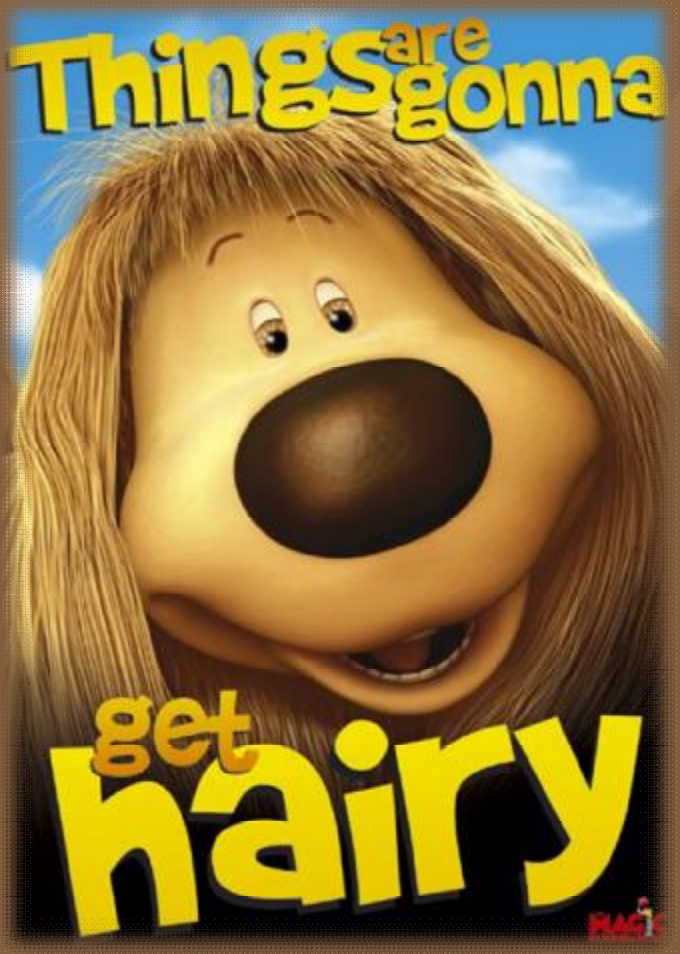
IPENZ
TRANSPORTATION GROUP



Roundabout

The Newsletter of the IPENZ Transportation Group

www.ipenz.org/ipenztg

Table of Contents

Cover image: Movie advertising poster, "The Magic Roundabout", 2005

Chairman's chat

The national committee has continued its regular monthly meeting schedule, and it seems there is ample on the agenda to deal with at each meeting.

The committee has successfully made award of the AITPM conference exchange. There was much interest in this Group opportunity, and based on the submissions, there is no doubt that much in the way of learning will be returned through articles to be published, regional presentations and other communications. It is really great to see the profession willing to stand up, be counted and deliver in return, to the benefit of the wider Group.

Hence, the subject of the 2012 conference, *"Stand and Deliver"*. Preparations are well advanced for this, our flagship event. Recent progress has been the decision to again offer a special day rate inducement to our younger and student membership for conference attendance. The registration process will be similar to previous years. The committee therefore encourages our future leaders to take up this opportunity and be part of this knowledge sharing event.

The end of September signals the end of the IPENZ and Transportation Group financial calendar. The committee has looked long and hard at the Group's budgets and at what is offered in return. It is clear that some particularly valuable opportunities for learning, for involvement, for professional contribution reflecting the purpose of the Group are not able to be supported due to constraints on funding. Similarly, it is a concern that there is no current provisioning for the future and longer term interests of the Group.

Many of the most valuable opportunities for partnerships, to communicate the interests of the Group, to participate in and offer advice emerge at a regional level. To this end, the committee has sought the approval of IPENZ, and had approved an increase in the annual membership subscription of $10 effective from 1 October 2011. This is applicable to Member and Affiliate level memberships. There will be no change to the current subscription levels for Life, Retired Members or for students. The committee resolved that 75% of the revenue generated be returned to the regional branches to empower them to take a more active role in planning, coordinating and sponsoring regional activities that contribute to the Group objective. From March 2012, the committee will be in a position to start increasing regional distributions. By year end, these will have increased from the current $1,000 to $2,500 per annum. Regional committees are charged with the responsible use of these funds in the best interest of the Group.

At the national level, the committee is focussed on:

(i) Increasing linkages and support with technical sub-groups;

(ii) Enhancing the website; and

(iii) Supporting nationally focussed initiatives such speaking tours as opportunities arise. The Group is in discussions with other Groups such as Traffinz and CILT about these opportunities.

And, finally, to wrap things up, we note the Christchurch branch is busily submitting on the Recovery Plan, as is IPENZ itself. Also, the MoT has now released *"Connecting New Zealand"* found here:

http://www.transport.govt.nz/news/newsevents/ConnectingNewZealandreleased/.

This summarises the government's broad policy direction for the whole transport sector over the next decade and draws from a number of key strategic documents.

Thanks and go well!

Mark Apeldoorn

September 2011

Postscript: Congratulations to Richard Galloway from TDG as this year's recipient of sponsorship to the Australian Institute of Traffic Planning and Management (AITPM) conference, recently held in Melbourne. This sponsorship is given in recognition of the close professional connection between the IPENZ Transportation Group and AITPM. Richard will be providing a report on the conference to help disseminate useful information to the wider Group membership.

Editorial

Accessibility is at the core of what we do as transportation professionals. We aim to better enable the people of the world to participate in activities. Some of us focus on getting people places more efficiently, or safer, or more sustainably. Sometimes we work with others to change the way activities are planned, to help the greater system. At the core of all of these activities is accessibility.

It's one of a breed of new buzz words. *Accessible*. It has different meanings for different people. One group looking to change the way we view accessibility, and therefore the way we go about our lives, is the Be Institute. The institute has funding from the Ministry of Social Development to lead a social change campaign that aims to *inspire and enable greater accessibility for all*. Isn't it wonderful that in an industry such as ours we aren't limited to the bricks and mortar of traditional engineering fields – here we are reading about social issues which are directly influenced by what we do every day. The more we learn to see opportunity in working with all sorts of non-engineers – economists, geographers, psychologists – even planners!! – the better enabled our real clients, the communities of the world, will be - to do what they want to do.

The Be Institute had its origins in planning for that big tournament going on right now (the one that starts with Rugby and will end with delight or despair, depending on your allegiances). There is an advertisement for Be. Accessible in this issue. I encourage you to read it, and to find out more.

Bridget Burdett, Roundabout Editor
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Roundabout is the newsletter of the IPENZ Transportation Group, published quarterly. It features topical articles and other relevant tid-bits from the traffic 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.

An Application Form for membership of the IPENZ Transportation Group can be downloaded here: http://www.ipenz.org.nz/ipenztg/files/TG-App.pdf

Issue contribution deadlines and publication dates for the coming 12 months are:
December 2011: Contributions due 5th December for publication by 15th December
March 2012: Contributions due 5th March for publication by 15th March
July 2012: Contributions due 5th July for publication by 15th July

Letters to the Editor

Dear Editor,
Thanks to Jenson Varghese for his response to the Willmott article in the June Roundabout. I appreciated Jenson taking the time to make the counter arguments and to provide reference in support of his key points.
One of his references I strongly recommend to all IPENZ Transportation members: "The Myth of Travel Time Saving" by David Metz. A very topical paper given the current Government's preoccupation with the building new motorways. Unfortunately we are creating a transport system to encourage the increasing domination by single occupancy vehicles and heavy trucks. The impacts of this we conveniently ignore... increasing reliance on imported and expensive petroleum; communities severed by ever larger roads; unsafe or unpleasant walking and cycling conditions; lack of travel choice (especially for our children and elderly); greater traffic congestion; health issues from noise, air pollution and inactivity; and capping it all off, transport is New Zealand's fastest growing source of CO_2 emissions.
For me, Jenson hits the nail on the head when he asks... "if we develop solutions which effectively ignore those [adverse] impacts I stated above, are we not then failing in our professional and ethical responsibilities?" I must agree that as a profession we are failing.

Bevan Woodward
Transport Consultant, BetterWORLD NZ Ltd

Bridget,
The debates, such as those around Dave Wilmott's article are very valuable. The trouble is both sides are right but with such wide crevasses between them it requires much better definition of the balanced objectives relevant at each level of policy and at each part of the network. It's all very well everybody wanting to get into and share the main stream but this ends up with compromises of multiple use at all the key points of a mutli-purpose street system. Then the guillotine of the objectives to be achieved 'at that spot', has to fall and a decision by those responsible must be made in the context of both the short and long term!! At that decision point neither side will necessarily be happy. All the professions require sympathy and patience for integrated planning. But above all even if it is not efficient we must keep talking.

