Roundabout

Newsletter of the IPENZ Transportation Group

Issue 137 September 2013

Is the way we value travel time fundamentally flawed?

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'Ignore Satnav - engage brain'

Evolution of Motorway Performance Monitoring

The Effect of the Opposing Flow on the Critical Gap

Pay Attention or Pay the Price

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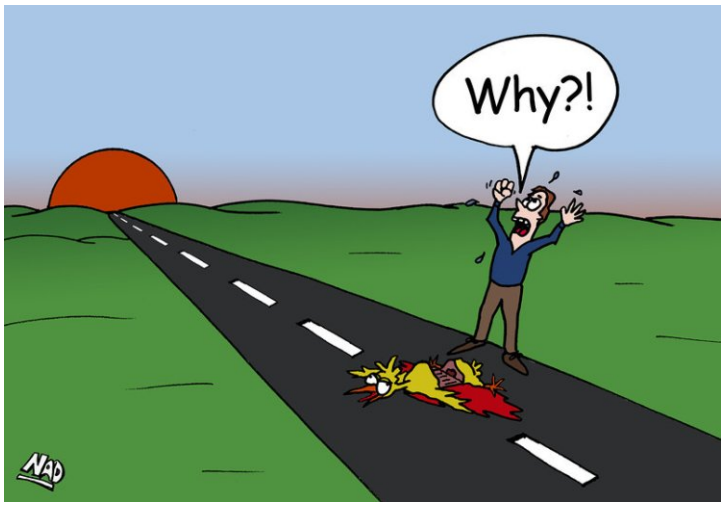

Roundabout is the newsletter of the IPENZ Transportation Group, published quarterly. It features topical articles and other relevant tidbits from the traffic engineering and transport planning world, as well as details on the latest happenings in the NZ transportation scene.

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 IPENZ Transportation Group or the editor, except the editorial of course.

Many thanks are due to Opus International Consultants, who sponsor the printing of Roundabout for those members who prefer to receive a hard copy.

Correspondence welcome, to Daniel Newcombe: daniel.newcombe@aucklandtransport.govt.nz or c/o Auckland Transport, Private Bag 92250, Auckland 1142

Roundabout is published around the 15th of March, June, September and December each year. Contributions are due by the 5th of each publication month.

If somehow you have come to be reading Roundabout but aren't yet a member of the IPENZ Transportation Group, you are most welcome to join. Just fill in an application form, available from the Group website: http: //ipenz.org.nz/ipenztg/files/TGApp.pdf

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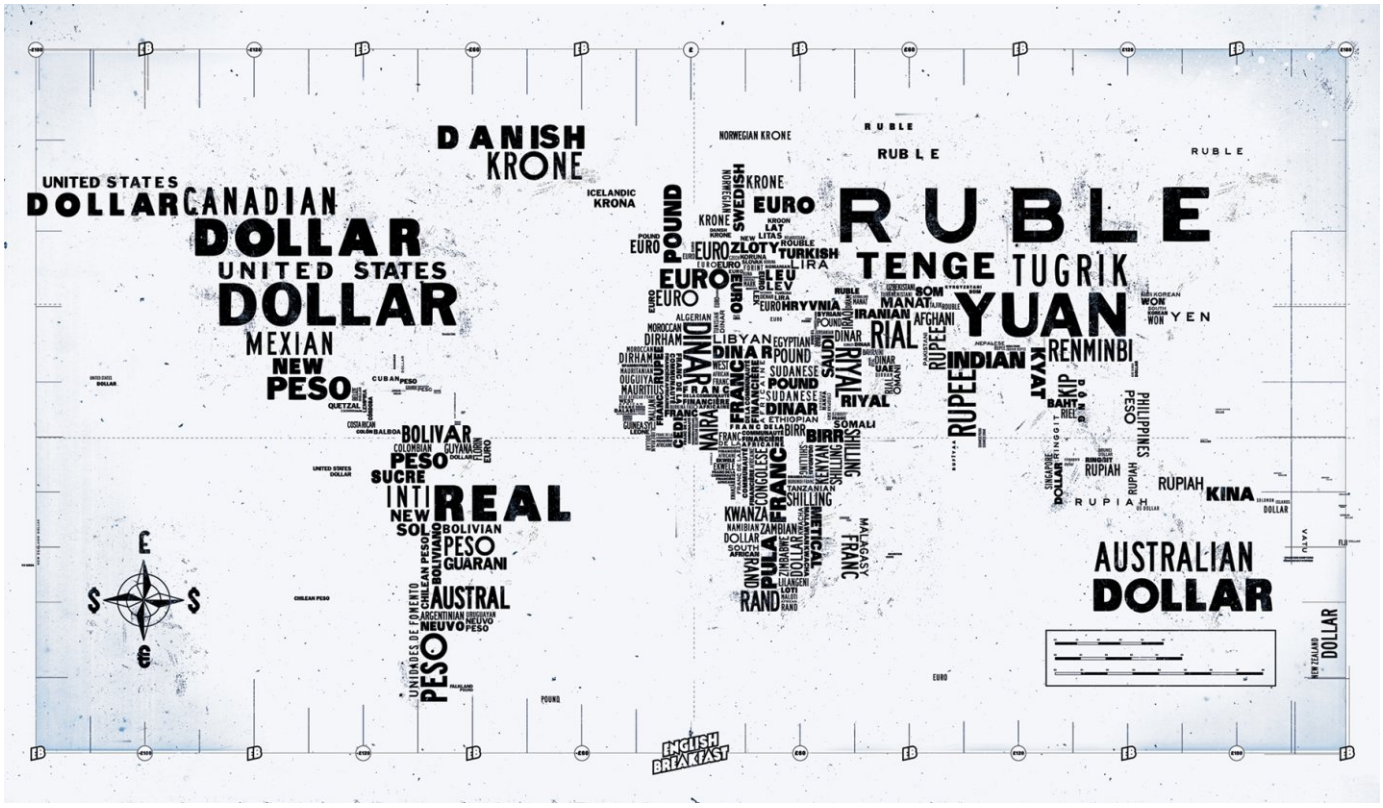
Editorial



Money makes the world go round.

And so the recent government announcement in Auckland of funding for the City Rail Link, next harbour crossing and a range of roading projects means a fundamental shift for many in the transportation industry (in Auckland, for sure, but also nationally due to the scale of funding involved).

Instead of arguing whether a certain major project deserves funding, the focus now is on what to deliver and when. And for how much. A quite profound shift in focus which I suspect may create unexpected benefits for the industry.

Many, if not all, of the Roads of National Significance projects have been derided by some over the years for being unworthy of funding, but ironically the certainty of this funding has provided a central foundation around which many transport organisations have been able to arrange their programmes.

Having less certainty around these major projects would almost inevitably make everyone's jobs a lot harder - back to arguing about 'whether' rather than 'when'.

Money is the theme of our cover story too, or rather the way we value it and use it in our economic evaluations. Although he sometimes seeks to convince us otherwise, the author Ian Munro has brains in his head and he makes a compelling argument for a fresh look at the monetary value placed on trips regardless of where they occur in the country.

This isn't a case of urban trips being more important than rural trips, but that a nationally averaged system masks higher or lower values of time in particular locations. There are winners and losers, of course, but Ian's point is that currently we don't even acknowledge this.

If we are really serious about the robust economic evaluation of transport projects and the prudent outlay of public funds, then differences in the value of time need to be acknowledged.

There is a subsequent discussion - which I hope to bring in a future edition - about how that value of time gets applied to computer models and failings in predictions of human behaviour. Anyone brave enough to take that issue on?

Finally, and still on the theme of money, I am happy to announce that Pippa Mitchell of T2 Engineers has been awarded this year's Study Award prize, picking up a cool $10,000 for her proposal. For more information about her research, see page 26.

Daniel Newcombe
Roundabout Editor

Chair's Chat

This morning I read about Martin Luther King Jr's famous "I have a dream" speech 50 years ago. I already knew that it was not the speech he had intended to deliver, but was egged on, an advisor remarking "Aw shit. He's using the dream".

From the early days of public television to the days of iCloud, what are our dreams as transport professionals? 500 years ago Martin Luther posted 95 theses, and, thanks in part to the recent printing press, led to an earlier revolution in Europe, conveniently for many not long after the (re)discovery of America.

100 years ago, the Institute of Local Government Engineers of NZ and the NZ Society of Civil Engineers were formed, merging together within two years, and in 1937 renamed as the NZ Institution of Engineers.

The Great War that followed soon after, along with WWII, led to a rapid advance in motor and air transportation, while during the height of the Cold War JFK led the American race into space just before his 1963/64 Civil Rights Act.

Abstracts for our 2014 Conference during the IPENZ (ex NZIE/NZSCE) centenary are now being called for. At the same time as the conference, Dr Charles Elachi, Director of NASA's Jet Propulsion Laboratory, will be delivering the Pickering Lecture. This annual public event is named after Sir William Pickering, who left our shores to head NASA's Laboratory for 22 years and pioneer the US exploration of space.

I hope that many of you, particularly our overseas members, will be inspired to submit an abstract, to put the "dream" thoughts in their inner space into an impassioned message to give to us, in tune with the special conference theme.

I wish to thank our sub-groups and kindred bodies who are planning their own sessions to be run as part of the special conference, broadening the range and appeal of coming to the "coolest little capital in the world" (although we just had the warmest winter in 150 years!).

Continuing on, I wonder where is transport heading in the next 50 years? Will we all be driving electric cars by then, or more likely be driven by electric autonomous vehicles? Will the increasing problem of youth unemployment spread into all age groups to the extent that demand for travel will be reduced, with fewer people working or more working remotely at home under contract? Will continual decline in the provinces result in less demand for our professional services or, ironically, more?

Naturally these are hard questions to answer, just like the small matter of when will the climate change tipping point occur, leading to sea level rises of more than 1-2 metres, threatening ports, coastal land, transport and cities, etc.

The Government has been emphasising resilience in the past 2-3 years and ingenious solutions will be needed for our country to remain prosperous in the face of these physical challenges, not to mention the economic and man-made political challenges. So put on your thinking caps, enlighten us all with thoughts and dreams for how to create a better future for your grandchildren, even if only in a small way in the neighbourhood you live. "One small step for man …". "Ask not what your country can do for you …"

Dave Wanty
National Committee Chair

PS: If you wish to help us in our current endeavours to work with the NZTA and MoT in developing / reviewing Standards and Rules in line with our 2013-2016 Strategic Plan, please inform your Branch chair or rep on the National Committee – offer open to all, not just members in NZ.

Website review - your feedback sought

The National Committee is reviewing the effectiveness of the website in helping to deliver the objectives and mission statement of the Group.

The review began with initial input from the branch committees and technical subgroups, and now the process is opened up for feedback from members.

The wide range of issues raised to date include:

- *How to use the website to achieve the objectives and mission statement of the group;*
- *How easy is it to find the website and navigate through it;*
- *Which pages are the most popular;*
- *Does the structure and functionality of the website work well;*
- *How does the website meet the needs of members,*
- *Are there opportunities to make it look more interesting and inviting;*

Comments to date have included:

- *Keeping topical information (such as Roundabout) to the forefront;*
- *Prominently displaying information about joining the group;*
- *Making the layout and content more visually appealing;*
- *Offering information about what the branches do, the group as a whole and linkages with other organisations;*
- *Providing information on, or a record of, past events at a branch level;*
- *Using the website to generate debate and encouraging membership;*

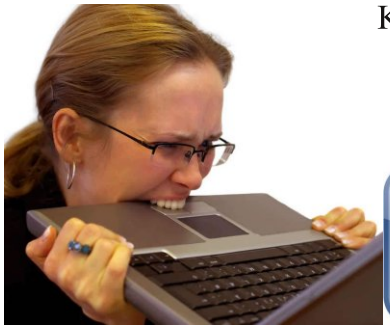
The general direction of the feedback is that the website could usefully do with a complete overhaul.

The website is generally devoid of pictures and there is a desire to change this in the new version. Therefore if you have any photos that you think might be worthy of inclusion on the new version of the website, and are free of copyright, please send them to the address below.

After reviewing member feedback, the next step in the website refresh project is to draft a revised website structure and layout for the approval of the National Committee in October. Therefore any member feedback is required by the end of September.

The website belongs to all of the members of the group, so it is important to give feedback so it can be made more useful and relevant.

Please send any comments or pictures to: liam.ryan@tdg.co.nz



Keep up to date with IPENZ Transportation Group happenings:
www.ipenz.org.nz/ipenztg
www.twitter.com/ipenztg
www.facebook.com/ipenztg

IPENZ TRANSPORTATION GROUP

Vacancy: Transportation Engineer

MRCagney is an independent, international transport and planning consultancy with an enviable reputation for fresh and innovative solutions. The company prides itself on the quality and depth of its people and their total commitment to the task of 'mobilising people for better communities'. With offices in China, Singapore, Indonesia, Australia and New Zealand, MRCagney is at the forefront of international best practice and critical thinking.

We are seeking a Transportation Engineer to work in our growing Singapore office. The ideal candidate would have:
- A minimum of two years experience in the transport field.
- Excellent verbal and written skills in English, with fluency in a second language such as Mandarin or Bahasa preferred.
- A track record of transportation engineering projects spanning traffic impact assessments, integrated transport assessments, and transport modelling.
- Robust academic qualifications and a track record in professional development and learning.
- A dynamic personality, with creative flair for solving complex problems.
- Candidates must have excellent technical and presentation skills.
- Consulting experience would be an advantage.

MRCagney

The successful candidate will be exposed to a variety of projects spanning our international network of offices, with a focus on the South East Asian market. Career development with the company will likely involve secondment to various offices to facilitate professional learning and development. MRCagney is able to offer a flexible work environment, competitive remuneration package, and a central office location close to public transport links.

If you are interested in joining a vibrant and growing organization that can provide unique professional development opportunities, please forward your CV and cover letter by email to nmumby@mrcagney.com. In your cover letter please describe your interests in transport, your work experience, and expected salary range. The close off time for applications is Friday 4 October 2013 at 5.00 PM.

Updates

Passing of Tom Fookes

It is with great sadness that New Zealand Planning Institute advises of the passing of Tom Fookes, previously Associate-Professor and Head of the Department of Planning at the University of Auckland.

Tom would be known to many planners and transport planners across the country, from his many years teaching and tutoring hundreds of students. He is survived by his wife Susan, his children Emma, Catherine, and Ian.

