

Roundabout

Magazine of the Transportation Group NZ

Issue 159 March 2019

Conference 2019



Also in this edition:

- Why diversity in our Group matters - Award winners
 - New Chair & Vice-Chair - Self-driving cars are out...
 - Data is the new sealbelt - Tactile paver research
- And much more*

Contents

| | |
|----|--|
| 3 | Editorial |
| 4 | Chair's Chat |
| 5 | Adios from Alan |
| 6 | Planning and Design for Cycling |
| 7 | 2019 Conference Award winners |
| 8 | 3M award winner announced |
| 9 | 2019 Conference photos |
| 10 | News updates |
| 11 | New Vice-Chair announced |
| 13 | Survey on directional cycle signals |
| 14 | Self-driving cars are out. Micromobility is in |
| 16 | Surveys on healthier streets |
| 17 | Car looby opposes safety |
| 18 | Data is the new seatbelt |
| 19 | Walking is good for all |
| 20 | Consultation on speed limit changes |
| 21 | Are e-scooters here to stay? |
| 22 | Don't believe the autonomous car hype |
| 24 | Tactile paver resistance issues |
| 27 | Suffragette on a scooter |
| 28 | On the Go page |
| 29 | Are you implementing a bus stop? |
| 30 | Branch updates |
| 31 | Active modes infrastructure group update |
| 33 | Photo competition |
| 34 | More Conference photos |
| 35 | Why walking matters |
| 36 | Roundabout of the Month |
| 37 | Caption Competition |
| 38 | Transport Advice for Dummies |
| 39 | Group Contact Details |
| 40 | Kids Explain Traffic Engineering |

"So are e-scooters here to stay, or are they just another boom and bust fad that will quickly disappear?"
Page 21

"Public transport is the beating heart of a successful and liveable city, and will be for a long time to come, likely forever. If you don't believe that, let me sell you a fleet of autonomous cars now."
Page 22

"I wrote this just before the terrible shooting events in the Christchurch mosques. Those events just reinforce to me the need for tolerance and support - in our Group and in our country."
Page 3

"Numbers do not lie and unfortunately I am officially overweight by Ministry of Health standards."
Page 35

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

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

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

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

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

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

ISSN 01 1 3-9053

Editorial



One of the strengths of our Group is its diversity.

I was reminded of this during our conference dinner, held within Parliament in Wellington, recently.

As is tradition at our conference, the dinner was a fancy-dress event (not compulsory, but if you didn't dress up, you'd wished you had).

We had a diverse and hilarious range of costume ideas, including the winning Nandor Tanczos, who had to put his skateboard through the security scanner before he could enter the building. Everyone was having a good time, and there was much laughing with rather than at people.

I got talking to a waitress at the event who had complimented me on the size of my hat (I get that a lot - see photo of me with Jackie O, our Vice Chair) and I asked her if she saw a lot of fancy-dress parties at Parliament.

She replied that they have hundreds of formal black-tie events but she couldn't recall a fancy dress party.



As I looked around at the pretend Trumps, Lincolns and (my favourite) Julie-Ann Genters (complete with baby in front pack – that wasn't weird at all having her actual husband in attendance), it struck me that we are a diverse group but a group that is up for trying new things, having a good time and providing a supportive environment for each other.

This is relevant right now for a few reasons.

I looked around at the pretend Trumps, Lincolns and (my favourite) Julie-Ann Genters (complete with baby in front pack – with her actual husband in attendance)

Firstly, we now have – for the first time ever – females in the two top roles of the Group. This is a stupendous milestone for such a traditionally male-dominated industry.

Secondly, we are a Group with a diverse range of views. From time to time contrary views escalate between members, but I feel that collectively we provide a supportive environment to have honest conversations and not personalise criticisms.

The conference presentations contained some polar opposite views on transport matters, but whilst the subsequent debate was robust, not once did attendees stoop to personal criticism.

Thirdly, our new Vice Chair, the incomparable Dr Bridget Burdett, will in the near future be raising the issue of industry diversity and representation. This is something Bridget is passionate about and I know the topic will find a supportive home in the Group.

If you have views you wish to share, on diversity or anything else in the profession, I hope the Group will remain a positive and supportive place for discussion.

And fancy-dress costumes. That's another big part of the Group.

Post-script: I wrote this editorial just before the terrible shooting events in the Christchurch mosques. Those events just reinforce to me the need for tolerance and support - in our Group and in our country. We are a fantastic country that allows for open, tolerant discussion and a range of views, but we are united in our intolerance for violence and aggression. Let's make sure we come out of this even more supportive of each other.

Daniel Newcombe
Roundabout Editor
[@newcombe_dan](#)



**TRANSPORTATION
GROUP NEW ZEALAND**

Chair's Chat



Well here I am after two years of Vice Chair, now the Chair. Interestingly this is the first time we have had a female chair, and to top that, this is the first time we have had a female Chair and Vice Chair (the lovely Bridget Burdett).

It was interesting to note at our recent conference that there were two presentations regarding gender aspects of our transport system, this is the first time I can recall such matters being discussed at the conference. This, and the recent formation of the Women in Urbanism group could indicate that something is amiss.

For those of you who do not know me, here is a bit about my career so far, my favourite pastimes and what I hope to achieve during my tenure.

I started my career with a NZCE Civil then onto the BE Civil a few years later. I have had a range of experience from materials laboratory testing, road design, hydraulic modelling (put me off modelling for life), landfill site selection, structural bridge assessments (really old bridges in the UK) and project management to finally being transport focused. This change to transport inspired me to do the MET Masters part time, a great decision despite having to balance work, study, a family and a few earthquakes.



My current role at Abley is varied but I am most passionate about street design. I joined the Transportation Group in 2008 and have been involved at the branch level for many years. I have been on three conference organising committees, most recently I was the convener for last year's Queenstown Conference.

I have two teenage sons who keep us busy, one is currently learning to drive. I have to say that learner driver process is quite eye opening and scary. I enjoy cycling, trail running and kayaking with friends and recently completed a multi-modal event across the South Island known as the Coast to Coast, a 20-year goal finally achieved.

Travelling is another hobby and last year as part of a trip to the northern hemisphere I had the opportunity to visit Copenhagen with some ex-colleagues, an entirely 'transport geek' trip. The transport culture there was certainly something to aspire to!

At this year's AGM I outlined that I am focused on collaboration with other industries working across transport, in particular urban design. We need to be working in multidisciplinary teams, sometimes this happens, and it works well, but sometimes we don't, and the outcomes aren't always great.

As a technical group of Engineering New Zealand (EngNZ) we will continue to work closely with the helpful EngNZ staff and tap into the services that they can provide us. It was fantastic to have Susan Freeman-Greene the CE of EngNZ join us for the conference dinner this year, she now has a much better idea of what are about and our dressing up antics.

We need to consider how our Group can make a difference, this might involve more media interaction. There's a lot to do and I look forward to working hard for our members!



New Vice-Chair, Dr Bridget Burdett (left) with Chair, Jeanette Ward, in non-usual garb

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

Adios, from Alan...



"So long and thanks for all the fish"

So this is it, the twilight of my tenure is over and now night must fall...I want to thank everyone for their support over the last two years and especially Pravin, Jeanette and Daniel who kept things rolling seamlessly when the reality was more akin to a duck swimming upstream

(serenity above, flailing limbs and turbulence below)

As my last rant from the soapbox of "Chairs Chat" I want to talk about the past rather than the future.

We have come a long way since 2015 when I was talked into standing for Vice Chair (thank you Pravin), we now have a much better relationship with our parent organisation – Engineering New Zealand who are much more relevant to us as a group since the old IPENZ days.

The priorities in our investment in transport have changed dramatically too, with a resurgence in active modes and public transport, which, in my opinion, are the only real future for transport within urban centres. It's a pity that so many detractors have a louder voice than the supporters.

I am still wanting to see an overarching transport strategy for NZ, because if we don't have a plan or direction, how can we even pretend that we are doing the right thing?

Simply leaving things to chance and letting the market decide is ineffective and cowardly, we will only get what is most profitable for vehicle manufacturers or

builders of infrastructure, and not what we need as a progressive and hopefully more environmentally conscious society. Look at Los Angeles - unsustainable growth fuelled by the dream of the dollar and getting everything you want and nothing you need. Is that Auckland in 20 years' time?

Is a retrograde step in reliability and efficiency actually progress? Because that's what we will get by adding more and more capacity for vehicles in our urban networks.

And what do we do with our cars while we are not sitting watching the back of the car in front? We devour valuable, precious real estate to park them all day and complain about the cost of renting this space. For the sake of convenience.

We have done this for years, back in 1970, Joni Mitchell was prophetic with the haunting line "they paved paradise and put up a parking lot" let's try and make a different future....

Anyway, that's me done. The Transportation Group will move forward and remain to be commentators and advocates for all things transport without me waving my arms and talking (apparently the two things I do best).

Hand-over has occurred at exactly the right time as I am suddenly very busy with no sign of abatement.

Don't worry you are in safe hands with Jeanette and Bridget at the helm, things are going to be much better

Alan Gregory
Past National Committee Chair
Transportation Group NZ



Thanks for all those who attended the 2019 conference. It was great to have your company.

We have had some great feedback so far but would love to hear from you if we haven't already... Be in to win a \$100 prezzie card by completing the following survey ENZ TG 2019 conference survey. Click [HERE](#) This will take no more than 7 minutes.

Important links
[Conference photos](#)

[Conference presentations](#)



Planning and Design for Cycling

Forthcoming training courses



| | |
|---|---|
| Wellington (2nd course), Thu 11 April, 2019 | Willeston Conference Centre, Willeston St (TBC) |
| Hamilton (2nd course), Tue 16 Apr 2019 | Hamilton City Council offices, Garden Pl (TBC) |
| Christchurch, Thu 3 May 2019 Wed 1st May 2019 | Ibis Hotel, Hereford St (TBC) |
| Auckland, Jun 2019 (Date TBC) | Venue TBC |

New Zealand is continuing its journey to ensure cycling is a safe and attractive transport choice. The new Government Policy Statement has signalled a strong desire for more liveable cities that are safe, accessible and are designed to improve people's wellbeing. This means we need to continue to develop our cycling networks to a level of service where people will use them, and make sure they are well integrated into the wider transport system.

The NZ Transport Agency and ViaStrada are offering full day industry training courses based on the recently ratified Cycle Network Guidance and cycling levels of service research which will focus on planning and design for cycling.

The courses will summarise recent advancements in cycling planning and design understanding, using case studies from a wide range of New Zealand projects implemented in the last five years. Topics covered will include:

- Understanding our users – customer thinking / target audience approach, cyclists' 5 main requirements
- Planning for cycling – assessing demand, route options, prioritisation, monitoring, engagement, funding
- Designing between intersections – various types of provision (focus on separated cycleways and paths), making space
- Intersection design – achieving continuity through intersections, cycle bypasses, minor junctions, cycle crossings, cycle detection, signalised intersections, roundabouts

This courses will benefit anyone involved in planning or designing for cycling facilities such as: project managers, road safety auditors, transport planners, transport engineers and elected members. Further courses may be added around NZ, subject to demand.

Course fees:

Early bird professional (non-volunteer) \$400+GST

Early bird volunteer/advocate \$150+GST (closes 2 weeks prior)

Information and registration

To find out more or register for the course contact Helen Woodhouse at ViaStrada:

03 366 7605

helen@viastrada.nz

Visit the ViaStrada website for more information on course content, and a link to the registration form. Any updates will also be posted at www.viastrada.nz/training

2019 Conference Award Winners

Highly Commended Young Author
How Hackathons and Smart Cities relate
Kathy Matete, Beca



Best Young Author and People's Choice Award - Poster
4x stop; whose move?
Rebecca Tuke, Abley



Highly Commended Practice Paper, sponsored by SIDRA Solutions
Fares and ticketing transition in Wellington
Reza Chalabianlou, GWRC

Best Practice Paper and AA Award for Best Conference Paper, sponsored by SIDRA Solutions and the New Zealand Automobile Association
Understanding vulnerable road user crash risk
Dr Shane Turner, Transport Consultant

Highly Commended Research Paper, sponsored by SIDRA Solutions
The mechanics/politics of changing speed limits
Dr Glen Koorey, ViaStrada Ltd

Best Research Paper, sponsored by SIDRA Solutions
The changing signal faces of cycling
Megan Gregory, ViaStrada Ltd

Transportation Group NZ Research Award 2019
Peter Nunns, MRCagney Ltd.
How to analyse the impacts of transport investment on housing development



Transportation Group NZ Tertiary Study Grant 2019
Ashu Kedia, University of Canterbury

Best contributor to Roundabout
Claire Pascoe, NZ Transport Agency

Best abstract presentation (no written paper)
Auckland: the case for Vision Zero
Andrew Bell, Auckland Transport & Phil Harrison, WSP|Opus

People's Choice best award - oral presentation
Improving PT reliability on Auckland's motorways
Dr Ranjan Pant & Kevan Fleckney, NZ Transport Agency

Winner of exhibitor quiz
Brian Hasell

Winner of best picture from the conference on social media
Madie Aghili



Keep up to date with ENZ Transportation Group happenings:

www.transportationgroup.nz

www.twitter.com/ipenztg

www.facebook.com/ipenztg



**TRANSPORTATION
GROUP** NEW ZEALAND



2019 3M Traffic Safety and Innovation Award Winner Announced

Safe Roads has won New Zealand's premier road safety award for the innovative use of virtual reality technology to test safety designs at rail level crossings.