Malcolm Douglass
Nelson

Survey of readership

There was a good response to the survey published in the June issue – over 150 surveys were completed. Results are shown below. The general conclusion is that most of you like Roundabout the way that it is, and appreciate the efforts of those Group members who contribute to its production. There was no great theme suggesting change to any aspect of the magazine, so it is a tribute to Editors past that it is serving the needs of the vast majority of members… or at least, of those members who filled in the survey…

Highlights of survey responses are detailed below. For more detailed analysis, feel free to contact the editor.

1. Age of respondents:

a. Under 21 1%	b. 21 – 29 13%	c. 30 – 39 27%	d. 40 – 49 22%
e. 50 – 59 17%	f. 60 – 69 18%	g. 70 – 79 1%	h. >79 1%

2. For how many years have you been reading Roundabout or its equivalent NZ publication?

a. This is the first issue I have read 0%	b. Up to one year 4%
c. 1 – 2 years 8%	d. 3 – 5 years 25%
e. 6 – 10 years 21%	f. 11 – 20 years 22%
g. 21 – 40 years 16%	h. >40 years 4%

3. Please rate how often you read the following components of Roundabout from 1 – 5 (circle one number per row):
1=Every issue 2=Most issues 3=Sometimes 4=Rarely 5=Never

Top three most-read features (combined score of most/every issue answers):

1. Cartoons (71% Every Issue, 19% Most issues)
2. Letters to the Editor (49% Every Issue, 38% Most issues)
3. Member articles (40% Every issue, 43% Most issues)
4. Editorial (45% Every issue, 35% Most issues)
5. Chairman's Chat (44% Every issue, 34% Most issues)

Though training advertisements and job advertisements were the least-read components, 67% and 60% of respondents respectively read them 'every' or 'most' issues.

4. Please rate how useful or worthwhile you find the components of Roundabout listed.
1=Always or often useful and worthwhile
2=I could take it or leave it; sometimes useful
3=Never or rarely useful or worthwhile
No component scored worse that 18% in the 'never or rarely useful' column. The top five most useful components were:

1. Cartoons (66% Always or often useful and worthwhile)
2. Member articles (54% Always or often useful and worthwhile)
3. Letters to the Editor (57% Always or often useful and worthwhile)
4. Editorial (51% Always or often useful and worthwhile)
5. Chairman's Chat (46% Always or often useful and worthwhile)

5. In relation to member articles, are there any topics that you would like to see more or less of in Roundabout?
1=More would be better
2=Current frequency is about right (or I don't know)
3=Less would be better
The response 'current frequency is about right (or I don't know)' was the most popular for ALL of the article topics listed. 'More would be better' was also highly rated for all topics, with 'less would be better' selected by, at most, 4% of respondents for any topic.

6. Would you prefer Roundabout to be published with a different frequency?
Current frequency is one issue every three months.
75% of respondents favour the current frequency, with 22% preferring every two months.

7. In relation to technical information, are there any forms of writing that you would like to see more or less of in Roundabout?
Around half of respondents would like to see more *Summaries of international journal articles* and *Project updates.* For all other listed topics, the most popular response was 'current frequency is about right'.

8. In addition to Roundabout, would you like any additional communication from the IPENZ Transportation Group?
54% of respondents thought that a monthly email newsletter would be good. Other communication options were overwhelmingly rated 'not necessary'.

9. Do you have any other comments to make about Roundabout?
Across all questions, there were dozens of comments submitted. Here is a roughly representative range:

I generally eagerly devour the lot.

Far too many cartoons for a reputable publication purporting to represent an organisation wishing to be taken seriously as a NZ Govt advisor.

Love the cartoons, of course they aren't useful or worthwhile, but if they go, I might stop reading it!

It would be great to see some NZ roading projects and to understand their lessons learnt from a transport side.

Could be a link to Roundabout in the signature of any correspondence from the national committee. Once I have opened up the initial email about Roundabout I usually forget about it.

Always a good read. Always look forward to it. Keep it amusing - not too heavy

It's always been great. You couldn't go wrong continuing to deliver the same as in the past. Cheers.

I like having it there, just wish you could attract more interesting contributions, perhaps distilling some foreign material would be a good way to do so.

Just keep up the good work.

It would be nice if it included vouchers for free chocolate fudge brownie.

Snoopy: New news on old members

- *Caron Greenough* and *Urie Bezuidenhout* have both recently joined Parsons Brinkerhoff in Auckland.
- *Zoran Bacovic (Parsons Brinkerhoff, Australia)* is a newly elected Committee Member of AITPM NSW

New Members

There are 38 new memberships from April to September 2011 inclusive, pending formal approval at the next National Committee meeting. The new member list will be published in the December *Roundabout*.

IPENZ Conference 2012

The IPENZ Transportation Group's annual conference is New Zealand's premier forum for the traffic engineering, road safety and transportation planning community. It is intended to stimulate debate and collaboration amongst peers. Around 200 professionals attend the annual event, which has been running for over 30 years.

Transportation professionals are increasingly called upon to resolve complex and conflicting demands, with safety, capacity, sustainability, accessibility and land-use often against political and budgetary constraints. The best solutions to these issues often come from interaction and collaboration, where ideas are shared and learning and improvement takes place. This conference is an ideal forum to facilitate such interaction and to share and discuss issues together.

Abstract submissions are due for consideration by 12th October 2011.

Download the Call for Papers document here:

http://hardingconsultants.co.nz/ipenz2012/downloads/Call_for_Papers___IPENZ_Transportation_Group_Conference_2012.pdf

Greenfields: Spotlight on Young Transportation Professionals

Gavin O'Connor is a Senior Transportation Planning and Traffic Engineer in the MWH Hawke's Bay branch. Gavin worked in UK local government traffic and transportation engineering for 5 years up to 2010. He was also a member of the Chartered Institute of Highways and Transportation and formed the Young Professionals Committee for the North West of England.

Gavin actively develops his skills through participation in national transportation groups and attendance at relevant seminars and courses. He enjoys implementing the skills he has developed on a daily basis and takes huge satisfaction in seeing the outcomes of his hard work.

As part of his MSc in Transportation and Traffic Engineering, Gavin completed a dissertation titled ***'The Impact of Visibility Splay Requirements on Road Safety and Development Control'****.*

This study was based on guidance, regulations and case studies from the United Kingdom where significant changes in geometric design standards had recently been implemented. The most significant change being the relaxation in the visibility splay requirements for urban intersections. Although based on UK guidance and case studies, the findings and recommendations are appropriate to New Zealand.This change was implemented through the Manual for Streets (MfS, 2007) document which was developed following research on the relationship between road width, forward visibility and traffic speeds. As detailed in Figure 1 below, it was shown that increased visibility and road width directly results in increased traffic speeds on straight road links. The same was found for intersections.

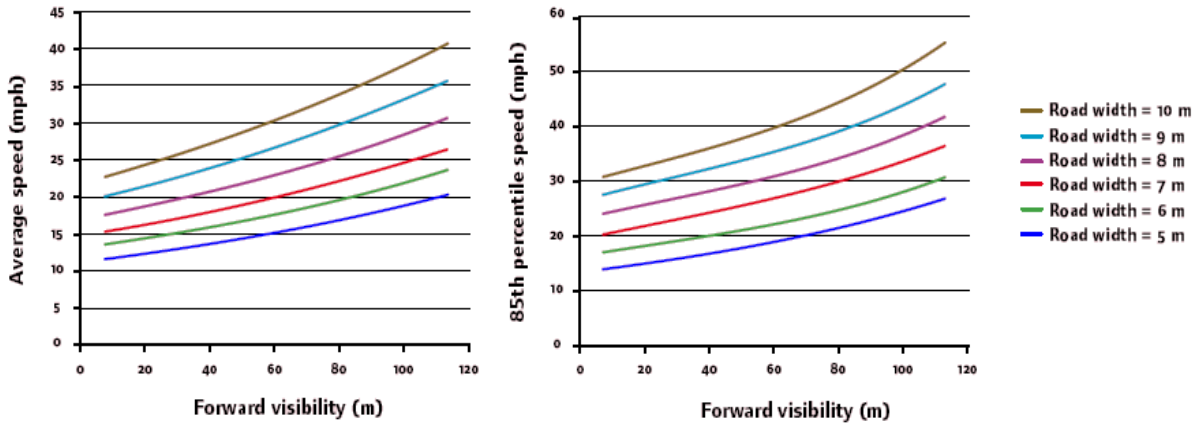

Figure 1. Correlation between visibility and carriageway width and vehicle speeds (a) average speeds and (b) 85th percentile speeds. (MfS, 2007)

Even with the evidence provided within MfS, many Authorities within the United Kingdom were reluctant to adopt these standards for fear of negative road safety implications. To

appease these fears within Liverpool City Council (his employer at the time) Gavin's research aimed to use a number of case studies to determine the true impact of visibility splays on road safety. In addition, the research considered the other negative impacts associated to visibility splay requirements to highlight the importance of implementing only those splays which are fundamental to the safety of the road network and not overly proscriptive.