IPENZ electronic invoicing

A note to remind all financial members that billing will be electronic again this year. Please go on-line to the Members area of www.ipenz.org.nz to check and update your contact details. Prompts are available for new users. Please check your email inbox (and spam filter) in early October for your subscription invoice. Also see a notice of fee increases on Page 9.

IPENZ
ENGINEERS NEW ZEALAND

CAS contact correction

The article on changes to the use of NZTA's CAS database in the June issue of Roundabout contained an incorrect email contact for those needing crash data requests. The correct contact is:
Annie.law@nzta.govt.nz

NZTA Community Road Safety Fund

NZTA has launched its new fund to support community-based road safety initiatives, following the winding up of the Road Safety Trust.

The new Community Road Safety Fund aims to improve road safety outcomes by co-funding, in partnership with others, high impact community projects which might otherwise not occur. This will include small, locally focussed projects as well as large national programmes. For more information visit the new website: http://tinyurl.com/k6h8apz

Warning: Pay your dues

We've recently been reviewing our membership records and highlighting those of you that have not paid your past fees. One option is to name and shame you in the next issue of Roundabout. We'd prefer it if you made the payment so please take a moment and remit the outstanding amount today.

If you've received an invoice, but not yet paid, please can you make the payment as soon as possible. If there is some reason that we have not received your payment or if you wish to discuss your membership or payment options, please contact the IPENZ Technical Group Officer on (04) 474 8937 or email techgroups@ipenz.org.nz

transport ingenuity

celebrating 100 years

IPENZ TRANSPORTATION GROUP

Wellington
23 – 26 March 2014

ipenztg2014.co.nz

CONFERENCE 2014

The IPENZ Transportation Group's annual conference is New Zealand's premier forum for the traffic engineering, road safety and transportation planning community.

Around 200 professionals attend the annual event, which has been running for more than 40 years. The 2014 conference will include thought-provoking conference papers, healthy discussion amongst industry professionals (including our sub-groups and peer groups) and an exciting technical tour programme. As always, the conference will be an ideal opportunity to network and share ideas across a diverse and wide-ranging industry.

In 2014, IPENZ will be celebrating its centenary and as a leading technical group of IPENZ, we will be joining the celebrations with the key focus and theme of our conference being "Transport Ingenuity – Celebrating 100 years". We look forward to seeing you in 2014 and wishing IPENZ a very happy 100th birthday!!

Commemorating 100 years of professional engineering is not just about celebrating the successes of the past and the positive influences of engineering on society. We also need to look at how the last 100 years will shape and influence our industry for generations to come. The last 100 years have seen huge changes in the way we live. We now no longer rely on horses or steam power for transport. This has influenced the shape of our cities and how we plan them. How is our transport legacy shaping how we are able to live in future?

Interested in submitting a paper? Abstracts are due 23rd September. Click http://tinyurl.com/kzw866e to view the Call for Papers document, which outlines everything you need to know.

Audio Visual Shows

There is an opportunity to submit a 4 minute audio–visual show celebrating the past or looking to the future. AV shows are a chance to try something different and will not be part of the formal conference proceedings.

All of the shows received will be placed on a repeating loop and displayed in one of the social areas of the conference. The AV shows should be stimulating and should encourage discussion and debate. This may be an opportunity to present some unconventional ideas about the technical future of transportation engineering.

AV shows will be vetted to ensure that they are transport themed, have some technical or historic interest and avoid advertising or promotional content (logos excepted). Those wishing to submit an AV show should submit a short (200 words) outline of the concept by 23 September 2013 to Harding Consultants.

'Ignore Sat-Nav - Read the signs'

Drivers in Cornwall are risking a serious accident by ignoring signs and following sat-navs directing them the wrong way down a dual carriageway slip road, according to a councillor.

A new roundabout and one-way system at Scorrier, near Redruth, has confused some navigation systems. The council has put up signs telling drivers to "ignore their sat-navs".

Scorrier councillor Mark Kaczmarek said some drivers were ignoring as many as nine signs warning of the new system.

Instead of turning left and going over the bridge to join the A30 eastbound, some sat-navs have been sending cars straight on at the roundabout, heading down a one-way slipway in the wrong direction.

Mr Kaczmarek said: "It is a real concern. One day the pub landlord counted 100 vehicles turning around. Only yesterday an articulated lorry tried driving the wrong way, and they are turning around 100 yards away from the main A30.

"Traffic is coming off the A30 and on to the slip way at around 70 miles an hour. It's not going to be a pleasant scene if there's an accident."

The highways department of Cornwall Council said it was an unusual problem. The local authority has installed a new sign highlighting the one-way system and several temporary signs telling drivers to "ignore their sat navs and turn left".

Peter Tatlow, a senior engineer with Cormac, said: "If people are not looking at the signs, it's difficult to know what to do. It's a real worry that someone is going to miss the 'no entry' sign as well."
BBC News UK

What does this teach us?

When undertaking major changes to road connections, consider investing in VMS or temporary signs that say something like:

'Road layout changed.
Ignore Sat-Nav. Read the signs.'

'Tis no parking, to be sure, to be sure

This clever bit of traffic management was recently spotted on the main street of a small village called Kinvarra in County Galway, which is on the west coast, south of Galway City in Ireland.

I thought the use of (presumably) empty Guinness kegs an ideal way to set out a temporary no-parking area along the main drag. I'm pretty sure this method probably isn't in the Irish traffic management manual (I'm making a big assumption in saying this, of course), but it sure worked in practise!

It was also very good advertising for the pub that was just up the road. I loved the simplicity of it all – only in Ireland!
From Brett Harries, TDG

Germany's little green man shows the way

Researchers have called for the introduction of former East Germany's hat-wearing "green man" traffic light figure at pedestrian crossings throughout the European Union after conducting a study that showed pedestrians react to it more quickly than they do to Western crossing signs.

The study, carried out by Bremen University, found that the so-called flat-hat wearing Amplemannchen - which translates as "little traffic light man" - encourages pedestrians to press stop or go buttons at crossings more quickly than Western traffic icons. The figure began life in Communist East Germany 50 years ago.

"Our study shows that the East German Amplemannchen have not just become iconic symbols but are also giving their West German counterparts a run for their money when it comes to signal perceptions," Bremen University's Claudia Peschke told the broadcaster Deutsche Welle. After reunification, East Germans joked that the Amplemannchen was the only figure to have survived the Communist era.

He was adopted by traffic authorities across West Germany, where he has now replaced his more robotic counterpart used in Western Europe. Bremen University has said that the results of its study should encourage EU traffic officials to standardise pedestrian-crossing signs with the introduction of Amplemannchen figures across Europe.

It remains unclear whether the recommendations stand any chance of being realised. Markus Heckhausen, the Amplemannchen's designer, told Germany's Bild newspaper: "It's a nice idea, but nobody has asked me and I own the copyright."
- *Independent*

Membership fees rise

The National Committee has approved an increase in membership fees.

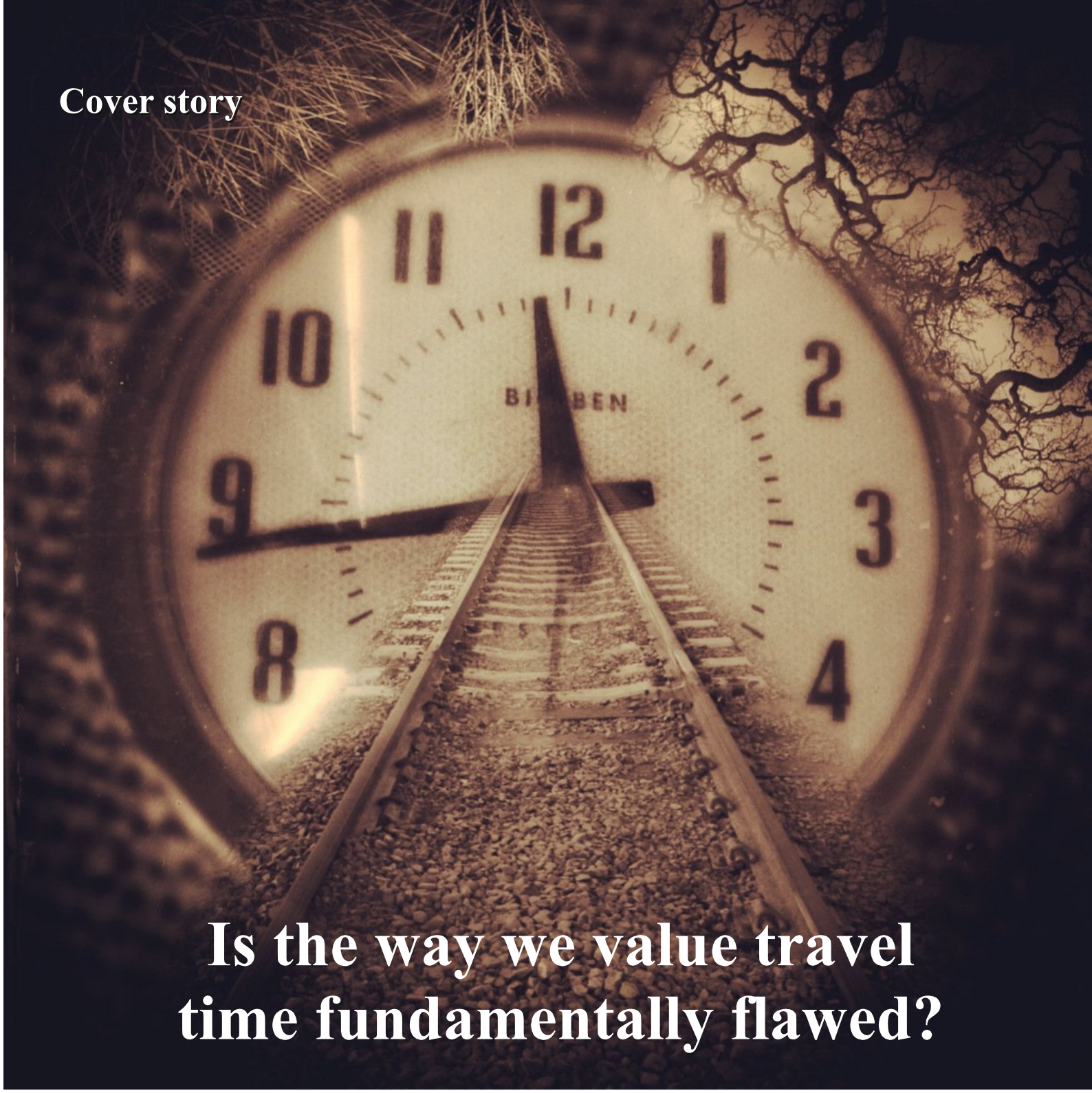
In recent years the National Committee has signalled, in the strategic plan, a need to strengthen the administration and co-ordination of the group and to strengthen its ties to other similar international professional groups.

Currently these services are predominantly undertaken on a voluntary basis although we have professional support for committee meetings and pay the costs for accounting and correspondence services provided by IPENZ parent body. This approach has allowed us to maintain the status-quo.

To achieve our vision of being recognised as the foremost impartial and credible voice on transportation issues in New Zealand we need to be more streamlined and business like. The National Committee has therefore approved a fee increase the cover the costs of additional administrative support.

This will free up the national committee, allowing a greater focus on development of the group, raising its profile and advancement of the profession. For most of our members the annual fees will, from October 2013, be $55 (excluding GST) per year which is increased from $40 (excluding GST). This increase is part of a long term plan for increasing the capability of the group and its visibility to the outside world.

National Committee Deputy Chair, Pravin Dayaram, took this photo in the Rarotongan town of Avarua recently. It is not known whether saying 'please' assists in observance of the parking restrictions.



Is the way we value travel time fundamentally flawed?

In this article, Ian Munro (Senior Associate at Urbanismplus Ltd, Auckland) challenges the current thinking regarding the use of nationally averaged travel time values in New Zealand and the discusses the implications for the evaluation of transport projects across the country.

(Ian also appears on page 23)

New Zealand Transport Agency's Economic Evaluation Manual Volumes 1 (EEM1), 2010A and 2 (EEM2), 2010B, set out the framework required to assess the costs and benefits of proposed transport investments. That framework follows a social cost benefit analysis model, described within NZTA's EEM1, 2010A , p2-2, as being:

"...similar to financial analysis except that a national viewpoint is adopted in which the benefits and costs are those to the nation as a whole. This viewpoint is appropriate in the case of transport activities, which are undertaken on behalf

of the nation and are publicly funded.

The analysis involves determining the various benefits and costs associated with each activity alternative and option over a certain analysis period, to determine the relative economic efficiency of these alternatives and options. The results for the chosen alternative and option indicate whether the activity is worthwhile from an economic efficiency viewpoint."

In the EEM, a number of nationally averaged travel time values, derived from the national average wage, are provided for use in economic analysis *(refer Table 1)*. This is consistent with comparator jurisdictions including the USA, Australia, and the UK *(United States Department of Transportation, 2011, Austroads, 1997, and United Kingdom Department of Transport, 2009)*.

The value of travel time is now a pivotal component of economic analysis due to the significance of predicted travel time savings in the calculation of project benefits *(Austroads, 2011B, and Hensher, 1989)*. It is self evident that for social cost benefit analysis to be robust, the predicted benefits of a proposal need to be as accurate as possible. Austroads, 2011B , succinctly makes this case:

"Valuing travel time savings (VTTS) robustly has major implications for properly evaluating transport investments. It is also required to better understand and price scarce road space (i.e. congestion), which is a key objective in a number of road pricing schemes. Therefore, valuing and understanding travel time savings is one of the key concerns of transport economics, analysis and modelling."

The prevalence of case study examples indicating the at times systematic overstatement of benefits (and understatement of costs) in major transport projects internationally adds further impetus to this concern *(Flyvbjerg et al., 2003)*.

The concept of placing a monetary value on travel time and using this as a means of calculating the benefits to a community that may arise from reducing travel time has evolved consistently over the past 50 years *(Austroads, 2011A, and Wardman, 1998)*.

The average wage has been a key determinant relied on first for work trips and then non-work trips *(Mackie et al., 2003)*. The methods relied on have also grown in complexity and detail over time, so as to provide more reliable estimates.