The 3M Traffic Safety Innovation Award for 2019, which recognises exemplary innovation and effectiveness to save lives and injuries on roads, was presented at the Engineering NZ Transportation Group's annual conference in Wellington recently, attended by more than 200 of NZ's transport professionals and advocates.



Safe Roads has developed a method of using virtual reality (VR) technology as a quick and cost-effective way of testing of ideas for safety designs at rail level crossings.

These use a 'human factors' approach that obtains quick user feedback to highlight issues that could otherwise be missed in a standard two-dimensional design process.

"Our 2019 winner demonstrates an effective and innovative approach to improving safety at road rail level crossings, which can represent a major risk for road users," says Transportation Group National Chair, Jeanette Ward.

"Safe Roads is being congratulated through this award for developing such an innovative and effective project, which could be applied to rail level crossings in other parts of the country or around the world."

In early 2018, Safe Roads converted laser scanning survey data for the SH29 Hinuera road rail level crossing into a three-dimensional model able to be viewed with VR technology. Within the model, an innovative new design treatment of in-ground pavement lights was



3M Traffic Safety Innovation Award

tested in advance of the level crossing to warn approaching drivers of an oncoming train. The lights were set up in various configurations and were then experienced and assessed by users in the VR driving simulator to acquire feedback on their respective effectiveness.

The outputs from the testing and preferred options can easily be shared in a VR environment through 360-degree videos. This allowed a range of design options to be tested and preferred designs taken forward to delivery with greater confidence of effectiveness. Judges for the 3M award considered the specific features of the many projects submitted, particularly in terms of innovation in thinking and technology, problem-solving as well as the real benefits in reducing trauma. Cost-effectiveness and transferability to other areas were other key criteria.



Safe Roads was established in 2016 to deliver a programme of road and roadside safety improvements to the State Highway network. It is made up of the NZ Transport Agency and infrastructure consultancies Bloxam, Burnett & Olliver (BBO), Beca and Northern Civil Consulting.

Finalists for this hotly-contested award came from many areas of the transport profession.

The winning team was made up of the following members:

- Jack Donaghy
- Gary Nates
- Clement Germain
- Joshua Forrest
- Luan You

The other finalists were:

- NZ Trucking Association - Safety MAN Road Safety Truck
- Stantec Ltd - Understanding Vulnerable Road User Crash Risk on Auckland's High-Risk Arterials
- Dunedin City Council - Dunedin Central City Schools Cluster
- Abley Ltd - Northland Programming Tool

3M Science.
Applied to Life.™

2019 Conference Photos



(More on Page 34)

Record numbers take part in Aotearoa Bike Challenge

This year's Aotearoa Bike Challenge has encouraged thousands more New Zealanders to cycle, with more than 22,000 people from over 1,900 organisations taking part, including over 4,700 new riders.

Kevin Reid, Acting Senior Manager System Design, NZ Transport Agency says it was great to see so many New Zealanders committed to getting on their bikes in February. "This year we've seen a 54 percent increase in the number of people taking part which is fantastic. The Challenge gives people an incentive to incorporate cycling into everyday life and see and feel the benefits."

Over 1,900 organisations participated in the Challenge this year, an 18 percent increase from 2018. Throughout the month of February participants made more than 289,000 trips by bike (a 79% increase), cycling an impressive 3.7 million kilometres in total.

The Aotearoa Bike Challenge is a partnership between the NZ Transport Agency, local councils and the global organisation Love to Ride.

A list of challenge winners can be found at: <https://nzta.govt.nz/media-releases/record-participation-in-2019-aotearoa-bike-challenge/>

Traffic signals celebrate Matatini

Wellington has designed special pedestrian crossing lights in honour of the arrival of kapa haka festival Te Matatini ki te Ao.

The lights, which have been installed at seven city locations, depict haka and poi poses, some of the most well-known elements of kapa haka, a Māori dance and song art form that dates back centuries.

Wellington mayor Justin Lester said Wellington local iwi had come up with the idea to celebrate te reo Māori in the city about two years ago.

"We've had a tradition of trying to make our traffic signals more interesting to better reflect the Wellington community."

He said the lanterns reflected Te Matatini ki te Ao and the council's commitment to te reo Māori.



Low Emission Vehicles Contestable Fund open for bids

The Low Emission Vehicles Contestable Fund (LEVCF) is open for a new round of applications, Energy and Resources Minister Megan Woods announced recently.

Up to \$3.5 million is on offer.

The investment focus for this round aims to stimulate continued innovation and investment in areas such as filling key gaps in the charging network, facilitating the scale-up of low emission vehicles technology, high-visibility demonstration projects and electric vehicle (EV) technology innovation.

"We've seen in previous rounds the exciting projects this fund can help deliver," said Minister Woods.

Projects to get the green light in the last round included hydrogen fuel cell powered buses at the Ports of Auckland, electric heavy vehicle trials, development of an EV battery testing method and 34 new public charging stations.

"I look forward to seeing how applicants will use this

funding round to help bring the benefits of these emerging technologies to even more New Zealanders."

Applications are due by 9am on Thursday 21 March 2019. Google LEVCF.





New Vice-Chair: Dr Bridget Burdett

The Transportation Group is pleased to announce that Dr Bridget Burdett has been elected as Vice-Chair of the National Committee.

Bridget joins Chair Jeanette Ward, creating a female pairing at the top of our Group for the first time ever.

Under the Group's Operating Procedures, Bridget will serve a two-

year term then replace Jeanette as Chair in 2021.

Bridget has recently completed a PhD in driver behaviour psychology and brings a passion for enhancing the reach and breadth of the Group's interests, particularly for the wider appreciation of the safety of vulnerable road users.



ICTH 2019-Melbourne aims to provide valuable insights into the health impacts of technological disruptions in transport and urban planning, governance, strategic and policy decision-making, performance tools and the potential return on investment of a dynamic system. Join us to learn HOW the most innovative minds in academia, practice and policy are bridging the gap between scientific investigation and real-world application.

Early Registration OPEN - [CLICK HERE!](#)

Due to space limitations at the Pullman and popularity of the conference destination, we encourage you to register for ICTH and book your hotel room early.

Here are a few reasons why you should attend ICTH 2019-Melbourne:

- Expect the unexpected!
- ICTH will keep you on your toes with a mix of science, real-world practical application, social activities and a laid back atmosphere
- An opportunity to build a world-wide cross-disciplinary and cross-sector network
- Learn about innovative research and practice programmes
- Interactive/participatory sessions focusing on experiential learning
- Supportive team environment encourages the sharing of information and new collaborative relationships
- Accepted abstracts of registered delegates published by Elsevier, Journal of Transport & Health in a special issue with selected abstract authors invited to submit a manuscript for consideration and publication
- Membership opportunity to the International Professional Association for Transport & Health (IPATH), which includes dual membership to the Transport & Health Science Group (THSG) AND discounted ICTH registration. Please join IPATH prior to registering for ICTH 2019.
- High scoring abstract and best poster awards
- On-site professional photographer
- Three FABULOUS Keynote Speakers
- Special Abstract Sessions & Hot Topic Workshops (details forthcoming)
- Brompton Bicycle Raffle - All registered delegates will receive a FREE raffle ticket
- 'How To' Training Seminars, Monday, 4 November 2019
- IPATH/THSG Annual Meeting
- Welcome Reception (and ICTH 5th Birthday Party) at the Old Melbourne Gaol
- Walking and bicycle tours of Melbourne
- A day at the races! ICTH will take a day off on Tuesday, 5 November to celebrate the Melbourne Cup
- Balloon Debate
- And much more in the planning...

Transportation Engineering Postgraduate Courses 2019



The University of Auckland
NEW ZEALAND



NZ TRANSPORT AGENCY
WAKA KOTAHİ

Department of Civil & Environmental Engineering University of Auckland
For Master of Engineering Studies [MEngSt] and Post Graduate Certificate [PGCert], with
/ without Transportation specialisation, or for a one-off Certificate of Proficiency, COP

Semester 1 (Mar-Jun 2019)

CIVIL758 – Traffic Systems Design
(Monday & Tuesday, three hours / week, 12 weeks)

Traffic signal timing analysis, gap acceptance parameters, intersection analysis of performance (priority, roundabouts, signals), introduction to transportation planning and modelling techniques, RMA and other requirements, computer modelling and simulation.

CIVIL765 – Infrastructure Asset Management (20-22 March & 15-17 May)

Advanced theories and techniques fundamental to the management of infrastructure assets, with a focus on Asset Management Plans. Covers the entire spectrum of infrastructure, including roads, water networks and buildings. A major project incorporates a literature review, selection and critical review of an industry AMP.

CIVIL769 - Highway Geometric Design (28-29 March, 9-10 May & 6-7 June)

An advanced course in highway geometric design techniques. Through the use of an independent applied project, students will apply advanced theory, methods, processes and design tools to the safe design of highway geometric alignments that includes an understanding of human / driver behaviour characteristics.

CIVIL770 - Transport Systems Economics (14-15 March, 2-3 May & 30-31 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 2019)

CIVIL759 – Highway & Transportation Design
(Monday & Tuesday, three hours / week, 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.

CIVIL762 – Transportation Planning (7-9 August, 2-4 October)

Provides an in-depth exploration of various components of the urban transportation planning process, with emphasis on theories on modelling. Conventional four-stage transport planning model principles, trip generation, distribution, modal split and assignment, are covered.

CIVIL766 – Road Asset Management (14-16 August & 25-27 September)

Advanced topics in road asset management - develops a critical awareness of the key issues encountered, including the evaluation of functional and structural performance; risk management; deterioration modelling and calibration; prioritisation and optimisation. Core skills are extended by a complex road asset management problem.

CIVIL 771 – Planning & Managing Transport (1-2 August, 29-30 August & 17-18 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 in planning, designing and managing transport infrastructure.

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: **Assoc. Prof. Roger Dunn**, Director of Transportation Engineering
Phone: (09) 923 7714 DDI, Mob 021 309 600 Email: rcm.dunn@auckland.ac.nz

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

Survey on directional cycle signals

Christchurch City Council and Auckland Transport have been conducting a trial of directional traffic signals for cyclists – you may have seen the installations and even taken part in the user surveys last year.

To conclude the official trial process, the NZ Transport Agency requires another round of investigation.

Regardless of whether you participated in the user surveys last year, whether you have seen the signals, and whether you ride a bike, your participation in the survey would be valued!

The Christchurch survey will be active during March 2019 via <http://bit.ly/ChchDCSTrial2>.



Unpopulated K-City built for AV testing

A city with no residents called K-City has been completed in South Korea for autonomous vehicle (AV) testing based on next-generation 5G mobile networks. It's among a number of such cities springing up around the world, including in the US and Japan, for driverless vehicle testing.

About US\$11 million has been invested by South Korea's land, infrastructure and transport ministry to build the 320,000sqm K-City at the Korea Transportation Safety Authority in Hwaseong, about 80 minutes drive southwest of Seoul.

Five main AV testing environments are included – highway, downtown road, suburban street, parking lot and community facilities. The 5G networks will allow companies, universities and research institutes to test a variety of connected car services in those different environments, the ministry says.

In March 2018, 188 companies including Hyundai Motor Group, Samsung Electronics Co. and SK Telecom Co., set up a consultation committee for AV development and are expected to test vehicles, products and connected technologies in a range of different driving conditions. These include pedestrian crossings, tunnels, train crossings, dummy cyclists and more simulating real-life road conditions.



Household Travel Survey and crash stats available

New results for the New Zealand Household Travel Survey (2015-2018) now available. The survey collects information about day-to-day travel in New Zealand – such as, how, where and when we travel. The results give us a picture of the travel patterns and choices of all types of people. This is available on the Ministry of Transport website – <http://www.transport.govt.nz/mot-resources/household-travel-survey/new-results/>

The Ministry of Transport has also released annual statistics on motor vehicle crashes and casualties, covering data to the end of 2017. These are available on the Ministry's website here: <https://www.transport.govt.nz/mot-resources/new-road-safety-resources/>



Self-Driving Cars Are Out. Micromobility Is In.

It's amazing how quickly perceptions can change. It may seem hard to remember now, but in 2017, the hype machine was going full steam ahead on self-driving cars and their presumed future dominance of transportation.

Cars would still dominate—many presumed—but drivers would be liberated as software took over their role, making everyone a passenger.

The fatal Uber crash hadn't happened yet. People still believed that Tesla's Autopilot system was safe and that full self-driving was on the horizon. The reporting on autonomous vehicles suggested they were safer than human drivers, despite a complete lack of evidence. The tech visionaries had spoken and, as is often the case, the media fell in line.