To achieve this the research analysed current road traffic crash records to determine relationships between incident numbers at uncontrolled major-minor urban intersections and their respective visibility splays. The research also looked at the impact of visibility splay requirements on design solutions and in particular considered the impact of these requirements on new development proposals.

Prior to considering whether reduced visibility at intersections is an appropriate method for reducing traffic speeds, it was first necessary to consider how previous standards had been developed. The Design Manual for Roads and Bridges (DMRB, 1992) and Design Bulletin 32 (1992) previously provided visibility standards for all roads within England. These standards were developed on the basis that lengthy visibility to and from intersections was required to ensure suitable operation of the road network. These standards aimed to ensure turning traffic did not impact on travel speed of through traffic whilst also ensuring road safety was maintained. MfS moved away from this approach and instead aimed to adopt standards suitable to maintain road safety but did not place road operation or speed of travel above other objectives such as urban design outcomes and pedestrian connectivity. Calculations based on typical deceleration rates and reaction times were used to determine appropriate visibility standards.

Twelve urban intersection case studies were assessed to determine whether any direct correlation between visibility splays and accident rates could be defined. The results showed no direct relationship between visibility splays and crash numbers. The site surveys showed that vehicles moving through an intersection with restricted visibility generally did so at lower speeds and as such the crashes observed at these sites were generally low in number and severity. A number of the sites assessed had minimal visibility (less than 30m) but observed no crashes involving turning vehicles. An example of this is provided in Figure 2 below which details 2 intersections on Comptons Lane, Liverpool which operates with a speed limit of 30mph (48kph).

Figure 2. Achieved visibility splays, Gwydrin and Primrose Road/Comptons Lane

The visibility achieved at these intersections is well below the DB32 (1992) standard of 90m which was the required visibility splay for residential roads before the adoption of MfS (2007). For most approaches the visibility is also less than that specified within MfS which suggests 43m. Nonetheless, the intersections, which observed 70 turning vehicles and over 800 through vehicles during the peak hour, observed no crashes over the 3 year survey period.

A total of 34 crashes were observed across all of the sites during the survey period, 9 of which involved turning vehicles. From further analysis it is apparent that only 6 of these could potentially be attributed to visibility splays. Of the 9 turning crashes observed 8 occured at intersections where visibility was over 90m (previous standard for 30mph roads).

This would suggest that significant visibility splays do not guarantee road safety at urban intersections. Traffic on roads with significant visibility was often observed to try and join the major arm without coming to a complete stop thus increasing the chances of collision with passing vehicles. This was particularly true for intersections were significant visibility could be achieved on the minor arm on the approach to the major arm (as opposed to at the give-way line).

In addition, the accident data shows that for at least one of the intersections the increased visibility may have directly contributed to the crashes observed here. The report shows that one accident involved a vehicle entering the main arm colliding with a cyclist mid intersection whilst the other involved a vehicle colliding with a pedestrian on the crossing 20 metres north of the intersection. Given the significant visibility splays here, and the driver behaviour observed on site, it is expected that these vehicles attempted to join the traffic without stopping and did not observe the immediate dangers as their attention was drawn to the wider field of vision. DMRB (1997) warns of this danger when stating that ‘visibility should not be excessive as this can provide a distraction away from nearer opposing traffic’. In areas with high volumes of vulnerable road users, such as urban areas, ensuring the drivers attention is on the immediate area is of paramount importance and reduced visibility splays may be more appropriate in these circumstances.

Although no definitive relationship was found to suggest the use of reduced visibility splays is appropriate in all locations (given natural deviations in crash data over various sites), similarly no relationship was found to suggest the use of increased visibility was required to maintain road safety. In fact, site observations and the crash data assessed seem to indicate that vehicles using intersections with reduced visibility do so at slower speeds and with increased awareness of potential hazards.

Given that there appears no direct correlation between reduced visibility and accident rates, it would seem inappropriate to suggest excessive visibility splays are required at all intersections. As such it is important to consider the impact of visibility splays on other objectives such as urban design and the development control process. Considering these

impacts whilst undertaking a full technical assessment of any proposed visibility splays should ensure road safety is maintained without impacting negatively on these other goals.

The impacts associated to road crashes are well known with costs per fatal estimated at $3.6million (Department for Transport, 2007). As a result considerable emphasis is often placed on achieving significant visibility splays within new developments without fully considering whether this is justified and what the impacts will be on urban design and the amenity of local residents. A clear potential impact of visibility splay requirements on development is represented in Figure 3 below.

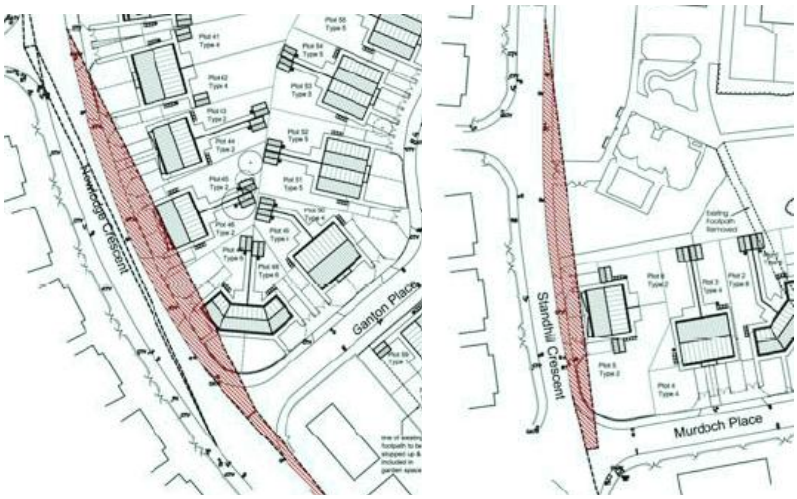

Figure 3. DB32 Visibility Splay Requirements over Proposed Development

Research undertaken by the Commission for Architecture and Built Environment (CABE), in 2007, shows that high quality street design can add at least 5 per cent to the price of homes. In addition, the research shows that the general public are willing to spend more money on council tax and public transport costs if it results in improved street design in their area. (CABE, 2007)

This can be further emphasised when we think of the requirement for long sight lines in road design resulting in wide intersections. This has long been accepted as a requirement to ensure road safety. However, the charming narrow roads and tight corners with bad sight lines prominent in the majority of local villages and historic towns throughout Europe are highly revered by the general public. Little evidence is available to suggest these villages and towns have an inherent road safety issue. (www.publicrealm.info, 2010)

The importance of good quality urban design treatments is not unique to the United Kingdom. This issue has been long considered on an international scale and many countries are now implementing guidance documents aimed at increasing the importance of good urban design and ensuring highway design is appropriate and not overly restrictive on developers.

The Institute of Professional Engineers New Zealand (IPENZ) undertook significant research on behalf of the Ministry for the Environment (MfE) to update road design guidance, NZS4404:2010 (updated from 2004), to reflect new thinking with an emphasis on high quality urban design.

IPENZ (2009) states that 'the current standard gets in the way of modern thinking in urban design and is partially responsible for what many consider to be our 'soul less' suburban landscape'. IPENZ (2009) goes on to highlight the issue experienced in the UK of many authority's implementing guidance documents as a rigorous checklist to the harm of urban design and planning achievements. It states that 'in practice many TA's (Territorial Authority's) consider the complying standards as the only solution and treat alternatives differently in the Resource Management Act consent process, and some simply obstruct different design solutions'.

As was the case with DB32 in the UK, NZS4404:2004 contained design tables advising of appropriate geometric design standards. As found in the UK, IPENZ (2009) state that these standards were 'mostly used as a minimum standard by designers and TA's and become something of a straitjacket. This encouraged highly uniform outcomes and did not allow 'context' or 'place' to be considered easily'.

Significantly more work is required to address the negative issues associated to unnecessary visibility splay requirements. Engineers should consider these findings and aim to adapt local policies to ensure geometric design standards are justified in terms of road safety and do not impact negatively upon urban design initiatives unless warranted. This research encourages Engineer's to use their own judgement for appropriate design solutions based on their knowledge of road user characteristics, crash data and local planning objectives.

