz

www.twitter.com/ipenztg

www.facebook.com/ipenztg

TRANSPORTATION GROUP NEW ZEALAND

Long-time TG member John 'Foz' Foster passes

It is with sadness we acknowledge the passing of John Foster on 8 December 2019.

John, affectionately known as 'Foz', spent many years in the transport industry both in NZ and overseas.

He held senior roles in the National Roads Board where he held important roles in the development of the national and local transport networks, and also spent a significant period with Traffic Design Group.

John made large contributions to the development of the Motorways in all our major cities during the 1960's to 1980's, using his wide range of skills including geometric design, transport planning and modelling.

John had a deep passion for transport and he was active in mentoring many prominent practitioners in the transport sector.

He remained an active member of the Transportation Group and NZMUGS long after he retired.

Our thoughts are with his family and friends.

Auckland's High Street more people-friendly

In collaboration with the local community, a pilot project has been launched to trial some ideas for improving High Street in Auckland. The first stage of the trial has widened the footpath, creating more space for people and greenery.

This technique of employing fast tactical changes is well-evidenced. By testing innovations in streets with communities before committing to major investment, councils can have more assurance that they're getting the direction of change right.

Testing also enables communities to get a sense of what their streets could be like, to input into changes in an iterative process and make more informed decisions.

The project is a case study in the Transport Agency's Innovating Streets programme, which aims to support towns and cities to make streets safer and more liveable quickly and cost effectively, using innovative and effective techniques to reduce vehicle speeds and create more space for people.

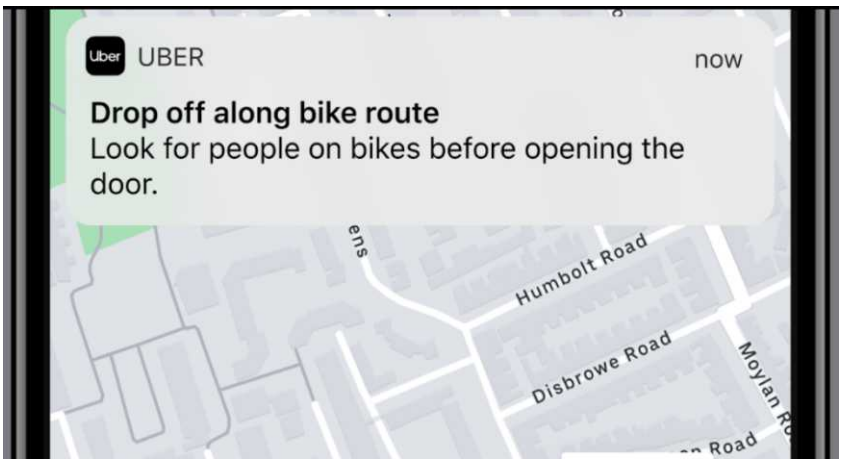
Check out this video from Auckland Council HERE

Uber rolls out cycle safety alerts

Uber NZ is rolling out a new feature – Bike Route Alerts – across seven cities in New Zealand. The alerts will notifiy Uber riders via a push notification that their upcoming drop-off is near a bike lane or along a bike route and remind them to look out for people on bikes before opening their door.

The alerts are aimed at preventing people opening doors into the path of someone cycling, hitting them or causing them to swerve.

The alerts will be rolled out in Auckland, Christchurch, Dunedin, Hamilton, Queenstown, Tauranga and Wellington.




Imagine if Paris had as many new cars as Mumbai
Catch up on a fast-changing world
theguardian.com/global-development

Letter to the editor (and response)

Dear Editor,

I saw the letter in September's Roundabout magazine (reprinted on following page) on behalf of the Transportation Group to the government on the subject of climate change (and apparently provided by an organisation calling itself Generation Zero), and have a few questions:

1/ Could you please put in plain language what the recommendations are, and if they align with IPCC recommendations?

2/ What are the long-term consequences of these recommendations to the economy and for future generations of New Zealanders?

3/ Why did the Transport Group committee feel that members of the group did not need to be consulted before signing us up to this?

It seems to me that the Transport Group committee has decided on behalf of us all, that in effect the 'science is settled' with regard to the effects of human activity on global climate. I personally am not convinced there is a climate emergency, and know that I am far from alone in this (for example see: https://www.climatescience.org.nz/).

Reducing vehicle emissions and improving the environment are of course good things to do, but not if it just involves throwing taxes around at things that don't really achieve anything constructive and will inevitably affect the cost of living for every New Zealander.

I also think it is inappropriate for a professional organisation such as ours to endorse a course of action to government, that it isn't properly qualified to understand. Isn't that just called 'virtue signalling'?'

Duncan Campbell
Principal Traffic Engineer & Director
TRAFFESSIONALS Ltd

TRANSPORTATION GROUP NEW ZEALAND

Hi Duncan

The Chair and Deputy Chair have asked me to respond on their behalf.

The first point they would like to make is that where the National Committee is making a decision or taking a position on behalf of the Group members, they do try to consult members beforehand.

As volunteer elected representatives of the Group, the National Committee has an implicit mandate to make decisions on behalf of the Group. Consulting the whole Group on every decision is neither feasible nor necessary.

However, in this case, the committee was presented the letter from Generation Zero only shortly before the publishing date, so there was not time to consult members. The National Committee reviewed the letter and were collectively happy for the Chair to sign it. The letter was then published to show members what had been done.

The second point is that the letter was acknowledging the urgency of climate change, in the context of the RMA amendments and Zero Carbon Bill that were being debated by Parliament at that time.

The Group was not 'signed up' to anything in particular, but simply joined a group of concerned organisations in highlighting the issues under discussion at the time, and seeking that certain legislation be aligned. As you will know, the Zero Carbon Bill was recently passed into law with near unanimous cross-party support.

And thirdly, transport is squarely within the remit of climate change concerns, given the significant emissions of the sector and the role transport plays in supporting land use. Sustainability within the transport sector has been the topic discussed at Group conferences and branch events for years.

As transport professionals, we don't need to debate climate science, but simply acknowledge our sector's role in the emerging concern regarding climate change.

With regard to climate change I have some thoughts to share. I tend to agree that we as a Group shouldn't debate whether climate change is 'real' or not, but equally we should not just ignore the topic and wait for

someone else to point out our sector has a role to play. As editor of the Group's magazine, I have to balance the differing views of our members with the need to share information of relevance to the profession.

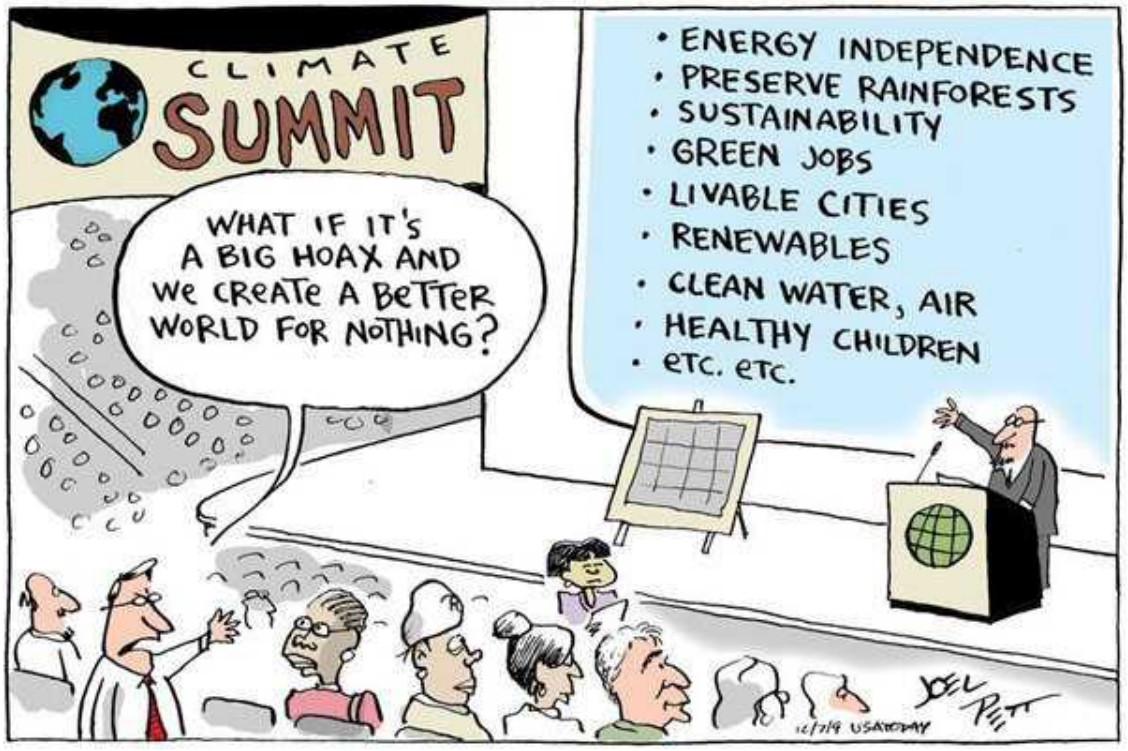
This often means that some members feel challenged by the material we publish (I often get correspondence that we publish too much on cycling issues, for instance), but I consider our Group is better for the diversity and new thinking these articles can bring. It also feels like we are re-balancing a historical blindspot of the industry – that we focused too heavily on moving vehicles and too little on helping people get around.

Whilst I am not a climate scientist, I would commend you and all our members to read 'The Uninhabitable Earth: Life After Warming' by journalist David Wallace-Wells. It is a summary of hundreds of reports and articles on climate change and sets out a shocking but compelling picture of the coming decades. There is a lot of science in it, but I found it more digestible than many equivalent books.

I had – like many, I presume – thought that centuries of carbon-burning were finally starting to take effect on the environment, but the most astounding fact I discovered from this book was that of the total quantity of carbon burning that has occurred over the last 400 years, over half has happened since the premier of Seinfeld. Seinfeld the TV show. I had to re-read that a couple of times to make sure I understood that correctly. And 85% has occurred since the end of World War II.

This is a recent and extreme situation, not comparable to natural warming and cooling cycles of the planet.

After reading more on the topic, I am convinced of the need to reduce emissions, and would rather the profession was debating how best to do this, than debating whether it is necessary to do so. I am reminded once again of the cartoon below.



Everyone is entitled to their own views, and I completely expect our members to be having debates for years to come on the efficacy and implications of various emission reduction efforts. And the National Committee should be leading the Group in a direction that places us at the heart of the discussion, so we can use our collective expertise to help find the best solutions – whatever they are and however urgently they are implemented.

So, I hope it is understandable why the National Committee chose to sign and publish the Generation Zero letter, and why we as a profession need to discuss our role in climate change responses. I am happy for this to be an ongoing discussion, hopefully in a productive way that sets the profession in the right direction for dealing probably the greatest challenge of our times.

And for those who want to explore the issues further, along with Duncan's link (https://www.climatescience.org.nz/), some further information is here:
https://skepticalscience.com/argument.php

Additionally, some transport-specific evidence, including 20 pages of scientific references, is here:
https://www.ipcc.ch/report/ar5/wg3/transport/

The Editor

Letter to the Government on Climate Change

The Transportation Group Chair Jeanette Ward signed the below letter on behalf of the Group, joining a large number of concerned organisations, seeking that the Government take action on climate change.

Hon David Parker, Minister for the Environment Parliament House Wellington
Cc: Hon James Shaw, Minister for Climate Change

Friday 6 September 2019

Dear Minister Parker

In 2004, the Resource Management Act 1991 (RMA) was amended to include sections (ss 104E and 70A) that specifically ruled out the ability of a council to take into account the effect of greenhouse gas emissions on climate change when making rules and when considering a resource consent. While this was supposed to be followed up with either a carbon charge or a National Policy Statement that would set out the criteria to deal with climate change, these never eventuated.

A similar section was also included in the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ/CS Act) - s59 (5)(b).

We understand that the RMA II revision programme would have the Climate Change Response (Zero Carbon) Amendment Bill (Zero Carbon Bill) "in scope" - but this will not be completed before the next election, and we simply don't have the time to wait. Neither would this take care of s59(5)(b) of the EEZ/CS Act.

It is 2019, and both the Amazon and the Arctic are on fire. Both poles are at record melt. Thousands of New Zealanders face increased floods, droughts, wildfires, and tornadoes appear to have become a regular thing. We face a climate emergency.

Our response to these challenges must honour te Tiriti o Waitangi and the rights of tangata whenua. Protecting indigenous rights in the world is fundamental to how we take action to protect our climate.

The IPCC's Special report on 1.5˚C made it clear that warming beyond 1.5˚C will be extremely challenging and increases the risk of runaway climate change. To get onto a 1.5˚C pathway, we must decarbonise our economy - and fast. The urgency of the situation has been voiced by many politicians, including the Prime Minister. But these clauses directly prevent local authorities from considering, and acting on, the climate crisis.

We are in the middle of a Select Committee deliberation on the Zero Carbon Bill. We are very concerned that once the bill comes into force, and the Climate Change Commission sets out its carbon budgets, local authorities and the EPA will still be blocked from even considering the effects of emissions on climate change for any new project. The RMA and EEZ/CS Act will stand in the way of New Zealand endeavouring to set itself on a path of cutting emissions in order to get onto a 1.5˚C pathway.

This would render the Zero Carbon Bill ineffective in crucial respects for at least two years until any revision is made to the RMA and EEZ/CS Act. We envisage this could cause litigation including judicial review under the Zero Carbon Act and further confuse the public about the consent process even after it was fixed in legislation.

It has been argued that the NZ ETS would deal with high-emitting projects, but we would respond that not all of them would be, such as out-of-town shopping centre without any public transport, that would drive up transport emissions. While this could be affected by a price on carbon brought about by the ETS, at the moment any expected price on carbon is not going to be high enough to stop such activities. Hard rock minerals mining, including gold mining, is another very high-emitting activity, and there are many more.

Consents these days are often non notified so the public has no opportunity to demand consideration of climate. Speaking frankly, the 2004 RMA amendment was a failed experiment, and it's now time to put climate change back into its remit.

If we want to get onto a 1.5˚C pathway, we must decarbonise our economy. The urgency of the situation has been voiced by many politicians, including the Prime Minister. But these clauses directly prevent local authorities from considering, and acting on, the climate crisis.

We have a straightforward proposal: insert a clause in the Zero Carbon Bill by Ministerial Supplementary Order Paper (SOP) that would specifically take precedence over sections 104E and 70A of the RMA and section 59(5)(b) of the EEZ.CS Act, to allow consideration of the effect of emissions on climate change where relevant. A threshold of emissions could be considered or inserted so that low level emissions are not covered.

This would send a very clear signal that climate change is an issue that needs to be taken into account across all activities.

If you consider that amending the RMA through the Zero Carbon Bill process is out of scope, then we request that you urgently amend the first round of RMA amendments due to be introduced this year, so that our Zero Carbon Act does not come into force completely hobbled by the RMA for at least two years before the second round of amendments are completed. Climate change doesn't allow us that kind of time. We also request that you urgently introduce legislation amending the EEZ (CS) legislation to repeal S59(5)(b).

It is now time for climate change to be a relevant - indeed, often central - consideration in local and regional authority decision-making. Only then can New Zealand effectively and comprehensively address climate change.