But, as 2018 began, criticism began to emerge amid delayed timelines, a growing number of collisions, and the slowing progress in reducing the number of times human test drivers had to take over for computers.

As the year played out, critics were proven right—but a much more inspiring vision for the future of transportation has emerged in the wake of the self-driving vehicle.

Waymo, a division of Alphabet, has long been a leader in autonomous vehicle technology. Based on the limited data released on the company, its vehicles have

driven the most miles in self-driving mode and have the lowest rate of disengagement (moments when humans have to take over).

But Waymo's CEO, John Krafcik, has admitted that a self-driving car that can drive in any condition, on any road, without ever needing a human to take control—usually called a “level five” autonomous vehicle—will basically never exist.

At the Wall Street Journal's D.Live conference, Krafcik said that “autonomy will always have constraints.” It will take decades for self-driving cars to become common on roads. Even then, they will not be able to drive at certain times of the year or in all weather conditions. In short, sensors on autonomous vehicles don't work well in snow or rain—and that may never change.

Such a statement from someone leading a self-driving vehicle company seems surprising. But given what's happened throughout 2018, it shouldn't be. A number of negative stories about self-driving cars permeated the year's coverage, including the deaths of those using Tesla's Autopilot technology.

The effect of an Uber self-driving car killing a woman in Tempe, Arizona, cannot be understated. That singular event broke through the largely uncritical mainstream coverage of autonomous vehicles; it showed us how far the technology really had to go before it could be safe.

The initial event was bad enough: A self-driving car failed to slow down to avoid hitting a person and a safety driver was too distracted to notice. But as the National Transportation Safety Board investigated the incident, we learned that the autonomous driving system was unable to determine that the object in front of it was a person at all.

When it finally did correctly determine that it had to stop—just 1.3 seconds before impact—it couldn't because emergency braking had been disabled, and there was no way to alert the safety driver.

Leaked information showed that Uber safety drivers had to intervene in their self-driving vehicles every 13 miles (21 km) compared to every 5,600 miles (9,000 km) on average for Waymo's vehicles, and the team was putting their test vehicles in unsafe situations to try to hit impossible deadlines.

It was a complete mess, and eventually blew up future plans among ride-sharing apps that depended, in part, on autonomous vehicles to reduce labor costs.

Uber had to completely halt its autonomous vehicle testing, and it was already far behind its competitors. It pulled out of Arizona completely, laid off most of its safety drivers, and only reapplied to resume testing in Pittsburgh near the end of 2018—almost eight months after the fatal crash.

But between March and November, everything changed. No longer does anyone credibly claim that self-driving cars are the future of transportation, and Uber has even shifted its focus to scooters, e-bikes, and turning its app into the “Amazon for transportation.”



At the beginning of 2018, it would have been unimaginable for the CEO of Waymo to publicly acknowledge that self-driving cars will never work in all conditions. Now, it's a statement of fact that anyone familiar with the industry already knows.

But while the hype about self-driving cars is over, there's a new vision for urban transportation that's much more inspiring—and everyone seems to want in on it.

Before, it seemed like the future of transportation would look like the present, albeit augmented with a bit more tech. That's no longer the case. We've heard for a while that European cities are improving transit, adding bike lanes, and taking space away from cars. Now, these trends are becoming more common in the United States.

And why shouldn't they? Cities in the U.S. are still overwhelmingly dominated by cars, but that doesn't

mean they have to be—remember, there was a time before the automobile.

People enjoy driving less than they have in the past, and a recent survey showed that 30 percent “do not believe that owning a car is worth the investment.” Instead of driving, people want better public transit and more options for biking and walking around their cities—and they're getting them.

Over the past year and a half, dockless e-bikes and scooters—collectively called “micromobility” services—landed on the sidewalks of cities around the country. Initially, there was backlash. These bikes and scooters were on roads previously reserved for cars, and they were imposing on pedestrians' limited space.

City governments weren't as slow to react as when Uber and Lyft rolled out their ride-hailing services. Local governments have created a range of regulations to cap the number of bikes and scooters. They've set speed limits and off-limit zones, and some have even started turning some on-street car parking spaces into micromobility parking spots.

More importantly, governments have access to bike and scooter trip data. As more people use these micromobility services, the pressure to add more bike lanes and improve micromobility infrastructure grows.

In urban planning, there's a concept called “induced demand.” The concept maintains that as the supply of a good increases, so does its demand. This typically applies to roads and explains why even when highways are widened, congestion rarely improves—the additional lanes simply attract more drivers.

We're seeing the same phenomenon with micromobility. As cities add dockless bikes and scooters, they create demand that didn't previously exist. New cyclists and scooter users create pressure for better parking and bike lanes, which results in a positive feedback loop by attracting more users, who create more pressure for infrastructure, and on and on.

In the past, this feedback loop has benefited drivers, but momentum may finally be shifting to more active forms of mobility.

Cars have dominated U.S. cities for decades. It can be difficult for people who grew up in them to imagine anything else. Today, however, people are demanding a different kind of city. Citizens want easier, less environmentally toxic ways of moving around.

For baby boomers, the car was a symbol of freedom. It allowed them to hit the open road and go wherever they wanted. Younger generations, however, see cars as an expensive inconvenience. Wages are lower, vehicle costs are higher, and they'd rather get where they're going than wait in traffic and try to find parking.

The self-driving car seems to have been a reflection of the future imagined by car-loving boomers, but micromobility seems to be the future people want—and the one that might just have the best chance of succeeding.

Source: Medium

Towards streetscapes promoting inclusive mobility, health and well being for all: Web survey

Researchers from the University of Auckland, Massey University and Stantec Ltd invite you, as a transport professional, to participate in a survey for a study that explores what influences decision-making by transport professionals with regard to age- and disability-friendly policies including the sources of data they find useful.

Taking part in this survey is entirely voluntary and you completing the survey implies consent to participate. The survey should take no more than 10 minutes of your time.



Innovative Streets survey

The Transport Agency has launched a workstream to look at how we can provide clearer guidance and better enable people to make our streets more liveable through temporary, tactical interventions.

We're really keen to get your feedback on what is and isn't working, what guidance would be useful, along with examples of ways you've innovated streets in your own area.

Please help us get their work right by taking 10 mins to complete this survey:
https://www.surveymonkey.com/r/Innovating_streets_for_people

Research: leveraging walking in NZ urban areas by addressing the main barriers

Pedestrian accessibility is increasingly seen as a key aspect of efficient towns and cities, and its improvement faces the challenge of addressing systemic issues.

A PhD work is underway at Auckland University of Technology (AUT), aiming to support local decisions through evidence on how streets' characteristics participate to difficulties of reaching local destinations on foot or by wheelchair, linking users' experiences with objective aspects of the streets' built environment and transport systems.

It will also provide an overview of (1) international and national evidence linking the quality of the built environment, its perception by people with disabilities, and their trips; (2) the extension of current difficulties to reach destinations (populations affected and their characteristics – quantitative analysis of the Household Travel Survey data and the Auckland Transport Active Modes survey); and (3) challenges and barriers to implementation as seen by practitioners from different

professional disciplines involved in streets' design, transport systems management and operation, and public health.

The research is undertaken by Tamara Bozovic (MSc Transport Planning and a 15-year experience as strategic transport planner), under the supervision of Professor Erica Hinckson and Dr Moushumi Chaudhury, both leading research in the relationships between the built environment and physical activity. The team would like to reach out to the Transportation Group members to:

- inform of the study and of their availability to link with projects it could benefit
- welcome local non-academic evidence, to be integrated in the systematic literature review
- invite members to participate later in the practitioners' survey and focus group

They welcome your contact regarding any of the above – feel free to contact Tamara writing at rfg8954@autuni.ac.nz

Car lobby opposes EU safety bid that 'would save 1,300 lives a year'

Car industry lobbyists are pushing the EU to weaken safety technology proposals, even though their own research predicts the move would cause more than 1,000 extra road deaths each year.

The European Automobile Manufacturers Association (Acea) is fiercely opposing an EU attempt to benchmark a technology that automatically reduces car speeds to local limits. The group favours one that just sends speeding drivers a dashboard warning.

Acea last month had to remove claims from its website that speed limit information (SLI) technology was “an effective alternative” to intelligent speed assistance (ISA) “combined with better enforcement and driver training.”

This came after TRL, the expert consultants to whom it had jointly attributed the claim, said it was “not true” and “damaging [to its] reputation”.

Richard Cuerden, TRL’s director, said in a message to the European transport safety council (ETSC): “If every [vehicle] in the EU28 today was fitted with SLI instead of ISA, approximately 1,300 more people would be killed on our roads every year. SLI is not an effective alternative to ISA.”

Cuerden confirmed that Acea had been made aware of the figures, and TRL’s objections to the claims about SLI.

Despite this, Acea has continued to use the “effective alternative” phrase in its lobby material, and the wording has been inserted into nine amendments to the EU package now being proposed by three MEPs.

Antonio Avenoso, the ETSC director, said: “These new vehicle safety standards will have a hugely important impact on reducing deaths on European roads. So it’s critical that the political discussion is not frustrated by misleading information.

“That a handful of MEPs are trying to copy-paste this into the legislation itself is very worrying. The price would be paid in lives lost that otherwise would not have been.”

None of the three rightwing MEPs proposing the amendments – Jacqueline Foster, Andor Deli or Massimiliano Salini – immediately responded to requests for comment.

Acea declined to discuss its interactions with MEPs or its reasons for repeating the disputed claims.



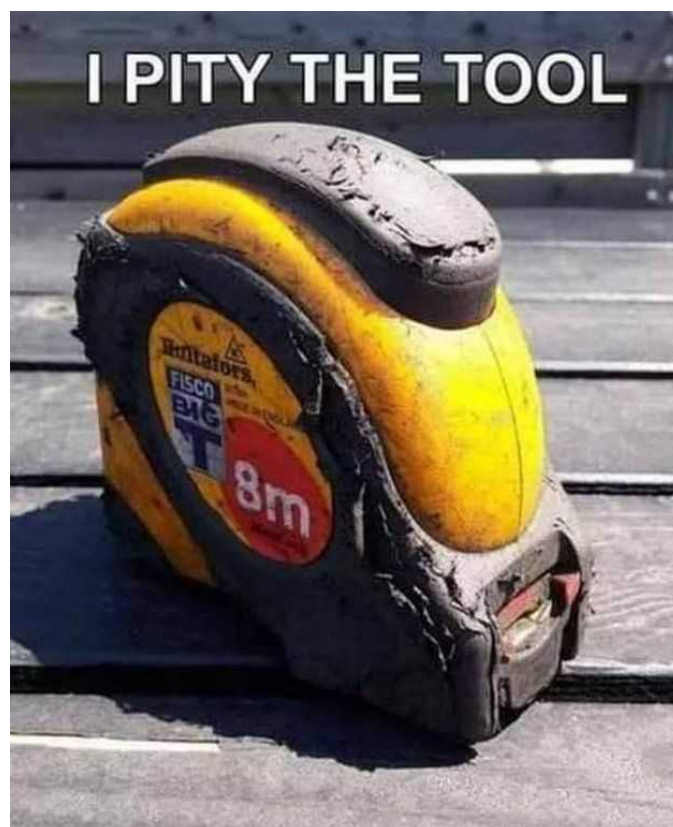
Acea says on its website: “ISA technology holds promise for the future.” However, a spokesperson said it “still shows too many false warnings due to incorrect road signs and outdated speed limit information – something that most consumers will not accept.”

This is contested by Mobileye, a leading safety tech supplier, which says ISA systems have an accuracy rate of 90-95% and rising in the EU.

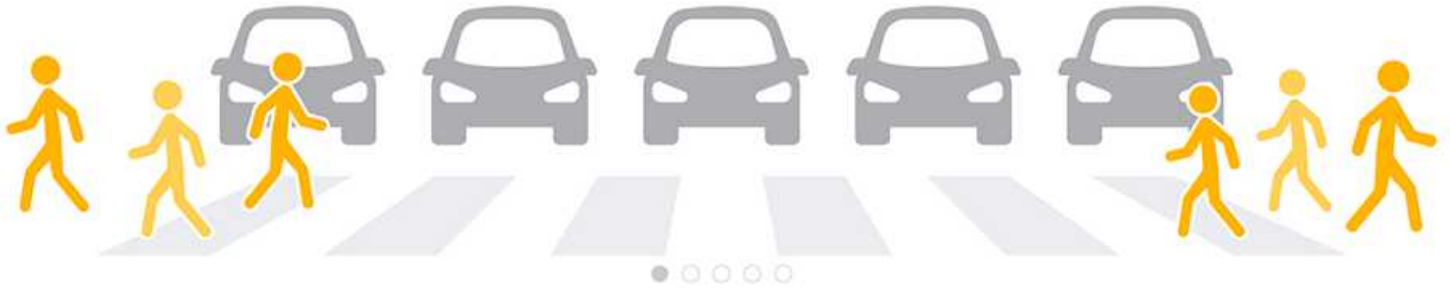
ISA, which is used by some Ford cars, employs traffic sign recognition systems and GPS satellite to adjust car speeds. It turns itself off in inclement conditions and can be manually over-ridden.