Vehicle occupant	Work travel purpose	Commuting to/ from work	Other non-work travel purposes
Base values of time for uncongested traffic ($/h)			
Car (motorcycle driver)	23.85	7.80	6.90
Car (motorcycle passenger)	21.70	5.85	5.20
Light commercial driver	23.45	7.80	6.90
Light commercial passenger	21.70	5.85	5.20
Medium/heavy commercial driver	20.10	7.80	6.90
Medium/heavy commercial passenger	20.10	5.85	5.20
Seated bus and train passenger	21.70	4.70	3.05
Standing bus and train passenger	21.70	6.60	4.25
Pedestrian and cyclist	21.70	6.60	4.25
Maximum increment for congestion (CRV, $/h)			
Car (motorcycle driver)	3.15		2.75
Car (motorcycle passenger)	2.35		2.05
Commercial vehicle driver	3.15		2.75
Commercial vehicle passenger	2.35		2.05

TABLE 1: NZTA EEM TRAVEL TIME VALUES

Source: Table A4.1: Values for vehicle occupant transport user time in $/hr (all road categories; all time periods – July 2002 values). NZTA EEM1, 2010A, page A4-2.

Despite this significant body of work, a number of challenges remain and are widely described within the literature *(such as Li, 2003, Button, 2010, O'Fallon and Wallis, 2012, Wardman, 1998, Austroads, 2011B, and Lyons and Chatterjee, 2008)*. They include:

- Whether or not travellers can accurately perceive and measure the travel time savings they are enjoying (and placing a conscious value on);
- Whether or not travellers value travel time in a linear fashion irrespective of the unit of time saved;
- Whether or not a unit of time saved is valued the same as an additional unit of time delayed;
- Whether or not travel time is always a disutility;
- Whether or not travellers can make consistently rational travel decisions; and
- Whether or not (especially in a successfully mixed mode network offering choice) it is appropriate to value travel time differently depending on the mode chosen.

These criticisms appear to be growing, rather than diminishing, with time. Metz, 2008, has gone so far as to question whether travel time savings have even been proven to empirically exist.

Cervero, 2011, has asked whether, based on the recent history of urban sprawl and work such as time budget theory *(refer to early work by Zahavi, 1979, and Zahavi and Talavatie, 1980),* travellers have simply used travel time savings to spread their activities out across space for a zero sum travel time benefit.

But the dominant voice in the literature at this time remains that despite these ongoing challenges, it is still on balance more accurate to include an estimate of travel time values than to ignore the variable in economic analysis. As summed up by the United States Department of Transportation, 1997:

"Even though the theoretical and empirical support… is less than compelling, no strong evidence has emerged to justify abandoning it."

But irrespective of the broader framework preferred to place a value on travel time generally, a number of local distributional questions remain if travel time values are to be then applied in a

way that gives the most accurate predictions possible. Of most relevance is the spatial distribution of travellers and in particular whether there are any significant concentrations or dispersals of like income ranges.

The obvious flow on from the above distributional question is that a spatial investment bias may arise over time – projects may come to favour and become concentrated by either one project type (or mode), or in one location, relative to alternatives.

If such a bias arises as a result of rational and factual analysis, then it should not be of concern to practitioners involved in undertaking that analysis as it is their role to impartially report on the facts; the analysis would be merely identifying a consistently superior candidate. But to decision makers and communities generally, such a pattern may be indicative of unfairness or inequity.

In turn, the question could more productively become not one of whether or not fairness is important, but of how and by whom in the decision making process it is exercised. This is consistent with Mackie et al., 2003, who identify the three pillars of evidence, practicality and policy as feeding transport project decision making.

A key characteristic of social cost benefit analysis is that in helping society make difficult choices it is closely aligned with the moral philosophy of utilitarianism, or of securing for society as a whole the greatest benefits for the least costs.

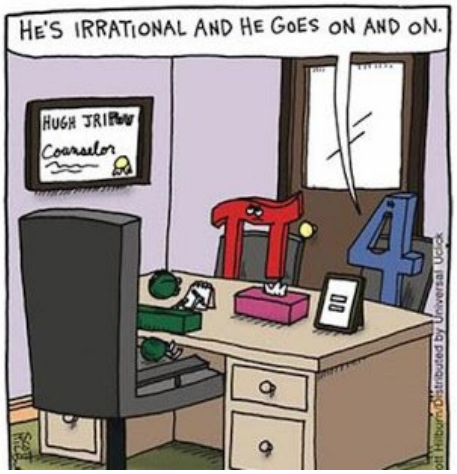
It is a moral philosophy not primarily concerned with distributional issues or equity between the members of society. Who wins and who loses is a secondary value judgement to whether or not society as a whole is winning. This thinking can be seen to directly underpin NZTA EEM1, 2010A, where it states at page 2-8 that:

"Cost benefit analysis only indicates those activities with the largest resource gains per dollars of expenditure, irrespective of whether benefits and costs are evenly distributed or whether costs fall more heavily on some sections of society while benefits accrue mainly to others.

"An analysis of the distribution of benefits and costs among different groups of people is not required for the economic efficiency evaluation of the activity. However, reporting of the distribution of benefits and costs, particularly where they relate to the needs of the transport disadvantaged, is part of the funding assessment."

It can be seen that the NZTA's EEM1, 2010A, directs economic evaluations to focus on identifying economic efficiencies to society as a whole, with any distributional issues additionally reported on to decision makers as a form of qualification attached to the efficiency analysis.

It does not encourage practitioners to attempt to introduce their own equity judgements by manipulating the evaluation inputs, such as knowingly using travel time values that do not reflect the reasonably likely travel time values of travellers.



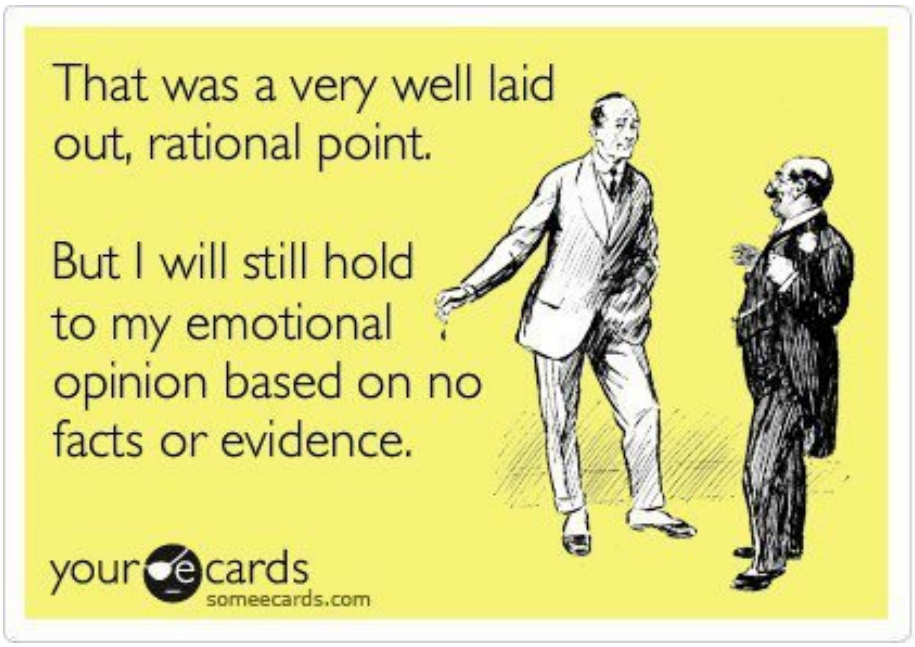
NZTA's EEM1, 2010A, itself gives a clear indication that incomes and hence travel time values should not be expected to be uniform across space (which does not sit well with the concept of relying on a nationally averaged value of time).

This is because in addition to specifying higher travel time values for occupants of motor vehicles relative to other modes, the EEM acknowledges the economic principle of agglomeration. This is the phemonenon whereby firms benefit by locating close to one another, and as a result major urban conurbations can eventuate bringing a variety of productivity, wealth, and specialisation advantages.

As one consequence of higher productivity and labour specialisation is higher average wages, it is difficult to conclude that if the value of travel time to individuals is based on their income, workers in locations subject to higher incomes will likewise place a higher value on their travel time.

NZTA's EEM1, 2010A, acknowledges that there are important reasons why a consideration of investment equity should be included in the decision making process, but that consideration must fall outside of the economic evaluation itself. That economic analysis is clearly intended to be a technically "uncontaminated", factual, and impartial analysis of empirically derived data.

If it so happens that one type of transport investment or one geographic area repeatedly reveals itself as being more efficient or beneficial than alternatives, this fact should be reported on without bias by transportation specialists, and decisions then made accordingly by persons mindful of the bigger picture of fairness.



In literature the indexing of travel time to the wage rate is widely canvassed *(Mackie et al., 2003, Austroads, 2011B)*. The companion assumption that nationally averaged standardisation is also appropriate is, perhaps anomalously, not well addressed although it can be seen to typically accompany the wage-rate approach in practice.

The only commentator found to directly address the matter is Gwilliam, 1997. His analysis in support of nationally averaged values is explicitly made on the basis of a fairness/equity consideration, not one of identifying economic efficiencies:

"Values of time vary between regions within a country as a result of differences in wages and incomes. If these income related differences are reflected in the evaluation of investments, for which users do not pay directly, a vicious circle is created. High income areas yield high project returns, which attracts investment, which further increases income.

This can be avoided by using national average wage rates for major categories of labor and applying national average income in valuing leisure time savings. It is recommended that such an "equity value of time" be used, especially where poverty alleviation or regional redistribution of income is a national objective."

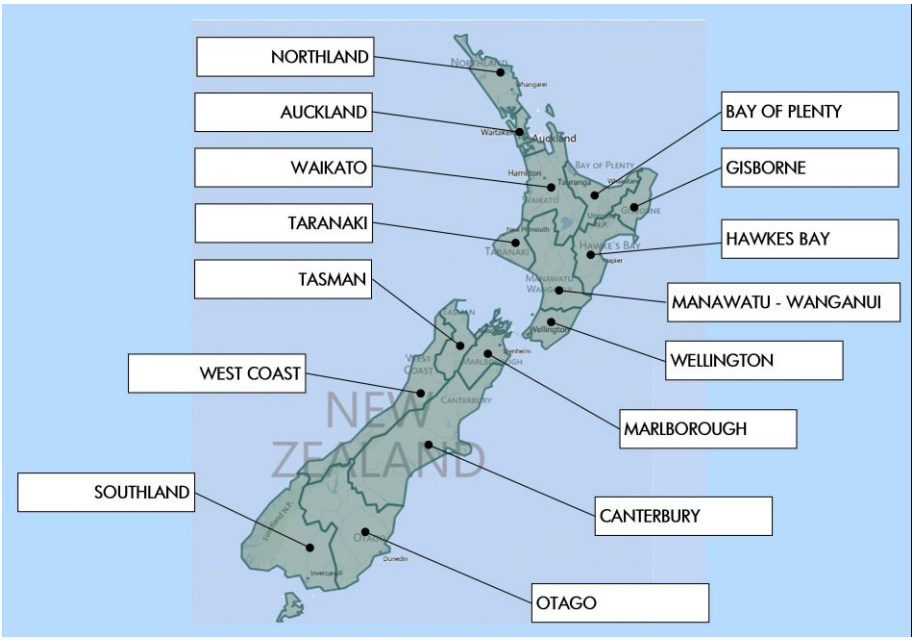


FIGURE 1: NEW ZEALAND REGIONS BY CENSUS DATA

Source: Statistics New Zealand, 2012

REGION	2006 MEDIAN INCOME	% CHANGE FROM NATIONAL MEDIAN
NEW ZEALAND	**$24,400**	**0%**
WELLINGTON	$28,000	+14.8%
AUCKLAND	$26,800	+9.8%
WAIKATO	$24,100	-1%
CANTERBURY	$23,500	-3.7%
MARLBOROUGH	$23,300	-4.5%
SOUTHLAND	$23,200	-4.9%
TARANAKI	$23,200	-4.9%
BAY OF PLENTY	$22,600	-7.4%
HAWKES BAY	$22,600	-7.4%
MANAWATU—WANGANUI	$21,600	-11.5%
OTAGO	$21,600	-11.5%
TASMAN	$21,600	-11.5%
NORTHLAND	$20,900	-14.3%
GISBORNE	$20,600	-15.6%
WEST COAST	$20,400	-16.4%

TABLE 2: RANKED MEDIAN INCOME BY REGION, 2006 CENSUS *Source: Statistics New Zealand, 2012*

This approach of "equitising" transport economic evaluations does not sit comfortably with the NZTA's EEM1, 2010A "efficiency" framework. Button, 2010 cautions against it because it is (page 106) *"... not consistent with the way other aspects of transport investment are evaluated"*. Mackie et al., 2003 also note that in the United Kingdom context the use of nationally averaged travel time values is at odds with observed income distributions across space.

Overall therefore the use of nationally averaged travel time values could only be technically supportable (i.e. justified other than on policy grounds requiring one interpretation of equity) if there was data indicating that incomes were distributed relatively consistently across the country.

Figure 1 and Table 2 illustrate the distribution of median incomes across New Zealand based on 2006 New Zealand Census data. There is range of $7,600, or 31%, between the lowest, $20,400 (West Coast), and highest, $28,000 (Wellington). Only Auckland and Wellington regions have average incomes higher than the national average.

If a tolerance of +/- 5% around the national average of $24,400 was seen as acceptable, then the use of a national average travel time value would seem workable in five out of fifteen New Zealand regions. But in the West Coast region, travel time benefits could be overstated by up to 16% (if 100% of origins and destinations occurred within the region). Conversely, travel time benefits in Wellington could be understated by almost 15% in the same circumstances.

This distribution does not support the use of nationally averaged travel time values. In essence, travellers in Auckland and Wellington may be penalised; those in all other regions appear to be enjoying a mark up to one degree or another.

There is an argument that without such redistribution, the West Coast may "unfairly" continue to lag or fall even further behind other regions if it is not prioritised in some manner.

But it could be just as equally argued that hard working people in Wellington should not expect to be treated "unfairly" and be penalised because of the lifestyle choices of others.

This important but ultimately moral dilemma is not one that technical experts should readily enter into, and it supports the view that economic efficiency evaluations should be focussed strictly on the facts as the EEM directs.

Conclusions

It is likely that predicted travel time savings will continue to be a very important and very contentious part of economic evaluations for the foreseeable future, if for no other reason than that there is no readily apparent alternative.

My research emphasises the importance of developing a spatial intelligence when applying travel time savings to transport project economic analysis.

The following key conclusions can be drawn from this research:

• There is no technical basis apparent (in terms of economic efficiency calculations) to support the use of nationally averaged travel time values in New Zealand.