Commission for Architecture and the Built Environment (2007) Briefing - Paved with Gold: the real value of good street design. Commission for Architecture and the Built Environment, London.
Department for Transport (DfT) (2007) Manual for Streets. Thomas Telford Publishing, London.
Department for Transport (DfT) (2007) Road Casualties Great Britain 2007: Annual Report. National Statistics Office, London.
Department of the Environment (DoE) (1992) Design Bulletin 32: Residential Roads and Footpaths – Layout Considerations. Second Edition. Her Majesty's Stationery Office, London.
Highways Agency (1997) Design Manual for Roads and Bridges. Her Majesty's Stationery Office, London.
Institute of Professional Engineers New Zealand (IPENZ) (2009) NZS4404: Engineering Standard or Urban Design Guide – Have Your Say. IPENZ. Wellington.

The Christchurch Earthquake

The Christchurch Earthquakes are a defining moment in the history of New Zealand. This lively report from Steve Abley FIPENZ, from the perspective of a war time correspondent, explains some of the issues of living in Christchurch over the last year.

This is the first part of a two part report. The second part will be presented at the TRAFINZ Conference on Thursday 17 November 2011 in Hamilton.

Status Report

The enemy was dormant and patient. We were complacent and we thought we had built substantial defences and our knowledge of the enemies' forces and expected modus operandi were complete.

We were wrong. On reflection, we weren't just wrong, we were arrogant. We considered ourselves insulated from a full on frontal attack because our self-importance meant we thought we understood our adversary. Unfortunately, our understanding was measured in decades. Rather the enemy had been waiting in stealth for centuries.

We also misunderstood the veracity of an enemy that partnered with other partisans to deliver critical damage. When they did strike, they killed, maimed and left the wounded. We have now endured over 7,000 attacks with little retaliation on our part.

Some of our forces have permanently fled, others have decided to remain and fight. A handful of reinforcements have arrived but in the majority, more troops are required. Competent special forces are in especially high demand. Our leadership has the best intent, but there is also confusion as to how they might best work together.

Whatever the reasons, our defences were lacking, our triage is currently overwhelmed and the planned recovery and rebuilding has a number of critical hurdles. This is a precarious state of affairs.

The initial strike: Mike Time Zone Day 0, 04:35

They struck in unison in an ambush that caught us napping. I was woken by my commanding officer and directed to group the trainee troops. One attack went to work on the ferocious shaking and others backed up and rallied further attacks in the form of liquefaction. I found it difficult to move but made it to my post.

The resulting infrastructure damage was substantial but luckily we all escaped physically unhurt. However we were very badly stunned. It was literally a wake up call and one that I will never forget. It was the start of a long war and we had just experienced the first barrage.

Given the attack came in the dark, we held our positions until daylight where our initial reconnaissance teams went to work. A number of our Captains went straight into the battle zone. One of the first was a Special Forces expert Capt. Sutton. Major Parker immediately went to headquarters but it had suffered a direct strike. A temporary cantonment was set up in close proximity and the reconnaissance started in earnest.

The first reports were favourable - no deaths. This was more by chance than good management and the troops were shaken. The silver lining was our countrymen stood with us and supported us unconditionally. We were hurting but we had survived and we knew our Cantabrian spirit was strong – we could overcome.

As the teams returned with news it was obvious the damage was severe. Specialist recovery teams were brought in from wider afield to assist and coordinate the rescue, reconnaissance, recovery and rebuilding phases. The top brass enlisted a local General, Hon Brownlee and empowered him with the task of advocating and reporting direct to central command in Wellington.

Interestingly it was during this phase that our initial arrogance and infighting was put aside. Major Parker's team decided it was time to up the ante on the enemy and further strengthen our physical defences. Resolutions for improving structural readiness were passed with relative ease compared to before the initial strike but it would take years for these decisions to take effect.

On the negative, some of our special forces that we thought would assist the most during this period looked a little in disarray. Teams such as EQC knew their role but were pressured into expanding their function. Also, Major Parker had a few dissenters that were becoming increasing vocal.

Even so, with more lessons to be learnt and more to be done, we all knuckled down and went back to work. Of course minor skirmishes went on, but in general we knew we were still the stronger force, better organised and better resourced. We were on our way to recovery and rebuilding.

That was, until the second strike.

<u>The second event: Mike Time Zone Day 172, 12:51</u>

This was a much more damaging strike. It was only some five months after the first but we had lulled into a false sense of security. This time the enemy struck with less force but much more precision.

The ferociousness of the strike was short in duration but extreme in strength. I was thrown to the ground and struggled to understand my shaken surroundings. I was separated from my commanding officer and trainee troops because I was with my weekday team. I had to put aside my initial thoughts to run and rather my role was to assess damage, coral and return the weekday team safely to their respective home bases.

Our building fought its attacker and responded as anticipated by bending and absorbing the worst of the shaking. It was significantly damaged but we made it out alive. The team was fortunate and only suffered minor cuts and bruises – me included. We grabbed what we

could but it was time for us to regroup with our respective garrisons and we went our own ways. We would remain in electronic communication over the next week.

I was lucky and made it to my home base fairly quickly. My commanding officer had already completed some minor reconnaissance and it was decided we should depart and collect one of the trainee troops that was off base. Travelling was difficult and it was clear that this was a much larger event than the first strike.

We went past the PGC building and it was clear this time some had lost their lives. It was surreal and the enemy continued their attacks with a series of shocks that further stretched our first responder resources. Communications were limited and travelling difficult. Troops fleeing the worst of the damage helped the walking wounded to a makeshift field hospital in Hagley Park. They were accompanied by civilians unassociated with the war and left to fend for themselves.

We collected the oldest of the trainee troops and it was a relief to be together. Regretfully we had no other choice but to abandon our home base and we made camp elsewhere but what about the others associated with my commanding officer? We retreated to a common base that we thought others would also flee to.

In the ensuring weeks command and control recognised the gravity of the situation and set up a new structure. Capt Sutton was promoted to Brigadier and given control of his own special force, CERA. Major Parker and his team have retained their positions and although there have been no deserters, dissenters are becoming more vocal. Captains of industry such as Elder and Townsend have made their positions clear. There is much to be done by all involved and strong concise leadership is critical for a successful rebuild.

Some weeks later our building that had served us so gallantly, was disconnected from life support and extinguished with the force of a large digger. It was a sad moment. We never returned to home base and it remains on life support. We're unsure for how much longer.

At final count 181 souls lost their lives as a direct result of the second strike. We remembered them in a sterling commemoration that shook us emotionally. It is unknown how many more lives will be lost or shortened over the longer term due to fatigue.

The troops that remained have had to fight through sand, silt, poor sanitary services, redundancies, and the threat of losing their homes. Some will never recover but others will recover and rebuild with gusto greater than they could ever have imagined.

This is a war a lot of us never thought we would see but now we are here, we are totally committed to 'get thru'. A number of wider reconnaissance sorties have been undertaken to provide us with the knowledge and support of others who have been through similar events.

The rebuilding is yet to start but planning for the recovery is now underway. There are critics, but on the whole support for the recovery plan is strong.

Next time we won't forget that reduction (mitigation) and readiness (preparedness) are our best weapons in the war against natural disaster. The question for the future isn't have we recovered, but are we prepared socially, economically and emotionally?

That question is still to be answered but clearly the answer right now, is no. Work continues to make sure we are ready to answer yes when the next attack comes.

Next report Mike Time Zone Day 409, 14:35.

End transmission.

Pvt. Abley.

Christchurch

The *weekday team* building that was disconnected from life support on 30 July 2011

Response to Auckland CBD Rail Loop Article

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David Willmott (April 2011 *Roundabout*) is guaranteed to get a response, but his comment I remember that *"cities are about commerce"* – interaction between people concentrated in one place – is the same as what David Engwicht meant in his book *Towards an Eco-city.* If one David who used to plan motorways agrees with another who entered this field trying to stop one, they must be onto something. The discord is on which form of transport best gets us there.

We're all aware of divided views over whether the Auckland CBD Rail Loop is a) needed, b) urgent, c) the best way to regenerate central Auckland, or d) a better use of scarce transport funds than 'the Holiday Highway'. Auckland Council are set to face off against Steven Joyce on this, but the arguments are not just 'yes versus no' – they relate to timing, who will pay, and what else will ensure success.

The NZ Council for Infrastructure Development's Stephen Selwood got to the nub of it in his 24th June 2011 press release *"Quality urban revitalisation key to Auckland CBD Rail Loop business case"*:
"For the business case to stand up it is critical that the project is fully supported by a coherent land development plan for the corridor and the inner city. This necessarily means appropriate phasing of the development of commercial land, incentives to support development of land adjacent to the rail network such as streamlined planning approvals for developments that meet certain design standards, along with the commitment to investment in the rail system. Proactive support by the Council is central to giving the private sector confidence to invest.