ISA is one of 16 safety measures – including automated emergency braking and motorway lane assistance – in the EU general safety regulation aimed at cutting road deaths by 25,000 – one year’s death toll at present – over a 15-year period.

Source: *The Guardian*



THE **WORST HOURS** TO BE A KID
ARE **PICKUP AND DROPOFF TIMES**
7-8 AM AND 3-4 PM



Data Is the New Seatbelt

By Noah Budnick and David Braunstein

To date, road safety technology improvements have maintained a status quo—massive carnage on our roads each year, yet an amount that Americans are willing to tolerate.

Since mandating seatbelts in 1968, stricter drinking laws in 1984, and airbags in 1998, the number of traffic deaths in the U.S. has hovered between 40,000–50,000 a year, with an all-time high of 54,589 in 1972.

A recent dip in annual fatalities to the mid-30,000 level has been eclipsed in the past two years, with deaths again rising above 40,000 a year. Nonetheless, the traffic safety developments that brought us to this point are truly important, and without them, and as more and more Americans take to the road, annual traffic deaths could easily be 50 percent higher than they are today.

While this is a tremendous figure, the sad reality is that these advances are just helping America tread water, not make significant advances towards Vision Zero. In fact, to get to zero in the coming decades, we will need to continuously reduce roads deaths and serious injuries by the thousands every single year, year after year.

A critical factor in preventing crashes is changing people's behavior by changing the environment around them. To develop high-impact measures to stop risky

mobility, we must measure everything from the effects of a new speed limit to the way drivers travel on a wide highway.

Today we have the technology to collect more data than ever before. It's time to embrace it. Analytics based on data—both predictive and descriptive—is the 21st century's game-changing technology that will help communities save even more lives.

For example, traffic crashes are the number one cause of injuries and deaths for school-aged kids in the U.S. In their annual report on school safety, the road safety analytics company Zendrive found that traffic around schools is the most dangerous during morning drop-off and afternoon pick-up, from 7:00 to 8:00 a.m. and 3:00 to 6:00 p.m.

Zendrive's data show that driver phone use, and hard braking, are the most frequent risky behaviors around schools at these times. Under these conditions, it is no surprise that children are killed at such a high rate.

Notably, after speed enforcement cameras and other Vision Zero improvements were installed near New York City schools, Zendrive found an improvement in driver behavior. In 2017, Manhattan, Brooklyn, Queens, and the Bronx were among the ten most dangerous counties in the country.

In 2018, none of them appear in the ten worst list. In 2017, three school locations in Manhattan were among the ten most dangerous schools in the country. This year, there are no schools from New York City on that list.

Another example is in Atlanta. The city's North Avenue, a multi-modal high activity corridor with increasing development and a mixture of uses, suffered from

ON AVERAGE, CITY SCHOOL ROADS ARE
4X MORE DANGEROUS
THAN RURAL SCHOOL ROADS



DRIVER BEHAVIOR IN
CITIES AND SUBURBS SAW
THE WORST DECLINE
FROM **2017-2018**



fallen by 100 percent, and rear-end and same-direction sideswipes have been reduced by 24 percent and 34 percent, respectively.

In Chicago, which experiences nearly 3,000 road crashes a year between vehicles and pedestrians, about 800 of which involve children, artificial intelligence data helped reduce crash numbers and save lives. Geotab—a fleet tracking and management company—used artificial intelligence to

predict hazardous driving areas in Chicago.

heavy congestion and a crash rate over 200 percent worse than the statewide average for similar corridors. To determine how best to reduce the North Avenue crash rate, and ultimately save lives, Atlanta analyzed hyper-local root causes of collision risk and created analytical indices to estimate risk levels.

The analysis was based on curating and aggregating data sources from the City of Atlanta's publicly available data and private sector data, which uncovered increased collision risk when there was congestion around events, rainy conditions during early morning hours, susceptibility to water-logging around high traffic segments, and driver behavior of failing to yield and changing lanes improperly.

With these insights, the City of Atlanta incorporated multiple technology components designed to facilitate and promote safety for pedestrian and bicycle traffic, including the use of the latest adaptive traffic signals for a safer, more efficient flow of bus and vehicular traffic in real-time conditions, and prioritizing fire engines and ambulances traveling along the corridor on emergency response calls.

Since then, there has been a 26 percent reduction in the number of crashes along the route. Particularly, head-on collisions and opposite-direction sideswipes have

By looking at areas where vehicles tend to harsh brake or experience crash-level events, Geotab uncovered a school in the north end that had a particularly hazardous area located near where children park their bicycles. In this specific area, the crosswalk and school zone signage were very far from the bike racks and there was a lack of a stop sign from an oncoming alley that connects to the street.

With this analysis, Geotab was able to provide Chicago with a data-driven decision-making approach to determine if, and how, they could move the bike rack area, provide more signage, or place a stop sign in the alleyway approaching the street.

These examples are just a few of the many that showcase how—by “digitizing Vision Zero” and incorporating new insights into our intervention plans—we can accelerate outcomes and get closer to a world where no one is at risk of being killed on the roads.

More than ever, communities need to embrace innovative, evidence-based transportation safety solutions based on big data and analytics to save lives.

Walking good for all



The NZ Transport Agency's Providing for walking - Research into guidance and policy report was published recently and shows the NZ Transport Agency is providing good guidance to local authorities to ensure the best long-term planning for walking.

The report reiterates the health and environmental benefits of walking, before analysing documents which are used to help local authorities plan, design and

prioritise walking improvements – and outline availability for Transport Agency funding. These documents are:

- Pedestrian Planning and Design Guide (PPDG)
- Guidelines for blind and vision impaired pedestrians
- Government Policy Statement (GPS) on Land Transport
- Investment Assessment Framework
- Economic Evaluation Manual

The research was conducted to understand the suitability of these documents through technical reviews and work with industry.

According to the report, New Zealand is well placed in terms of the strategic direction, policy and planning and design guidance. But the report – undertaken by Abley - has identified 27 recommendations to enhance the provision for walking.

Most of the recommendations can be led by the Transport Agency although some will require sector collaboration. The report was finalised in September 2018 and can be found [here](#).

Consultation on speed limit changes around Auckland

To make our roads safer, Auckland Transport (AT) wants to introduce a new bylaw to set new speed limits, including lower speed limits for approximately 10% of Auckland's local roads.

Auckland has a serious problem with people being killed and being seriously injured on our roads. In 2017, 64 people were killed on the region's roads (44% of which were speed related deaths) and 749 people were seriously injured. This represents a 78% increase in road deaths since 2014.

One of the most effective ways of minimising road trauma involves reducing vehicle speeds. That's because speed determines both the likelihood of a crash occurring and the severity of the outcome.

Therefore, we plan to reduce the speed limits of more than 700km of road in areas which pose the greatest safety risk to people.



Under the Speed Limits Bylaw 2019, we plan to reduce the speed limits of some high-risk rural, urban and residential roads, as well as various town centres and the city centre. The changes would affect approximately 10% of the region's local road network.

The roads have been selected based on a number of criteria, namely their risk of death or serious injury as well as those with large numbers of vulnerable road users like pedestrians. 90% of the roads we plan to reduce the speeds of are rural roads. The remaining are made up of the city centre, town centres and residential roads.

The criteria for speed reductions is dependent on the road type:

Rural roads - Approximately 90% of the total area we want to reduce the speeds of are rural roads. They have been selected because they are either high-risk roads or close to high-risk roads, have high crash rates, or are close to roads with high crash rates, have speed limits which are unsuitable – they could be winding, hilly or have unsegregated lanes. We will introduce safe and appropriate speeds across areas rather than individual roads.

Residential and urban roads -

These roads have been selected because they have large numbers of vulnerable road users (people walking and cycling), they're often near schools, kindergartens and other community facilities, and AT research into speeds and risk factors.



Town centres and Auckland city centre - These areas have been selected because this is where the highest number of vulnerable road users are (people walking and cycling), population increases mean more people are walking and cycling in these areas, and reducing speeds here has the greatest potential to reduce the chance of serious injuries and deaths occurring.

In addition to reviewing speed limits, we are implementing a comprehensive road safety programme that will complement lower speeds across Auckland, which includes:

- Residential road safety improvements, including engineering measures like speed tables or humps, kerb buildouts and raised intersections.
- Town centre safety improvements, including a combination of speed limit reductions, signage, speed tables or humps, and raised intersections.
- Setting new urban traffic boundaries, with more appropriate speeds for newly developed residential areas.
- Implementing a 30km/h speed limit in Auckland's City Centre.

We want you to let us know what you think about the new speed limits we are proposing to set (by bylaw) for roads under our control. Check out our video at: <https://youtu.be/m2DI722lvmo> Feedback closes on 31 March 2019. You can provide feedback here: <https://www.surveymonkey.com/r/NewSpeedLimitsBylaw2019>



Are e-scooters here to stay?

It has now been nearly 18 months since former Lyft and Uber executive Travis VanderZanden bought several e-scooters from Alibaba, built a simple app and put the scooters out on the streets of beach-side Californian city of Santa Monica. Nine months later VanderZanden's company Bird made history by becoming the fastest ever startup to reach a \$1 billion valuation.

In the last 18 months, dozens of competitors have emerged. Several such as Lime and Jump were initially involved in the dockless bike share industry, but switched to scooters following Bird's success. Since then these companies have launched in dozens of countries across the world, with Lime arriving in New Zealand in October and Australia (Brisbane only for now) in November.

So are e-scooters here to stay, or are they just another boom and bust fad that will quickly disappear?



In this article I will cover off the key benefits and risks I see for continued e-scooter rollout, while subsequent posts will look at how both e-scooter operators and governments need to respond to ensure e-scooters can add a permanent positive contribution to urban transportation.

On the plus side e-scooters are a cheap, easy, space efficient way to travel around our cities. They offer significant opportunity for short urban trips to be shifted from private car as well as ride-hailing vehicles that are increasingly congesting our cities. They can also provide an excellent complement to public transport, with great potential for first and last mile transport, expanding the catchment of rapid transit. In Auckland, it is now common to see Lime scooters parked outside railway stations and major bus stops, which anecdotally suggests e-scooters are being used to support public transport.

On the other hand, there are many valid concerns about the operation of e-scooters. As with ride-hailing companies before them, E-scooter operating companies have followed the 'disruption' model of doing business, often arriving in cities unannounced, often in conflict with local laws. While e-scooter companies now more commonly work with cities, regulations are generally fairly minimal, and many cities are unsure how much they can regulate e-scooters.

The key public concern is around safety. Anecdotally it appears e-scooters are leading to fairly high rates of accidents. Unfortunately data on e-scooter accidents are hard to come by, given dispersed methods of

recording data. The most comprehensive seems to be a University of California study that found there had been 249 people presenting to the emergency department at two selected hospitals over the course of a year.

However there was no comparison against usage rates or kilometres travelled. This makes it hard to understand how dangerous e-scooters are in comparison with other modes of travel, or other common activities where accident are common such as sports or DIY. Either way, e-scooters risk being seen as highly unsafe, which will limit uptake, as well as test the patience of authorities in charge of regulating their use.

One key related issue is that e-scooters don't have a place on our city streets. Many people walking around our cities are understandably concerned about sharing the footpath with vehicles travelling at up to 27 kilometres per hour. While accidents between pedestrians and e-scooters appear to be very rare, these negative interactions can make some people less wary about walking.