Signed

Jeanette Ward
Chair - Engineering NZ Transportation Group

TRANSPORTATION GROUP NEW ZEALAND

Other signatories include:
Coal Action Network Aotearoa
Ecologic Foundation
Forest and Bird
Generation Zero
Greenpeace
Aotearoa New Zealand Human Rights Foundation
OraTaiao: The New Zealand Climate and Health Council
Oxfam New Zealand
School Strike 4 Climate
WWF-New Zealand
350.org

Dunedin ped/cycle study

ViaStrada is studying the changes for cyclists and pedestrians being trialled in Dunedin, at the State Highway 1 intersections with Albany Street.

This is part of the official trial required by the NZ Transport Agency. Anyone who uses or is familiar with these intersections is encouraged to participate in the survey - http://bit.ly/cycleBD. The survey will be online until January 2020.

Traffic signal optimisation PhD study released

The Transportation Group provides a Tertiary Grant and Dana Abudayyeh from Canterbury University was a recent recipient.

Dana has now completed a PhD in Traffic Engineering. You can download the thesis from the University library website HERE

AITPM appoints inaugural CEO

At the Australian Institute of Traffic Planning and Management (AITPM) Board Meeting held on Friday 6 December 2019, Kirsty Kelly was appointed to the role of CEO for AITPM.

Ms. Kelly will take on the newly created position bringing with her a strong record of leading and improving organisations at a national level in the non-profit sector, both as a CEO and Company Director.

Ms. Kelly's achievements and contributions during her 23-year career have been extensive. Over 6 years as CEO of the Planning Institute of Australia, Ms. Kelly led organisational reform to unify and modernise the organisation which included achievements in membership growth and restructuring, reputation building and collaborative partnerships, improvements in business planning and financial performance, and social media growth.

Ms. Kelly is highly qualified, holding a number of tertiary qualifications including a Graduate Certificate in Business and is nearing completion of a Master of Business Administration. She was also a recipient of an Australian Leadership Award, Australian Davos Connection Forum in 2012.

The public wants action on climate change. Politics must catch up

Opinion piece: Stephen Buranyi, The Guardian

The most shocking political development of 2019 may be the end of the nearly three-decade old consensus that the public doesn't care about the climate crisis.

People were hopelessly and permanently apathetic, the argument went, or unable to see beyond the present. They were said to suffer what Ted Nordhaus and Michael Shellenberger memorably called "apocalypse fatigue", a numbness brought on by years of scientific warnings about a dismal future. And this in turn meant they were uninterested in, if not outright hostile to, any kind of meaningful climate action.

All of this appeared to be backed up by data. Years of polling and other measures of public engagement showed that even as awareness of the crisis grew, there was no interest in changing anything.

But after an unprecedented wave of popular climate protests – centred around the latest and most terrifying scientific predictions – recent polling suggests that orthodoxy has suddenly and dramatically reversed.

A YouGov poll found that more than half the country backs a national target of zero carbon emissions by 2030, a policy that as recently as a year ago was offered only by the Green party.

Other polls suggest that two-thirds of the country believes the climate crisis is the biggest issue facing humankind, and that it has overtaken the economy on voters' list of concerns.

There have been suggestions that the climate crisis will be a central issue in the upcoming general election – it's even being called "the climate election" – and a majority of Britons say that it will influence the way they vote.

The public now appears to want to take part in the politics of climate change. The trouble is, such a thing barely exists. This sounds ridiculous, because we have clear evidence of at least two kinds of climate politics: the familiar international conferences, with rooms filled with bureaucrats and national leaders parachuting in for the final handshakes and signatures; and the recent actions by grassroots groups such as the school strikers and Extinction Rebellion. But between the insulated world of international negotiation and street-level protest there is almost nothing.

For most people, politics means national politics, and a choice of policies delivered by ideologically distinct national parties. But for nearly a generation, climate politics has hovered in the almost apolitical space of international treaties, out of the reach of the public.

Climate policies have been formulated in broad and loosely defined terms that politicians can all agree on. They commit to future targets that would seem to require radical changes in the way we live, but those decisions remain unmade, because the major parties have never brought them in front of a national electorate.

The UK's own Climate Change Act of 2008 – often touted as the most progressive climate legislation in the world – neatly illustrates the limits of climate politics as they currently exist.

The act passed with an overwhelming majority, and committed the UK to an 80% emission reduction by 2050 (since increased to 100%). It started from a premise everyone agreed with: that climate change was a problem, and we had to do something about it.

But 10 years later, the question of what exactly we will do has hardly been addressed. The government hit its first two mandated climate targets largely by tinkering with policy out of the public eye, decommissioning coal plants and supporting renewables where it was easy to do so.

The next steps, though, would require transforming more visible and tangible aspects of public life – whether they are the boilers we use to heat homes, the kinds of food we eat, or the way the countryside is balanced between exploitation and protection – and would involve stronger government intervention, and spending, than has been committed before.

There aren't currently any plans to do that, and so as it stands the UK is expected to miss the 2025 and 2030 targets.

This is how the politics of climate change has always played out. Targets are made by consensus, but policies are never brought forward because they would involve change, and thus be contentious, partisan – the stuff of real politics.

Instead, we're left with a framework that is never filled in, a set of guy-wires meant to steady a bridge that is never built.

For a long time our leaders haven't been held to account for this; they've been safe knowing the public doesn't care enough to demand more. That appears to have changed over the past year, and the initial response is promising: the declaration of a climate emergency by parliament, and MPs convening a public assembly on the climate crisis are good starts.

But they're still in the realm of acknowledgement and declaration. They need to go further than that, by presenting people with an actual political choice.

Not just a choice of different future targets, but the policies to deliver them. The Greens have been offering those kinds of policies for years.

Now Labour has indicated it will bring forward its version of a green new deal, likely a path to net-zero carbon by 2030 backed by new regulations and a massive government spending programme on infrastructure and housing.

It's unclear what the Conservative platform will be, but, several months ago, 41 Tory MPs produced a draft manifesto with market-based initiatives that they believe will deliver net-zero by 2050.

These visions are likely to be attacked by some as reckless, or ineffectual. But they are serious proposals because they place their policies within a political vehicle familiar to each party's voters, and to the wider public.

They indicate that the climate crisis may be about to descend from the lofty realm of consensus into the arena of real politics. That can only happen when the public is given – or demands – a proper democratic choice.

1.5°C Cities: the why, what and how of urban climate leadership

Cities are where over half of the world's population live, and are the site of most of our built assets, economic activity, and greenhouse gas emissions. Because of this, ambitious action by cities is absolutely critical to respond to the climate emergency.

The next few years are crucial for climate action; while climate neutrality by 2050 is the goal, it is critical that cities do everything possible to cut their emissions now to have a chance of meeting it. Every ton of carbon cut today makes it easier to cut two or more tomorrow.

To support cities to deliver the action which is so urgently needed, this article brings together a wealth of information to concisely explain why reaching the 1.5 goal is so important, what the problem is, and how we can solve it. It summarises and updates C40's major research findings over the past five years in line with the 1.5°C goal, and lays out the targets set by cities already implementing 1.5°C-compatible climate action.

Limiting temperature rise is to 1.5°C is the only reliable 'science-based' target we have: we know that with any warming beyond this cities would experience massive increases in food insecurity, water shortages, poverty, risk from extreme weather events and impacts on human health.

Human activity has already caused 1°C of warming since pre-industrial times. Due to the time lag between emitting greenhouse gases and their effect on climate, we are already guaranteed some additional warming. It is still possible to limit global heating to 1.5°C, but we are not on track, and time is running out. With our current level of emissions, we are heading for a catastrophic 3°C of heating or more, and we are likely to pass the 1.5°C mark between 2030 and 2052.

Business-as-usual will deliver a devastating future for cities and urban citizens around the world. The impacts would include:

Extreme heat. The number of cities exposed to extreme heat would nearly triple, and the urban population exposed would increase by 800% to reach 1.6 billion, by mid-century. This includes over 215 million people living in urban poverty in developing country cities, and who are among the most vulnerable.

Sea level rise. Over 570 low-lying coastal cities would face projected sea level rise of at least 0.5m by 2050. This would put over 800 million people at risk of coastal flooding and storm surges, increase the risk of energy disruptions (due to the coastal locations of many power plants), and the economic cost to cities from rising seas and flooding could amount to $1 trillion by 2050.

"If heating exceeds 1.5°C, much of the economic and social progress made since the end of World War II will be undone."

By 2100, climate change could deliver 2m of sea level rise. Local factors like land subsidence mean that some cities, like Jakarta and those on the east coast of the United States, are witnessing local sea level rise two to three times faster than the global average, and face an existential threat5. Indonesia has already announced it will move its capital inland because of the rising seas.

Food security. By 2050, 2.5 billion urban residents in over 1,600 cities will live in countries where one or more of the major crops are projected to decline by at least 10%. Food shortages drive up costs, and the urban poor are especially at risk from supply disruptions. Food scarcity can also lead to conflict and unrest.

Cities would also face major threats from water scarcity and droughts, flooding due to heavy rainfall, and increased vector-borne diseases like malaria and dengue fever, among other challenges.

By reducing greenhouse gas emissions, we can mitigate climate change. The stronger the mitigation action, the less climate change we will see, and the lower the cost.

The probable savings (avoided damages) from keeping global warming to a 1.5°C rise, relative to a 2°C rise, are a cumulative US$20-trillion increase in world GDP by the end of the century (for comparison, global GDP in 2016 was about $76 trillion).

Cities implementing climate actions also reap swift, local benefits for health, quality of life and prosperity.

Common benefits for cities and individuals include:
- Health benefits from reduced air pollution.
- Improved quality of life and wellbeing from increased active travel, better quality buildings, more trees and green space, and more.
- Improved workforce productivity and economic efficiency due to better health and reduced congestion.
- New job opportunities, including unskilled, skilled and professional jobs.
- Reduced spending on fuel and electricity, reduced fuel poverty, and the opportunity to generate revenue from building-scale renewable energy.
- Less need for car parking provision, allowing land to be used more productively.
- Improved energy security as a result of reduce oil dependence and exposure to price volatility.
- Revenue raising and resource generation opportunities from the collection and treatment of waste.

Climate change is inextricably linked to the challenge of creating a more equal world. It is impossible to tackle climate change without tackling inequality, and vice-versa. At the same time, climate actions bring social, economic and environmental benefits, such as better air quality, low-cost renewable energy and employment opportunities.

At a global level, the quantified benefits of three of the most impactful actions cities can take are estimated at:
- Investments in residential energy efficiency retrofit could result in the net creation of 5.4 million urban jobs worldwide, and significant household savings – along with emissions reductions.
- Improved bus services and more extensive networks could prevent the premature deaths of nearly 1 million people per year from air pollution and traffic fatalities worldwide, while saving 40 billion hours of commuters' time each year by 2030 – along with emissions reductions.
- District-scale renewable energy for heating and cooling in buildings could prevent a further 300,000 premature air pollution related deaths per year, by 2030, while also creating jobs for approximately 8.3 million people – and result in emissions reductions.

"An advanced city is not one where even the poor use cars, but rather one where even the rich use public transport."
Enrique Peñalosa, Mayor of Bogotá

Globally, emissions need to peak by the end of 2020, and halve by 2030. Already, 30 C40 cities have peaked their emissions.

In the interests of fairness and feasibility, individual cities' 1.5°C pathways should take account of their historical responsibility, current per capita emissions, and relative capacity to act. High capacity cities with high current and/ or historical emissions must deliver significant emissions reductions first; by 2035, all high GDP cities should be producing negligible emissions.11 Cities with low GDP and low GHG emissions per capita can deliver greater emissions reductions after 2030.

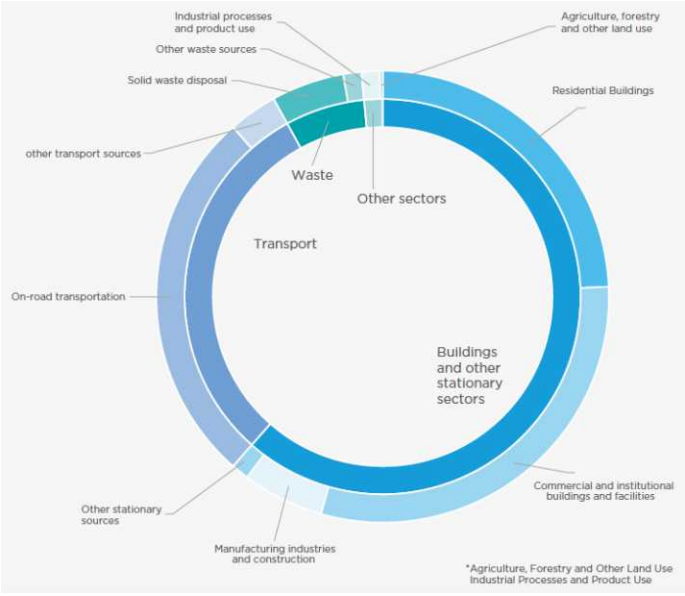
The precise deadline for carbon neutrality is less important than the need for cities to do everything possible to cut emissions now. Transforming cities cannot happen overnight and we need to start immediately to have a chance of meeting our 2030 and 2050 targets. It is critical that today's infrastructure investments do not lock cities into high carbon futures, and many sectoral policies will take years to deliver the emissions savings we need.

The first step for cities to reduce their greenhouse gas emissions is to identify and measure where their emissions come from. The biggest sources of greenhouse gas emissions in cities are:
- The energy consumed to heat, cool and power our buildings.
- Fossil fuel-based transport.
- Solid waste disposal and burning.
- The food and goods we consume.

Cities' assessments of their greenhouse gas emissions and sources – known as emissions inventories – should at minimum be based on the emissions produced by activities within the city boundary (the 'production-based' or 'sector-based' approach, which includes grid electricity used in the city).

Ideally, it should also incorporate the emissions from goods and services consumed by the city, including those imported from elsewhere (the 'consumption-based' approach). A city's production-based emissions and consumption-based emissions are interlinked and overlap.

When assessed using a production-based approach, cities' emissions sources typically look something like the graphic below – buildings, (on-road) transport and to a lesser extent municipal solid waste are usually the



Approximate emissions sources in an 'average' city, based on data from C40 cities

largest sources of a city's emissions. Visit the production-based emissions page to find out how to assess these emissions in your city.

A large amount of the emissions associated with goods and services consumed in cities are imported from elsewhere (85%, on average, for C40 cities). C40's research with cities indicates that the consumption-based emissions sources with the biggest opportunities for significant emissions reduction are food, buildings and infrastructure, clothing and textiles, electronics and electrical appliances, private transport, and aviation.

To limit global heating to 1.5°C, the average per capita emissions from consumption must decrease by 50% by 2030 and 80% by 2050.