"But that level of commitment is not yet being demonstrated by the Council. For example, its Waterfront Development Agency is very successfully promoting the development of Wynyard Quarter. While not served by the inner city rail loop, this significant waterfront land development will compete in the same residential and commercial property market as the land adjacent to the CBD loop. Already the ASB Bank has committed to relocate its head office to Jellicoe Street in 2013, vacating considerable floor space in the existing ASB centre which is directly adjacent to the proposed new Aotea station. Given that the rail loop is designed to serve the CBD, perhaps Wynyard Quarter should be put on the back burner? Alternatively, should the CBD loop also incorporate a connection to Wynyard Quarter? These decisions are vital to the business cases for both the CBD rail loop and the Wynyard Quarter Development.

"The most recent decision to proceed with SkyCity's proposal for a 3500-seat convention centre to be built between Hobson and Nelson Streets is a case in point. While no doubt the other proposals were meritorious, concentration of major projects like convention centres, shopping, residential and commercial density is exactly the kind of development that will be needed to support the economics of the CBD rail loop. It's this kind of joined up infrastructure land development that drives the success of Melbourne. The integrated Southern Cross rail, bus and tram station in Spencer Street is central to major passenger generating attractions

such as the 74,000 seat Etihad Stadium, a major shopping mall, the Southbank entertainment hub and the 5,560 seat Melbourne Convention and Exhibition Centre."

NZCID have had the bare-faced cheek to challenge 'urban design' – something many like to enthuse about. This may be dominated by 'architect types' who don't necessarily know much about transport planning, and use the right terms ('vibrant', 'live work and play', 'quarter', etc) without looking at city-wide or regional implications. NZCID's even suggested putting the 'Wynyard Quarter' on the back burner and focusing on development around the Rail Loop instead – or, alternatively, hard-wire a transport link from it into the Rail Loop, as Andy Lightowler suggested the July 2011 *Roundabout*.

If we're building a road, we try to ensure success through urban growth strategies, structure plans, and so on to give it traffic-generating development. This is more difficult for a rail project. Even if 'spatial planning' might help, we still have no means to co-ordinate rail proposals with urban form when they straddle two regions (say, Waikato-Auckland, or Manawatu-Wellington). State highways don't have this problem, and may even get a boost from the *"of national significance"* tag.

The Auckland Spatial Plan is more pro-active than Resource Management Act District Plans, from when government was seen as hands-off and *"enabl[ing] people and communities to provide for their own social, economic and cultural well-being and for their health and safety . . . ."* etc, RMA section 5). The Ministry for the Environment, and the whole planning profession, have high hopes for 'spatial planning' (both within and beyond Auckland) to deliver the ever-elusive joined-up, integrated planning. So not only Steven Joyce but also Nick Smith and the Ministry for the Environment must work together to resolve this battle royal brewing in our Queen City.

The CBD Rail Loop could be of immense benefit, but only if appropriate urban planning backs it up, and this means attention to transport project evaluation. The NZTA's *Economic Evaluation Manual* would render the Rail Loop 'nice to have' but not outstanding. However, supported by city-regional urban development (not just pretty streetscapes) the Rail Loop really could be a major success. The arguments aren't over who has done their sums right, but whether we will focus development around the Rail Loop or not. That will mean not just Auckland Transport and Steven Joyce, but also the Ministry for the Environment and Auckland Council, working together.

And there's more: turning Britomart from a clogged-up terminus into a fast-moving through station would liberate capacity for wider rail development with, say, a decent Hamilton-Auckland commuter services bringing executives in from Pukekohe, Tuakau, Pokeno, Te Kauwhata, Huntly, Mercer and the like, thus freeing up space on the Southern Motorway.

Public Transport Shelter Glazing Vandalism: From Problem to Solution

Chris Harris

Transportation is civilisation
--- Sir Robert Risson, Chairman, Melbourne and Metropolitan Tramways Board, 1949-1960

Shelter glazing vandalism — breakages and scratching — typically costs each public transport authority hundreds of dollars a year in repair bills for each of its shelters. In a region the size of Auckland, this easily amounts to tens of thousands of dollars a month in total. Even more seriously, shelter vandalism creates a stigma against public transport. Above all, it creates a stigma against the bus system, which has the most easily vandalised shelters. This stigma puts people off using public transport (especially buses), and ties up council planners in a ceaseless round of public objections to the majority of proposals to provide a minimum level of amenity for bus users by installing a shelter. And indeed, to the majority of proposals to improve bus services in general.
The usual response to this problem is one of fatalism. “You can’t stop vandalism” is something I’ve often heard. Yet others among us know that that is not true. For instance, everyone knows that blank walls get ‘bombed’ with graffiti, while this tends not to happen to walls that have a decorative pattern on them. Why can we not find a similarly smart and pragmatic solution to shelter glazing vandalism?

The basis of a practical solution

Let’s look at the problem scientifically, rather than fatalistically.
First, we may observe that glass can be broken by rocks, slingshots and air rifle pellets, while tough clear plastics—suitably toughened acrylic, or polycarbonate—cannot be so easily broken. So this first observation suggests that we should use tough clear plastic rather than glass. On the other hand, tough plastics are even more easily scratched than glass. So on second glance it looks like Catch-22.
But what we also know is that clear areas that are less than 50 to 75 mm across will not be scratched, because there is no point scratching such a small clear area.
So, a pattern that consists of coloured or frosted areas with small clear strips in between won’t be scratched, while still allowing visibility. Patterned plastic, then, is the answer.

How to apply the pattern and mount the plastic

The most useful way to apply such a pattern is by a modified printing method, such as follows. First, the pattern that is to be printed is masked out on an aluminium plate with varnish, and the remaining area is then etched to a depth of a couple of millimetres using acid or caustic soda. Alternatively, a decoratively perforated or laser-cut sheet could be used. Rights to duplicate the pattern must, of course, be secured.
The plate is then used to print a pattern onto the plastic. Instead of ink this printing exercise should use a hot-melt adhesive (HMA) which has been coloured an appropriate colour, perhaps with high-refractive index glass beads added to increase visibility further. Hot melt

adhesives are ideal for application by a printing method and, being a 100% solids technology, they do not cause problems with solvent evaporation.
The plate is electrically heated so that it remains permanently hot, and the liquid HMA is printed onto cold transparent plastic sheets.
For transport-panel applications it is necessary to use a hot melt adhesive that will remain sticky when cold, rather than the waxy HMA sticks sold in hardware stores, which lose their surface stickiness if they are allowed to cool down before the joint is completed. This generally means the use of a permanently sticky rubber rather than hard waxy sticks.
One common rubber HMA for this purpose is “hydrogenated rubber,” such as styrene ethylene butadiene styrene (SEBS) rubber, which is able to withstand ultraviolet radiation and other degrading influences in the environment. Examples of suppliers include Dynasol Elastomers and Cattie Adhesives.
The plastic glazing sheet, with HMA pattern, is taken out to the bus shelter and attached to the glass glazing, with the HMA between the plastic glazing and the glass and bonding the two. The plastic should be on the side of the glass that faces the street. That is to say, it should be applied to the front faces of front panels and to the insides of rear panels, as well as the outsides of end panels (if desired). These are the faces most frequently vandalised.
It is a good idea to apply a thick layer of adhesive, which may be applied by combining the molten glue with hollow glass microspheres in such a way as to reduce its weight per unit volume, by electrostatically charging the heated metal printing plate to attract the HMA (and switching it off during transfer to the plastic glazing), or both.
A thick layer of HMA will allow differential movement due to thermal expansion and will generally ensure more ‘give’ in the system, while at the same time, the HMA will still hold the plastic flat.

The finishing touches

It is important to stop moisture getting into the air gap that will exist in the clear areas. If moisture gets in it will cause condensation or, in a worst case scenario, delamination, and will shorten the life of the HMA in any case. For this reason, the edges must be sealed all the way around as the final step. This can be done by ensuring that the pattern includes a ring of HMA all the way around the edge of each panel, at the very edge.
As an added precaution, the edges should be completely ‘buried’ underneath a tough black rubber bead, as with a car windscreen. This will provide further protection from water and make it more difficult for vandals to get at the edges and pull the whole assembly apart. A fibreglass net tape mixed with HMA may be wrapped all the way around the edges of the panel before the bead goes on, to make still more certain of this.
Numerous artistic variations are possible. For instance, if the HMA is only used to tack the glass and plastic together here and there, then almost anything else could be encapsulated between the two sheets.
A refinement of the idea is to use a plastic sheet, or sheets, that have a mar-resistant coating on one side, the side that is on the outside. The mar-resistant coating will keep the plastic looking ‘brand new’ for many years in the face of ordinary cleaning abrasion.
If plastic is used, it is also important to use the right kinds of cleaning chemicals. Harsh, ammonia-based glass cleaners cause some forms of plastic glazing to go milky, and we often see this in practice. The problem is easily corrected by adjusting the cleaning formula.