• Understanding the origins and destinations of transport project users is an important factor in accurately predicting their incomes and hence the value they will likely place on their travel time.

• Nationally averaged travel times should not be used in economic evaluations if project specific origin / destination matrices can be harvested to identify a more accurate local average.

• Nationally averaged travel time savings should not be "optional" as it will simply equate to an artificial inflation of travel time values in those project areas where the average income is less than the national average.

• If "equitising" national average values are to be preferred for policy reasons, then the built-in equity filter should be made explicit within NZTA's EEM so that decision makers do not unintentionally "double dip" an equity judgement in their decisions. As a part of this, the circumstances where travel time values are being marked up or marked down should be made clear.

Detailed references to the material contained in this article are available from the author (ian.urbanismplus@gmail.com).

Launch of high-risk intersections guide

The Safer Journeys second action plan prioritises investigating and improving high risk intersections. NZTA has now published the 'High-risk intersections guide' to assist Road Controlling Authorities to identify and focus their efforts on these intersections.

A draft guide was issued in April last year for consultation and interim use. Feedback was very positive and numerous suggestion have been adopted in the published version.

Key changes include more worked examples and a greater focus on deaths and serious injuries.

The metrics for identifying high risk intersections have been tweaked and the thresholds adjusted. This has been informed by a database of 25,000 intersections that has resulted from applying the draft guide to analysing the networks of the larger Road Controlling Authorities.

The data collaboration has permitted a much clearer picture of the crash risk at rural intersections, permitting the reinstatement of rural crash risk charts. While this has taken some time to complete, it now puts the rural risk metrics on a more robust basis.

The guide has been ratified by NZTA into the standards and guidelines manual and NZTA plans to run workshops on using the guide, over coming months.

The guide is a living document that will be updated to include new developments over time. The guide will only be published electronically, at: www.nzta.govt.nz/resources/high-risk-intersections-guide

Vacancy - Principal Planner (Transport)

Here at Auckland Transport, our Strategy and Planning Division is tasked with developing and planning innovative transport solutions for a growing Auckland. This includes the preparation of transport plans and policies that ensure priority projects and service levels are delivered in an integrated way and to provide Auckland Transport's forward strategy and planning framework.

If you want to play a key role in Auckland's transport planning we have a vacancy for a Principal Planner within our Transport Land Use Integration Plans team in the Strategy and Planning Division. This team plays a key role in leading Auckland Transport's involvement in the development of Resource Management Act planning frameworks and spatial planning frameworks, as well as providing planning leadership across a wide range of transport projects.

The key to your success will be your:

- In-depth understanding and knowledge of the RMA and other regulatory frameworks, transport land use integration, planning policies and frameworks and transport planning and systems.
- Ability to lead Auckland Transport's contribution to key statutory planning documents such as the Unitary Plan and Operative District Plans, Spatial Plans such as area plans, precinct plans, structure plans, and providing input into transport projects, strategies and plans.
- Experience in planning with a transport focus to lead and input into the development of plans to guide and prioritise the development and management of Auckland's transport systems.
- Experience working in a complex environment
- Excellent communication and relationship building skills and ability to build high value relationships with stakeholders
- Demonstrated influencing skills to ensure buy in and engagement of stakeholders in key projects delivering effective transport solutions
- Strong analytical and strategic thinking skills
- Ability to support the team through mentoring and training.

If you are a Planner looking for a role where you will be involved at a leadership level in a range of transport projects and the development of the regulatory and spatial planning frameworks to help us develop the transport system that is changing Auckland's future - don't delay, apply today and start a new journey with Auckland Transport.

Job Details
Position: Permanent
Location: Henderson
Reference: #23333
Closes: Sep 22, 2013
Expertise: Transport Planning
Job level(s:) Experienced
More details and to apply:
http://tinyurl.com/knqq92e

Transportation Engineering Postgraduate Courses 2014

supported by: NZ TRANSPORT AGENCY WAKA KOTAHI

Dept of Civil & Natural Resources Engineering
University of Canterbury

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/thesis

*Domestic student fee per course in 2014 is **$950 (except ENTR401 to be $840) incl. GST**, + Student Services levy (up to $362/semester).*

*All courses run in "block mode" to enable **part-time and distance students** to easily take part. Block course dates would be announced in due course. 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 with suitable work experience will be considered for entry.

COURSE	**DESCRIPTION** *(more detailed Flyers available on website)*
Anytime (contact Department)	
ENTR401: Fundamentals of Transport Engineering *(Self-study at home with 1-day tutorial at UC, date TBC)*	Transportation planning; Road link theory & design; Intersection analysis & design; Traffic studies; Accident reduction; Sustainable transport planning & design; Intro to Pavement design. *{bridging course for non-transportation students}*
Semester 1 (Feb-Jun 2014)	
ENTR611: Planning and Managing for Transport	Road/transport administration in NZ; Transport legislation in NZ; Communication/presentation skills; Public consultation; Transport assessment; Traffic surveys; Demand management & tolling; Project economics; Construction planning & contract management.
ENTR602: Accident Reduction & Prevention	Impact on society; Data analysis and interpretation; Hazardous location identification; Problem diagnosis; Treatment options; Treatment selection; Economic appraisal; Evaluation.
ENTR614: Planning & Design of Sustainable Transport	Pedestrian planning and design; Planning and design for cycling; Audits/reviews of walking and cycling; Public transport operations, scheduling and network design; Travel behaviour change and travel plans.
Semester 2 (Jul-Oct 2014)	
ENTR603: Advanced Pavement Design	Stresses, strains and deflections in flexible and rigid pavements; Pavement materials characterization; Mechanistic and mechanistic-empirical design methods; Pavement performance and evaluation.
ENTR612: Transport Policy & Demand Management	Transport economics; Travel demand and supply management; Congestion pricing; Transport policy objectives and instruments; Traffic management modelling.
ENTR615: Transport Network Modeling	Principles of transport modelling; Road network modelling (SATURN); Macro-simulation and micro-simulation (Paramics); Traffic intersection modelling (SIDRA); Transport network analysis and reliability.

Note: Other relevant courses at Canterbury (e.g. Risk Management and Construction Management courses), Univ. of Auckland or elsewhere may also be suitable for credit to a PGCertEng, MEngSt or MET.

For more details contact:
Professor Alan Nicholson, Director of Transportation Engineering
Phone: (03) 364-2233 Email: Alan.Nicholson@canterbury.ac.nz
Or visit the website: ***www.met.canterbury.ac.nz***

Fundamentals of Traffic Engineering

Organisation Development Institute
Capable people, capable organisations.

Advance Notice
10–14 February 2014, Auckland

Roger Dunn, University of Auckland and **Alan Nicholson**, University of Canterbury, are pleased to jointly offer a five-day programme covering the Fundamentals of Traffic Engineering.

Following a comprehensive review, including an online needs survey across the traffic engineering sector, this programme has been recrafted to enable participants to check their learning and practice new skills in the workshop in preparation for supported application back at work. The programme now incorporates examples, case studies and industry speakers.

Aim
The aim of this five-day programme is to provide you with a solid grounding in the fundamentals of traffic engineering and the contextual issues related to planning and managing transport operations, and to support you to transfer your new knowledge and skills into your work practice.

Learning Outcomes
By the end of this programme, you will:
- have a solid grounding in the fundamentals of traffic engineering
- have practical skills and knowledge of how and when the fundamentals should be applied
- understand the theory of good traffic engineering practice
- recognise and deal effectively with situations where standard methods are unlikely to work well
- have practiced new skills application and have had a review opportunity to reflect and to improve on your workplace application efforts.

Target Audience
This programme is for practising engineers, technicians, planners and designers with relatively little or no formal training in traffic engineering and transport operations. Previous participants have been from a range of occupations such as:
- Traffic / Road Safety / Highway Engineers
- Traffic Planners / Transport Managers
- Land Use / Resource Planners and Engineering Consultants
- Transport Policy Analysts, Design Engineers and Technicians

Further Information
www.development.org.nz Click on Short Courses tab, then Management Skills heading

Course Inquiries
Cathy Anderson, Organisation Development Institute
PO Box 20395, Bishopdale, Christchurch 8453
Phone: 03 943 2373
Email: cathy.anderson@odi.org.nz

Fee
Standard fee $2,450 + GST
Early Bird fee $2,200 + GST (for enrolments prior to 20 December 2013)

Branch updates

Auckland/Northland Branch

Since June the Auckland/Northland branch has had a number of events which have drawn large and varied audiences. First up on 19 June we co-hosted a Pub Quiz with the NZPI Young Professionals. The evening was a great success with ten teams competing for the winning prizes.

Two anonymous Auckland branch committee members **cough*Lennart and Sarah*cough at the recent Young Professionals pub quiz.**

The quiz teams represented a good mix of IPENZ and NZPI young professionals, and the quiz rounds tested them on a wide range of knowledge – from celebrity photos to politics, and including a few token transport and planning questions! Quiz Master Daniel Newcombe's skills were tested, the pizza and beers went down well, and the winning Auckland Council team were pretty chuffed with their Westfield vouchers. Watch this space for a 'bigger and better' young professionals quiz in 2014!

In June the well followed Auckland Transport Blog, an independent blog hosted by the Campaign for Better Transport, an Auckland based transport advocacy group, started promoting a Congestion Free Network in collaboration with Generation Zero.

This alternative to the Auckland Plan focusses on reallocating funding to prioritise the construction of a high quality public transport network. The proposal has received extensive coverage in Auckland and on national TV, and the Campaign presented to the branch members on 30 July. The interesting and challenging presentation sparked much debate amongst the attendees.

Then on 6 August the branch hosted a presentation from Steven Burgess and Aut Karndacharuk on Complete Streets and Shared Spaces. Steve Burgess a Principal with MRCagney in Melbourne presented on his 2010 book "Complete Streets – Guidelines to Urban Street Design" giving an interesting insight into how these ideas could be applied in Auckland.

Then Aut, Principal Consent Specialist with Auckland Transport presented on his PhD research into the recently installed shared spaces in Auckland Central and what has been learnt from these.

Up-Coming Events

The branch will also be hosting its annual panel debate on Tuesday 8 October at the University of Auckland. This year we have chosen to look at how technology is playing an increasing role in the transportation sector, particularly with all the buzz recently around Google's self-driving car. Will these technologies live up to their hype and solve our various transport problems or not? Come along to the debate and see what you peers think. Check out the details on the poster on the next page.

Events currently being planned for the last three months of the year include:

- A joint event with NZPI hosting Brent Toderian, well known planner and urbanist from British Columbia.
- Update on City Centre master-planning and transport futures, presented by a well known planner from Auckland Transport.
- Visit to the Waterview Connection site to view the world's 11th largest Tunnel Boring Machine.
- Visit to the Wiri Depot to learn more about Auckland's new state of the art electric train fleet.

Keep an eye out for the event notifications, the site visits in particular will fill up fast. Planning is also well underway for the end of the year transportation group Christmas event.

A reminder again that we welcome feedback from members on any issues they feel the branch committee could improve on, respond to, or simply ideas for future presentations.

Waikato/Bay of Plenty Branch

AWOL. If anyone finds them, please alert the authorities.

Central Branch

The central branch held a successful quiz night back in July open to branch members and colleagues at the Green Man Pub. The event was won by MWH, pictured below. This was a successful and well attended event though costs were not covered due to cost of venue hire. It is proposed to run this event annually. Thanks to Laura Skilton, Eliza Sutton and Jo Draper for organising, and to Higgins for their sponsorship of the event.

Yet another pub quiz.
This one in Wellington

We plan to use the funding to support a member's attendance at next year's IPENZ conference – watch this space!

IPENZ Transportation Group Conference 2014 in Wellington. 23-26 March 2013:

Branch updates continued

Calls for abstracts went out last week – please get your ideas in!

Meeting Location Update – The Wellington "old" town hall building will be closed for strengthening from September. This means the central branch lunchtime sessions are looking for a new home. The Branch committee have a few options being evaluated with key considerations being cost, accessibility and consistency. Keep your eyes on the invitations for the location of each event as they may change initially. Any member suggestions for a new home are welcomed! The new venue ideally should be free or low cost so that we can continue to offer a high number and range of events.

Upcoming Events:
Chris Vallyon (Beca) and AGM Joint Meeting – end of October at a venue and date to be confirmed. Chris to speak on Pedestrian Catchments or eRUC tool.

Memorial Park Alliance site visit – tentatively scheduled for end of year.

Canterbury/West Coast Branch

Over the last quarter the Committee has met on the 19th June and 15th August to identify and prepare informative events for members.

Between the meetings in late July the Committee agreed to put together a submission of the Draft Land Use Recovery Plan (LURP). Unfortunately the time we had did not allow for the document to be circulated to the members. A submission was lodged with the CERA primarily to confirm the Transportation Group's position as an interested stakeholder in this area and we hope the Minister finds our comments useful.

The first event of the quarter was held on 1st August with Professor John Parkin, who was visiting from the Department of Urban Engineering, London South Bank University. He talked about the principles of on-road cycle design, off-road cycle design, and covered some issues in connection with intersection design. It was a fantastic, well attended presentation and was a good opportunity to network and socialise for the evening.