The priority sectors, and action areas, for cities to reduce their greenhouse gas emissions from the biggest emissions sources, outlined above, are:

Energy: removing fossil fuels from cities' energy supply
Centralised (grid) renewables
Distributed (building and within-city) renewables

Building energy efficiency: minimising energy demand
New building standards
Existing building retrofits (including the building envelope, HVAC and water heating, lighting upgrades, and building controls)

Transport and urban planning: shifting away from vehicles powered by fossil fuels
Transit-oriented development
Mass transit, walking and cycling (in place of vehicle miles, including commercial freight)
Next generation vehicles (shared vehicles, electric vehicles and AVs), including commercial freight vehicles

Solid waste management: minimising waste to landfill or incineration
Food and organic waste

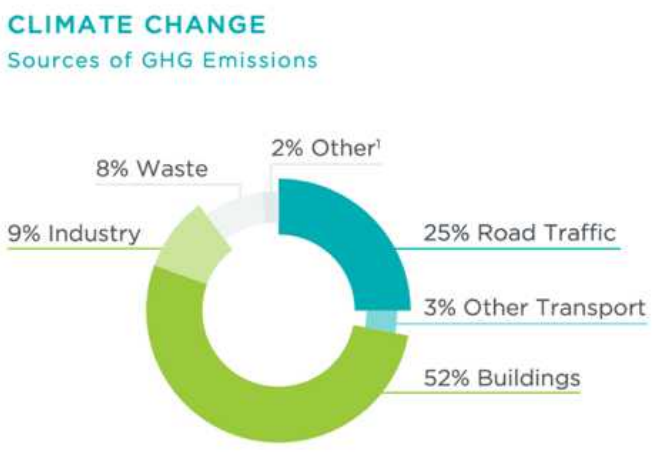
Consumed goods: reducing consumption to sustainable levels
Food
Electronics and electrical appliances
Clothing and textiles
Aviation

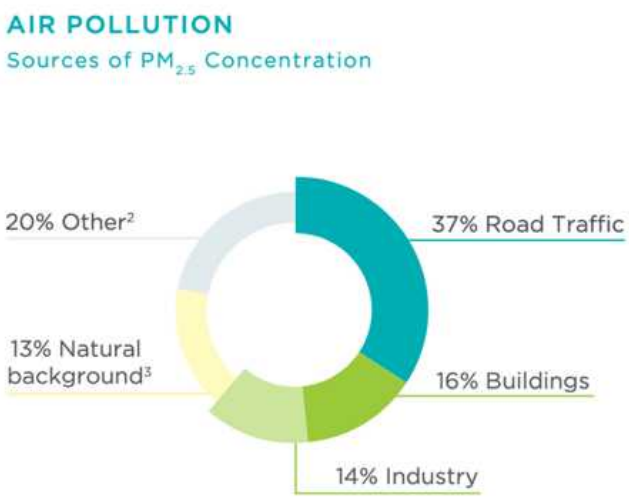
Globally, 80% of people in cities are exposed to unsafe air quality. In low- and middle-income countries, there are unsafe levels of air pollution in 97% of cities. This air pollution contributes to an estimated one quarter of all adult deaths from heart diseases and strokes, 43% from chronic obstructive pulmonary disease, and 29% from lung cancer – and it is often a high priority for urban citizens.

There is significant overlap between the sources of greenhouse gas emissions and of fine air pollution (PM2.5), as shown in the graphic below. This means that cities with high air pollution can prioritise the sectors above, and actions below, that address both problems simultaneously, such as building envelope, HVAC and water heating retrofits, vehicle emissions standards and a shift to walking, cycling and public transport.

Many cities around the world are already implementing ambitious actions. Building on their experience, cities can prioritise the implementation of a suite of tried-and-tested impactful actions, which are outlined below.

Building energy efficiency
Set performance requirements for new and existing buildings.
Support stakeholders to meet – and exceed –





requirements through incentives and supportive programmes.
Lead by example with municipal buildings. Begin by evaluating current energy demand and carbon emissions from municipal buildings.

Clean energy
Create demand for large-scale clean energy generation.
Promote clean energy sources, including for heating and cooling, to meet buildings' remaining energy demand.
Incentivise building-scale renewables.
Lead by example with municipal solar energy or other municipal clean energy projects.

Transport and urban planning
Enact people-friendly, transit-oriented urban planning policies.
Increase the rates of walking, cycling and the use of public and shared transport that is accessible to all citizens, to drive a shift away from personal vehicle use.
Enact policies to reduce the number of polluting vehicles, shift the vehicles left on the roads to electric, and lead by example by procuring zero emission vehicles for city fleets as quickly as possible. Collaborate with suppliers, fleet operators and businesses to accelerate this shift, and reduce vehicle miles.
Accelerate progress by enacting zero emission areas in the city.

Solid waste management
Establish city-wide universal collection and safe disposal. Avoid investing in incineration as a means of disposal.
Segregate collection, treat food and organic waste, and boost recycling rates.
Reduce the generation of waste. Encourage reuse, repair and the development of a circular economy.

Food consumption
Make it cheaper and easier for people to buy and eat more plant-based foods, and reduce their consumption of meat, dairy and highly processed foods – which is also in line with health recommendations.
Only spend city funds on sustainable foods, ideally sourced from organic agriculture.
Support citizens and businesses to reduce their food loss and waste.

Consumption of other goods and services
Encourage citizens to buy fewer, better quality clothes.
Encourage citizens to reduce the number of flights. Promote train travel, and more local travel opportunities.
Encourage producers and consumers to optimise the lifetimes of electronics and electrical appliances.

Cities will need to develop a climate action plan to determine which actions will have the greatest impact and benefits locally.

Cities should work with citizens, businesses, public institutions and other organisations to develop joint strategies for implementing these measures, and achieving these goals inclusively and equitably.

To show political leadership, and accelerate the pace of change, cities are publicly adopting and reporting progress toward ambitious, evidence-based targets in priority sectors:

Net Zero Carbon Buildings:
Enact regulations and/or planning policy to ensure new buildings operate at net zero carbon by 2030 and all buildings by 2050.
Only own, occupy and develop assets that are net zero carbon in operation by 2030.

Transport:
Procure, with partners, only zero-emission buses from 2025.
Ensure a major area of the city is zero emission by 2030.

Clean Energy:
100% renewable electricity by 2030, and 100% renewable energy (including electricity, heating and cooling, and transport) by 2050.

Waste:
Reduce municipal solid waste generation per capita by at least 15% by 2030 compared to 2015.
Reduce the amount of municipal solid waste disposed to landfill and incineration by at least 50%, and increase the diversion rate away from landfill and incineration to at least 70%, by 2030 compared to 2015.

Food:
Align city food procurement to the Planetary Health Diet, ideally sourced from organic agriculture by 2030.
Support an overall increase of healthy, plant-based food consumption in cities by shifting away from unsustainable, unhealthy diets by 2030.
Reducing food loss and waste by 50% from a 2015 baseline, by 2030.

Air quality:
Within two years, establish baseline levels and set ambitious reduction targets for air pollutants that meet or exceed national commitments. These targets should put cities on a path towards meeting World Health Organisation Air Quality Guidelines ideally by 2030.
Before 2025, implement new policies to address the top causes of air pollution emissions within the city and under the cities' control.

Pledge equity in climate action:
Increased community-led development, inclusivity in climate action, and investment in infrastructure projects that achieve major environmental, health, social and economic benefits, especially in low-income and vulnerable communities.

Innovating streets for people

NZ TRANSPORT AGENCY
WAKA KOTAHI

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

Pt Chevalier Play Street a success
The first Play Street supported by the Innovating Streets team was held in Pt Chevalier in Auckland, testing out the trial process that aims to remove barriers to hosting community events in the street.

The event was hosted by members of the Pt Chevalier community and Pt Chevalier Primary School, and involved members of the team running the traffic management on the day.

They report that the process worked well and the event achieved the desired outcomes of more children walking, cycling, scooting to school and community members connecting.

Play Streets practitioner workshop
The Play Streets workshop in Wellington was co-hosted by the Innovating Streets team and Sport New Zealand. It focused on opportunities and barriers for getting lower-volume streets temporarily 'closed to cars but opened for people' for community-centric events like Play Streets and street parties. There was nationwide representation from traffic management controllers through to community development experts.

One of the highlights was the way the community practitioners and infrastructure practitioners really appreciated seeing into each other's worlds, and collectively workshopped a proposed new process for temporarily closing 'low-risk' streets.
There were also strong calls for a new approach to how New Zealand sees and deals with local streets: who and what they're for, and what activities we should be enabling on them.

"The Road User Rule is about activities not interfering with the normal operation of the street ...in good residential [cul de sacs] the normal operation of the street is play, neighbourhood connection, plus some home access."

"Let's be honest, in residential areas a lot of the time people are doing street BBQs and suchlike anyway. The risk is minimal, the benefits are pretty great, and with a bit of support for doing it well, [council] should just be saying 'go for it, take some photos and tell us how you get on'."

We're keen to get more case studies testing the new 'low-risk' road closure processes for Play Streets over summer. If you have a lead to discuss please contact innovatingstreets@nzta.govt.nz

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Release of the Transport Evidence Base Strategy

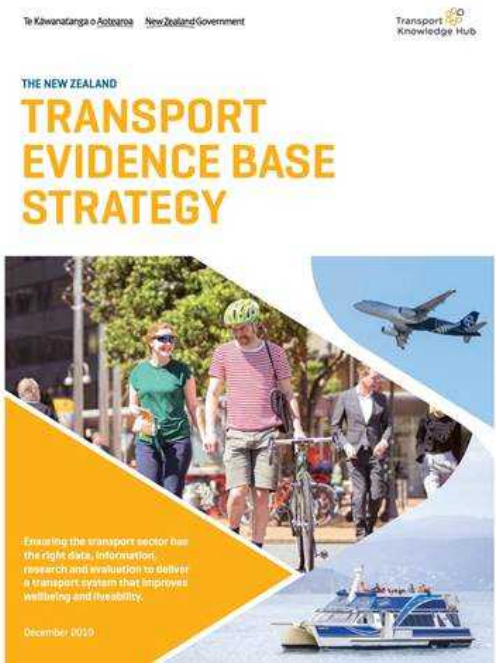
The Ministry of Transport is pleased to announce the release of the Transport Evidence Base Strategy (TEBS). TEBS creates an environment to ensure the transport sector has the right data, information, research and evaluation to deliver an evidence-based transport system that improves wellbeing and liveability.

Development of TEBS is the collaborative effort of the government transport agencies, local government and the wider transport sector. It ensures we have a coordinated approach to the collection, management, sharing and use of transport evidence.

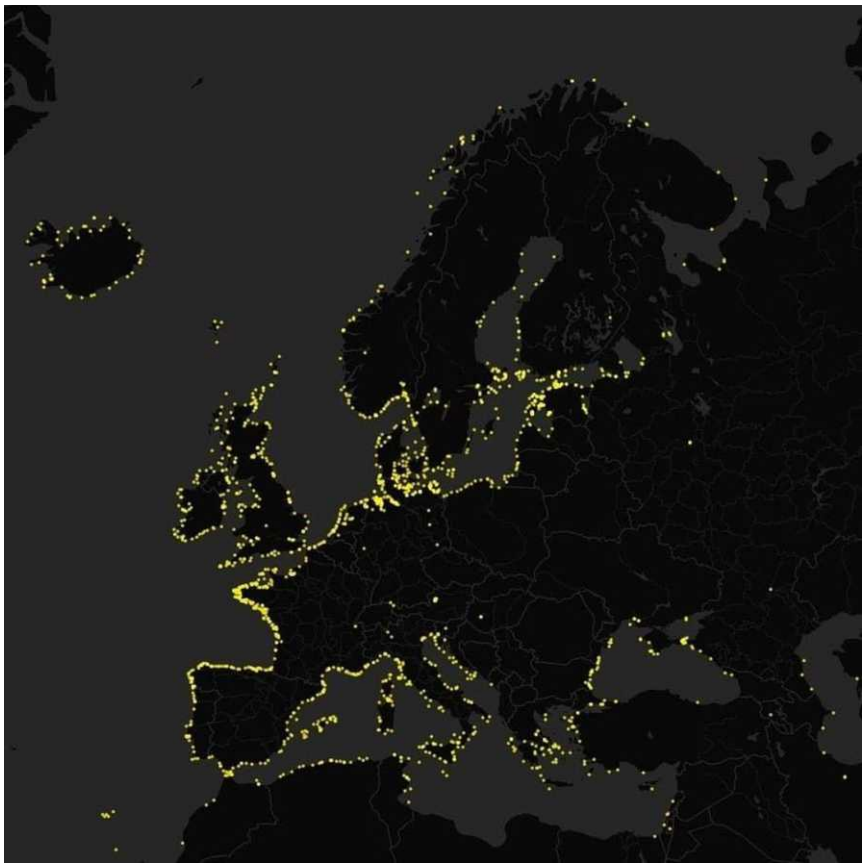
TEBS is aligned with updated Government transport priorities and outcomes. It updates two previous strategies originally published in 2016, the Transport Domain Plan and Transport Research Strategy, and merges these with the new Evaluation Strategy. It further signals development of two further complementary strategies, the Information Strategy & Architecture and Modelling Strategy.

TEBS ensures we have a:
· Shared understanding of the big picture questions for transport (the 'enduring questions') and future challenges facing the sector from economic, social, cultural and environmental changes and our ability to respond to these
· Understanding of the associated data and research gaps in our available knowledge and an agreed framework for prioritising and investing in the evidence-generating initiatives (the '3-Step')
· Framework for the recognition of Māori values in the collection, management and use of evidence relating to Māori
· Set of actions required to support generation and use of the transport evidence-base (the 'Enablers')
· Common framework to evaluate transport system policies and processes.

TEBS is available here:
https://www.transport.govt.nz/mot-resources/transport-evidence-base-strategy



Information about the Transport Knowledge Hub can be found here:
http://www.transport.govt.nz/research/transport-knowledge-hub/



This amazing map shows all lighthouses in Europe and northern Africa.

If you are a little surprised by the inland ones, consider the size of many lakes, which are large enough to have "inland" lighthouses.

Active Modes Infrastructure Group (AMIG) Update

Away from the usual scenery in Wellington, the latest AMIG quarterly meeting ventured south at the end of November for two days to explore what Dunedin had to offer. As you can see from some of the photos, Dunedin has been busy working on great walking/cycling infrastructure – with more to come. As well as the site visits, the AMIG team also discussed a number of interesting topics:

• Zebra crossings, courtesy crossings, and other pedestrian crossing treatments were the focus of a recent Masters study by Kylie Huard, who presented some of her findings to AMIG. Clearly there is a lot of variation in policy and practice around the country.

The timing was quite pertinent, as AMIG was also looking at how to consistently mark raised humps and platforms (e.g. use of "shark's teeth"), and the update of the Pedestrian Network Guidance is also considering its coverage of these topics.

• Pedestrian crossing facilities also feature in the ongoing discussion around the use of coloured surfacing treatments on cycle facilities and other traffic situations. A draft report has identified a wide range of uses for colour on our streets, with many of them probably not being technically legal or at least preferred practice. There are also interesting issues around what some colour combinations can appear like to colour-blind people, or how some cognitively impaired people might interpret non-standard colour uses. It is likely that certain colours will end up being specifically associated with certain traffic control devices within the traffic rules and guidelines.

• New trials are underway at present or in planning for several different innovative traffic control devices. These include the combined Barnes Dance ped'n/cycle signals being tried in Dunedin, some "dragon's teeth" roadside markings to warn of crossings and slow zones, and various new shared path markings to improve user behaviours.