The measure of success

It is true that no system can prevent vandalism completely; but we should not make the perfect the enemy of the good. Occasional vandalism may still occur with the system set out above. But the measures described will reduce vandalism's incidence to the point where it is easy to deal with when it does occur. For instance, an occasional deliberate scratch can be polished out, so long as deliberate scratching is, indeed, only occasional. Vandalism is only really a problem when it happens all the time.

The purpose of the measures set out above is therefore not to eliminate vandalism, but to reduce it to an acceptable level. At the same time, the decorative approach will make the shelters look more attractive, so that they become a visible asset to the community, and even a form of 'street art'.

DECLARATION OF INTEREST: Intellectual property protection has been applied for with regard to certain aspects of this technology solution. It should not be made use of without consultation with the author, on email: ce_harris@yahoo.com.

The Trouble with Public Transport Systems

John Foster

The trouble with public transport systems is that they cannot and are unlikely in the near future to be as effective or efficient as private car systems in meeting the personal travel needs of urban dwellers. The inherent technology involved precludes the supply of effectively competitive door-to-door travel times and will not inevitably lead to a substantial reduction in urban transport energy use.

Current public transport systems involve large vehicles (capable of seating more than 50 people) running on fixed routes at scheduled times. Three fundamental problems arise when such systems are compared to car systems.

- Significant access and waiting delays occur because routes cannot be universally located close to the doors of the origins and destinations of urban travellers
- In vehicle passengers must bear travel delays when the vehicles stop to serve new riders
- Public transport vehicles are seldom fully loaded. A high proportion of their total travel occurs when only partly full or near empty.

Design Issues

Presently urban public transport systems are targeted at the transport needs of work and/or educational trips involving travel demands from/to many places to a single dominant destination/origin (usually a CBD). In meeting the needs of this niche travel market segment a firm trend towards larger(buses) and larger(railway trains) vehicles has occurred in order to minimise crew costs.

Large vehicles-based systems in turn, lead to widely spaced routes and stops and thus high access times among the many origins/destinations in moderate to low density residential areas. The resulting inconvenient access times when added to the in-vehicle delays at stops to serve other passengers produce door-to-door travel times that generally lie in the range of 40% to 80% greater than the travel time supplied by a private car between the same places.

However, door-to-door travel times in comparison with those of the car are extremely variable. Travel from a residence beside a stop located at the end of the collection section of the public transport vehicle route will avoid access and in-vehicle delays and then display door-to-door travel times similar to those of the competing mode. Also short access times in the CBD when compared to walk and/or fees for car parking can provide smaller access “costs” and inconveniences.

Public transport systems as presently structured can then supply an effective service to a small but significant share of the ”many-to-one” sector of the urban transport market. But the same design cannot provide an effective means of supplying other segments of the market where smaller vehicles and more flexible routes and timetables are indicated as essential.

The challenge will be to devise revised system designs incorporating services targeted at a much wider component of the urban travel market; particularly the “many-to-many” sector. Although many planners strenuously advocate the need for a substantial mode share shift

away from private cars; few, if any, have identified innovative public transport system designs capable of achieving that objective.

Fuel Consumption Efficiency

Although, it is clearly obvious that fully loaded individual large public transport vehicles are much more fuel efficient than a private car; the relevant comparison of the whole system over a full year of operation is seldom considered. An illustrative simple and direct comparison between bus systems and car systems follows.

If we take the example of a moderate size family car operating in the urban environment at journey speeds of about 35 km/hr and loaded at an average occupancy of 1.3 persons, we obtain an average fuel consumption rate of about 85 ml/person-kilometres. It is likely that annual average loadings of greater than 1.3 persons per vehicle and operating speeds greater than 35 km/hr for much of the year, particularly on weekends and public holidays would lower the average to near 80 ml/person-km.

To obtain the same relevant system average fuel consumption per passenger kilometre for diesel buses requires identification of the average annual vehicle loading.

A simple illustrative model of peak period bus operations in the morning would suggest an average loading of 25% for a radial route serving the CBD. The bus starts empty, fills uniformly producing an average loading of 50% over the inbound journey, and then returns to the suburban terminus empty. A more realistic representative example whereby a 10% loading applies at the start of the trip, and over some 20% at the end of the journey the bus is full; followed by a return trip at 5% loading, would produce an average peak period loading of some 35%.

Estimating the average loading over the remainder of the year is fraught with immense difficulty. The USA Department of Transportation general travel statistics for 2006 identifies that the annual average person loading over all buses to be 6 only. Reliable similar statistical data is not readily available for New Zealand.

If we assume that off-peak and weekend running averages 10% and constitutes 70% of the annual kilometres of travel by the bus fleet; we obtain an average annual loading of about 18% or some 9 persons per bus as a reasonable conservative estimate for New Zealand urban areas.

50 seat buses have a fuel consumption of about 600 ml/km. So, at 9 persons per vehicle the annual fuel consumption averages about 66 ml/person-km or only some 18% less than that of the car based systems derived above. Future innovative public transport system designs may or may not improve this comparison. It is likely that the need for a fundamental compromise between utility and energy efficiency will continue to favour utility.

The trouble with public transport then is that when the public actually experiences a severe loss in utility unable to balance only a small gain in fuel efficiency; they will continue to use their cars for urban travel. In any event, application present technology is readily capable of reducing the average fuel consumption of the vehicle fleet by a commensurate amount.

Characteristics of Pedestrians

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This article is a summary of part of the author's Master of Engineering in Transportation research project. It summarises characteristics of pedestrians, particularly in the New Zealand context, and is offered as an article of interest to Transportation Group members.

Background

Pedestrians are vulnerable road users and comprise the largest single road user group. The pedestrian population is not homogeneous. It means there is no such thing as an "average" pedestrian, as their size, speed, strength and judgement can vary significantly between individuals, depending on age, gender, mobility, level of awareness or aggression *(Willis, 1999)*.

Pedestrians require the following skills in order to interact safely with traffic: *(Thomson, 1996)*:

- *Detecting the presence of traffic*: the detection of traffic involves a range of basic processes, including selective attention, visual search, resistance to distraction, co-ordination of visual and auditory information, and the perception of crossing (in term of the opportunity they afford for detecting approaching traffic)
- *Visual timing judgements*: This requires the pedestrians to determine a vehicle's direction and rate of movement so that accurate time-to-contact judgement can be made. Such judgement provides information about the time available for crossing.
- *Co-ordination of information from different directions*: the pedestrians rarely have to deal with traffic approaching from a single direction, thus timing and other judgement must be made in relation to vehicles approaching from two or more directions. This requires the ability to divide attention, to hold information in memory and to co-ordinate and integrate this information.
- *Co-ordination perception and action*: this involves the ability to relate the time *available* for crossing to the time *required* to cross. The latter will vary according to characteristics of the individual's own movement, as well as to other factors such as the width of the road. Such knowledge about movement capability must then be calibrated to visual information about the time available to cross, so that realistic safety margins can be set and other decisions made.

The qualitative and quantitative design of a pedestrian environment requires a basic understanding of related human characteristics and capabilities.

Pedestrians Characteristics by Age Groups

In general, common pedestrian characteristics by age groups are *(Litman, et al., 2000)*:

Age 0 to 4

- Learning to walk; Requiring constant parental supervision;Developing peripheral vision, depth perception.

Age 5 to 12

- Increasing independence, but still requiring supervision; Poor depth perception; Susceptible to “dart out” / intersection dash.

Age 13 to 18

- Sense of invulnerability; Susceptible to Intersection dash.

Age 19 to 40

- Active, fully aware of traffic environment.

Age 41 to 65

- Slowing of reflexes.

Age 65+

- Street crossing difficulty; Poor vision; Difficulty hearing vehicles approaching from behind; High fatality rate.

LTNZ[1] *(2005)* noted that pedestrian physical ability is affected by a great range of factors. *Table 1* shows the ways in which pedestrians differ and how those differences affect the road/street crossing function.