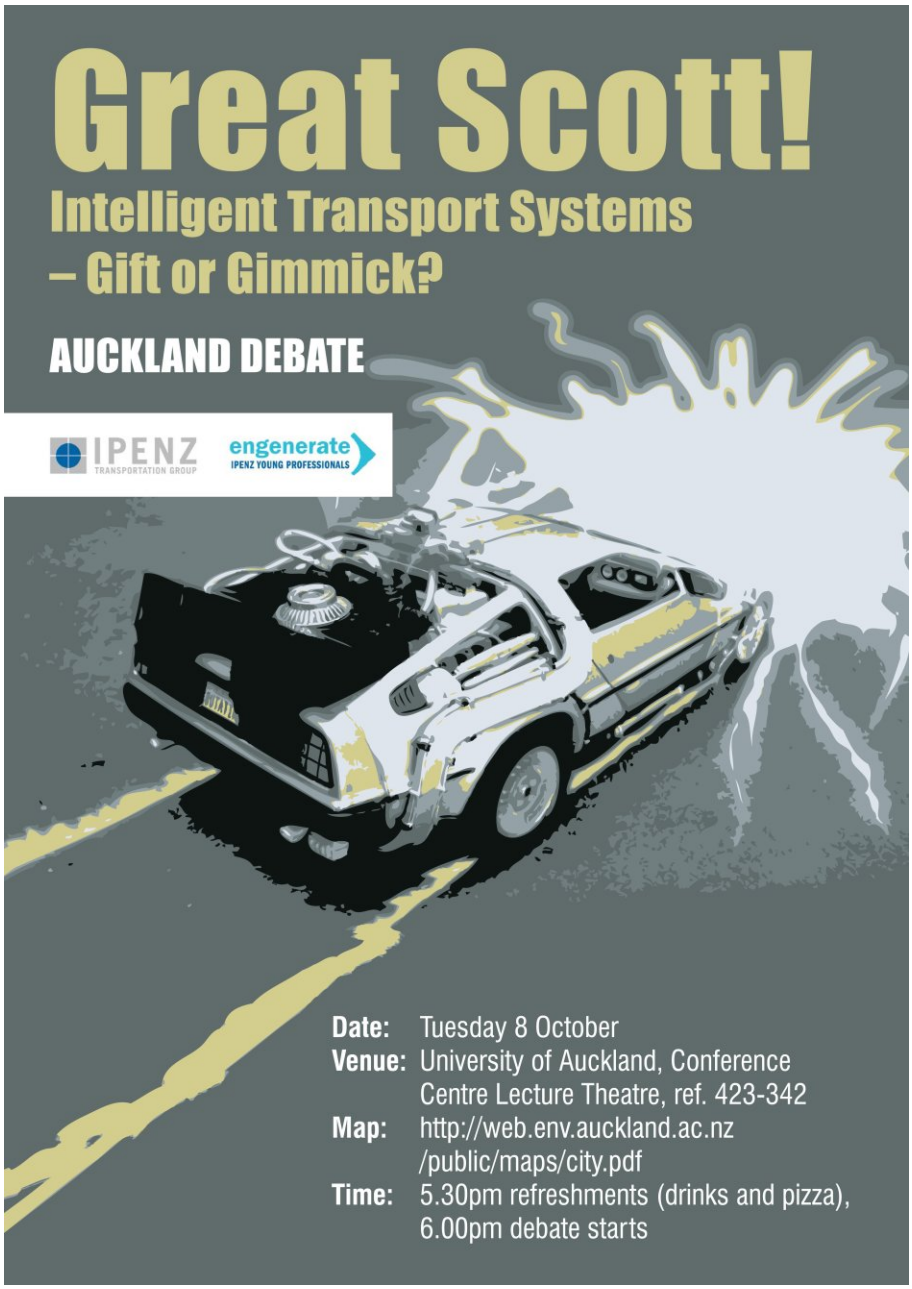
On 14th August there was a joint event held with NZPI and IPENZ TG. Brian Waddell from Urbanista Ltd gave an introduction to the value and process of Integrated Transport Assessments (ITAs). Although the presentation was well attended, it was aimed more at those less versed in the process and content of an ITA than most members. Nonetheless there were still some well-chosen questions from the engineers in the crowd.

While not specifically an IPENZ TG event, Glen Koorey gave a presentation as part of the University of Canterbury 'What if Wednesday' lecture series in August, "What if… we built a cycle-friendly Christchurch?" The lecture explored questions related to the Christchurch rebuild process and its opportunities - What can we gain from being more cycle friendly? How could Christchurch lead NZ in cycle commuting? What can we do to make it a safer mode of transport than driving? What are the latest trends in cycle commuting around the world? The presentation is available on YouTube through a link from the UC website, for those interested in hearing this discussion. Many thanks go to Glen for providing some insight and a thought-provoking session.

The next Committee Meeting is planned for 18 September 2013. Ideas from members are always welcome, to the Chair James Park (james.park@opus.co.nz) or Administrator Jared White (jared.white@abley.com).

Southern Branch

Also AWOL. May be hiding with Waikato branch.



Auckland Motorway Congestion: Evolution of Network Performance Monitoring and Reporting

Andy Hooper (Opus) won Best Techincal Note at the IPENZ Transportation Group 2013 conference with this paper. Co-authored with Dr Ranjan Pant and Scott Dakers (both NZTA).

Auckland's road network is routinely saturated at peak times. Capital improvement projects and changes to network management systems such as ramp signals, traffic signals, and the Auckland Harbour Bridge tidal lane system generally result in a redistribution of congestion spatially and / or temporally to other parts of the network.

Despite extensive traffic modelling being carried out before the implementation of major capital projects (and monitoring of selected routes after), to what degree the overall result improves congestion delay at the network level is often indeterminate or subjective.

The ultimate effectiveness of the allocation of limited funding resources to maximise the use of available capacity and achieve stated strategic network goals is therefore often unclear.
The Auckland Motorway Alliance (AMA) has been working closely with NZTA traffic operations and the Joint Transport Operations Centre (JTOC) in Auckland to develop Network Performance Measurement and Reporting (NPMR) tools.

The primary purpose is provide a clear "line of sight" for decision-makers by completing feedback loops that bridge the gaps between operations, management and planning. This will provide a better understanding of whether network capacity utilization and congestion management are in line with strategic intent. As a secondary purpose suitable relevant and meaningful summaries should be extractable for use to inform the media and public of how the road network is performing.

An "Agile" approach of iteration and refinement has been adopted to break the ambitious scope into manageable portions. The guiding principle at each step has been only to deliver something that is better than existed before, rather than trying to solve too many problems in one step.

Within other areas of the AMA this has proved a more successful way of delivering practically meaningful improvements than searching for "silver bullet" solutions. To date two key constraints have underpinned the development of the NPMR tools:
1. The reporting system should use data that is already available from existing detection systems; and
2. The primary data sources should be owned, managed and maintained by NZTA or AT. Third party data should only be supplementary.

The current version of the NMPR tool utilises data from both the Advanced Traffic Management System (ATMS) detectors and Ramp Metering System (RMS) mainline motorway detectors to leverage the strengths of both data sets. It covers the entire Auckland motorway system and Figure 1 shows an extract from the output reports.

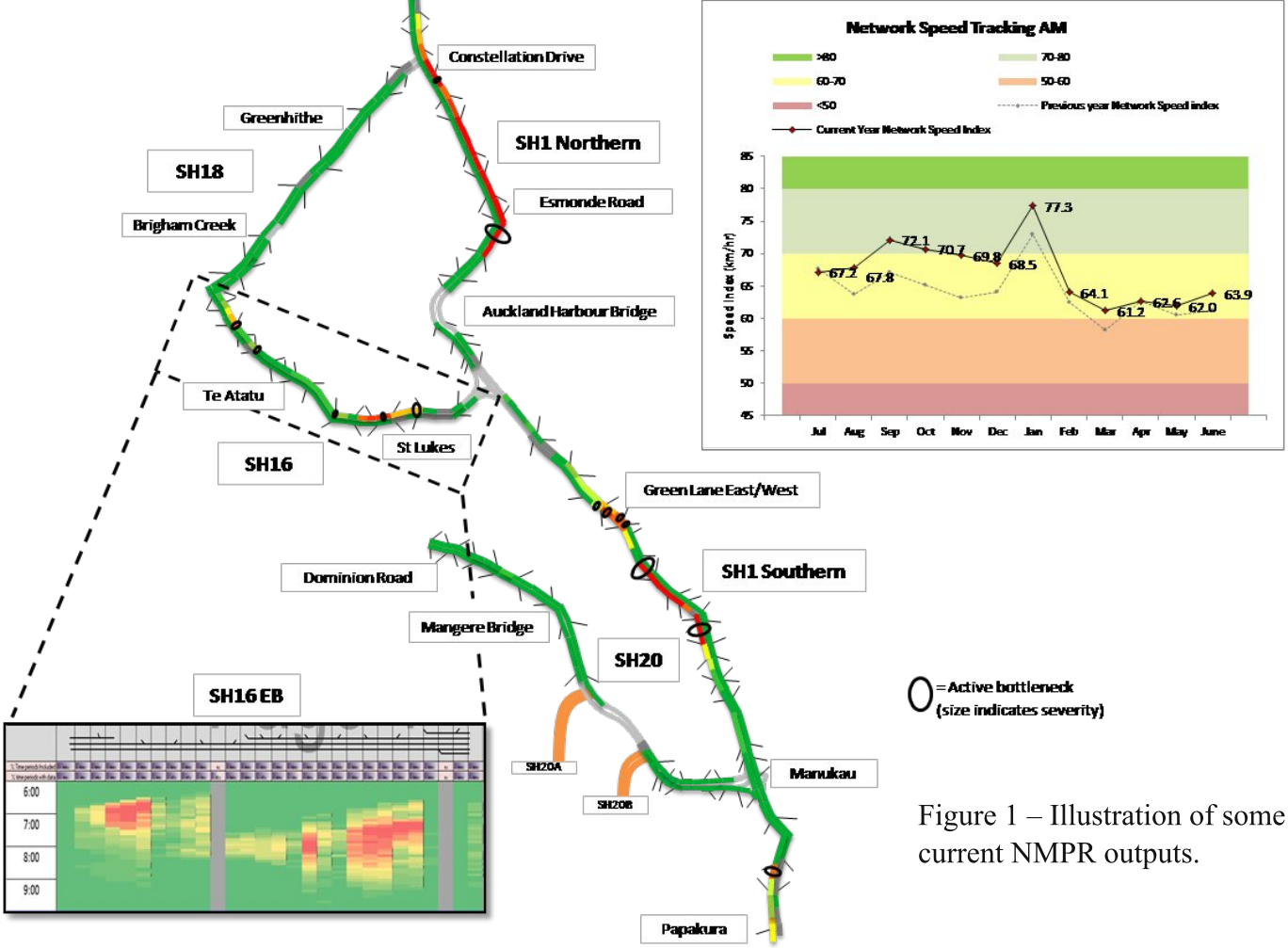


Figure 1 – Illustration of some current NMPR outputs.

The tool works from the part to the whole, aggregating data from: site; to link; to corridor; and finally to network level. A network level efficiency index of "generalised average speed" (total vehicle kilometres travelled divided by total vehicle hours spent on the network) is tracked month to month, and presented along with a graphical summary of congestion distribution in both time and space at the network level.

Congestion "heatmaps" sit below this to provide a detailed view of recurrent congestion patterns in space-time along each corridor. Active bottlenecks are identified at this level, then quantified and ranked in terms of their severity. Relative travel time estimates can be made for a number of key journeys. As the tool set is refined, a number of issues related to data sources, data quality and associated cost will need to be addressed. To date the cost has been minimised by re-use of data sources that already exist for other purposes.

A key issue so far has been the inevitable noise introduced into analysis through missing / poor quality data: with over 1,000 individual lane detectors providing continuous data, at any given time there are always some detectors with faults. However, cross calibration and fusion of data from the different detector systems as well as with data from third party sources has helped overcome this to some extent. As a result making the best use of what is currently available has proven extremely valuable in understanding the dynamics of "normal" network operation as well as the impacts of major incidents or network changes.

The key learning here has been that while not ideal, "noisy" data is not worthless. No journeys originate or terminate on the motorway network itself and next stage of development is underway to incorporate key arterial routes alongside motorway routes and thus move closer to capturing full network impacts. It is well known that the performance of the motorway in "processing" traffic is ultimately governed by the exit flow rate achievable and as such the receiving capability of arterial routes is a key factor.

In addition there is a growing desire to move towards tools that measure movement of people rather than vehicles. The NPMR tools currently under development will have the capability to do this if fed with suitable vehicle classification and vehicle occupancy data. However, in order to do this a reliable source of vehicle occupancy measurement is required that can be deployed at a large number of locations network wide relatively frequently (a maximum of three months to allow suitable feedback regarding the impact of initiatives aimed at encouraging mode change). Such a system would also have to be practical and cost effective – a vehicle occupancy measurement system with these attributes is not currently available.

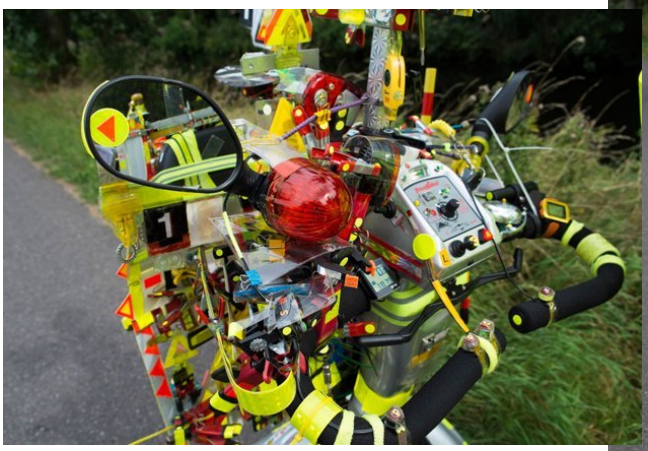
The use of vehicle occupancy assumptions or data collected less frequently (e.g. bi-annually) or at only a limited number of locations would need to be used with caution, as this will take the NPMR system away from being a continuous data collection tool and weaken its evidence-based approach.

In the meantime NMPR tools may still be able to play a valuable role in evaluating prioritisation decisions related to non-private vehicle modes. With/without assessments where capacity (lanes, phase time) is reallocated to prioritise private vehicle modes (bus, cycles, pedestrians) could utilise a vehicle measurement based NPMR system to assess the network (or defined sub-network) impact.

This would allow a trial or post-implementation evaluation of the marginal cost of additional delay to general traffic imposed, to achieve a desired marginal benefit for other modes.

'Be Safe, Be Seen' - mobility scooter version

A Dutch mother and son are going the extra mile when it comes to road safety - by fitting their mobility scooters with bells, sirens, horns, claxons and fluorescent stickers and markings. The pair are well known in Wassenaar, in western Netherlands, and often get acknowledgements from police patrols and passing cyclists.



Caption competition

Ian Munro (author of our cover story) contemplates life whilst at the hearing for the Dunedin waterfront hotel earlier this year. Who knows what he is thinking? A suggestion has been made. If you think you know better, send your suggestion to daniel.newcombe@aucklandtransport.govt.nz Ian Clark (far right) conveniently busies himself with his notes, so as to avoid featuring in a future caption competion.

The Effect of Opposing Flow on the Critical Gap

Dhimantha Ranatunga (MWH) won Best Young Author with this technical note at the IPENZ Transportation Group 2013 conference. Co-authored by David Wanty.

INTRODUCTION

This technical note outlines the results of various surveys that captured the delay to right turning traffic at priority intersections.