• Further new or updated items continue to be developed for NZTA's Cycling Network Guidance (CNG), with many soon to be published online. This time around, AMIG got the opportunity to review a broad-brush facility cost estimate tool, guidance for buffered cycle lanes at differing road widths, paired pedestrian/cycle crossings, and layout drawings for using access control devices on paths (like bollards).

There is also the interesting question of what signs to use (existing or new) to indicate the presence of a contra-flow cycle facility to users approaching from side roads.

Other items discussed at AMIG this time included an innovative flashing belisha disc, new signs for pedestrian hazards on high-speed roads, and desired bridge/fence barrier heights alongside pathways.

If you want to know more about this and previous AMIG meetings, check out the group's webpage: http://rcaforum.org.nz/working-groups/active-modes-infrastructure

The next AMIG meeting will return to Wellington in late February 2020. For RCAs who would like to be added to the group, contact co-convenors Wayne Newman (RCA Forum; wayne@cresmere.co.nz) or Gerry Dance (NZTA; Gerry.Dance@nzta.govt.nz). Other TGNZ members can also talk with me about raising any ideas or issues on your behalf at AMIG as well.

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

See it All in the Age of Big Data: GIS Visualisation for Transport Modelling

Amanda Klepper

The conference theme for the NZ MUGS conference this year was "To Model or Not to Model." That question may be beside the point – we are modelling, and we're not likely to stop any time soon. The question is: How do we communicate the results of our modelling effectively?

As modellers, we have access to specialised software, large quantities and varieties of data, and the skills to analyse and interpret that data. Our clients, stakeholders, and the public, for the most part, do not. We need to present our results in a way that is accessible to people outside the profession so that our models can fulfil their real purpose – to inform decision-making in the real world.

Geographic Information Systems (GIS) software is one way to create intuitive, accessible model visualisations. Without visualisation, modellers can run into issues when trying to share their results, such as:

- File size – model output files are often too large to be easily shared.
- Software and licenses – outputs are often in a proprietary format that cannot be accessed unless the user has the correct license, which can be very costly.
- Version control – as models are updated and re-run, versions with different assumptions can have widely varying results, and users might have an outdated version.
- Skills – if output files are shared directly, users may not have the skills to interpret the results appropriately. Visualisation allows users to be provided with the correct amount of data to avoid misuse or misinterpretation.

The following are two examples of innovative ways that the transport modelling team at Jacobs has developed GIS tools to visualise modelling results, allowing the models to be used effectively and interactively for real-world decision making: the Hutt City Aimsun Model and the 2018 Gold Coast Commonwealth Games.

Hutt City Aimsun Model

The Hutt City Aimsun Model (HAM) is a hybrid (mesoscopic and microsimulation) traffic model of Lower Hutt developed for Hutt City Council (HCC). The location and extent of this model is shown in Figure 1.

In the short term, the purpose of the model is to evaluate current traffic conditions, assess the local traffic impact of development proposals, and support urban plan change decisions. In the long term, it is to forecast future traffic conditions and assist with operational management and design.

Both short- and long-term purposes of the model rely on the ability to visualise the model outputs in a user-friendly way that communicates the information to stakeholders.

For example, if the model is being used to support urban plan change decisions, it is unlikely that the ones making those decisions will be modellers. So the supporting model results need to be presented in a way that makes sense for a planner or a politician.

To that end, we developed the HAM GIS Portal (Figure 2). The Portal uses the ArcGIS Online platform. On the back end, the model outputs are automatically processed using FME (Feature Manipulation Engine) software. This automated process makes it easy to keep the Portal up-to-date every time the model is re-run, while reducing the process cost and potential for human error.

The Portal features layers for Hybrid and Static traffic

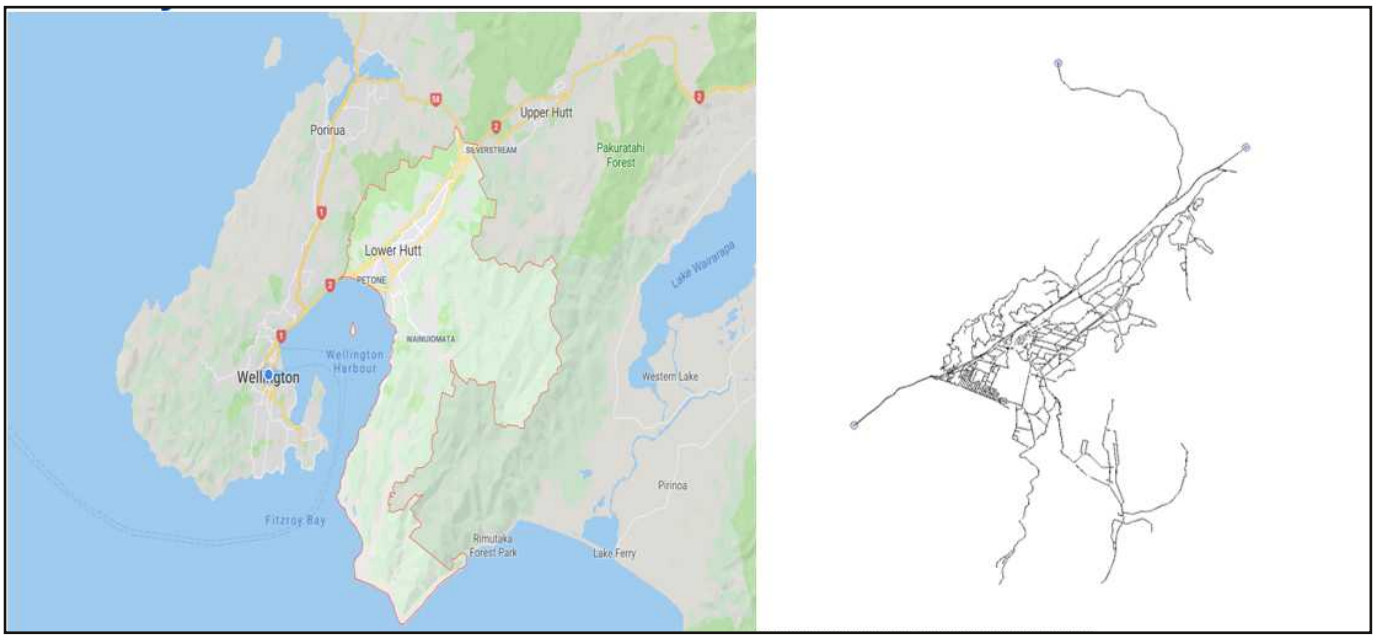


Figure 1 Hutt City Aimsun Model extent

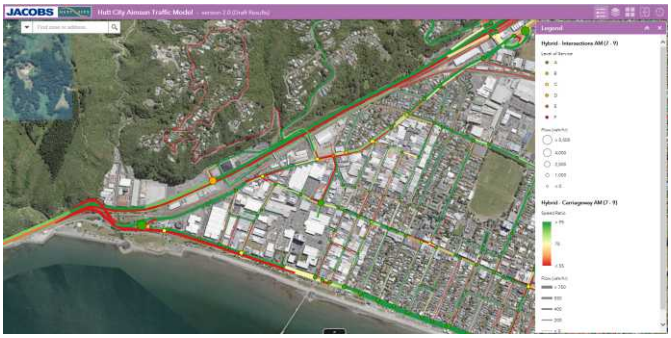


Figure 2 HAM GIS Portal, AM Peak level of service in Petone

performance outputs for both peaks for road carriageways and intersections. There is also time series data, with outputs for every 15-minute time slice in the Aimsun model. The Portal has a time series feature where users can press "Play" and watch the outputs change over time (Figure 3).

Figure 3 HAM Portal time series display

Finally, the Portal has zone-level data displaying the traffic demand into and out of each zone, allowing users to see the distribution of trips throughout the network. Figure 4 shows the car trips into each zone in the PM peak in Petone, with high numbers of trips (red/orange) into residential zones west of SH2, along the rail corridor, and into the Queensgate shopping area in Lower Hutt.

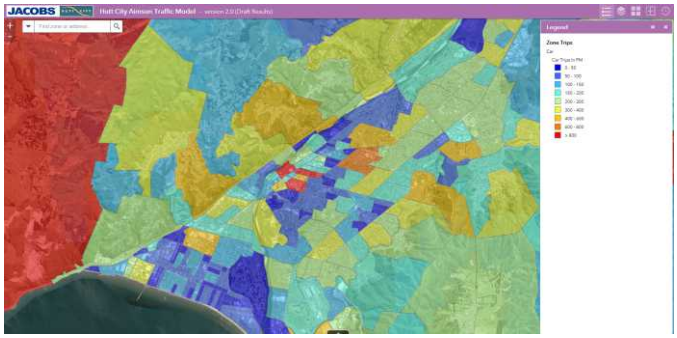


Figure 4 HAM Portal zonal data - PM trips into zones

These web-based maps add value to model results in many ways:

- The maps are browser-based, so users can view them on any device;
- Users do not need specialised software or licenses to view the data;
- The maps are simple to use, and the results are easy to interpret;
- The portal has a login system, so access to the data can be managed to different user levels;
- The maps are interactive, so users can view the layers that are most important to them, undertake pre-defined data analysis online and/or extract selected data to be further analysed;
- The webmaps enforce version control, as only the latest version is displayed and can be easily updated via the automated process; and
- The tool is flexible and can be easily extended and adapted for other models.

2018 Gold Coast Commonwealth Games

The 2018 Gold Coast Commonwealth Games was hosted in partnership by the Queensland Department of Transport and Main Roads (TMR), the Gold Coast Commonwealth Games Corporation, and the City of Gold Coast.

Jacobs staff from our Brisbane office were heavily involved both prior to the games (preparation began in 2012) and during the games (working in the Road Network Operations Hub) in various roles which included transport planning and modelling.

The Games ran from 4 to 15 April 2018. They attracted a large number of people to the Gold Coast, including 6,600 athletes and team officials from 70 nations; 50,000 workforce, contractors, and volunteers; 3,500 accredited media; and 1.2 million spectators. Over the course of its 11 days, the Games added an estimated 6 million additional journeys to the transport network.

Figure 5 Gold Coast Commonwealth Games venues map

With that much additional demand hitting the network, a well-planned, multi-modal transport strategy was fundamental, not just to the success of the games, but to also keep the city moving at the same time.

Multiple models were created to forecast demands, travel times, and potential bottlenecks. These models included a Games traffic demand model in MS Access, a strategic model in Emme that modelled general traffic plus games traffic for every hour of every day of the

games, a more detailed Public Transport model, and the Commonwealth Games Aimsun Model, used for operational planning (e.g. identifying congestion hotspots).

Outputs from these models were visualised using spreadsheets, Tableau (data visualisation software), and ArcGIS Online. Due to the large number of stakeholders, the GIS webmaps provided a single source of truth for all the latest Games forecasts to avoid miscommunication.

The following are a few examples of output visualisations that were used before and during the Games:

• Detailed Travel Time Analysis sheets – Travel times were tracked for the routes between key Games destinations, and sheets like the one in Figure 6 were produced for each day of the Games. Each graph is an hour of the day, from 7am to 6pm. The lines on each graph are different travel time measurements – posted speed, free-flow speed, mean speed, and upper bound. These graphs were used for planning bus and vehicle fleet movements.

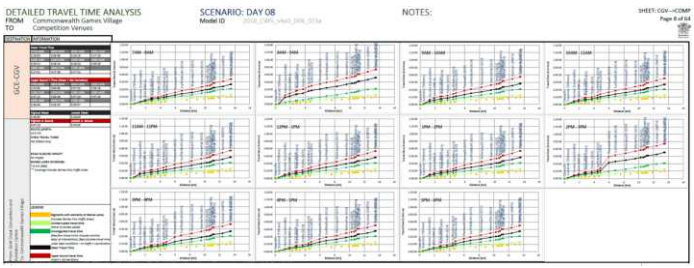


Figure 6 Detailed travel time analysis graphs

• Level of Service maps – Maps with intersection and link level of service (Figure 7) were used to forecast congestion issues so that changes could be made proactively, such as changing signals to move traffic more smoothly.

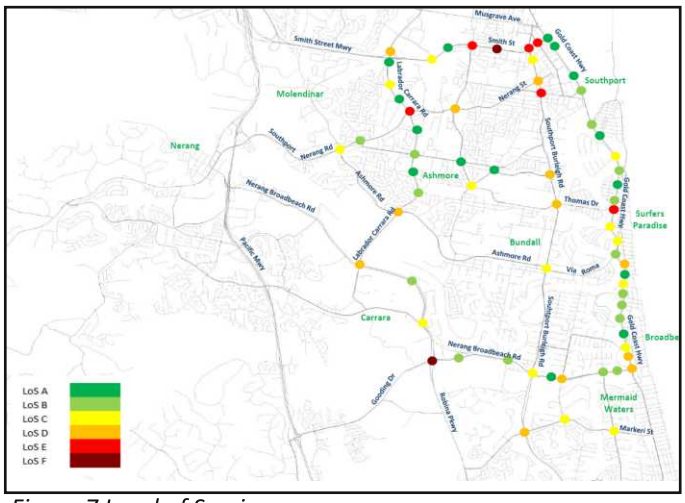


Figure 7 Level of Service maps

• Traffic Control Centre dashboards – During the games, the Road Network Operations team used dashboards (like those in Figure 8) to monitor traffic performance. Traffic was monitored in real time using Bluetooth, road detectors, and vehicle tracking.

This data was combined with model results for the games, and compared against business as usual (observed) traffic as a benchmark. These visualisations allowed the team to see where congestion issues were developing and respond accordingly, using signal timings and variable message signs to change traffic patterns.

The dashboards were also used to predict travel times for emergency response.

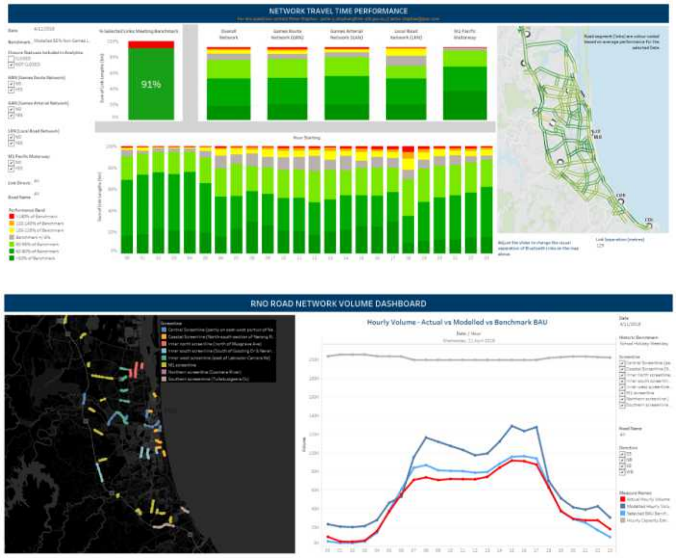


Figure 8 Traffic control dashboards used during the Games

• End of Day reports – The Road Network Operations team produced reports at the end of each day, such as the trend report in Figure 9, which shows the percent change between the actual Games day performance and business as usual on the M1 Pacific Motorway.