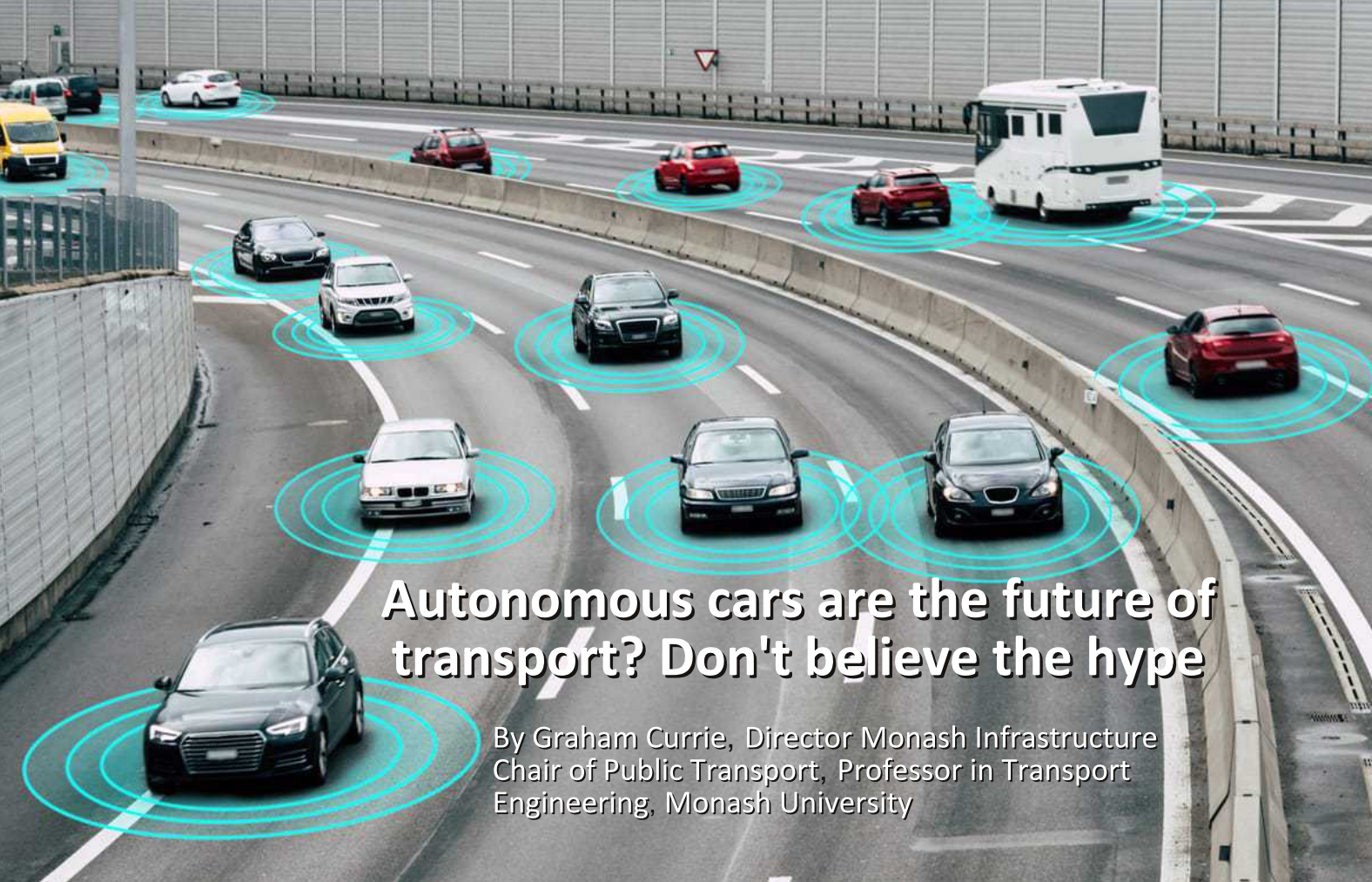
On the other hand, there is also obvious concern about e-scooters sharing the road with cars. The e-scooter deaths that have been reported around the world all appear to come from collisions between vehicles and e-scooter riders. The third potential space for e-scooters is bike lanes, however these networks are generally rather limited, disconnected, and sometimes e-scooters are even legally restricted from using them. For example in New Zealand, e-scooters are not allowed to use on-road painted bike lanes, due to their classification as being for cycles only.

E-scooters also experience the same complaints that have been seen regarding other dockless systems such as bikeshare. Given users can park the scooters anywhere, and there are generally no dedicated parking spaces available, scooters can clutter the footpath. While for some people they are just one of many obstacles to dodge on the footpath, along with sign boards, street furniture, illegally parked cars and poorly placed utility boxes.

It is also unclear if shared e-scooters are profitable enough to become a permanent fixture on city streets. There have been many articles published that try to estimate the the income and expenditure of e-scooters. While the income per day is high, the lifespan of shared e-scooters appears to be very poor. Many only last on the streets for a month, before needing replacement or major repair. This of course also raises concerns about the environmental impact of e-scooters. If e-scooter companies cannot improve on this performance, then they may not be around for long.

For e-scooters to become a permanent addition to the ever-increasing array for options for moving around cities, but they must overcome these hurdles to cement their place. This will require effort from e-scooter operators, central and local governments and e-scooter users. In follow up LinkedIn posts I will look at each of these hurdles in detail.

Luke Christensen is a Transport Planner for MRCagney
<https://www.linkedin.com/pulse/e-scooters-here-stay-luke-christensen>



Autonomous cars are the future of transport? Don't believe the hype

By Graham Currie, Director Monash Infrastructure
Chair of Public Transport, Professor in Transport
Engineering, Monash University

Public transport is the beating heart of a successful and liveable city, and will be for a long time to come, likely forever. If you don't believe that, let me sell you a fleet of autonomous cars now.

I'll even throw in a Segway, a flying car, a hovercraft and a Sinclair 5 to sweeten the deal. Because if you blindly believe the hype around autonomous cars at the moment, it should be an easy sale.

I, clearly, don't believe the hype. In fact, as a transportation researcher, I become enraged at the misinformation and rubbish being peddled about the future of transport, and the future of public transport in particular.

It's far too early to think autonomous cars will dominate travel in cities. They're not the answer to traffic congestion and they certainly don't spell the end for public transport, as many have suggested.

The hype, at any rate, viewed within the theoretical framework of the Hype Cycle, has already entered the

trough of disillusionment after reaching a peak of inflated expectation in 2015.

Despite this though, commuters are still continuously presented with blanket statements that public transport has no future in the modern city and that it will be rendered obsolete by new modes of transport and mobility.

To borrow a now familiar phrase, it's fake news!

It flies in the face of facts and a long history of built knowledge about the human condition, economics, cities and travel data.

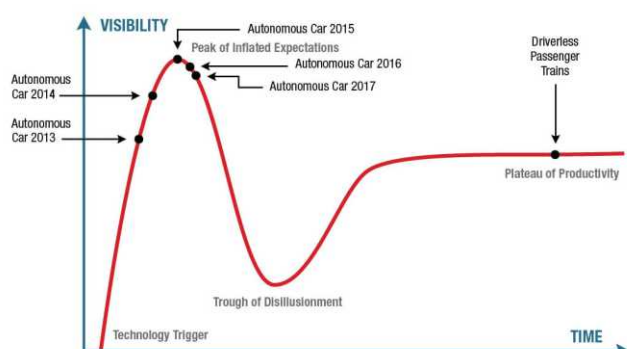
Cities now represent humanity's home. In 2007, for the first time, more than half the world's population were city dwellers, and that proportion has only increased since then.

Melbourne, for instance, which has just hit a population of five million, is projected to increase to eight million in 2051.

Along with population growth comes attendant problems, not least of which is traffic congestion. In Australia, congestion costs \$9.4 billion per year and is expected to rise to \$20.4 billion by 2020.

Common prevailing thinking presents autonomous car fleets as a solution to this traffic congestion, but this argument relies on what I call the shared mobility lie.

Shared mobility is a term now widely used to refer to transport network companies such as Uber and Lyft, bike sharing and car sharing.



This type of demand-responsive transport system has many fine features and certainly makes it easier to book and use a transport system, but to describe it as shared mobility implies that the travel involves shared occupancy. It doesn't.

Recent data out of the United States shows that the average passenger occupancy of an Uber vehicle in traffic was found to be 0.66. That's not sharing; indeed, the vehicles are 34 per cent empty taking up road space.

There's no reason why autonomous car-user habits would be any different. Would you share a car with a total stranger? It's a long way from the shared occupancy of public transport, in which more than 2000 people can travel in, say, one train. That's real shared mobility!

Or a bus with 50 passengers. That's true shared mobility, too.

It's easy to find detractors of public transport, not least of whom are the day-to-day users of trams, trains and buses having to cope with unreliable services and overcrowding, caused mostly by lack of government infrastructure investment.

It's a disenchantment that feeds the narrative of autonomous car progressives – that driverless cars are the future alternative to address the transport

problems being faced by increasingly crowded cities.

The fundamental failure in this narrative is the assumption that public transport doesn't work and is too old to be involved in the automated vehicle technology trend.

The reality is that autonomous public transport vehicles already dominate land-based passenger travel.

Four in 10 railways in Asia have no drivers. Autonomous trains operate today in Vancouver, Barcelona, London and very soon will operate in Sydney. Between 2006 and 2011, the number of kilometres automated trains operated doubled and, by 2025, this is expected to increase by more than 130 per cent.

More cars and more roads are not the answer for congested cities.

Transit systems, liberated by the very technologies that make driverless cars possible, are the only option for shared occupancy at the volume needed to meet the needs of large and growing cities.

The imperative to make mass transit systems efficient and effective must be on government infrastructure investment agendas.

Now, about that sale ...

South Waikato District Council hosts Forestry Symposium

South Waikato District Council hosted close to 80 industry stakeholders from across the Central North Island (CNI) forestry sector on Wednesday 6 March 2019.

"The overarching goal of the symposium was for the CNI leaders to share current industry and labour market issues and opportunities and explore implementable regional and local solutions", said Paul Bowden, Council's Economic Development Manager. "And for Council to listen."

Mayor Jenny Shattock is eager to galvanise stakeholders to futureproof the sector so that all businesses can reach their full potential. "With 20% of local jobs, 19% of GDP and 39% of export earnings in the District, coming from the forestry sector, what happens in forestry sector matters. It is in the DNA of our people and communities, our shared past and integral to our exciting future".

Representatives at the symposium covered a broad spectrum across the industry from government agencies, pulp processing, logistics and distribution, harvesting, training providers and forest management.

The symposium focussed on key areas including current barriers to employment the strengths and challenges experienced currently, the vision for the sector in 20 years' time and the steps that are needed to reach these goals.

Key themes included the forestry sector being considered an attractive industry with rewarding career



prospects, collaborating so the sector speaks with 'one voice', education and training pathways, continued investment in innovation and environmental sustainability.

The keynote address on the Government's 1Bn Trees Programme was delivered by Ruth Fairhall, Director Afforestation Policy, Te Uru Rākau Forestry who attended with colleagues from Wellington.

The President of Hancock Forest Management NZ Ltd, Bill McCallum, said the attendees represented a broad range of stakeholder interests.

"The SWDC is to be commended on its initiative," said Mr McCallum. Council has committed to hosting follow up symposiums throughout 2019 with the sector to ensure the forestry sector in Tokoroa and the wider



Tactile Paving Slip Resistance – Issues With Non Pedestrian Users

Tactile paving is used throughout much of the developed world to aid the visually impaired in navigating their way around.

Two types of tactile paving are used in New Zealand

Warning Paving – this is a series of domes closely spaced in a regular pattern. They are provided to warn of a hazard and are typically used at road crossings, railway platform edges and at the top and bottom of stairs.

Guide (or Directional) Paving – this is a series of longitudinal bars that are more widely spaced than the domes used in Warning Paving. They are used to permit blind users to navigate their way to road crossings and help points or exits on railway platforms

There are regulations regarding the size, shape, height, spacing and slip resistance of these raised surfaces

This report is the output from a brief investigation following a customer complaint. The customer was cycling in wet weather along the North Western Motorway Shared Use Path (SUP). The SUP crosses roads on street level at a small number of locations, one of which is at St Lukes Road.

It is understood that the customer crashed on the splitter island between the signalised crossing of St Lukes Road and the zebra-controlled slip lane. The signalised crossing and the zebra are not in line with each other due to the shape of the island, which required a change of direction on the island.

It is understood that his bike slipped from under him as he crossed the guide paving at an oblique angle causing him to fall and slide out into the road. He claims that the e-bike following also crashed and that he is aware of other crashes having taken place.

A site investigation was undertaken on 4th September 2018.

The route taken by the majority of users can be seen in the image below. It is understood that the customer was riding away from the vantage point this image was taken from, towards the crossing at the top of the picture.

Most path users, who are cyclists, ride between the zebra crossing on the left and the signalised crossing on the right. The same applies to the slip island on the other side of St Lukes Road where the degree of turn is greater.

A closer look at the guide paving units (above) reveals that the tops of the ribs are heavily profiled whilst their sides and the area between them are smooth. I was wearing trainers when I attended site which have poor grip in the wet. I could clearly discern the difference between the friction offered by the top of the ribs and the areas between them with the edge of my shoe, even in dry conditions.



From these images, it is clear to see that the tactile paving has the rough surface applied only to the top of the ribs and not to the sides of the ribs or the space between them.

Cyclists have narrow tyres, typically 25mm on a road bike, which traverse the section of paving between and over the ribs when being ridden obliquely across this paving, which would explain the likely cause of the crash.

The slipperiness of a surface termed Slip Resistance Value (SRV), where the minimum wet value recommended is 40, or as a Coefficient of Friction, where the minimum recommended wet value (μ) is 0.4.

I understand that these are the same (or very closely aligned) values; every increment of $\mu = 0.1$ is an increment of SRV = 10.

RTS 14 Guidelines for Facilities for Blind and Vision Impaired Pedestrians. Section 5.2.3 stipulates the requirements for tactile paving.

Slip resistance in wet and dry conditions. As a minimum TGSi (Tactile Ground Surface Indicators, or tactile paving for short) shall meet either:

- Class V standard when installed on slopes and Class W when installed on flat terrain (refer AS/NZS 4586: 2004 Table 2), or
- The requirements of the NZ building code acceptable solutions DS1/AS1 Access routes: "The walking surface when wet has a coefficient of friction (μ) of no less than: $\mu = 0.4 + 0.0125 S$ where S is the slope of the walking surface expressed as a percentage."