It investigates how the critical gap (actually headway) input, used in SIDRA 5.1 to replicate the observed delays, varies with the opposing flow. It also investigates how the critical gap varies with queue position. The results are qualitative and there is likely to be some influence of observer errors.

Tian et al. (1999) stated that the accuracy of capacity estimation is mainly determined by the accuracy of the critical gap.

The aim of this technical note is to establish how to objectively adjust the critical gaps for future traffic flows where the default critical gap results in delays that would be unrealistically high, hence reducing the modelled intersection capacity.

METHODOLOGY

MWH carried out keystroke delay surveys based on Wanty (2008) methodology to record both the vehicle flow and right turn delays at state highway intersections in Wellington and Taranaki.

This involves an observer whereby for each keystroke recorded (representing a movement or type of vehicle) on a laptop, the time and key pressed are logged. At busy intersections an additional observer using another connected keyboard is usually required.

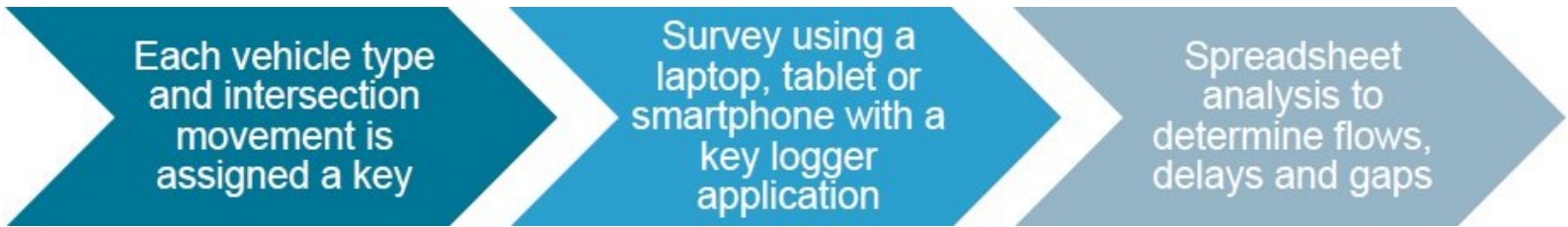
A spreadsheet tool was developed to analyse the survey data and calculate the flows, turning delays and vehicle queues. SIDRA 5.1 was used to model the various intersections, with the observed turning queuing delays used for calibration.

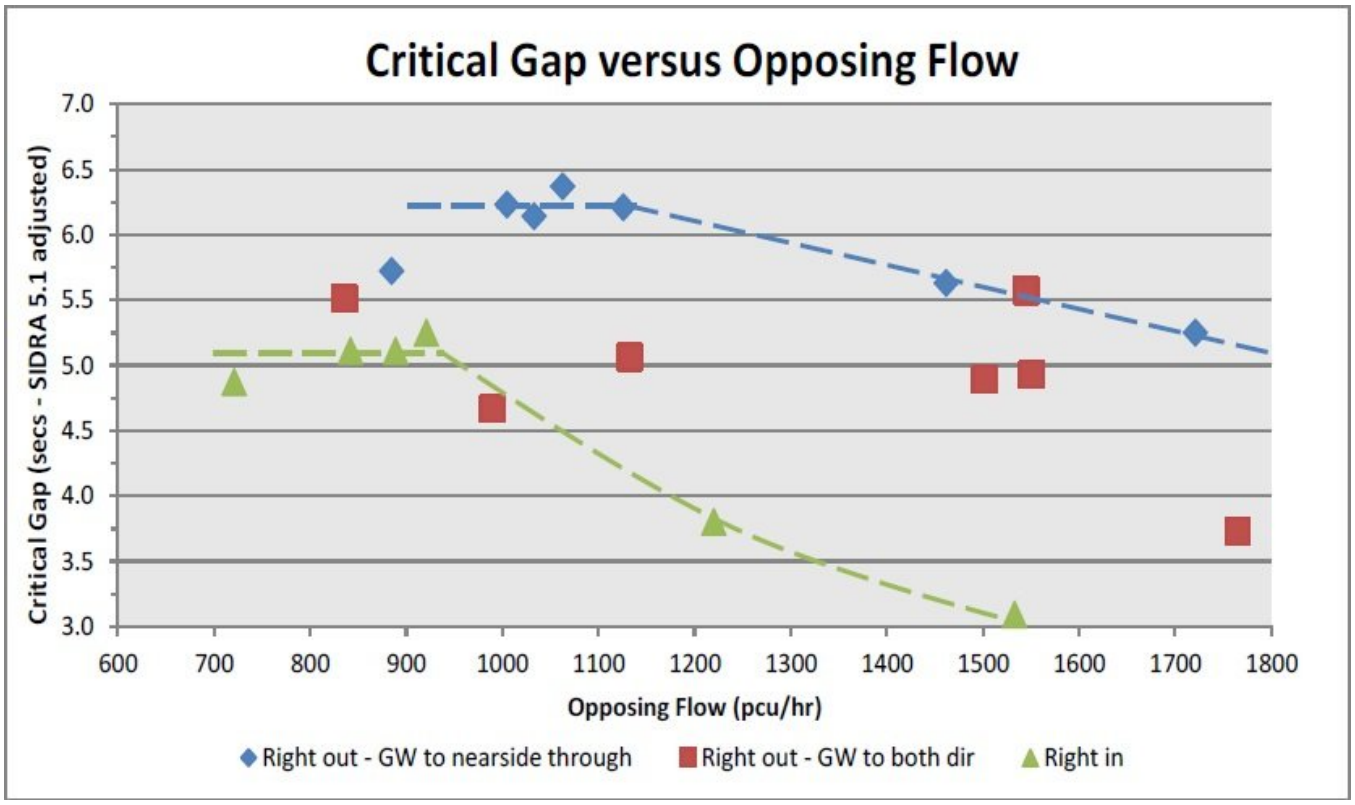
The resulting SIDRA critical gap to replicate the observed delays (follow-up headway was set at 60 % of the critical gap) was plotted against the opposing flow, with the results outlined in the following section.

RESULTS

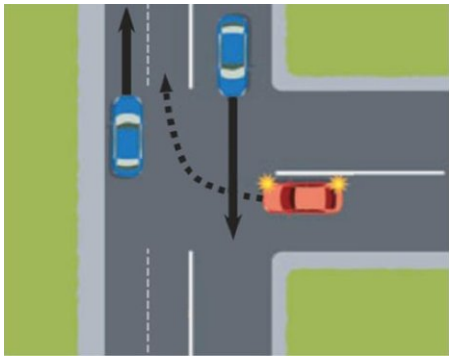
The findings below are indicative, based on small a sample size of seven T-intersections containing a mix of operating speeds and traffic patterns. Surveys were undertaken during the weekday peak periods.

Interestingly the displayed results differ from the SIDRA default values, being in between the four lane and two lane default values. The following is a qualitative (professional judgement) interpretation of the findings:

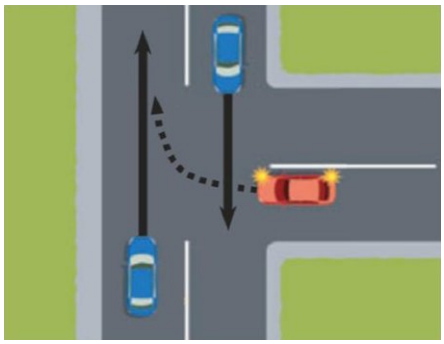




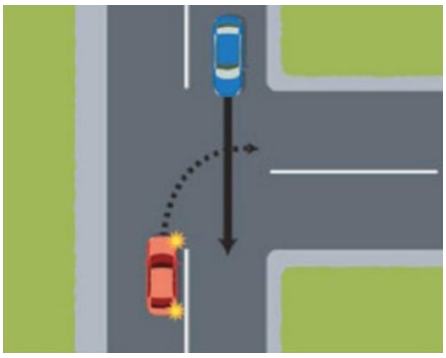
- For situations where there is a central acceleration lane used by motorists turning right out of a side road (give way to nearside through):
Critical gap (5½ - 6½ sec) decreases after approximately 1,150 passenger car units per hour (pcu/hr) opposing flow.



- For situations where motorists turning right out give way to both directions
Critical gap (5 - 5½ sec) - no obvious trend, too case dependent; however there does appear to be a downward trend with increasing opposing flow.



- For situations where motorists turning right from the main road in to the side road
Critical gap (4¾ - 5¼ sec) decreases after approximately 900 pcu/hr opposing flow.



Critical gap versus the minimum queue position

The keystroke procedure (outlined above) that derives the queuing delay also gives the approximate critical gap that varies depending on the initial queue position when the vehicle arrived at the back of the queue.

The analysis spreadsheet calculates the delay by initial queue position, and the critical gap for the minimum initial queue position. The results show that the critical gap reduces as the arrival position in the queue increases. This is best illustrated in Figure 2 and Figure 3 below for a few sites with modest queues. Interestingly, the critical gap used to calibrate SIDRA best matches that for motorists who join the back of the queue at or beyond the 80-95th percentile queue position.

This gap-reduction behaviour, which might be associated with drivers' level of impatience, is supported in the literature by Kimber (1989) and others. However the study conducted by Wong-Toi and Rosser (1994) at a single Tee intersection found the 'impatience effect' to be "barely significant in a statistical sense or as a measurable feature". Their speculation that "a driver at the front of a queue attempting to merge into a heavy line of traffic has probably already decreased a personal critical gap about as far as safety allows", is not inconsistent with our indicative results.

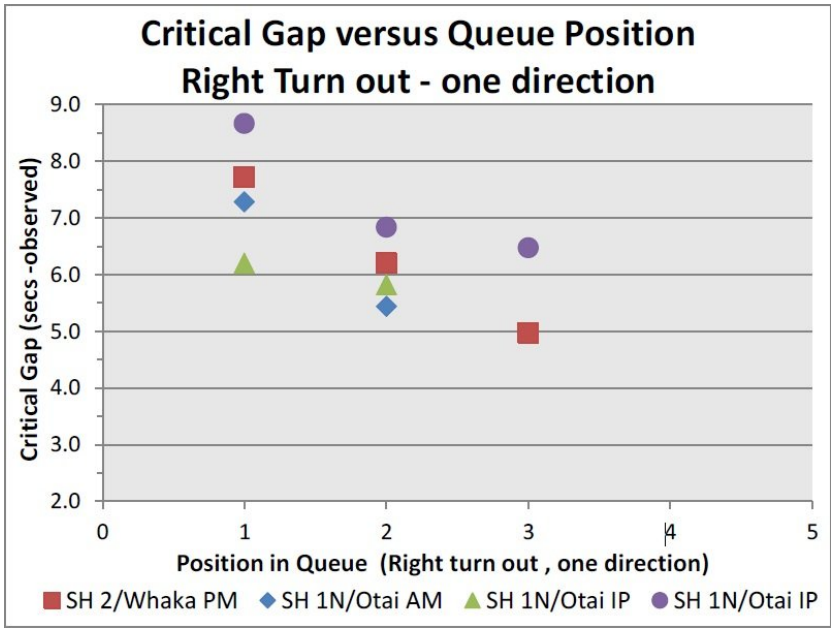
Figures 2 and 3 both show how the critical gap decreases with increasing queue position. Figure 2 shows how the critical gap for all vehicles (minimum initial queue position 1) reduces with increased initial queue position to approximately 3 seconds for queue positions of 5 or more. This trend is evident across the movement types, the various intersections and time periods.

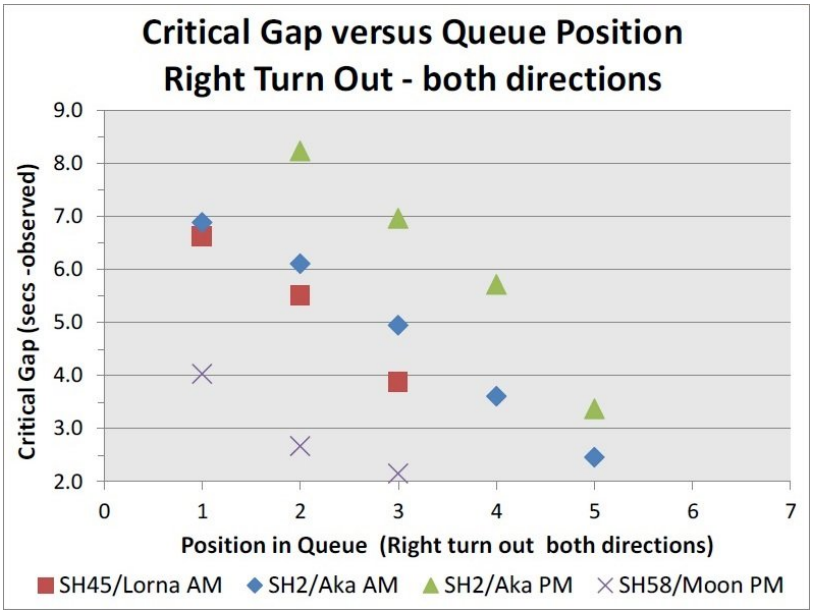
The critical gap drops below two seconds for some right turn out movements when queues exceed six vehicles. These values can be attributed to the observers struggling to maintain input accuracy as the intersection become increasingly busy and the side road queue lengthens, and in part to the spreadsheet procedure when there are few vehicles that arrived in queue position 6, 7 etc.

CONCLUSIONS

The following conclusions were made as part of the analysis:

- The above findings are qualitative and indicative in nature due to the small sample size. The keystroke analysis procedure currently does not include a





separate measure of the time delayed when (only) at the front of the queue.

- There is some evidence that the critical gap chosen by motorists turning right at priority intersections decreases as the opposing flow increases.
- The observed critical gap also decreases with position in the queue (observed delay generally increases with initial queue position).

- The SIDRA 5.1 default values for critical gap do not correlate well with those derived / observed for the small sample of survey sites analysed. For the NZ and Australian situation, the SIDRA default values generally differ from those in the Highway Capacity Manual 2010 and the Austroads Guide to Road Design Part 4A (SIDRA SOLUTIONS, 2011). They also differ from those in the Economic Evaluation Manual (NZTA, 2010).

- The critical gap used to calibrate SIDRA best matches that for motorists who join the back of the queue at or beyond the 80-95th percentile queue position.
- The findings support the importance of conducting surveys to measure the delays to right turn movements, and not just the turning volumes, at priority intersections. This is of particular importance when undertaking an economic evaluation and considering upgrading the form of the intersection.