These reports were used to inform stakeholders of how the day went and to adjust expectations for the next day.

Post-Games evaluations of traffic performance found that actual travel times on Games days were better than those predicted by the model, and in some cases even better than business as usual.

Figure 9 End of Day trend report

This was a result of the travel demand management measures that were put in place, and interventions that were done through signals and VMS signs in response to traffic monitoring. These responses were able to mitigate the congestion predicted by the models. Response times for incidents were also better than usual during the Games.

The success of these projects demonstrates the importance of visualisation in communicating model data. Visualisation is important for:

- Ensuring that model results are used for their intended purposes,
- Communicating results with stakeholders who may not have technical knowledge,
- Applying model outcomes to the real world,
- Reducing ambiguity through clear communication and version control, and
- Making data more accessible for a broader audience.

As demonstrated by the projects above, transport agencies should consider how best to use the visualisation tools on offer to achieve their modelling objectives.

The potential benefits include greater stakeholder engagement, better communication of information, and better transparency, as visualisation can show the public the connection between data analysis and the resulting decisions.

Apple co-founder: 'I've given up' on autonomous cars

There was a time when Apple co-founder Steve Wozniak was a believer in fully autonomous vehicles.

These robotic cruisers would read and react to the road like humans, he said, and wouldn't need a steering wheel. Wozniak hoped Apple, which had been rumored over the years to be working on a self-driving car project, would be the one to build it.

But he has since tempered his expectations. There is simply too much unpredictability on roads, he said, for a self-driving car to manage. For now, he believes the burgeoning technology is better used to give drivers a safety net for certain situations.

"I stepped way back [on] this idea of Level 5. I've really given up," Wozniak said during the J.D. Power Auto Revolution conference in Las Vegas recently.

"I don't even know if that will happen in my lifetime."

Autonomous vehicles would fare better, he said, "if we were to modify roads and have
certain sections that are well mapped and kept clean of refuse, and nothing unusual happens and there's no road work."

The reality of current self-driving systems doesn't match up with consumers' expectations, but Wozniak doesn't think that is their fault.

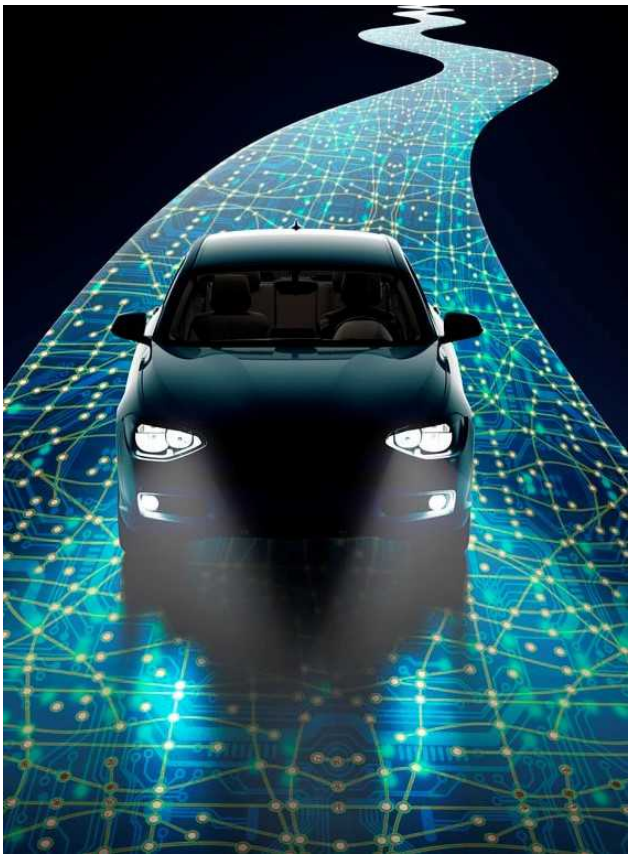
"What we've done is we've misled the public into thinking this car is going to be like a human brain to be able to really figure out new things and say, 'Here's something I hadn't seen before, but I know what's going on here, and here's how I should handle it,' " Wozniak said. "A human can do that."

But Wozniak did have a positive reaction to his first ride in a self-driving car last week in Vegas.

He and his wife hailed a car through Lyft, which has partnered with Aptiv to service the Strip and downtown area with specially outfitted BMWs (with human backup drivers). As of May, the cars had given more than 50,000 passenger rides in Sin City.

"It did a nice job," Wozniak said. "We felt safe and comfortable."

Source: europe.autonews.com



SAMM'S Story:
The newest member of the Auckland Forecasting Centre's modelling family

This is from Andrew Murray and Jojo Valero's presentation to the 2019 NZMUGS Conference held at Te Papa, Wellington on 16-17 September.

SAMM stands for Strategic Active Mode Model which was developed by the Auckland Forecasting Centre (AFC) – a partnership between Auckland Council, Auckland Transport and New Zealand Transport Agency.

The objective of developing SAMM is to enable an objective measure of walk and cycle responses to infrastructure changes, demographic changes and to changes in other modes at a regional level

The key focus of this model is therefore to provide a strategic demand model that provides plausible responses to changing land use and infrastructure inputs. It is developed as a general tool for strategic planning, however it is expected to provide a suitable platform for refinement for more specific project appraisals.

This resulted in adoption of the following design philosophy for the model development:
• Develop a model that is integrated with the existing model suite, but that can be operated independently as needed
• Use a model from that estimates active travel directly from land use inputs
• A model that is directly responsive to the quality of the cycle facilities provided
• Include a response to changes in travel costs of other modes (car and public transport)

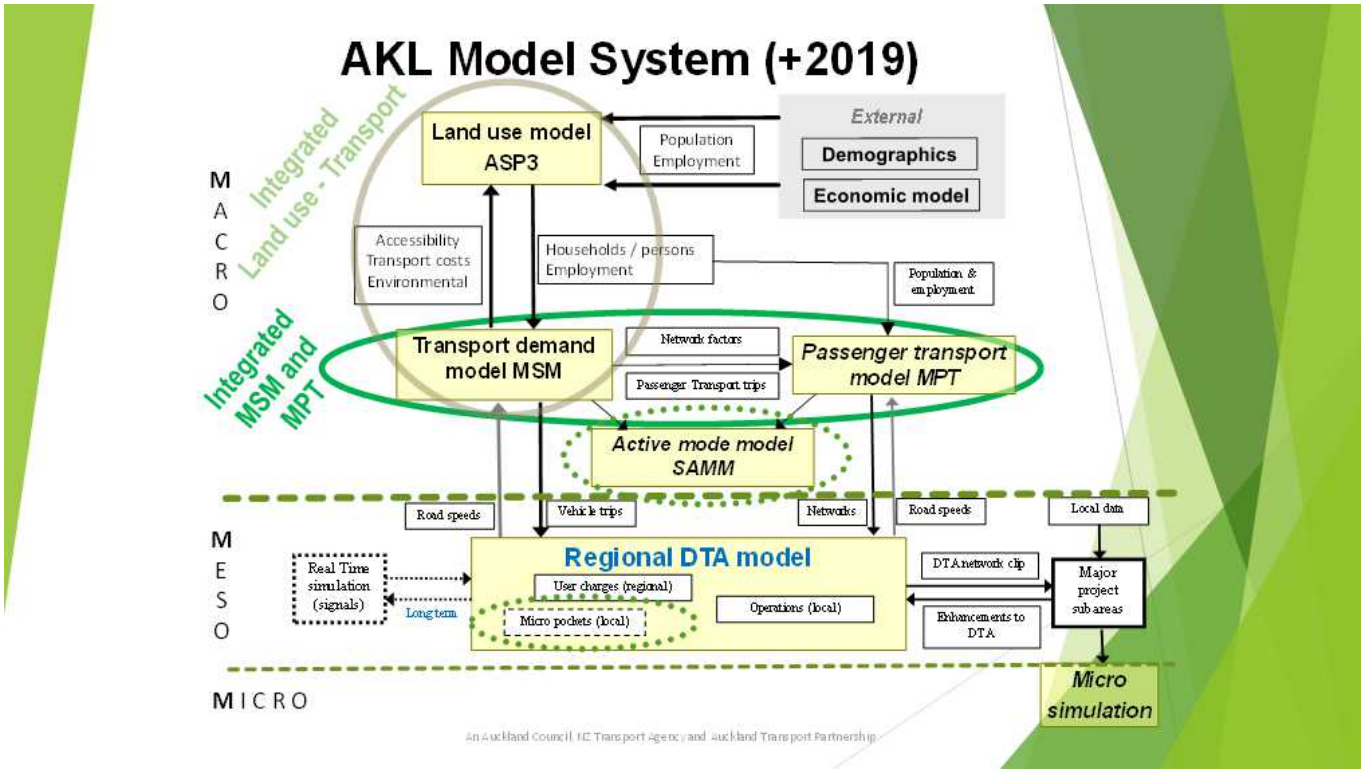
Inception – AFC's new baby
SAMM was conceived in response to growing policy focus to further promote active modes to support place making and urban design. Auckland Council and NZTA indicated increase funding and priority of active mode facilities. There is also a strong year-on-year growth in the number of people cycling.

The emergence of 'disruptive' technology such as e-scooters, e-bikes gave further motivation to develop a tool that will address the potential impact of these technology on travel choices. Further, there is also a recognition of the gap in forecasting active modes compared to mechanised (car and PT) modes in that daily active trips generated (estimated) in MSM are not distributed /assigned to the network eventhough active trips make up 12% of all daily trips, less than 0.2% of which are cycle trips.

Auckland transport modelling tree
The below image shows Auckland modelling hierarchy. The areas highlighted in yellow are main modelling tools where ASP (land use model) and MSM (transport model) are at the top of the hierarchy.

They are integrated and pass relevant information between each other and can used to perform a fully integrated land use and transport modelling. MSM also interacts (pass demands matrices) with a more detailed public transport model (MPT) and Regional Dynamic Traffic Assignment model.

SAMM fits in between MSM and MPT where it estimate initial demands from MSM's active mode trip rates and uses the MPT zoning and networks to estimate travel costs.



SAMM's DNA

Like its older siblings, SAMM is a trip based model that represents movement via Origin-to-Destination matrices. Active mode trip-generation derived from the land use inputs and car-ownership models in MSM

It covers the whole of Auckland region, consistent with MSM and MPT models and uses the same 1,100 zone system as MPT

Travel is represented for 5 trips purposes, as in MSM, namely:

Home Based Work (commuter)
Home Based Other
Home-Based Education – Primary School
Home-Based Education – Secondary and Tertiary
Non-Home Based Other

SAMM is based on traditional 4-stage modelling process of trip generation, distribution, mode split and assignment. It is a synthetic demand model, and unlike MPT, SAMM does not pivot on observed demands, and no matrix estimation is involved.

Challenges

Developing a strategic active mode model has many challenges. Foremost is the low and somewhat random use of cycling in Auckland which makes development of predictive models such as SAMM very challenging.

Data on active mode travel is sparse and SAMM was developed on the following data sets:

2013 census journey-to-work data
2006 (Auckland) and national annual Household Travel surveys
2016 and 2018 cycle counts for a small selection of locations

Walking typically involves short trips on complex 'micro' networks beyond the scope of a regional strategic model in terms of zone sizes ie walks trips are largely intra zonals.

So SAMM should be treated as 'first generation' model, with sense-checking of results and use of data to improve behaviour.

Special talents

SAMM is very talented and the key one is that it includes an accessibility function that factors trip productions and attractions up or down depending on how accessible they are to their desired destinations

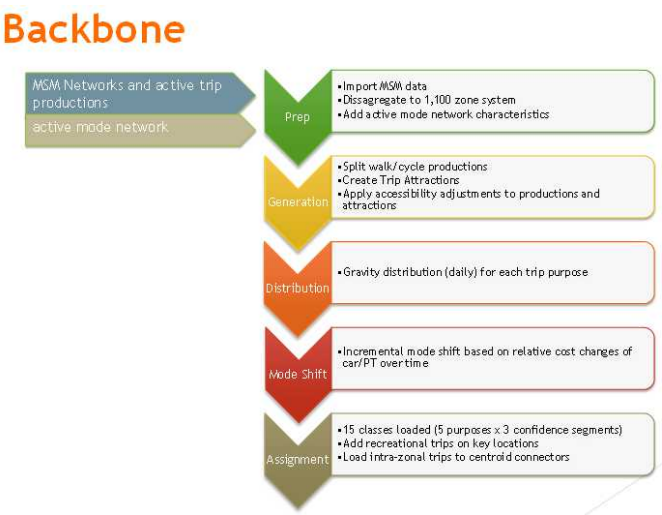
It is also worth mentioning that the trip generation, distribution, mode shift and assignment models all use 'perceived' travel costs (similar to Generalised Costs in MSM) and that costs are based on actual travel times with adjustments to account for perceptions of:

The type of facility provided
the type of road it operates on
amenity
hilliness of the route
intersections

Further, variation in cyclist speeds and perceptions are reflected via segmentation of each demand matrix into three levels of 'confidence', each of which uses different average speeds and different perceptions of the attractiveness of various cycle facilities.

Last but not the least, SAMM features an incremental mode-shift function which predicts change in cycling use in response to the relative change in travel costs for car and PT travel over time (2016 to Forecast year)

Structure



The modelling process in SAMM starts with preparation of inputs from MSM and MPT models, as follows:

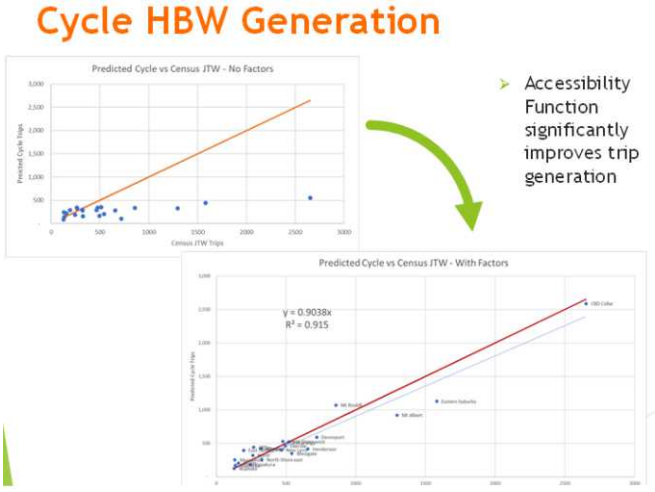
- Import MSM networks
- Add MPT zone system
- Add active network attributes
- Disaggregate MSM matrix data (active mode productions)
- Skim active mode costs

In the trip generation stage, walk and cycle productions are split and trip attractions estimated. These will provide initial trip ends which will then be adjusted to account for land use accessibility.

The adjusted trip ends by purpose will then be distributed using gravity model formulation. The daily production and attraction matrices are then converted to origin destination form.

The incremental mode shift stage adjust cycle and walk trips based on relative change in Car and PT costs. The resulting daily trip matrices are then assigned taking into account the 3 levels of cyclist confidence.