I do not have a copy of the AS/NZS 4586: 2004 Standard, though I am aware of the later AS 4586:2013 requirements, so there may be differences in the requirements below which are from the new standard, to the requirements NZTA adheres to in the earlier Standard. The requirements will therefore need to be checked by someone who has access to the referenced Standard in RTS 14.

The test used to determine SRV or Coefficient of Friction is called the Swing Pendulum Test.

The test uses a swing arm with a spring-loaded rubber slider attached to the bottom, that is held at an angle of 26 degrees at the bottom of the swing. The rear edge of the slider makes contact with the surface being tested. The rubber slider is 25.4mm wide and may be one of two different hardnesses.

The pendulum is required to swing across the test surface at an angle of 30 degree for warning surfaces and at an angle of 10 degrees for a guide surface. The surface is tested for a length of 126mm. The height of the exiting arc of the pendulum represents the energy lost through friction and this is recorded on a scale for an SRV, or BPN (British Pendulum Number) value.

For both surface types, the Standard dictates that the apparatus shall be set so that the "initial and final contact is aligned with the top of TSGIs" (the raised element).

Tactile paving is provided in all areas where pedestrians are present, which includes shared use paths.

The Australian Standard AS4586 test for the slip

resistance of tactile paving simulates a typical pedestrian use of this surface. The testing replicates sufficiently large elements such as footwear that only makes contact with the top of the tactile elements. Walking sticks, bicycle tyres and other small contact areas will fall between the raised elements.

The typical width of a bicycle road tyre is 25mm, with a significantly smaller contact patch, as bike tyres are rounded in profile. This means that bike tyres will pass over and will drop between the raised elements of the tactile surface, with a greater tendency to do so as the rider aligns with the raised elements of the surface.

Because the sides of the raised tactile elements and the area between them are not required to be tested under AS4586, manufacturers are not obliged to produce these pavers with a high friction surface anywhere other than for the area to be tested under AS4586. In fact, the Standard implicitly states that the testing shall start and finish on top of the raised elements, effectively instructing the manufacturer not to consider the space between the raised elements.

This results in cyclists and users of walking aids being exposed to slippery surfaces, particularly in wet conditions, which can lead to injury falls.

A guide paving tile was recovered from site that had been in situ for about two years.

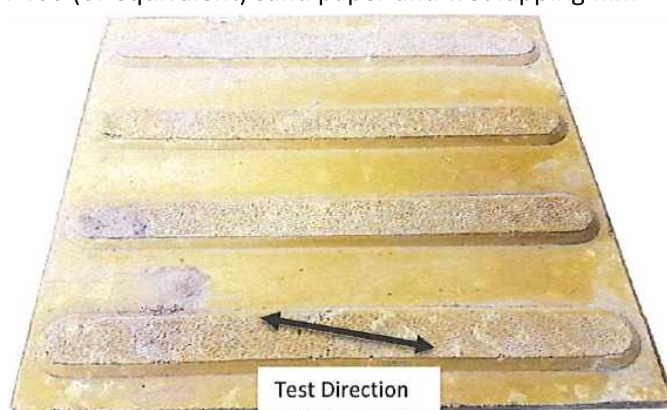
Testing the slip resistance of the surface was conducted at the WSP Opus Laboratories in Auckland in November/December 2018 to establish a baseline for comparison.

Three tests were undertaken:

1. On a tile of used tactile guide paving recovered from site, in accordance with AS4586:2013
2. On a mosaic of the areas between the raised elements (referred to below as "inner surface") of a new tactile paving tile
3. On a mosaic of the areas between the raised elements of a used tactile paving tile that was recovered from site

Mosaics were made from strips of the concrete tile to provide sufficient surface area for the test rubber used in the AS4586 test for it to have a full and even contact area. The test was done in line with the joins in the mosaic.

Each test was conducted in accordance with Appendix A, AS4586:2013 using Slider type; FOUR-S, prepared on P400 (or equivalent) sand paper and wet lapping film



Results (detail available from the author on request)

The testing of the used tactile guide paving tile has proven that the upper surface of the raised elements has a slip resistance value within the range specified by the RTS 14 Standard, even after a few years of light pedestrian use.

The test of the areas between the raised elements of the used guide paving tile has shown that the surface falls below the minimum SRV of 40 specified in the RTS 14 Standard.

The test of the areas between the raised elements of the new guide paving tile has shown that the surface also falls below the minimum SRV of 40 specified in the RTS 14 Standard but is slightly better than for the same area of the used tile. This is indicative of some polishing over time by the passage of bicycle tyres.

Discussion

When a cyclist corners, there is a horizontal force exerted by the tyre on the surface that increases both with increased speed on a constant radius curve, and with constant speed on a decreased radius, with braking forces introducing further dynamics into this equation. The effect of this horizontal force when exerted on the surface is akin to increasing the gradient of the surface.

RTS 14 references the NZ Building code: "The walking surface when wet has a coefficient of friction (μ) of no less than: $\mu = 0.4 + 0.0125 S$ where S is the slope of the walking surface expressed as a percentage."

Calculating gradients of 5% to 25% (also expressed below as degrees in order to visualise potential lean angles) using the formula above increases the minimum SRV by the following values:

Flat surface/zero degrees lean = 0.4 (SRV 40)
5% downgrade/2.9 degrees lean = 0.46 (SRV 46)
10% downgrade/5.7 degrees lean = 0.525 (SRV 52.5)
15% downgrade/8.5 degrees lean = 0.5875 (SRV 58.8)
20% downgrade/11.3 degrees lean = 0.65 (SRV 65)
25% downgrade/14 degrees lean = 0.7125 (SRV 71)

It can be seen that there is a large change in the required minimum SRV between a flat surface and a 25% slope (that's 1:4 expressed as a ratio).

Slopes from footpaths onto the highway for are expected not to exceed something like 12%, if the highway itself is on a gradient, the combination of the two would need to be factored in, thereby increasing the slope angle relative to the horizontal. It is unclear how often this is actually done.

When a bicycle corners on a level surface, the horizontal force of the tyre produced by the lean of the bike could reasonably be expected to be akin to a vertical tyre (or foot) on a surface of the same angle. It does not require significant speed to get a 14 degree lean on a bike. Should this be the case, it could be reasonably expected for the tactile (more likely guide) paving surface to have a minimum SRV of 71.

It is evident that this is not the case and that more work is required in this area.

The tactile paving elements installed at St Lukes Road, and presumably Nationwide, have been manufactured in accordance to the standard relating to slip resistance.

This standard only specifies the slip testing of the upper surface of the raised tactile elements, presumably because shoes of pedestrians are large enough not to tread on the surface between them. The standard does not consider any item smaller than a shoe, such as walking sticks, crutches or bicycle tyres.

Tactile paving is installed in areas where cyclists are legally present, but most bike tyres ride between the raised elements of the surface, particularly when aligned, or closely aligned with guide paving. This is a surface that is not required to have a specified slip resistance under the current Standard.

This results in a hazardous situation for cyclists that can lead to crashes and serious injury in the wet. Therefore, tiles manufactured in accordance with the current Standard AS4586, cannot be considered as Safe System compliant.

The correction factor for slip resistance is based on surface gradient and is not used to calculate lean angle of cyclists when riding across the surface. There seems to be little clarity regarding use of the correction factor by designers and installers when tactile paving is installed for pedestrian use.

This report recommends the following;

1. That the entire surface of the tactile paving tile should be of the same slip resistance.
2. That the minimum required slip resistance is increased to provide a slip value suitable to safely deal with the forces exerted by tyres cornering and by crutches/walking sticks applied at angles to the surface.
3. That an investigation is undertaken to provide a minimum SRV for a typical lean angle that cyclists would be expected to make on this surface and that this value becomes the minimum for sites where cyclists or users of other two wheeled recreational vehicles are likely to be present.
4. That the requirements in RTS 14 for the increase in minimum SRV based on gradient is used for lean angle of cyclists at the site the paving is laid, or that more research is undertaken regarding this matter.
5. That this issue is brought to the attention of Road Controlling Authorities around the country
6. That a rigorous study is conducted with the rubber/plastic/polyurethane tactile paving which is widely known to be extremely slippery in the wet, even after a short period of use.

Finally, it is recommended by this report that the current Australian Standard which only provides for testing of the top surface of the raised elements of tactile paving is supplemented to include the above recommendations and that the Australian Standards themselves are made aware of the first three recommendations above.

For more information please contact Kevan Fleckney, NZ Transport Agency
Kevan.Fleckney@nzta.govt.nz



Suffragette on a scooter

Yes, she is a suffragette, and yes, that is her scooter. English socialite and activist Florence Priscilla, Lady Norman, CBE was given this Autoped as a birthday present by her husband, Sir Henry Norman. She used it to travel to her office in central London.

Florence was following in her mother's footsteps in her active support for women's suffrage. Her CBE (Commander of the British Empire) came when she ran a hospital in France during World War I.

Kick scooters — a flat board on wheels with a long handle at the front, propelled by foot — have been made for at least 100 years as toys for children. Florence's Autoped was one of the first examples of motorised kick scooters. Like a child's scooter, it had no seat.

Manufactured in New York and Germany by Krupps, the U.S. postal service tested the Autoped as a means of fast transport for its special delivery service. The foldable scooter was also reportedly used as a quick getaway machine by New York gangs, racing down narrow alleys beyond the reach of police cars.

Other manufacturers followed: ABC Motorcycles produced the Skootamota, which had a top speed of 15 mph (24 km/h), and The Gloster Aircraft Company introduced the Reynolds Runabout in 1919, followed by the Unibus in 1920. The Unibus was promoted as the "car on two wheels."

Some of these early scooter designs were unstable, uncomfortable to ride and difficult to handle. The decades leading up to World War II saw the gradual introduction of a range of refinements, including efficient lights and brakes, gears, suspension, enclosed bodies and leg shields.

During the 1930s, scooters were introduced to a new market as the ideal mode of transport at large, sprawling military bases. Ironically, the era of the scooter truly began after the war — a direct result of fuel rationing.





Legal requirements for e-scooter riders

As the popularity of this type of travel increases in our cities, the NZ Transport Agency is reminding e-scooter users to ride in a careful and considerate manner, and strongly recommends they wear a helmet. Over one million trips have been completed on Lime e-scooters in New Zealand since trials began in mid-October.

The Land Transport Road User Rule 2004 does not require e-scooter riders to wear a helmet but does require riding in a careful and considerate manner. This means giving way to pedestrians and mobility devices, riding at a speed which is considerate to other users, and riding as far to the left as possible when riding on the road.

The Ministry of Transport is currently developing a regulatory package to encourage better designed and regulated footpaths that cater to all users.

Its aim is to improve safety by looking at what types of vehicles should use the footpath and in which way. Learnings from some current local authority scooter trials will feed into this work.

New bike path for Oriental Parade



A new bike path along Oriental Parade in Wellington was opened last month to improve safety for both cyclists and pedestrians.

Phil Twyford, Minister of Transport, and Julie Anne Genter, Associate Minister of Transport, opened the cycleway, which links to the existing shared path on the waterfront and will form part of Great Harbour Way.

The \$900,000 project includes a two-way bike path, a pedestrian-only path and some additional vehicle and motorbike parking.

"During rush hour, this part of the waterfront is full of people walking, running, cycling and scooting. In this narrower section it makes sense to separate faster moving cyclists from people walking," says Ms Genter.

"More people travelling by foot and by bike means less traffic and congestion on the road, and that benefits everyone."

The Transport Agency is investing \$390 million in walking and cycling over the next three years through the National Land Transport Programme (NLTP). Of that, \$260 million in funding is going to cycling and walking facilities in Auckland, Wellington and Christchurch where it can have the greatest impact on congestion.

Bike the Trail on recycled tyres



the Hutt River Trail.

Upper Hutt City, Hutt City, and Greater Wellington regional councils are hosting Bike the Trail - a fun, family day out on Sunday 3 March 2019, providing an opportunity to ride

Riders follow the flow of Te Awakairangi (the Hutt River) from Upper Hutt to Hikoikoi Reserve at the mouth of the river at Seaview. Participants can start at Harcourt Park in Upper Hutt and ride the full 25km distance or start in Stokes Valley for a 12km journey.

Those who ride from Harcourt Park will get to cycle on a new 'rubberised' cycleway section built as part of the Urban Cycleways Project, that uses seal incorporating recycled tyres.

The innovative pavement material is a rubberised asphalt developed by WSP Opus Research. Their pavement materials and behavioural sciences teams are in the final phase of a three-year project to trial the material. The asphalt is mixed with bitumen that has devulcanised tyre-rubber added to it, resulting in numerous benefits including increased resistance to fatigue and oxidation – factors that traditionally undermine asphalt pavement durability over time.

Each year New Zealand creates five million waste tyres, so finding a way to recycle them is a sustainable approach and takes care of waste material that would otherwise end up in landfills.

Bike shelter or bus stop?