- We have discussed our results with Rahmi Akçelik of SIDRA SOLUTIONS and have made suggestions for various changes to SIDRA. By the time of the conference we hope to compare our results with those derived from the newly introduced algorithms in SIDRA INTERSECTION 6.

References are available from Dhimantha (Dhimantha.C.Ranatunga@mwhglobal.com).

Study Award winner - Pippa Mitchell

The National Committee is pleased to announce that the winner of this year's IPENZ Transportation Group Study Award is Dr. Pippa Mitchell of T2 Engineers in Auckland.

Pippa will be evaluating the effectiveness of the current New Zealand speed limits setting process in the context of the safe systems approach. Schedule 1 of the Land Transport Rule: Setting of Speed Limits sets out the specific criteria for determining the appropriate speed limit for a road and identifies that the level of roadside development and the function of the road are the primary determinants of the appropriate speed limit and that road geometry is considered secondary.

Pippa will investigate whether the process needs to be reviewed in the context of the safe systems approach to ensure that a more holistic method is used when setting speed limits. This approach would more evenly evaluate all of the factors that can influence speed limits while ensuring that that any recommendations are nationally applicable.

The aim of this research is to provide a series of recommendations and mechanisms to improve the current process more in-line with the safe systems approach.

The National Committee was genuinely impressed by the enthusiasm and professionalism shown by all applicants and thanks them for their efforts. It is hoped that in future years there will be more opportunities for supporting the valuable range of research being proposed. Pippa's findings will be reported in a future edition of Roundabout.

SNUG

Signals New Zealand User Group

Signals New Zealand User Group (SNUG) Workshop 2013 - book now!

SNUG is a subgroup of the IPENZ Transportation Group with the objective of bringing about the advancement of the fundamental knowledge of the art, science and practice of design, operation and maintenance of traffic signals.

Following the successful 2012 workshop, SNUG will hold it's workshop on 7 and 8 November in Napier. This will be the first time that the SNUG workshop is held in Napier.

The committee is keen to see the same level of enthusiastic presentations and social collaborations as seen at last year's workshop being maintained. The field of Traffic Signals and Traffic System Control is moving forward rapidly and the SNUG workshop is an opportunity for Traffic Signal Engineers, Clients, Traffic Systems Specialists, Contractors, Consultants and other practitioners to discuss current developments in Traffic Signal and Traffic System Control.

Early thoughts for the workshop programme are:
- RCA/area updates on how Signals, Traffic Systems and SCATS are being used

- Update on revision to the National Traffic Signals Specification

- SCATS update

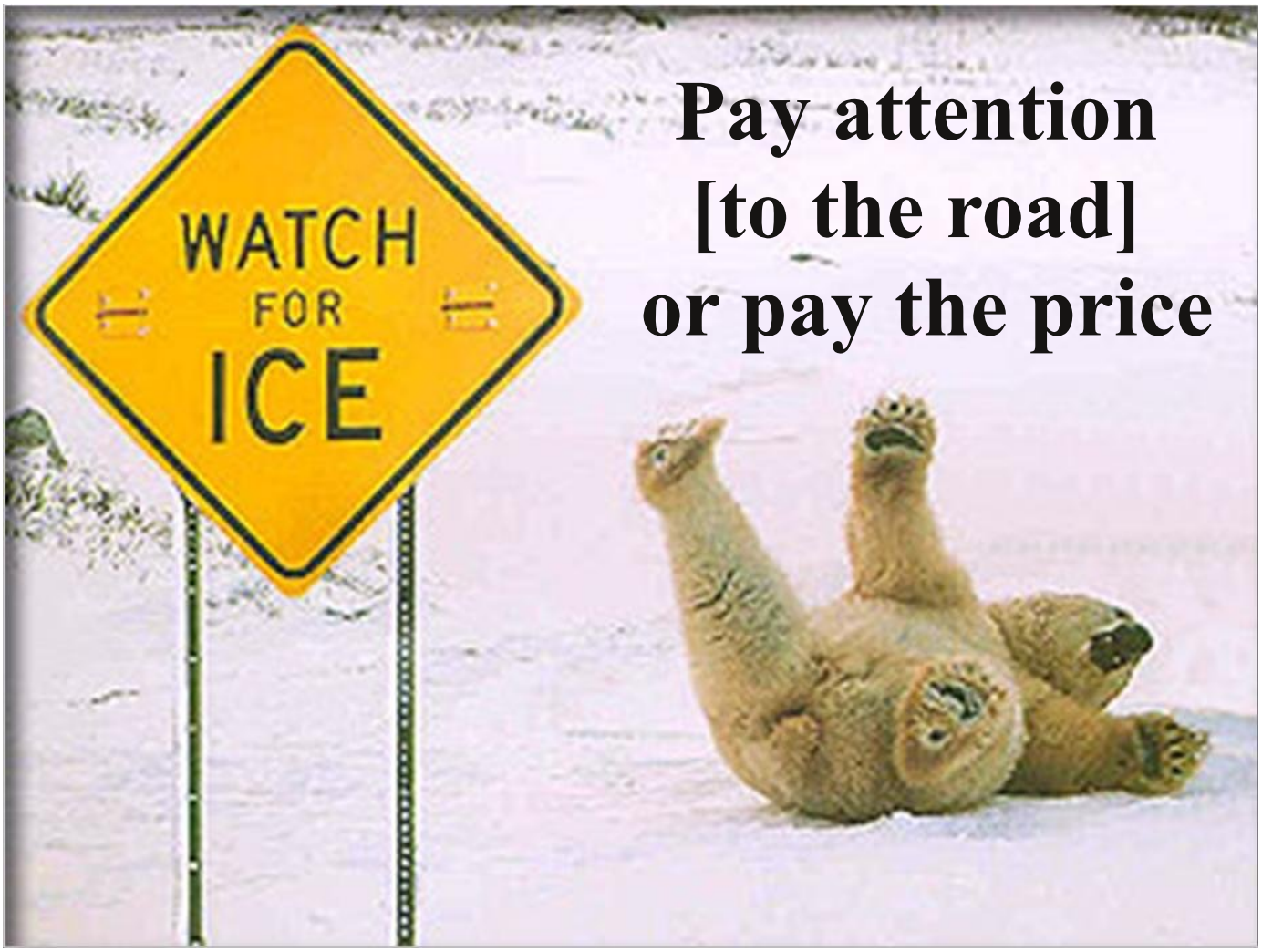
- Asset management systems and practices

- NZ Innovation

The workshop programme is being developed right now and anyone interested in submitting remits or presentations should contact Haydn Wardley at Haydn.Wardley@tauranga.govt.nz.

Conference organiser - Andrew Prosser: Andrew.Prosser@tdg.co.nz
Programme Co-ordinator- Haydn Wardley: haydn.wardley@tauranga.govt.nz

SNUG Workshop 2013 - 7 & 8 November



Pay attention [to the road] or pay the price

Professor Alistair Woodward, School of Population Health, University of Auckland

If you caught a bus recently in Auckland, you are likely to have seen a poster headed ***Pay attention, or pay the price***. It shows a pedestrian simultaneously texting and stepping off the curb into murderous traffic.

Many safety campaigns of this kind have been run in the past: a quick search on Google identifies a number that have used exactly the same slogan. The message, which is popular because it is intuitively obvious, is that road users should drive, ride or walk carefully to avoid injury.

There are three problems with this approach to road safety. The underlying logical model is circular. Not paying attention, or not being careful, is defined by the consequences. And the consequence (injury) is attributed to lack of attention or due care. Second, there is no evidence that interventions of this kind work.

Publicity and awareness raising campaigns are certainly important as part of a comprehensive programme (e.g. drink driving advertisements in conjunction with legislation and a high level of enforcement). But on its own, urging road users to be careful is pouring money into a black hole. Humans do not have the necessary psychological resources to "pay attention" all the time to all possible threats.

Even if the spirit was willing, our brains don't work that way. It has been shown many times, in many different settings, that we see what we expect to see. For example, in an environment in which cyclists and pedestrians are uncommon, the brain is tuned to recognize cars. Failing to see a cyclist is not necessarily due to lack of care; there may be a physiological explanation.

However the most important objection to relying on "be careful" messages is that there are other, well-demonstrated, highly cost-effective routes to improved road safety. One of us worked in injury research in South Australia at a time when roadside power poles typically consisted of two steel beams held together by a generous filling of concrete.

The research team studied injuries that occurred when cars collided with these poles, and took its findings to the Highways Department. Might it be a good idea if another, less harmful design was adopted? This suggestion caused a good deal of amusement, because, as one of the senior engineers put it, "I've never seen a bloody Stobie pole jump out into the middle of the road and cause an accident".

Fortunately, this one dimensional view of road safety did not hold sway. The Stobie pole (named after the man who invented it) is not extinct, but energy absorbing alternatives are now standard items and have contributed to the dramatic reduction in serious crash injuries in Australia and elsewhere.

Another incarnation of "pay attention or pay the price" is legislation that specifically penalizes one class of road user for crashes that cause injury to other, more vulnerable, road users. Most frequently this would apply to drivers of cars and trucks who are responsible for a crash that injures a pedestrian or cyclist, although it might conceivably apply elsewhere (e.g. a cyclist/pedestrian collision).

The idea for such a law in New Zealand has been given some impetus by recent, widely publicized car versus cyclist crashes. It makes sense, some might say, to penalize the drivers of cars and trucks more severely if they are responsible for injuries to cyclists, because the interaction is so one-sided. (How often is a driver seriously injured by a cyclist?)

Shifting liability onto drivers, and raising the stakes if a crash does occur, would be big steps towards improving behaviour on the roads and instilling a European-style safety culture. Weiss and Ward have taken a close look at these, and other arguments for a vulnerable road user protection law in New Zealand. They point to other jurisdictions, typically in the United States, where such laws apply.

In some European countries the onus falls on drivers to pay for the costs of any crash involving cyclists and pedestrians, but as Weiss and Ward point out, provisions of this kind have little relevance in New Zealand. There have apparently been no evaluations of the effectiveness of vulnerable road user protection laws. But there are good reasons to suspect that legislation would not act as a significant deterrent.

In this context, carelessness is difficult to define as it is, strictly speaking, apparent only after the event. We note also there is short step between 'carelessness' and 'culpability' and a focus of this kind on individual road users misses opportunities to correct hazardous aspects of the broader transport system.

Avoiding crashes (paying attention) is not entirely under people's control, in some circumstances. Furthermore, the presumption that 'to err is human' underpins modern approaches to safety in other domains, from preventing airplane crashes to reducing the harm caused by anaesthetic errors.

Transportation systems designed to be more tolerant of human error have equivalent potential for road safety. Strategies that address two broad principles are considered particularly important in preventing injuries to vulnerable road users: separating pedestrians and cyclists from motor vehicles, and managing vehicle speeds to reflect safety features of roads.

There are many opportunities in New Zealand to take a more robust approach to speed management in order to protect pedestrians and cyclists. When a network of 20 mph (30 km/h) zones was introduced in London, road traffic injuries were reduced by 40%. All road users benefitted, but the greatest reduction applied in children aged less than 12 years. In New Zealand, we could also be more proactive advocating for vehicle designs that increase the safety of not only vehicle occupants but also vulnerable road users who are more likely to be severely injured in collisions (e.g. "pedestrian-friendly" cars).

We agree with Weiss and Ward that it is not sensible to introduce a new law that penalizes drivers who strike cyclists or pedestrians. The existing legislation, if applied consistently, is sufficient to deal with careless, negligent and dangerous behaviours on the road. And more importantly, the big gains in road safety and public health more broadly will not come from pinning blame on individual road users, either cyclists and pedestrians or vehicle drivers.

A narrow, fault-based approach "is the product of transport policies that put vehicles, highways and speed before people and road safety. The same 'vehicle first' approach makes current approaches to transport policy a threat to international efforts to tackle global environmental problems, including air pollution and climate change."

This article by Alistair Woodward, Jamie Hosking and Shanthi Ameratunga is courtesy of the NZ Medical Journal (http://tinyurl.com/mcpg5wo)

NZMA
New Zealand Medical Association

Transportation Engineering Postgraduate Courses 2014

The University of Auckland
NEW ZEALAND

NZ TRANSPORT AGENCY
WAKA KOTAHI

Department of Civil & Environmental Engineering University of Auckland
For Master of Engineering Studies (MEngSt) and Graduate Diploma (GradDipEng), with / without Transportation specialisation, or for one-off Certificate of Proficiency (COP).

COURSE	DESCRIPTION
Semester 1 (Mar-Jun '14)	***Dates of Lectures to be advised later***
CIVIL660 - Traffic Engineering & Planning (mixed mode*, first week)	A range of selected topics in traffic engineering and transportation planning which will provide a basis for extension into further studies. (Diploma course which is a pre-requisite for several other 700 series courses). *** 1 x 3-days + integrated with Civil 758, a BEHons weekly course.**
CIVIL764 - Highway Safety & Operations (block mode, 2 x 3 days)	A range of topics on the operation of two lane highways and their safety including highway capacity, LOS, passing/climbing lanes, and economic evaluation methods. Safer Journeys and Safe Systems, Skid resistance, materials and roadside safety.
CIVIL770 - Transport Systems Economics (block mode, 3 x 2 days)	Fundamentals of transport economics incl. supply, demand, pricing, congestion and other externalities; principles of economic evaluation in transport planning.
Semester 2 (Jul-Oct '14)	***Dates of Lectures to be advised later***
CIVIL661 - Highway & Pavement Engineering (mixed mode#, first week)	A range of selected topics in highway engineering and pavement materials which will provide a basis for extension into further studies. *(Diploma course which is a pre-requisite for several other 700 series courses).* **# 1 x 3-days + integrated with Civil 759, a BEHons weekly course.**
CIVIL761 – Planning and Design of Transport Facilities (block mode, 2 x 3 days)	A range of topics on planning and design of transport facilities including fundamentals of traffic flow, modelling and simulation of transport facilities, macroscopic traffic models and traffic signal safety and operations.
CIVIL763 – Transportation Network Analysis (block mode, 2 x 3 days)	Introduction to logistics and scheduling; Definitions of graph and network theory; Max-Flow problems; Minimal spanning trees and shortest path; Minimal-cost networks; Location problems.
CIVIL765 – Infrastructure Asset Management (block mode, 2 x 3 days)	Integration of planning and infrastructure asset management, resource management, institutional issues and legal requirements. The process of undertaking asset management plans and specific asset management techniques across all infrastructural assets.
CIVIL 771 – Planning & Managing Transport (block mode, 3 x 2 days)	Integrated planning of transport and land use, Outline of transport planning modelling, LTMA and the GPS, District Plans and RMA, Travel, trips and parking. Integrated transport assessments with multi-modal transport, Travel demand management, 'Smart roads', Intelligent transport systems.
Civil 772 – Public Transport – Planning & Operation (block mode, 2 x 3 days)	PT Data Collection; Frequency and Headway Determination; Alternative Timetables; Vehicle and Crew Scheduling; Short-turn Design; PT Network Design; Reliability; Design of Shuttle and Feeder lines; Bus priority and BRT

Other relevant courses at Auckland or Canterbury or elsewhere may also be suitable for credit.
For course details, please contact the 2014 Course Coordinator: Civil 660 + Civil 758 + Civil 766 + Civil 767 (Dr Seosamh Costello), Civil 661 + Civil 765 (Dr Theuns Henning), Civil 759 + Civil 764 + Civil 768 + Civil 769 (Dr Doug Wilson), Civil 770 (Mr Bevan Clement), Civil 760 + Civil 761 + Civil 762 (Dr Prakash Ranjitkar), Civil 763 + Civil 772 (Prof. Avi Ceder), Civil 771 + Civil 773 (Assoc. Prof. Roger Dunn).