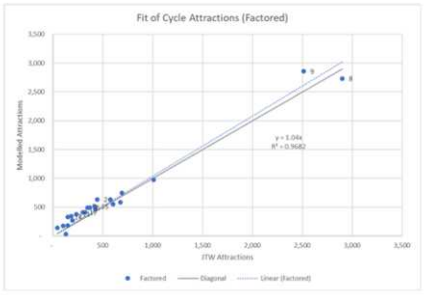
This stage also add recreational trips on key locations and load intra zonal trips to centroid connectors for presentation and completeness



Calibration
The fit of the production model was measured at a 22 sector level. The fit against Census JTW data is shown with and without the accessibility factors. The calibration process revealed the following:

• The accessibility function substantially increases the number of cycle trips and significantly improves the fit of the model
• The income factor made a small improvement to the model fit, however the relationship was not considered strong enough to adopt the income factor
• The global factor allowed the sensitivity of the accessibility function to be lessened, providing a better fit for the small generating sectors
• The zonal factors were considered necessary to address unique characteristics associated with military bases. In forecasting these factors may be better reflected as additive trips rather than multiplicative factors, depending on the growth in those zones.

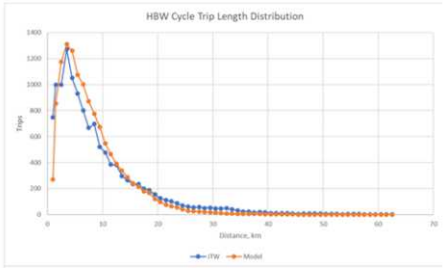
Cycle Attraction Model



- Regression analysis

Overall this is considered a good fit of the 2013 HBW trip productions that retains high explanatory power with limited geographic factoring.

HBW Cycle Distribution Model



- Calibrated to time and distance

Only two of the six employment types used in the MSM were used in the Cycle Attraction model.
This was based on a regression analysis of the 2013 JTW data which showed the most significant influence from employment types E2 (Business Services) and E5 (Govt, Defence, Medical, Education).

After a number of tests of Gamma and Exponential impedance functions, the exponential function was adopted for HBW cycle distribution. The fit of the impedance function yielded mean trip time of 26.3 mins compared to observed of 30.4 mins. Mean trip length is 7.9 km compared to 9.1 observed.

For the other trip purposes, initial trip generation rates are also from MSM except for Non Home Based Other purpose which is a function of HBO. The attraction model were calibrated in similar manner as HBW cycle.

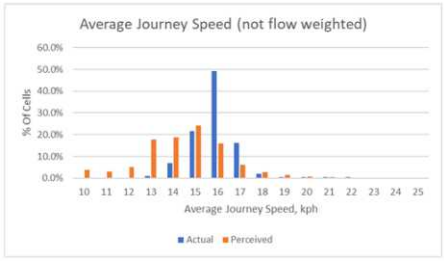
The accessibility function was also calibrated to ensure same number of trips are retained at the end of the process.

Trip lengths are calibrated to 2006 HTS target range.

Validation
Part of the validation process is to check the average cycle speeds. The actual speeds through the network (excluding perception factors) are estimated based on different cruise speeds on each facility plus intersection delays. Detailed data on average journey speeds is not available (Strava journey data is considered biased towards more confident and recreational cyclists).

The resulting average journey speeds in the model were assessed to check for plausibility. The frequency of the origin-destination journeys were therefore assessed, as indicated in the image below.

Cycle Speeds



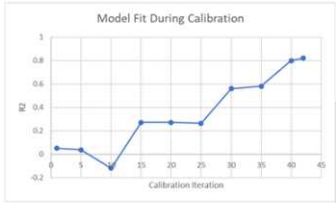
- Vary by facility type and confidence level
- Delay at intersections added
- Perception factors for facility, road, hilliness, amenity

It is not practical to document the numerous parameter values tested and the full results from the many hundreds of model runs undertaken during the calibration. However, the major outliers were extensively investigated and attempted to be addressed through the underlying models (rather than simple matrix correction factors).

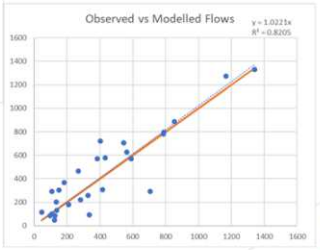
The remaining outliers are those for which no obvious causes (and hence solutions)could be identified. This progression in the calibration process is roughly indicated in the fit of the 2016 model for the more than 40 full sets of results recorded. This is shown in the figure below, showing the correlation co-efficient (R2) for the 2016 flow validation across the various iterations of mode refinement.

The early model runs did not have all model components fully implemented so are not a true reflection of the full model. However, it can be seen that significant improvement in the model fit was achieved during model calibration.

2016 Cycle Link Flow Validation/Calibration



- Calibrate via perception factors and model parameters
- No matrix estimation



A relatively limited set of daily cycle counts across the network was available. The average data for March 2016 was used in this validation. The key statistical check on the overall level of validation was the correlation coefficient (R2). The GEH measure used in the modelling guidelines is only applicable to 1-hourflows, so was not useful for daily flow validation. The scatter-plot of the validation is shown above.

Incremental Mode Shift Model

This model predicts a change in cycle demands in response to the combined relative changes in travel costs by cycle and mechanised modes. Mechanised travel is via car and PT. The split between car and PT travel is done via the MSM model, and not relitigated in the active mode model.

The incremental structure means that the initially estimated future year cycle trips are adjusted in relation to the change in travel costs. The process for the incremental mode shift adjustment is as follows:

1. Get the Car and PT generalised costs for the 2016 Base and Forecast years from MSM and create the Base and Forecast composite mechanised costs (M2016, MForecast)
2. Calculate the change in mechanised costs (dM = MForecast – M2016)
3. Calculate the change in cycle costs (dC = CForecast – C2016)
4. Calculate the initial Cycle mode share for the forecast year (MS = TripsCycle/(TripsCycle + TripsMechanised)
5. Apply an incremental logit choice model to predict the change in cycle mode share
6. Calculate the adjusted cycle trips based on the adjusted mode share

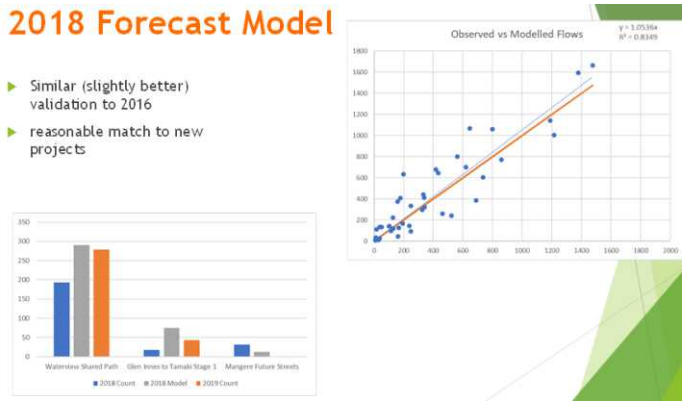
The incremental logit model is as follows:

$$MS' = MS \; x \; \frac{\exp(-s.dC)}{MS.\exp(-s.dC)+(1-MS).\exp(-s.dM)}$$

Where

MS	Initial forecast cycle mode share
MS'	Adjusted cycle mode share
dC	Change in cycle costs between 2016 and forecast year
dM	Change in mechanised costs between 2016 and forecast year
s	sensitivity parameter

All calculations are done on an origin-destination basis, with the ij references omitted from the above formulas for clarity.



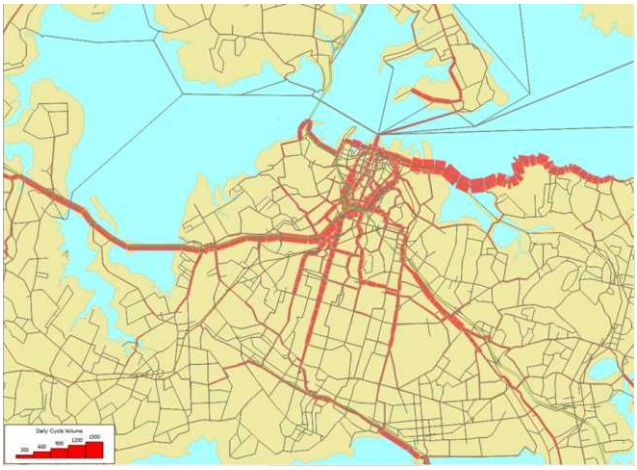
March 2018 counts were used to check the modelled daily flows. Many locations were as for 2016, however some new sites and some relocated sites were also included. Note the 2018 cycle flow checks includes the effect of incremental mode shift discussed earlier.

Given the extensive calibration exercise undertaken across two model years, it is considered that a good overall fit of the model was obtained. This was achieved through the underlying behavioural models without any manual adjustments of the resulting demands to match counts (as might be expected in a project-level model).

Model outputs

SAMM runs on Emme software. The types of outputs are as follows:

Origin-destination Trips by purpose and mode (walk and cycle)
Link flows (15-cycle classes + rec)
Intra-zonal trips added to centroid connectors
Link costs (real and perceived travel time)
Origin-destination costs (real and perceived time)
Aggregate network travel statistics (cycle-km, cycle-minutes etc)
Path and select-link analysis
Isochrone maps
Matrix data maps



Below is a plot showing cycle flows in the Isthmus area.

Walk Model

The walk model module in SAMM is basically as per the Cycle model presented above. It is also calibrated to 2013 Census JTW data and 2006 Auckland HTS data. Intrazonl trips are laoded onoto zone connectors for compete visibility of results

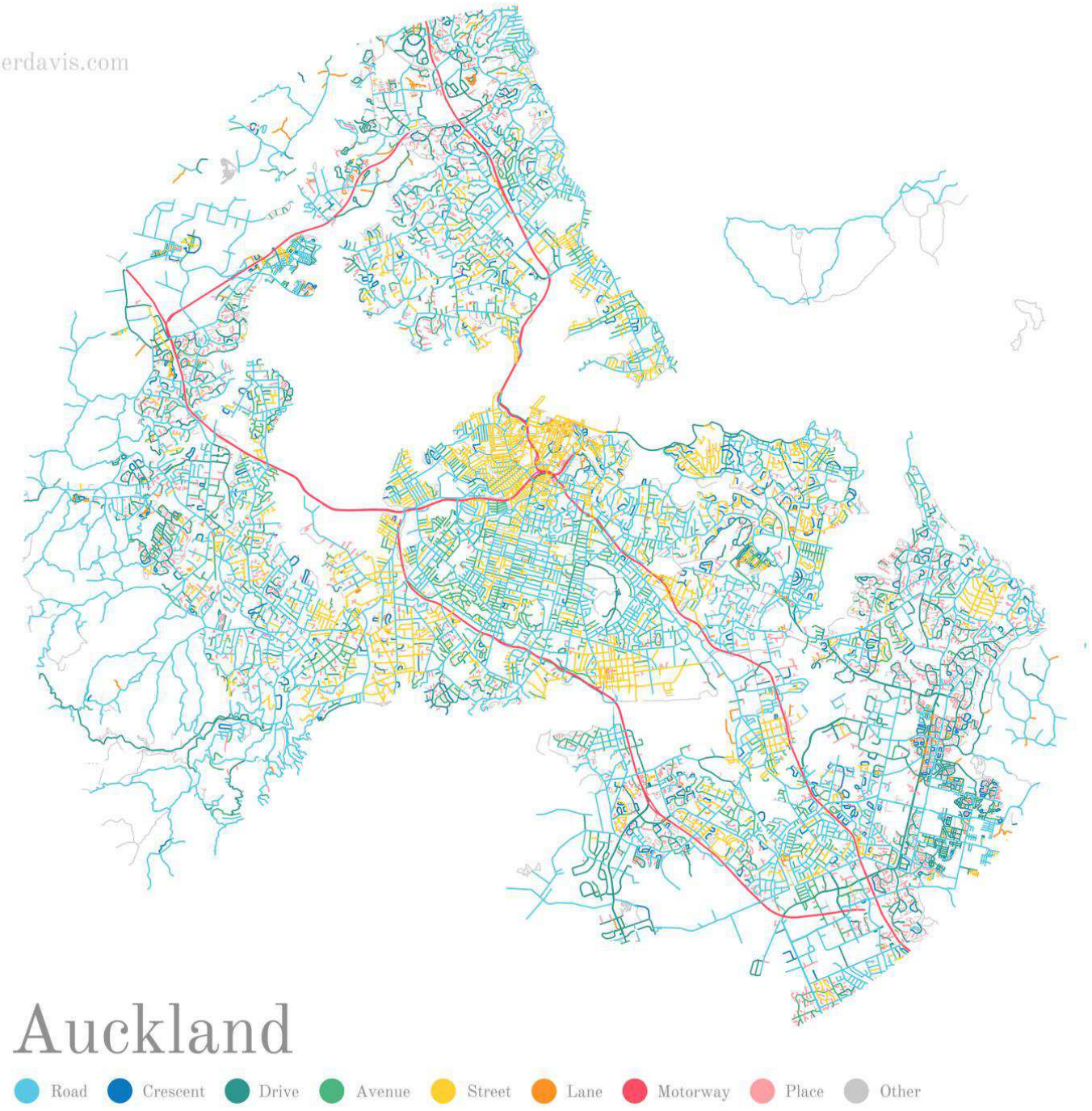
Due to lack of walk data, the Walk model is not validated at link level.

Peer Review

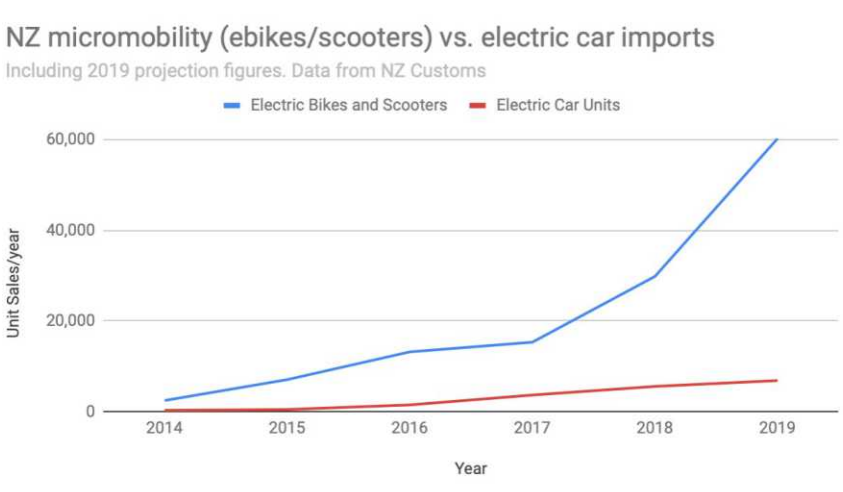
An independent peer review of the model was undertaken by Tim Wright of Quality Transport Planning Ltd (QTP). This included a review and input to the initial model Specification and reviewing the progressive development of the key model elements.

The review concluded that the SAMM is considered to meet AFC's stated purpose for the model and that overall SAMM is considered likely to be a valuable tool in assisting to objectively quantify the walk and cycle demand responses to new infrastructure, demographic changes and changes to other modes at a regional model.