The new Grey Street bike rack is also the first two-tiered rack Wellington City Council has installed for public use.

The new rack, which provides parking for up to 59 bikes, is open to the footpath but protected from the weather by a new three-sided, bus stop-style shelter.

It has been installed next to the public shower and toilets to provide a convenient option for people who would like to freshen up or get changed after biking into town but don't have facilities where they work.

Are you implementing a bus stop? – 10 Pointers

Putting in a bus stop should be one of the easier challenges in the space of public transport infrastructure provisions, yet we still find bus stops not functioning efficiently or safely and, in some cases, being unsuitable for use.

As an Infrastructure Lead in Auckland Transport, my team has years of experience in planning, designing and implementing bus stops throughout Auckland.

After facing various challenges and learning from our mistakes, I thought it would be a good idea to simplify some of the basic steps for planning and designing a bus stop, into 10 points, for students and professionals to use as a checklist before implementing a stop.

1. Know all about the type of vehicle you are designing the stop for.

Type of bus – what is its length, width, tracking, lead in lead out, kerb clearance for overhang. The type of bus will determine the minimum safe on-street footprint of the stop. It is critical that the kerb length and bus stop width is sufficient for the bus to safely enter and exit the stop. You will also need to take into consideration items near the kerb edge such as trees, utilities and street furniture.

2. Stop function – Is it a first stop, last stop or intermediate stop?

A bus stop may serve single or multiple bus routes and the usage of the stop by customers as well as buses will depend on the location of the stop in relation to the routes.

One major factor which decides the capacity the stop needs to have is the dwell time of customers and buses on it. The dwell time of buses and passengers at a first stop (start of a route) is much higher than that at a last stop where passengers generally only de-board and move on. Consequently, the need for a shelter and covered waiting space is not a priority at the last stop.

3. Number of forecasted passengers

The primary function of a stop is to connect passengers to their bus. In order to do this safely and efficiently it is critical to know the forecasted number of customers that will use the stop to connect to their service. This is the customer demand side and is generally the basis of decisions made around the footprint of the kerb side facility i.e. the waiting and circulating areas.

The footprint is mainly an estimate based on the passenger catchment of the stop and the number of routes serving the stop. For bigger stops, transport modelling can help with forecasting. The forecast passenger is generally not calculated per hour but per 15 minutes or similar based on route headway and missed headway (buses that may not turn up, leading to more waiting passengers).

4. Number of routes served (base and future)

The demand factor other than the customers is the buses. The number of buses a stop is expected to serve during a particular time interval is critical for the design and space allocation for them.

This factor is subject to variance due to the unreliable nature of travel times and delays at intersections. It is possible that two buses from the same route end up at the stop at the same time and three buses from four routes end up at the stop at the same time.

One of the ways to decide on the stop length is to look at the number of buses served per hour however our team has found that it is better to look at the timetables for the routes served by the stop to understand the arrival frequencies per 5 minute intervals.

5. Bus stop accessibility

Bus stop accessibility for our customers is critical for their safety. This becomes especially important when a stop is located near a school or retirement home. To meet accessibility requirements it is our responsibility to provide visual and audio queues for passengers and to make the stop friendly for the mobility impaired.

It is also important to consider how customers will access the stop, there should be adequate footpath linkages to the bus stop and ample road crossing facilities between a pair of bus stops.

6. Weather protection

The kerb side of a bus stop should be inviting for customers. It should provide them with adequate protection from the elements depending on the location and type of stop.

7. Minimum standard fittings and fixtures

Seating, customer information, bins, lighting, help points, bus service real time information, bus driver information and general traffic driver information are all fittings and fixtures that may need to be provided. The level of fitout will depend on the location and forecasted usage of the bus stop.

8. Crime Prevention Through Environmental Design (CPTED)

You should be well aware of CPTED guidelines. For example you need to ensure the bus stop and shelter is in plain sight (i.e. not obscured or hidden away from the road) and well-lit so customers feel safe when using the stop and so it does not become an area prone to antisocial behaviour.

9. Integration with other modes

Consideration should be given to how customers will get to (or leave) the bus stop. Facilities at major bus stations could provide cycle parking, storage or car parking areas.

10. Location of the bus stop

The location of a bus stop will heavily influence its design as all roads and streets are different. Bus stops should ideally be situated near intersections, side streets and points of interest (such as large retail areas) to maximise the customer catchment.

In a future article, we will start going into each aspect and give more detail on the things to plan for.

*Debajeet Baruah, Metro Services
Auckland Transport*

Auckland/Northland Branch

The Auckland Branch would encourage its members to making a submission on current proposal from Auckland Transport "Speed limit changes around Auckland". The Branch is also looking to make a submission on behalf of the Group. This will be based on what the Branch Committee believe is appropriate on behalf of the membership.

The branch committee remains strong but we are looking for some new representatives to refresh the committee for long term health. If you have an interest in actively participating in your profession we the group would welcome your nomination for a role on the committee. Please come along to the AGM on 21 March as outlined above. We hope you had a good break over the Christmas period and have now settled nicely into 2019.

The Auckland/Northland branch would like to invite you to come and celebrate the start of 2019 and what should be an exciting year in the field of transport. This year, we have organised a drinks, refreshments and mingling event at Tom Tom bar and eatery, in the historic Victoria Park at 27 Drake Street, Victoria Park Market, on Thursday the 21 March starting at 5.30pm in the covered outdoor "Marquee".

Our brief AGM will be undertaken concurrently from 5.45pm. Call for nominations and reports will be send out shortly.

Tickets will include drinks and refreshments and are free for the first 40 Transportation Group Members. Please RSVP by Wednesday 20 March to stephanie.spedding@jacobs.com

Central Branch

The ENZ TG Central Branch committee have had a busy quarter with several flagship events taking place.

TG Conference 2019

The flagship event for the committee was working towards the Transportation Group Annual Conference, which was held in Wellington on 4-6 March. The Central Branch committee would like to thank those who contributed to making this conference a great success! We are proud that the attendees enjoyed the conference and the great weather Wellington had to offer.

TG Central Branch AGM and annual quiz night



The Central Branch AGM took place on 21 February and it was attended by over forty branch members. Chairperson and Treasurer's

reports were presented and discussed at the meeting.

The attendees also looked back at the highlights of the past year. The meeting then continued with discussions on finance, next committee meeting, National

Committee update and upcoming events. The AGM was followed by the annual quiz event and it was a blast! Over 55 members took part in the quiz and the trophy was won by the WSP-Opus team. Well done, everyone! We look forward to seeing you all again next year!

People + Cities + Infrastructure webinar event

This presentation by Professor Mark Dyer from the University of Waikato was well attended by Wellington branch and Transportation Group members, plus another 150 people who signed up through the webinar facility.



Mark touched on a number of key concepts, in particular the role of the engineer in society: as a humanist, scientist, designer and crafts worker. It resonates very well with the branch theme of 'Engineering our Community'. As engineers we have a crucial role in making a difference in our society.

Canterbury-West Coast Branch

We're excited for the new year and so should you be!

Southern Branch

Hello?

NZ Modelling User Group

NZMUGS Conference 2019 - 16 – 17 September 2019
Te Papa, Wellington

NZMUGs are pleased to announce the 2019 NZMUGS Conference will be held on the dates above in Wellington. So save those dates in your calendar, and please get those training applications in and start booking travel etc. The committee will meet for our annual committee day in March, where we will be discussing progress in a number of areas including conference theme and guest speakers. So start thinking on presentation topics and watch out for the call for papers in April.

Remember if you are a Transportation Group member, it is free to join NZMUGs. All you need to do is email tech.groups@engineeringnz.org and ask to sign up.

Signal Network User Group

Remember if you are a Transportation Group member, it is also free to join SNUG. All you need to do is email tech.groups@engineeringnz.org and ask to sign up.

TDB

- TDB data sets are now on a web platform in association with TRICS (UK)
- Nick Rabbetts (CEO of TRICS) toured NZ in February 2019 and held 3 workshops
- Data survey programme continuing strongly both in NZ and Australia – big emphasis on multi modal and 12 hrs

Active Modes Infrastructure Group Update

The latest AMIG meeting was held in Wellington on February 28th, with an optional field trip the day after. The latter allowed a glimpse at some of the interesting walk/cycle projects happening around the region, including the Wainuiomata Hill path, Hutt Road pathways (photo below), and Rongotai Road separated bikeway. As for the meeting itself, here are some key points of note:



- An interesting project started by the Transport Agency is looking at **"Innovating Streets for People"**. Basically, the concern is that currently many RCAs find it quite difficult to trial any new traffic innovations, including many potential walking/cycling initiatives.

A series of workshops is currently being held with key stakeholders, with the aim to produce some interim guidance by about June. A change to the traffic rules should also make it easier to approve innovation trials in low-speed, low-risk situations (e.g. 30km/h low-volume streets). Contact Claire Pascoe (NZTA) for more information about this project.

- With the growing use of separated cycleways, RCAs and traffic device manufacturers are wanting more specifics about what kind of **separator devices** should be used. Some expanded advice on separated cycleways will soon appear in the NZTA Cycling Network Guidance (CNG), but further details are desired regarding choice of colours, shape profiles, and device dimensions (without being too prescriptive and limiting what manufacturers can provide). The Transport Agency will look at developing some further guidance in this area.



- Some fascinating research was presented on **public e-scooter** trials to date in NZ, based on general attitude/perception surveys and ACC injury stats. Generally, there is good support for e-scooters and understanding of the laws around them, although some confusion is evident between the contractual conditions for hire and the actual road rules.

The ACC data shows that e-scooter injuries continue to be a small drop in the ocean (particularly compared with other wheeled devices); interesting too that head injuries account for <8% of ACC e-scooter claims.

- Further updates to **best practice cycling guidance** are being reviewed by AMIG each meeting. This time, the group looked at draft guidance notes on bike parking and restrictive devices (bollards, railings, etc), and further discussion was held regarding the use of coloured surfacing and/or sharrow markings for cycling facilities.

In case you're wondering too, a project has just started to update the existing NZ **walking planning and design guidance**, and to ultimately produce a similar online national resource for walking like the CNG.



Other items discussed at AMIG this time include forthcoming walking/cycling conferences and cycle planning/design courses, an update of the NZ Cycle Trail Design Guidelines, options for installing audio-tactile profiled line-markings ("rumble strips"), and progress on the Traffic Control Devices Manual Parts 4/5.

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 be at the end of May 2019 also in Wellington. If you would like to attend, or at least be part of the ongoing email discussion group, contact co-convenors Wayne Newman (RCA Forum; wayne@cresmere.co.nz) or Gerry Dance (NZTA; Gerry.Dance@nzta.govt.nz). Or you can have a chat with me about raising any ideas or issues on your behalf – I'm happy to do so.

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

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

- 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 Semester 1

DESCRIPTION (see flyers on website for more details)

ENTR 401: Fundamentals of Transport Engineering

Self-study course with tutorials on 27 Feb (Semester 1) and 24 July (Semester 2)
Course coordinator: Dr. Kun Xie 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]

ENTR603: Advanced Pavement Design

Block dates: 18-19 Mar, 13-14 May Course coordinator: Assoc. Prof. Mofreh Saleh
Covers the principles and fundamentals of Superpave characterization system; Multilayer analysis using Circly; Traffic volume and loading calculations; Austroads mechanistic empirical pavement design; Deflection analysis and backcalculations; Overlay design.

Semester 2

ENTR608: Traffic Management and Monitoring (Block dates: 26-27 Aug, 30 Sep-1 Oct)

Course coordinator: Dr. Mehdi Keyvan-Ekbatani This course will provide students with a fundamental understanding of 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 problems.

ENTR612: Transport Policy and System Management (Block dates: 19-20 Aug, 23-24 Sep)

Course coordinator: Dr. Diana Kusumastuti Transport economics; Travel demand management; Transport policy objectives and instruments

ENTR615: Advanced Traffic Flow Theory and Simulation (Block dates: 2-3 Sep, 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.

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



Photo Competition

Planning isn't always as easy as it seems. Sometimes it is downright tricky. Sometimes people deliberately plan for awkwardness. These building names show magnificence in the face of planning. Seen any others? Send photos to: daniel.newcombe@at.govt.nz



More 2019 Conference Photos



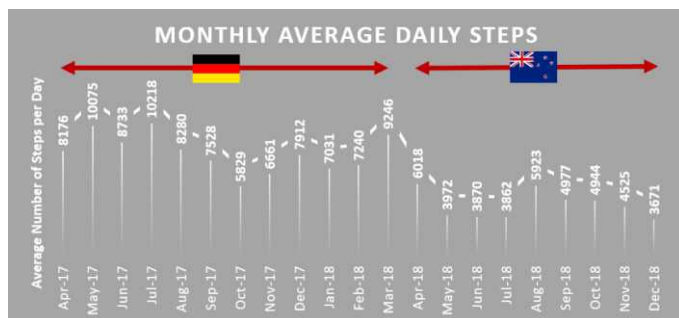
Step by Step: Why Walking Matters

Numbers do not lie and unfortunately these numbers tell me something I have been trying to ignore over the Christmas and New Year break. Yes, I will finally admit it. I am officially overweight by Ministry of Health standards. But why am I making this confession in a work blog? This is why...