Ways in which pedestrians differ	**Affecting**	**Impacting upon**
Height	Ability to see over the objects; Ability to be seen by others.	• Sight distance
Speed of reflexes	Inability to quickly avoid dangerous situations	• Crossing opportunities.
Visual perception	Ability to scan the environment and tolerate glare	• Legibility of signs; • Detection of kerbs and crossing locations; • Crossing hazards; • Tactile paving; • Judging traffic.
Attention span and cognitive abilities	Time required to make decisions; Difficulties in unfamiliar environments ; Inability to read or comprehend warming signs;	• Positive detections; • " Legality" of streetscape; • Consistency of provision; • Use of symbols.
Balance and stability	Potential for overbalancing	• Provision of steps and ramps; • Kerb height; • Gradients; • Crossfall.

[1] *Land Transport New Zealand*

Manual density and coordination	Ability to operate complex mechanisms	• Pedestrian activated traffic signals.
Accuracy in judging speed and distance	Audible clues to traffic being missed	• Need to reinforce with visual information.
Energy expended in movement	Walking speed	• Crossing time.

Table 1: Pedestrian physical abilities
(Source: "*Pedestrian Network Planning and Facilities Design Guide" – LTNZ, 2005*)

Characteristics of Children as pedestrians

Children *("pedestrians aged fewer than 15 years" - Statistics New Zealand)* display significantly different characteristic to adults, not only in physical build but also in development maturity (*LTNZ, 2005*). Quite often adults consider that children are more capable than they actually are (*Tuter, 2004*) but children still developing their cognitive and social skills and abilities. The ability to cross a street safely develops with age. Children do not reach an adult level of performance in traffic (i.e. do not have the perceptual and cognitive capacity to make sound judgement about traffic safety) until about 12 years of age (*Malek, 1990; Thomson, 1996; Vinje, 1981)*.

A child's capacities to perform the task of crossing the street, particularly in scanning the environment as a whole, are poorer than an adult's. The more complex the traffic environment, the more the crossing task will be difficult to perform for children. Young children have limited ability to process information in peripheral vision, so they need more time to react once on object in the periphery is seen (*Tuter, 2004*).

Children also tend to have a trust that others will protect them, and can be overconfident in many circumstances (*LTNZ, 2005*).

A brief examination of the limitations and characteristics of children as road users helps to illuminate the problems, which may occur during their street crossing activities (*Federal Highway Administration*):

- *Up to age 2* children are not fit to cope with traffic in any way;
- *Between 2 and 7 years*, children are thinking but of the immediate task in hand (one matter at a time). Vision in not fully developed;
- *Between 7 and 11 years* children are capable of abstract thought. They reason about events not actually present but need experience to relate to the task in hand. Vision fully developed by age 16;
- *Children 12 years and over* have reached the stage of formal operations and have an adult grasp of the particulars of logical thought. They are ready to participate at adult level.

According to the *LTNZ* (*2005*), the major characteristics which could affect a child's crossing behaviour are present in *Table 2*:

Characteristic	*Resulting in*	*Impacting upon*
Shorter height	Reduced ability to see over the top of object	• Sight lines and visibility.
Reduced peripheral vision	Reduced ability to scan the environment	• Legibility of signs; • Detection of kerb; • Crossing locations; • Crossing hazards.
Limited attention span and cognitive abilities.	Inability to read or comprehend warning signs and traffic signals	• Positive directions; • "Legibility" of streetscape; • Use of symbols.
Difficulty localizing the direction of sounds	Audible clues to traffic being missed.	• Need to reinforce visual information.
Unpredictable or impulsive actions.	Poor selection of routes and crossings.	• Lateral separation from cars; • Traffic speed and density; • Barriers.
Lack of familiarity with traffic patterns and expectations.	Lack of understanding of what is expected of them.	• Complexity of possible schemes

Table 2: Characteristics of child pedestrians which affect their crossing activities
(Source: "*Pedestrian Network Planning and Facilities Design Guide" – LTNZ, 2005*)

Characteristics of Older Pedestrians

Older pedestrians ("…*age over 65 years old*..." - *Statistics New Zealand)* face reducing capabilities with increasing age (*Oxley, 2004*). The aging process generally causes deterioration in physical, cognitive and sensory abilities and more than 50% of the over-65s in New Zealand consider themselves to have some form of impairment *(LTNZ, 2005; Statistics New Zealand)*

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Oxley (1989) highlights some characteristics of *older pedestrians* that can affect their walking and crossing ability:

- Impaired vision
  - Difficulty seeing pedestrian signals on opposite side of the street;
  - Often find it necessary to look at the ground while walking;
  - Difficulty seeing curbs, cars, other pedestrians and other obstacles.
- Impaired hearing;
- Decreased agility, balance and stability;
- Slow gait, shorter stride;
- Lack of confidence;
- Inability to determine boundary between curb and street;

- Slower reflexes; and
- Exaggerated start-up time.

Table 3 lists the characteristics of older pedestrians, which effect their road crossing activities:

Characteristic	***Resulting in***	***Impacting upon***
Reduced range of joint motion.	Slower walking speed.	• Crossing time;
Vision problems such as degraded acuity and poor central vision.	Reduced ability to scan the environment.	• Legibility of signs; • Detection of kerbs; • Crossing locations.
Limited attention span, memory and cognitive abilities.	Require more time to make decision, difficulties in unfamiliar environments, lack of understanding of traffic signals	• Positive directions; • "Legibility" of streetscape; • Consistency of provision.
Decreasing agility ,balance and stability	Difficulties in changing level.	• Provision of steps / ramps; • Kerb height.
Slower reflexes.	Inability to quickly avoid dangerous situations.	• Crossing opportunities.
Reduced manual dexterity and coordination.	Reduced ability to operate complex mechanisms.	• Pedestrian activated traffic signals.

Table 3: Characteristics of Older pedestrians which affect their road crossing activities
(Source: "*Pedestrian Network Planning and Facilities Design Guide" – LTNZ,* 2005)

Pedestrians with disabilities
Assuming that the typical pedestrian is fit and healthy, has satisfactory eyesight and hearing, is paying attention and is not physically hindered, will misrepresent a significant proportion of the population (*Gadd, 2005*).

Table 4 shows some *characteristics of mobility impaired pedestrians* and their effect on street crossing.

Characteristics	**Resulting in**	**Impacting upon**
Extra energy expended in movement.	Slower walking speed.	• Crossing time
Use of mobility aids	Increased physical space needed and good surface quality.	• Footpath width • Obstruction

Decreasing agility, balance and stability.	Difficulty in changing level.	• Provision of steps/ramps • Kerb height.
Reduced manual dexterity and coordination.	Reduced ability to operate complex mechanisms.	• Pedestrian activate traffic signals

Table 4: Characteristics of mobility impaired pedestrians and their affect on a street crossing

(Source: *"Pedestrian Network Planning and facilities design guide"- LTNZ, 2005*)

CONCLUSIONS

The main findings of literature review were that:

- Pedestrian population is not homogenous. It means that there is no such thing as "average" pedestrians, as their size, speed, strength and judgement can vary significantly between individuals depending on age, gender, mobility, level of awareness and aggression;
- Among pedestrians, especially *children* and *older pedestrians* face challenges when crossing the street due to:
  - *Children* do not reach an adult level of performance in traffic until about 12 years of age;
  - *Older pedestrians* are affected by age-related declines in function of visual, perceptual, cognitive and motoric systems. However, in contrast to younger pedestrians, elderly people are aware of their limitations;
- Many people who crossing the road have some kind of disability affecting their crossing action and behaviour. Assuming that the typical pedestrian is a fit and healthy, with satisfactory eyesight and hearing, pays attention and is not physically hindered will misrepresent a significant proportion of the population;