With localised refinement it will also serve as a useful basis for objectively appraising the effects and benefits of specific active mode infrastructure projects. The development of time-of day models from the daily



Auckland streets colour-coded by suffix. Source: Erin Davis erdavis.com



If you think electric cars are the future, check out the sales of electric bikes and scooters in NZ.

130% year on year growth, with nearly 9000 units imported in November.

For context, this compares to 563 registered electric cars.

Transportation Engineering Postgraduate Courses 2020
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CIVIL761 – Planning & Design of Transport Facilities (25-27 March & 9-11 May	A range of topics on planning and design of transport facilities including fundamentals of traffic flow, modelling and simulation of transport facilities, macroscopic traffic models and traffic signal safety and operations.
Civil 767 – Pavement Analysis & Design (1-3 April, 13-15 May)	Pavement design philosophy; stresses, strains and deflections in pavements; pavement material properties and characterisation; traffic loading; pavement failure mechanisms; assessment of pavements; empirical and mechanistic pavement design methods; pavement overlay design; asphalt mix design.
CIVIL770 - Transport Systems Economics (11-12 March, 29-30 April, 27-28 May)	Advanced specialist topics in transportation economics including economic analysis, theory of demand and supply of transport, govt. intervention policies, and externalities and agglomeration. A research project analyses 2 major transportation infrastructure projects to determine likely future social benefits and dis-benefits.

Semester 2 (Jul-Oct 2020)

CIVIL759 – Highway & Transportation Design (Thursday and Friday, 3-hrs, 12 weeks)	Economic and environmental assessments of transport projects. Road safety engineering. Crash reduction and prevention methods. Pavement asset management. Pavement rehabilitation techniques. Heavy-duty pavements, highway drainage and chip seal design.
CIVIL765 – Infrastructure Asset Management (12-14 August & 23-25 September)	Advanced theories and techniques fundamental to the management of infrastructure assets, primary focus on Asset Management Plans (AMP). Entire spectrum of infrastructure, roads, water and buildings. Major project incorporates a literature review / critical review of an AMP from industry.
CIVIL 771 – Planning & Managing Transport (29-30 July, 16-17 September & 14-15 October)	An advanced course on integrating land use planning and transport provisions, including planning for different land use trip types and parking, travel demand management techniques, and intelligent transport systems. An independent project applies this specialised knowledge.
CIVIL 773 - Sustainable Transport: Planning and Design (5-6 August, 26-27 August & 1-2 September)	Pedestrian and cycle planning and facility design using best practice (network and route planning, trails, roundabouts, footways, terminals, plazas, footways, escalators, etc.); public transport (bus, rail and LRT) and vehicle operations for compact central urban areas and transit orientated developments, shared spaces and user safety in design assessments.

NOTE: Other relevant courses at the University of Canterbury (e.g. Civil / Transportation) or at Auckland (e.g. in Civil / Construction Management) or elsewhere can be suitable for credit – prior approval is required.

For Admission / Enrolment inquiries contact: Bevan Clement DDI (09) 923 6181
Email: b.clement@auckland.ac.nz Mob: 021 022 65184

Further details, including the course outlines, can be found at:
http://www.cee.auckland.ac.nz/uoa/home/about/ourprogrammesandcourses

Our Masters degree Brochure *https://cdn.auckland.ac.nz/assets/engineering/for/future-postgraduates/documents/Transportation_final_print.pdf*
Our Transportation Research Centre *www.trc.net.nz*

Aotearoa Bike Challenge to return in February
The Aotearoa Bike Challenge is a month-long challenge which encourages Kiwis to make everyday trips by bike, offering the chance to win some great prizes along the way. The challenge will be back in February and as 2020 is a Leap Year you'll have an extra day to clock up your rides.

In 2019 there were a record-breaking number of participants with more than 22,000 people from over 1,900 organisations taking part, including over 4,700 new riders.

This year's challenge is points-based, which means organisations climb the leader board by encouraging their staff to ride, ride often, and encourage others to ride. This incentivises more riding and participation throughout the challenge.

Registrations are now open, and if you sign up before Midnight on Friday 20 December, you'll be in to win a bike! (If you've taken part in previous challenges all you need to do is sign into your account to be in to win).
Find out more and register at www.Aotearoa.bike

Work on the Hutt Valley cycleway begins
Work on another link in the Wellington region has begun with the start of construction on the Petone to Melling cycleway. It is just one section of the Te Ara Tupua project which will create a walking and cycling link from Wellington to Lower Hutt.

Associate Minister for Transport Julie Anne Genter joined the Transport Agency's Director Regional Relationships Emma Speight for the ground-breaking ceremony. Ms Speight says the cycleway will provide a safe, separated alternative for people on bikes, away from State Highway 2 or Hutt Road.

"This is one part of the plan to connect Wellington and the Hutt Valley for people using bikes and getting around on foot. People in this region tell us they want to cycle more, but they don't feel safe without separated routes connecting places they need to be."

More bike stands for Christchurch city centre
Two new bike stands are being installed outside Riverside Market in Christchurch as part of a push to make the central city safer and more accessible for cyclists.

Extra bike parking will also be installed in other locations.

"With seven major cycleways leading into the city centre it is important we provide people choosing to bike with convenient places to park,'' says Christchurch City Council Transport Planning and Delivery Manager Lynette Ellis.

"We've identified three central city locations where the demand for bike parking is high so we're installing additional bike stands in those spots first. If they are well used, we will look to provide some more in different locations around the central city,'' Ms Ellis says.

Kamo shared path extended

On 24 November the newest piece of the Kamo Shared Path in Whangarei was opened.

The new $4m sections (stages three and four) combine with the $1.8m first stage, from Rust Avenue to Cross Street (opened last December) and the $3m second stage between Cross Street and Kamo Road (opened this winter) to provide a 6km long link between the district's northern suburb and the city.

The shared path is one of three (Onerahi, Raumanga, Kamo) designed to get more Whangarei people off the road and more able to move around by cycling or walking. As well as creating safe links for school children and workers the routes should ease pressure on the city's roads and increase health and wellbeing in the community.

Upskilling public transport planning and design
The Transport Agency is keen to grow the capability of those who work in the planning and design of public transport by providing opportunities to learn and upskill. If you would like to be notified of future courses or have suggestions on course topics please contact Brenda.ODonoghue@nzta.govt.nz

City Rail Link update

Mana Whenua and the CRL Project
In 2012, CRL approached Mana Whenua across Auckland to explain the project, the area it would travel through and ascertain their wish to be involved.

A Mana Whenua forum was established and since then it has been formalised through the project's legally binding consent conditions. The role of the forum includes:
- Developing practical measures to give effect to the principles in the Urban Design Delivery Work Plan (DWP)
- Input into, where practicable, the design of the stations
- Input into the preparation of the Construction Environment Management Plans (CEMPs) and DWPs
- Working collaboratively around built heritage and archaeological matters
- Undertaking kaitiakitanga (guardianship) responsibilities associated with the CRL project, including monitoring, assisting with discovery procedures and providing input of Maori mātauranga (knowledge) in relevant stages of the project

"Tikanga Maori encompasses an important system of customs and values to conserve, manage and protect natural and physical resources. In the Maori worldview, all natural and physical elements of the world are related through whakapapa (genealogy) and each is controlled and safeguarded through spiritual beings. All living things have mauri. The protection of mauri is essential."
— Extract from City Rail Link Process for Maori engagement paper

- Providing a forum for consultation with Mana Whenua regarding the names for the CRL stations.

The forum meets monthly and as required has additional design, consent, sustainability and other workshops.

The Mana Whenua forum continues to flourish and the iwi narratives have influenced the station designs, both the internal structure and the external appearance.

The forum has agreed on seven key design principles, which have been incorporated into the design framework. These are:
- Mana – the need for relevant mana whenua groupings to have individual and collective high quality formal relationships with key stakeholders
- Whakapapa/Whakamana – names and naming as a means of reconnecting iwi narratives to place
- Tohu – the acknowledgement of wider mana whenua cultural landmarks
- Taiao – bring landscape elements back into urban areas (e.g. water, trees, birds, and insects)
- Mauri tu- maintaining and enhancing the environmental quality of water, air and soil.
- Mauri toi – Re –inscribing iwi narratives into architecture, landscape architecture and urban design
- Ahi ka – exploring opportunities to facilitate a meaningful living presence for iwi.

Branch updates

TRANSPORTATION GROUP NEW ZEALAND

Auckland/Northland Branch
Our AGM was held on 12 December. Congratulations to our new Chair, David Matthews and Deputy Chair Matt Hoyle for the next two years.

We also thank the following people who are retiring form the Committee this year:
Ngan Truong, Rohan Sood, Kathy Matete, Jenson Varghese, Darren Davis

And welcome the following people onto the Committee for 2020:
- Madison Salter - Harrison Grierson (joined during the 2019 year)
- Swaminathan Charan - Engineering student
- Dave Brierly
- Tiffany Robinson – Harrison Grierson
- Shendi Mani - Abley
- Ellie Craft - MRCagney

We are also very exciting about providing the opportunity for people to see what is happening on the Ara Tūhono – Pūhoi to Warkworth project. Keep an eye out for the invitation in mid-January for the site visit on Thursday 5th March 2020.

Waikato/Bay of Plenty Branch
We've recently had a Christmas lunch gathering in Tauranga with a good response. We are working on hosting an event in Hamilton in the New Year as a means of attracting interest to join the committee in Hamilton.

Canterbury/West Coast Branch
The year has flown by and we've closed out our 2019 calendar of events. Safety and the future of cities and transport have been the major themes, and have hosted over ten events and networking opportunities around these topics.

Our last event of the year was a walkshop, where Elise Copeland led members around the central city followed by our Annual General Meeting. We have a couple of people stepping down and am happy to report we'll have a few new faces around the committee table to take their place.

Looking forward to early the New Year, we're hoping to collaborate with the Railway Technical Society on an event around light rail in February so stay tuned for updates.

Southern Branch
Now confirmed two events in 2020:

27 Feb – Russell Nicholls (Southern Branch committee member) to speak on the bridge work WSP has been doing in Otago and Southland. Will coordinate with the local Structural Engineers group.

26 March – Mark Cruden to speak on Pavement Engineering (Chair of the National Pavements Technical Group)at WSP in Frankton. Looking to recruit new engineers into this area of expertise so inviting Otago students along.

Later in year:
- Tour of Portobello Road improvements (DCC)
- Edendale – SH1S bypass (NZTA)
- Quiz Night

NZ Modelling User Group
2019 NZMUGs Conference, Wellington
The 2019 NZ Modelling User Group conference was held over two beautiful Wellington spring days with cloudless skies and no wind on 16th and 17th September.

To a delegation of 64 modellers, over 35 presenters gave their take on the question "to model or not to model", many extending the Shakespearean theme well beyond what we could reasonably expect from folk who spend their days buried in data rather than the classics.

We almost made it to lunch on the first day before someone mentioned autonomous vehicles (Dunedin's own Nick Sargent in case you were wondering), and managed to cover a vast array of topics from social values to matrix estimation, mobile phone data to 3.5 stage models.

Consistent with conference tradition, we mixed the presentations up to enable both quick fire sessions with no questions for less experienced presenters, and more in depth presentations for those with lots more to say and happy to field questions from what was generally an amicable audience.

This was interspersed with a panel session including discussion on climate change and model complexity, and keynote speeches from Martin Dutton of the Ministry of Health and Tom van Vuren from Mott MacDonald Sydney.

Martin articulated the links between transport, urban form and physical and mental health, and Tom provided a wealth of information on international emerging trends (Tom also took the Shakespearean theme to new heights with his "Winter of discount tent" and "Winter of disco tent").

Best presentations were awarded to Amanda Klepper from Jacobs who presented on presentation of model outputs (see her paper in this Roundabout!), and Jojo Valero / Andrew Murray from the Auckland Forecasting Centre / Beca who presented on their new baby SAMM (also in this Roundabout).

Attendee feedback on the conference was excellent, and the Committee has already started planning for Christchurch 2020! We hope you all have a relaxing holiday season, and safe travels wherever you are going.


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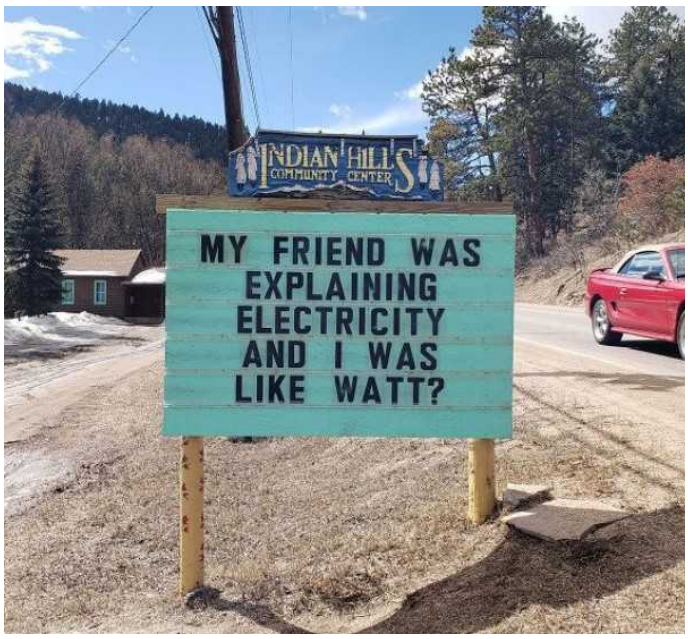
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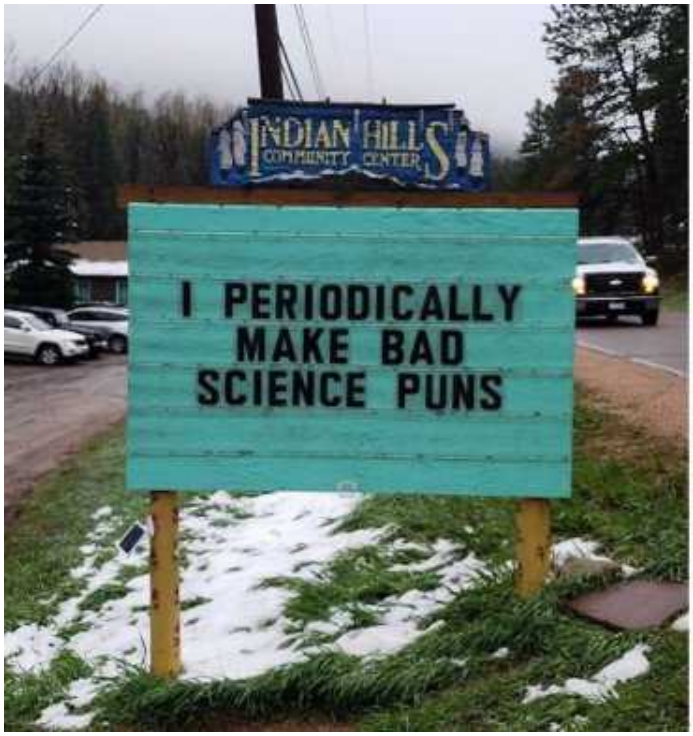
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OVER-ENGINEERED
BUILDINGS
IT'S A COMPLEX
COMPLEX COMPLEX

Transportation Engineering Postgraduate Courses 2020

Dept of Civil & Natural Resources Engineering University of Canterbury

Supported by:

The courses below are available for full-time or part-time students studying for the following postgraduate transportation qualifications at Canterbury in 2020:

- Certificate of Proficiency (COP) ~ for individual one-off courses (great for CPD!)
- Postgraduate Certificate in Engineering (PGCertEng) ~ typically four courses
- Master of Engineering Studies (MEngSt) ~ typically eight courses
- Master of Engineering in Transportation (MET) ~ up to six courses plus research project or thesis

Please see the website of the University of Canterbury for fees per course in 2019:
http://www.canterbury.ac.nz/courseinfo/MyGetCourses.aspx?course=&year=2019

All courses run in "block mode" to enable part-time and distance students to easily take part. In 2018, the contact time will be four days (i.e. a 2-day block of 2 blocks), and students taking the courses will be expected to do more reading and learning in their own time. All prospective students must apply to enrol in courses no later than one week prior to the course starting (preferably earlier), otherwise late fees may apply. Candidates with a Bachelor of Engineering OR other relevant degrees (e.g. planning, geography, psychology, maths), OR non-degree qualification and suitable work experience, will be considered for entry.