For Admission / Enrolment inquiries contact: **Assoc. Prof. Roger Dunn**, Director of Transportation Engineering
Phone: (09) 373-7599 x87714 or (09) 923 7714 DDI 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
http://www.engineering.auckland.ac.nz/uoa/home/about/our-staff

Photo Competition

This edition's Photo Competition theme:

Best Stop Sign

Seen a better one? Send it to:
daniel.newcombe@aucklandtransport.govt.nz
and win the adolation and begrudging respect of your peers.

Flickr/Rich Anderson

Next edition's theme:

Best Road Safety Ad

Got a great photo?
Send it to:
daniel.newcombe@aucklandtransport.govt.nz

The University of Auckland
NEW ZEALAND

Vacancy: Lecturer/Senior Lecturer (Transportation Planning)

Faculty of Engineering / Department of Civil and Environmental Engineering

Job ID: 15828
Campus: Auckland City Campus
Full/Part Time: Full-Time
Permanent/Fixed Term: Permanent

The Department of Civil & Environmental Engineering is inviting applications for the above academic position. This opportunity arises due to a need to strengthen the University's contribution to the transportation engineering sector in New Zealand and the Australasian / Pacific region and especially to meet the expected growth in population and transportation infrastructure needs in the Auckland Region.

The Department Transportation programme has an outstanding reputation, both within New Zealand and internationally for its teaching and research programs, as well as its close collaborations with industry. Due to recent staff retirements a replacement is required in the Transportation Planning area.

The appointee with a doctorate in engineering, will be required to teach Departmental courses in transportation planning, modelling and system analysis, both at under-graduate and graduate levels. Applicants must demonstrate expertise and a strong commitment to undertake research in the theory, practice, methods and applications in transportation planning, and should be familiar with urban transportation planning, modelling and/or traffic engineering optimisation methods.

Additionally, a demonstrable interest in one or more of: smart/intelligent transport systems, human behaviour, policy analysis, active and sustainable transportation systems, freight and logistics modelling would be desirable.

Attractive candidates would have a track record of peer-reviewed publications, presentations in international academic conferences, research funding, and teaching experience, or show great potential to excel in these areas.

The current student numbers are approximately 240 under-graduate per year (almost all full-time) and 100 graduate (mostly part-time), plus about 40 undertaking research in the Transportation area. The initiation of a research programme in an appropriate area of transportation will be expected, and will be strongly encouraged. This research will be co-ordinated with the Transportation Research Centre (TRC) in the Department. Currently, there are six academic staff members in transportation engineering.

The appointment is desirable for an early to mid-career academic because of the requirement for strong industry interaction; appointment at Associate Professor level is possible for an outstanding candidate who has the track record and potential to develop leadership and an academic centre of excellence.

Preliminary enquiries relating to the above positions, and the Department, its research and teaching may be directed to Dr Douglas Wilson email: dj.wilson@auckland.ac.nz or to the Head of Department, Professor Pierre Quenneville, email: p.queneville@auckland.ac.nz

Closing date is 1st November 2013.

Alice? Who the [redacted] is Alice?

After a rigorous selection process, the SH20 Waterview tunnel boring machine (TBM) has officially been named 'Alice'.

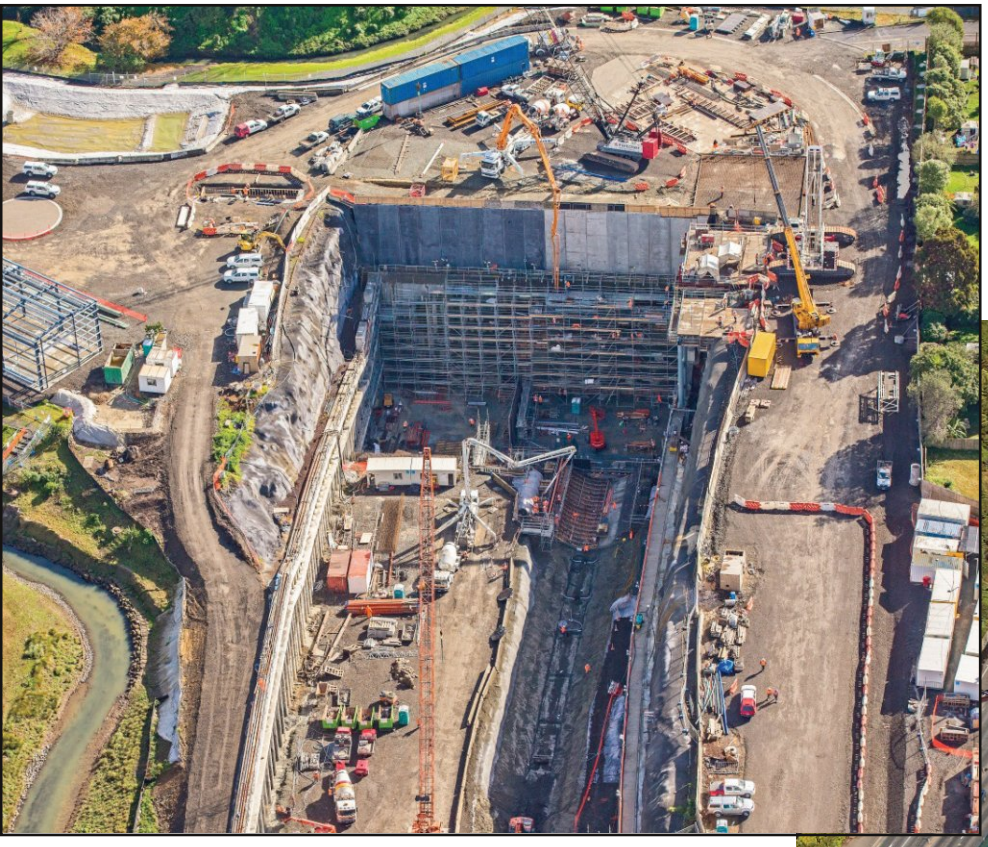
The name was nominated by 9-year-old Branden Hall from Everglade Primary in Manukau and comes from the classic tale, Alice in Wonderland. Branden says he picked 'Alice' because the tunnel boring machine will make a tunnel to go through, and just like the rabbit hole Alice used, 'Wonderland' will be on the other side.

"When the tunnel is finished it will be wonderful," says Branden, "because it will be faster to get to my cousin's place where I love to play, which is cool!"

Branden and others will be able to go through the motorway 'rabbit hole' made by Alice the TBM by early 2017, when the Waterview Connection will be completed.

Waterview's TBM was designed by Herrenknecht and fabricated at the company's manufacturing plant in China. The machine was disassembled before being shipped to Auckland early in July. It will take three months to reassemble the giant machine, ready for tunnelling to start at the end of October. Alice will weigh as much as 750 elephants. She will have a top speed of 8 centimetres a minute and will be over 87 metres long, almost as long as a rugby field.

For more information about Alice and to see a time-lapse video, go to www.facebook.com/aliceTBM



Left: The southern approach trench is now 35 metres deep. The last pieces of infrastructure are being put in place for the arrival and assembly of the TBM.

Below: Excavation work continues in the Northern Approach Trench in preparation for the arrival of the TBM later next year.

Below: The TBM is installed in the Northern Approach Trench.

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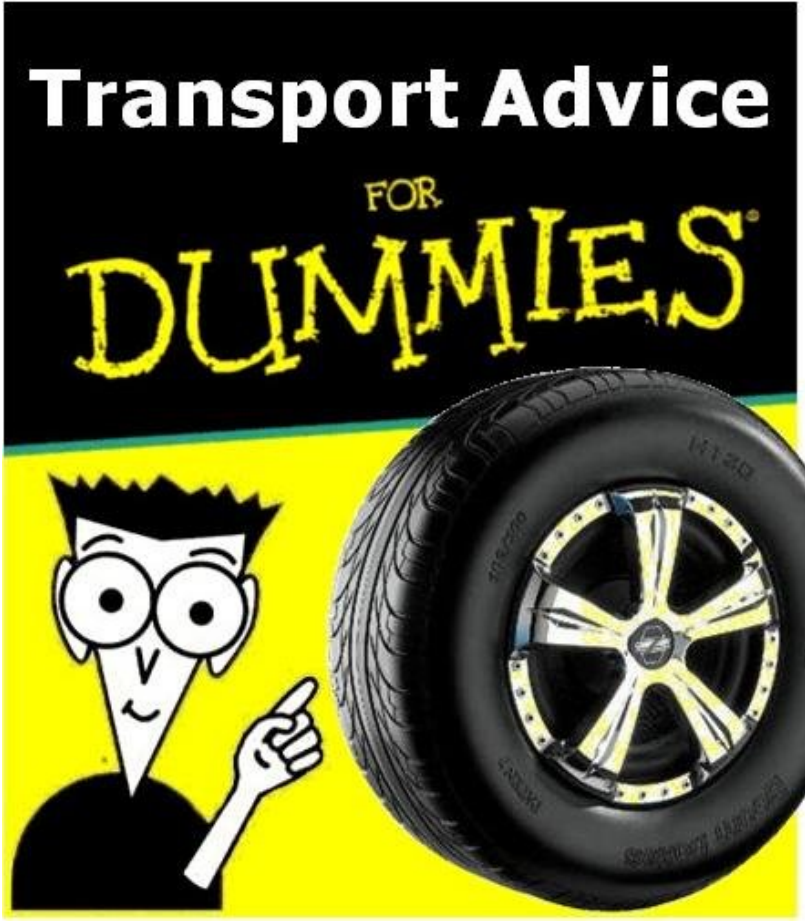


A tongue-in-cheek column on transport matters by The Transport Guy. The contents do not represent the views of the IPENZ Transportation Group, or anyone else for that matter. Follow the advice at your own risk.

Dear Transport Guy
Every time a cyclist gets hit by a car, everyone gets all huffy about how drivers don't pay attention or cyclists aren't visible enough. I reckon we can fix this problem if we just made cyclists ride on the right-hand side of the road into on-coming traffic. That way they could see the traffic coming at them and could get out the way if they had to.
Barry, Otago

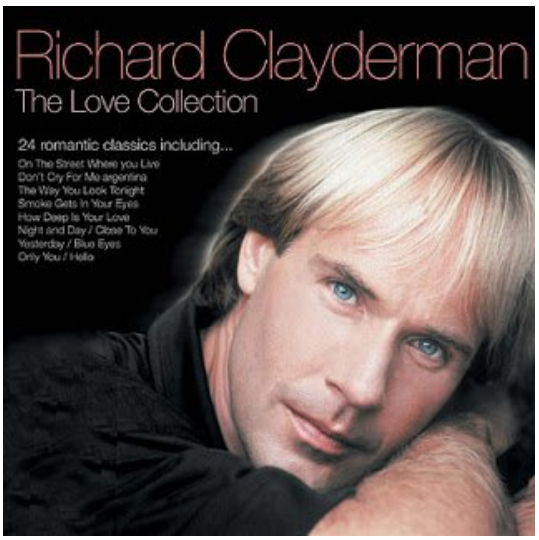
Dear Barely
You are quite right that the major problem here is cyclists not getting the hell out of the way. And I think your contraflow cycling scheme may have huge safety benefits. No cyclist in their right mind would ride that way, so cyclist volumes would plummet and we'd eliminate cycle crashes. But why stop at cyclists? What about other at-risk groups? How about we make learner drivers do that too? Anyone who survives a week of driving that way earns their full licence. Brilliant.

Dear Transport Guy
Now that the government has announced a few big transport projects in Auckland, a lot of the future work for transport planning consultants has gone out the window. There were going to be years of ever more detailed reports arguing for this project over that project. Now we'll just be getting on and doing them. Sure the tunnel guys will be happy, but what about us poor report writers?
Matt, Auckland

Dear Matted
This is called planning by funding. What gets funded gets planned. No funding, good luck with the planning. I'm sure all parties involved in the decision-making, both Steven Joyce and Gerry Brownlee, thought long and hard about the repercussions for report writers such as yourself. You really are the heart of the economy. Other than the rest of it. I can only hope you can transfer your considerable skills to another honorable and time-generating profession. Have you thought of becoming a lawyer?
~Transport Guy

Dear Transport Guy
How come we are banned from using handheld cellphones while driving but we can still eat, change the radio, put on a CD, or do a bunch of other distracting things?
Felicity, New Plymouth

Dear Felicitous
Because those folks that make the rules are scared of modern technology and find it easier to ban technical devices than address human behaviour. Many of them have not heard of CDs, let alone the distraction of putting one into the car's sound system whilst driving. It's the real reason that red light cameras have taken so long to be rolled out. They think that if their photo is taken, their spirit wil be captured in the 'mystical magic box'.



Actually, serious consideration was given to a wider range of restrictions on in-car activities. Here is a summary of where they got to:
Hot coffee - OK. Bowl of soup - banned. Eating an apple - OK. Making apple cider - banned. Putting on a CD - OK. Putting on a Richard Clayderman CD - banned. Owning a Richard Clayderman CD - banned. Changing the radio station - OK. Refitting a new car radio - banned.
Surreptitiously checking your cellphone in your lap, hoping no-one will notice you looking down at your lap whilst driving - banned. Looking down at and doing something on your lap a lot when you aren't holding any item - not banned but quite creepy.
~Transport Guy

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

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Kids explain traffic engineering