A few years ago, I took off to Europe and completed my Masters degree in Munich, Germany. This took a couple of years and I have only been back in New Zealand for roughly 9 months. Within my time back in New Zealand, I found I have moved from the 'Normal' BMI range to 'Overweight.'

There was no back-at-home binge eating involved or dramatic lifestyle changes and I certainly ate much more in Germany than in New Zealand, but the fitness tracker on my smartphone told me something I completely missed in my calculation.

I realised that I was walking much less back in New Zealand than I did in Germany. I decided to look into this and downloaded all the step data recorded on my phone since the day I purchased it in Germany. I had a years' worth of daily step data in Germany and 9 months of daily step data in New Zealand. The difference was shocking.



On average I walked approximately 8,000 steps a day in Germany but a surprisingly low 4,000 steps a day in New Zealand. For a bit of context these equate to walking approximately 6km and 3km per day, respectively.

The 3km difference is significant as it is almost the length of walking from Britomart to Newmarket in Auckland; the whole length of Moorhouse Avenue in Christchurch; or from the Beehive to the Mount Victoria Peak in Wellington.

I put on my transportation engineer hat, thought about why this might have happened and made a list:

- I no longer live at a walking distance from where I need to be every day.
- There is currently no supermarket close enough to walk to do my grocery shopping.
- Walking is not as pleasant as it was in Munich due to noise and traffic.
- I am naturally choosing to drive, even for short trips, as there is usually parking at the destination.

That is when it hit me – New Zealand is making me fat without me even noticing.

With health being increasingly topical in the transport

sector it is not surprising that research around the connection between transport and health has resurfaced. Dr David Tripp in a recent presentation at the Trafanz conference, acknowledged how 'Overweight & Obesity' has been listed as the top cause of illness and early death among New Zealanders by the Global Burden of Disease (DALYs, Global Burden of Disease, 2016).

In the same conference, the New Zealand Transport Agency quantified that most of the trips in New Zealand are short (<2km) but mostly driven. My own experience neatly illustrates this transportation trend.

European cities are often set as good examples when talking about active transport, but largely thought as something too good to be true to have here in New Zealand.

This can spark the good old conversations about population density, sprawl and most importantly when the cities were formed (pre- or post- motor vehicles) but in the end denser and more mixed development with pedestrian friendly streets increase walking and decrease people falling off the wagon without them even noticing.

The following comparison of basic statistics between Munich and Auckland shown in the table below tell us something we certainly know but continuously struggle to design for. Although relatively similar in population size, the density per square kilometre is roughly 1.5 times denser in Munich than in Auckland; and as for car ownership, 61% own cars in Germany compared to 84% in New Zealand.

| | Munich | Auckland |
|----------------------------|------------------------------------|--|
| Population ¹ | 1,450,380 | 1,614,400 |
| Density ² | 4,400 per km ² | 2,800 per km ² |
| Car ownership ³ | 610 per 1000 inhabitants (Germany) | 839 per 1000 inhabitants (New Zealand) |

¹(stats.oecd.com, 2016)

²(Demographia, 2018) <http://demographia.com/db-worldua.pdf>

³<https://www.acea.be/statistics/article/vehicles-per-capita-by-country>; <https://www.mia.org.nz/Portals/>

Land use is a significant contributing factor in the choices made in transportation journeys. The comparison between Auckland and Munich highlights some key statistical differences which are reflected by my own experiences.

Thinking about the reasons why I walked more in Munich, I concluded that:

- Affordable housing is closer to the centre in Munich than in Auckland and therefore walking was always an option.
- Mixed development in Munich encouraged me to walk when making utility trips.
- Generally, Munich is a much more walkable city than Auckland as there are less cars within and around the city.
- It is faster and more convenient (no parking at destination) to walk than drive in Munich.

I quickly investigated the mode shares between the two cities and found it to be mirroring my experience. The walking mode share in Munich is significantly higher at

27% compared to only 4% in Auckland and private vehicle mode share is 33% in Munich compared to 85% in Auckland. Looking at national obesity rates for the two countries they measure at 23.6% for Germany and 32.3% for New Zealand.

| | | Munich | Auckland |
|----------------------------|------------------|-----------------|---------------------|
| Mode Share ^{4,5} | Private Vehicle | 33% | 85% |
| | Public Transport | 23% | 9% |
| | Cycling | 17% | 1% |
| | Walking | 27% | 4% |
| Obesity rates ⁶ | | 23.6% (Germany) | 32.2% (New Zealand) |

⁴<https://web.archive.org/web/20140408041150/http://www.ris-muenchen.de/RII2/RII/DOK/SITZUNGSVORLAGE/2497925.pdf>
⁵<http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE7432>
⁶<http://www.oecd.org/health/obesity-update.htm>

There will be other factors contributing to the different obesity rates between nations and cities, yet this trend both personally and on a civic basis is telling. This very brief analysis based on my own experience leads to bigger transport planning and land use questions.

How strong are the links between walkability and health? Is in fact, land use and transport the key to

resolving New Zealand's top cause of illness and early death – obesity?! And, should the 'Safety' branch of our land transport system really read as 'Health and Safety' to reflect this link?

These are questions that as transport planners we have a responsibility to answer. Realising how much daily walking affected me in the past months, I am now deliberately trying to walk more, especially if it can substitute the short drive.

With this I would like to challenge the readers to investigate how much you are walking on a daily basis and if you are in fact slowly forming a donut ring around your belly due to the lack of it.

As for me, my personal experience demonstrates a very clear message...the more you move your body, the more (fat) you lose.

By Ruby Kim, Abley
ruby.kim@abley.com



Roundabout of the month



This image from Vancouver, Canada, shows a substantial effort for planting within a roundabout. No frangible trees in this street - if you drive into the tree, the tree will win the battle. It turns out the image is a photomontage from an art collective that invites viewers to imagine a city whose planners specified old-growth trees, rather than small gardens, within traffic islands.

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

Caption competition



This edition's caption competition is for a sign on the Eastern Viaduct in Downtown Auckland. You know what they are trying to say - a separation of pedestrians and vehicles for safety - but what does it imply if cars are not seen to be driven by and for people? If you have a caption suggestion, send it to daniel.newcombe@at.govt.nz

Transport Knowledge Conference 2019 (and more)

Save the Date now! TKC2019 will be held on Thursday 5th December at the James Cook Hotel, Wellington.

Please share this date with your colleagues and others you know will be interested in attending. More information will be released as soon as it becomes available, including a call for abstracts and registration later in the year.

Research Register – February 2019 now released

The Research Register contains a repository of completed and active New Zealand related transport research. The Register aims to share information about available research from the academic, government and private sector and inform future research. While this list by no means includes all possible research conducted in NZ, it currently includes over 800 entries.

It can be downloaded [here](#):

Transport Dashboards – Walking & Cycling and Domestic Freight Dashboards

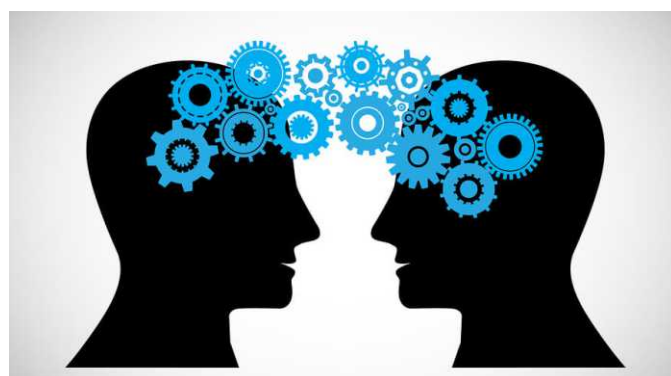
The Ministry of Transport continues to release new dashboards on our website. The dashboards replace the existing Transport Indicator Framework and also provide an update to the Transport Outlook: Current State publication, which was released in July 2017.

When finalised, the dashboards will detail a series of

statistics covering eight topics: household travel, road transport, public transport, walking and cycling, domestic freight (road, rail, and coastal shipping), air passenger and freight, maritime and ports, and environment and health.

The Ministry has recently released the walking & cycling and domestic freight dashboards. Topics include amongst other things: number of walking and cycling trip legs, bicycle ownership, length of cycleways, public expenditures on walking and cycling, pedestrian and cyclist safety, and cycle helmet use. Click [here](#):

Topics in the domestic freight (road, rail, and coastal shipping) dashboard include freight tonnes and tonne-kilometres by mode, average load of heavy vehicles, length of rail network by region, producers price index for road transport, producers price index for rail, water, air and other transport, rail deaths and injuries, rail accidents, and social cost of rail accidents. Click [here](#):



Transport Advice

FOR
DUMMIES



Dear Transport Guy

I had the pleasure of witnessing David Willmot's talk at the recent conference. Amidst a Group of cycling specialists he denounced cyclists and public transport users as 'free-loaders', then promoted road-building as an antidote to the 'UN conspiracy of social meddling' that pushes active modes against people's wills?

Tom, Wellington

Dear Tum

You are blessed to have experienced the Wisdom of Dave. People go their whole careers (quite happily in most cases) without hearing his wisdom. Whilst his talk was barmy, there are certain points that are indisputable. Cyclists and public transport users are indeed free-loaders, apart from the taxes, rates and fares that they pay.

And the UN does indeed indulge in social meddling. Mostly to improve the lives of the downtrodden, and it is quite an open conspiracy. A 'non-conspiracy' if you will.

Say what you will about David's talk - and it was barmy - the best part was when he was physically removed from the stage after he refused to stop speaking. If nothing else it added a bit of colour and diversity to the conference.

We'll listen and offer a supportive environment for any speaker, whether we agree with them or not, though we will remove them if they take up another speaker's time.

~Transport Guy

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 heard the Transport Minister speak at the conference about safety and accessibility and urban development. Then later MP Paul Goldsmith spoke about speed and more roads and high spec cars. They were both talking about NZ. My question is WTF?

Majorie, Auckland

Dear Misery

LOL. FOMO. NSFW. It just goes to show that each national election offers the excitement of a 180 degree spin of strategic direction.

~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...



Transportation Group National Committee

National Chairperson: Jeanette Ward jeanette@abley.com

Vice Chairperson: Bridget Burdett bridget.burdett@stantec.com

Immediate Past Chair, Submissions Coordinator, Membership Coordinator, Treasurer: Alan Gregory AGregory@tonkintaylor.co.nz

Auckland Branch Chair: Stephanie Spedding
stephanie.spedding@jacobs.com

Waikato/Bay of Plenty Branch Chair: Alan Gregory
alan.gregory@tonkintaylor.co.nz

Central Branch Chair: Thomas Small thomas.small@jacobs.com

Canterbury/West Coast Branch Chair: Cameron Bradley
cameron.bradley@stantec.com

Southern Branch Chair: Olivia Heer olivia.heer@wsp-opus.co.nz

Website Administrator: Vacant

Modelling User Group: Nathan Harper nathan.harper@aecom.com

Signal Network User Group: Daniel Burgess
daniel.burgess@nzta.govt.nz

Active Modes Infrastructure Group: Glen Koorey glen@viastrada.nz

Research Sub-committee: Alan Nicholson
alan.nicholson@canterbury.ac.nz

Branch Administrators

Auckland: Chun-Lin Lee chun-lin.lee@stantec.com

Waikato/Bay of Plenty: Clara Hechei
Clara.hechei@ghd.com

Central: Josephine Draper
josephine.draper@abley.com

Canterbury/West Coast: Grace Ryan
grace.ryan@ghd.com

Southern: Lisa Clifford lcliffor@dcc.govt.nz



^ Ancient Assyria



Possibly the first parking restrictions were put in place in [Nineveh](#), the capital of ancient [Assyria](#) in c.700 BC. The restrictions are due to their king [Sennacherib](#) (704 to 681 BC) and pertained to the sacred main processional way through Nineveh. The oldest parking signs ever discovered read "Royal Road – let no man decrease it". The penalty for parking a chariot on this road was death followed by [impaling](#) outside one's own home.^{[4][5]}


Roundabout Editorial Team

Editor: Daniel Newcombe
daniel.newcombe@at.govt.nz

Immediate past editor and dogsbody: Bridget Burdett bridget.burdett@stantec.com

Additional dogsbody: John Lieswyn
john@viastrada.nz

Kids explain traffic engineering

A photograph of a suburban street scene. In the foreground, a concrete sidewalk runs diagonally from the bottom left towards the middle right. A large, dark, irregular patch of asphalt or gravel is laid on the sidewalk, creating a bump. White chalk lines are drawn on the concrete, including a large 'X' shape and several straight lines. To the left of the sidewalk is a grassy area and a large tree trunk. In the background, a paved road curves to the left, with a silver car driving away. Further back, there are more trees, a yellow diamond-shaped road sign, and some houses.

"Black patches are better than fixing the footpath because you can do jumps on your scooter."