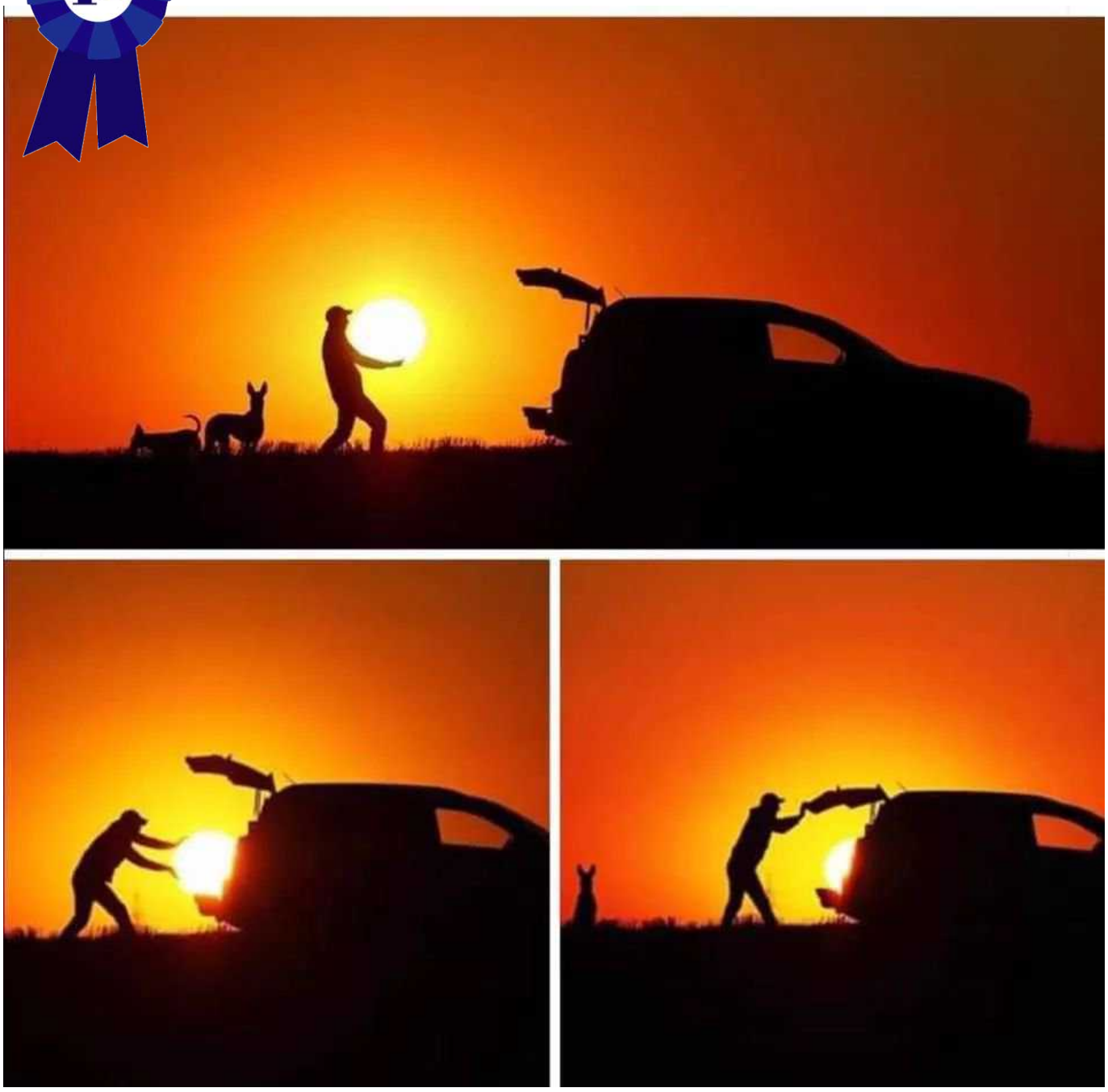
COURSE	DESCRIPTION (see flyers on website for more details)
Semester 1	
ENTR 401: Fundamentals of Transport Engineering	Self-study course with tutorials at certain times determined by the course coordinator. Traffic engineering; Road geometric design; Highway capacity and level of service; Intersection analysis & design; Traffic flow theory; Traffic signal control; Transportation planning; Accident reduction; Statistical analysis. [bridging course for non-transportation students]
ENTR616: Transport Planning and Modeling	Block dates: 19-20 March, 14-15 May Course coordinator: Dr Diana Kusumastuti Urban transport planning context and process; Transport and land use interaction; Travel demand modelling: Trip generation modelling, trip distribution modelling, mode choice and trip assignment modelling; Choice Modelling; Stated preference; Land use modelling approaches: Models of residential and employment location
ENTR608: Traffic management and monitoring	Block Dates:15-16 April and 18-19 May Course coordinator: Dr. Mehdi Keyvan-Ekbatani Traffic network estimation techniques, including control theory, traffic estimation and traffic control techniques using a variety of simulation and software packages. This course is expected to develop student skills to the level where the student understands the theory behind traffic control and can identify, diagnose and manage traffic flow problem
Semester 2	
ENTR610: Intelligent Transportation Systems and Connected Autonomous Vehicles	Block dates: 15-17 July, 6-7 August Course coordinator: Prof. Panos Prevedouros ITS, active traffic management, incident management, connected and autonomous vehicles, bilateral cruise control
ENTR614: Planning/Design of Sustainable Transport	Block dates: 30-31July, 24-25 Sep Course coordinator: Dr. Diana Kusumastuti Planning and design for cycling (eg cycling facilities between intersections, through intersections and on paths); Pedestrian planning and design (eg pathways and crossings); Audits/reviews of walking and cycling projects; Planning and design of bus public transport facilities (eg network design, routing, connectivity, demand and capacity, service timetabling/scheduling); Economic evaluations
ENTR617: Transport Network Optimization *Block dates: 24-25 August, 28-29 Sep*	Course coordinator: Assoc. Prof. Dong Ngoduy This course introduces advanced concepts and principles of urban transport network optimization. Participants will also obtain skills in the practical application of transport network optimization software (i.e. SATURN).
ENTR615: Advanced Traffic Flow Theory and Simulation *(Block dates: 2-3, 16-17 Sep)*	Course coordinator: Assoc. Prof. Dong Ngoduy This course introduces advanced concepts and principles of traffic flow modelling. Participants will also obtain skills in the practical application of traffic simulation software (i.e. AIMSUN).

Note: Other relevant courses at the University of Canterbury, University of Auckland or elsewhere may also be suitable for credit to a PGCertEng, MEngSt or MET (contact Assoc. Prof. Saleh for approval).

For more details contact:
Associate Professor Mofreh Saleh (Ph. 03 369 5118; Email: mofreh.saleh@canterbury.ac.nz)
Or visit the website: **www.met.canterbury.ac.nz**

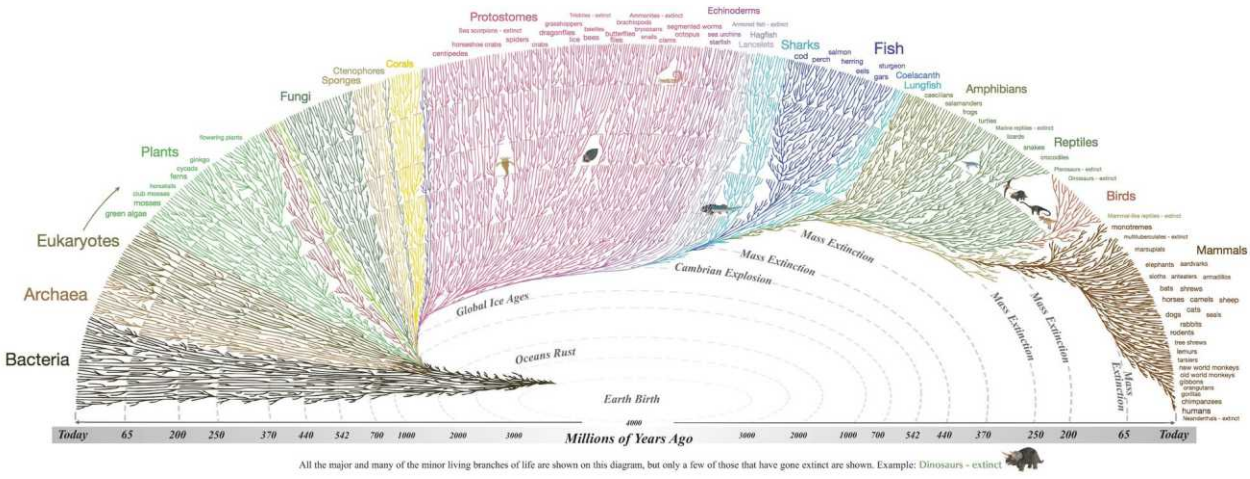
This month's selection is from Denis Schubert, who saw these variations on standard road signs at a boat dealership in Manukau. There are some clever ideas in there. Have you seen other examples of 'subverted' road signs? Send photos to:
daniel.newcombe@at.govt.nz

Roundabout of the month



This edition doesn't have a roundabout, but it does have a round thing. This cool series of sunset images has a transport relevance, tenuous though it is.

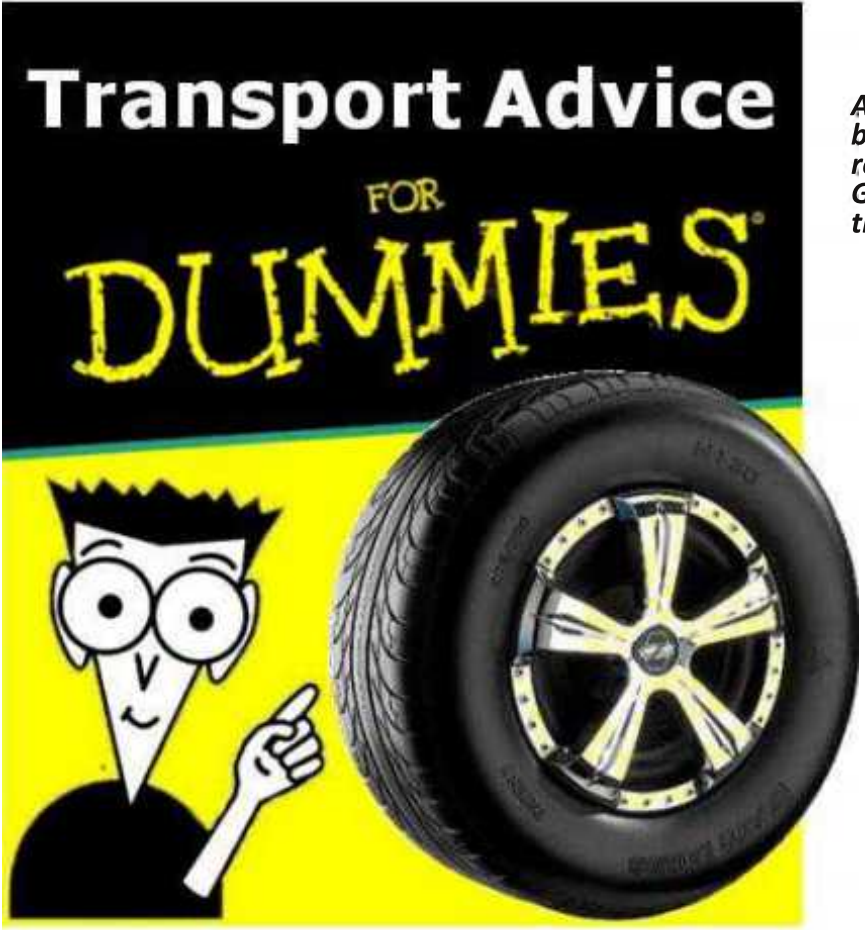
Seen a better pic? Email: daniel.newcombe@at.govt.nz



Caption competition

In keeping with the climate change theme, this edition's caption competition is of Climate Change Minister James Shaw and Prime Minister Jacinda Adern at a press conference on the Zero Carbon Bill.

An appropriate caption has been suggested. If you have a caption suggestion, or a photo of your own you want captioning, send it to daniel.newcombe@at.govt.nz



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

Dear Transport Guy

I am getting a bit bored with all these young kids going on 'strike' from school (in my day it was called wagging) in order to protest climate change. What do they think they will achieve with it?

Dave, Karori

Dear Dire

I think you are right, who do these kids think they **cough** are with their **cough** protesting about not having a habitable **cough** planet for when they are **cough** your age. Sorry about the **cough** coughing, its the smoke from the Australian bushfires getting in my **cough** lungs. I'm sure its perfectly **cough** normal for half of Australia to be on fire. Go back to **cough** school, kids!

~Transport Guy

Dear Transport Guy

It will take decades for the current petrol/diesel fuelled fleet in NZ to be replaced by an electric fleet.

Its a pretty pointless exercise. The benefit of reduced vehicle emissions will be minimal for some time, so it seems ridiculous to try to force everyone to buy electric vehicles. The current lot are expensive, don't go very far and look butt ugly too.

Better that we make our roads as efficient as possible so the current fleet can operate as cleanly as possible, and not have to bother buying a bunch of expensive new cars.

Greg, Dunedin

Dear Gag

You are quite correct. It will take time to transition to an all-electric fleet.

However, amidst your complaints, you appear to have skipped a bunch of other factors here. Another way to reduce emissions from the current fleet is just to use it less. How? Catch a bus. They will increasingly be electric too. Ride a bike. Take a walk. Share the car trip. Or just don't travel - combine it with a later trip.

And don't forget, those newer more expensive cars have better safety features, so they may save your life as well as the planet.

Sure, roads should be efficient. But that supplements fleet emission reduction efforts rather than replace it.

~Transport Guy

Dear Transport Guy

Why do those climate change protesters block roads? Doesn't that just create congestion and worsen emissions?

Sienna, Mairangi Bay

Dear Senile

I think they do it because it directly impacts the people they are trying to get through to - the car drivers. Not much point in blocking a cycleway. Those people are already making an effort.

~Transport Guy

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

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Kids explain traffic engineering

"People wanting to buy electric cars should just buy a bike."