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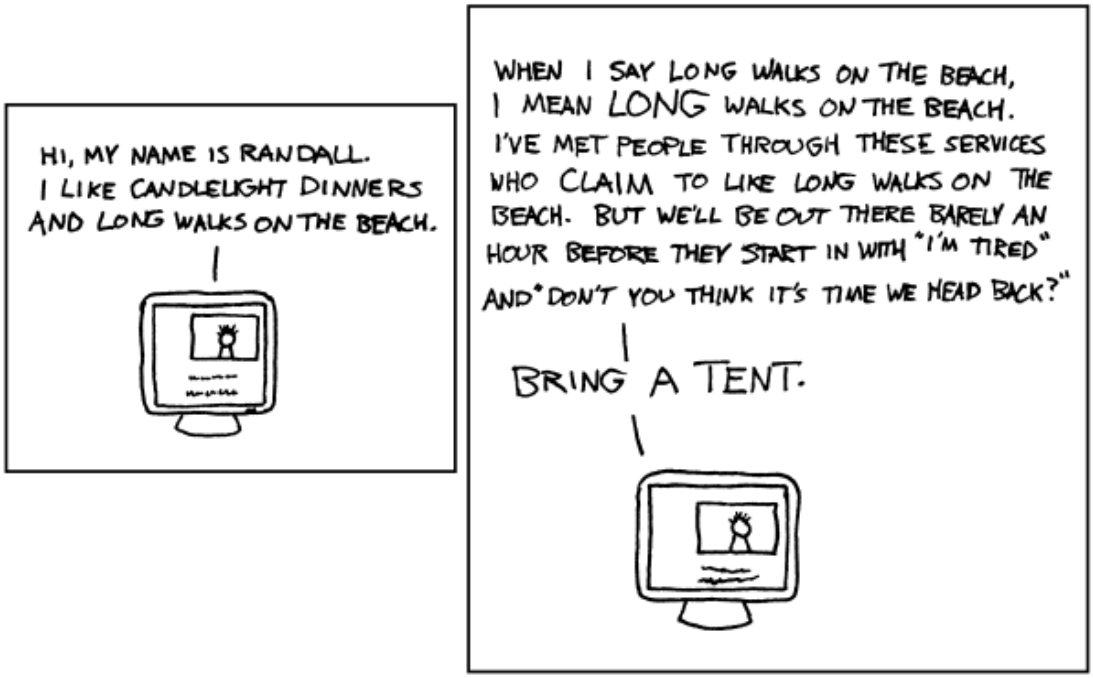


www.xkcd.com/120

Branch updates

Canterbury/West Coast Branch **Chairman – James Park**

The recovery from the 22 Feb 2011 earthquake and the subsequent large aftershocks on 13 June 2011 is still dominating activity around Christchurch. There is alot of activity and change happening with the Canterbury Earthquake Recovery Agency (CERA) and the associated Alliance becoming more active in management of roads around eastern Christchurch from 1 Sept 2011.

The nominated Members who attended the Christchurch City Council (CCC) Workshops gave debrief discussions to the Branch on 20 June 2011 covering the process and outcomes from the Council workshops held mid June 2011. The Branch had a good response with 3 speakers and around 20 Members attending.

CCC is continuing the development process for the Central City Plan (CCP) to inform and direct earthquake recovery and rebuilding of the area of Christchurch City, largely within the four avenues. The CCP is now into the public consultation phase and the Branch is engaged to assist Members in representing their views into this process.

A forum meeting is proposed for 6 Sept 2011 to inform Members and give an opportunity to review and discuss the Transportation issues and options indicated within the CCC Central City Plan. It is hoped from this event that Members are encouraged to participate in the submission process. Submissions on the Draft Central City Plan are due with CCC by 16 Sept 2011.

The Committee met 29 June 2011 and 17 August 2011. The Committee has confirmed two other presentations in September:

- PTV Asia-Pacific, David Ng – Mon 5 Sept
- Jeanette Ward and Rob Woods – Thurs 15 Sept

Thanks must go to the Branch Committee members as we are all very busy both working and organising Branch events in recent times. Next Committee Meeting is planned for 21 September 2011.

Southern Branch **Secretary, Lisa Clifford**

The Southern Branch held an event on 8 August where Paul Durdin and Ann- Marie Head from Albey Transportation Consultants did a presentation on the newly released NZTA Best Practice Guidance for the Preparation of Transportation Assessments.

The meeting was originally scheduled for Monday 25 July but the heavy snow in Dunedin and Christchurch closed the airports on both ends! About 10 people were present in total

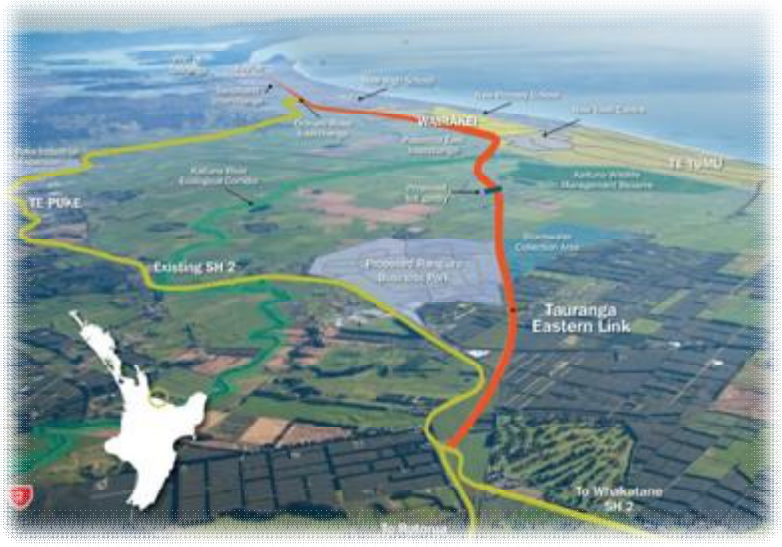
with wine, beer and nibbles provided. The presentation was well received with the new guidelines aligning better to the resource consent process.

Waikato/Bay of Plenty Branch **Deputy Chair – Adam Francis**

The Bay of Plenty / Waikato Branch continues to be busy with planning and running several events. The majority of the committee's activities have been associated with the planning for the Annual Conference which will be held in Rotorua in March next year. Details for the venue, conference dinners and the conference theme have been fixed, and paper submissions are beginning to flood in ahead of the October deadline.

However, in parallel with the long term planning, the region has been active with local meetings and talks. In Tauranga 32 members enjoyed a breakfast at the Tauranga Eastern Link site office and heard presentations from both the NZTA and HEB Construction regarding the procurement strategy and the initial construction activities. We are looking forward to returning to the site throughout the construction period. Further events are arranged before the end of the year with visits for Te Rapa bypass and Kopu Bridge in association with the local IPENZ groups (24 September), an evening presentation from Alan Bickers (17 October, Tauranga CBD) and a visit to the Port of Tauranga (date TBC).

In Hamilton, approximately 30 members of IPENZ and NZPI, along with two Councillors, heard from Steve Abley on 'How to better understand transport effects' based upon NZTA Research Report 422. Members also attended a joint meeting with the Waikato Branch of the Property Council NZ on 'Infrastructure and Transport'. Mark Apeldoorn (Traffic Design Group) and Bevan Houlbrooke (CKL) presented on growth in the Waikato region from both planning and transportation viewpoints. We hope to arrange a presentation on active and sustainable transport by Dr Rodney Tolley in November.



Tauranga Eastern Link, from www.tauranga.govt.nz

Central Branch **Chairman - Roger Burra**

Central Branch recently held a successful discussion forum at the Backbencher Bar & Restaurant opposite the Beehive. The venue is a well-known haunt for members of parliament. However on the night, the only politician evident during our debate was Councillor Andy Foster, Portfolio Leader for Transport at Wellington City Council and President of TRAFINZ. Initially asked to provide introductions and a key note speech, Andy became so engaged with the discussion, he decided to stay and take part in the debate!

The event was well attended, with all 35 seats taken and standing room only at the back. This was due to the high quality of the speakers who were generous enough to share their vision of an "ideal transport system for Wellington Region". Peter McCombs, Director and Chairman of Traffic Design Group, started the evening with a very informative account of the historic transportation plans for Wellington Region and putting them in the context of present day. A very memorable series of slides from his presentation were birds-eye photographs of Custom House Quay on Wellington waterfront and how it has changed over the last few decades. Given today's conditions, it's amazing to think that pedestrians were once provided zebra crossings of this road.

The next speaker was Patrick Morgan who works for the Cycling Advocates Network. Patrick gave us a good round-up of travel from the perspective of cyclists. He talked about the challenges faced by cyclists and initiatives that CAN are promoting to help. Patrick actively engaged with all the discussions and really helped us to look at things from a different perspective.

Fergus Tate, Manger of Traffic and Safety at the New Zealand Transport Agency gave us a challenging and thought provoking round-up. He stimulated discussions on transit orientated development and the importance of considering the social impacts of policies that promote this type of development. Fergus also shared his views on the future direction of our profession and the need for robust analysis supporting everything we do, rather than one-size fits all transport planning.

The panel took questions from the floor and some of the audience shared their views before the discussions were continued over food and drink. The discussions and debates must have been good because many of the audience stayed on for well over an hour after the more formal part of the evening ended.

Central Branch committee would very much like to thank the panellists and the audience who so readily contributed their thoughts and questions. The committee would also like to thank MWH Global who provided sponsorship towards the event. From the committee's perspective and from the feedback we have received, the event was a huge success that met its two main objectives which were to stimulate debate and to encourage networking in a more social environment.

We are looking to organise a formal debate in the New Year. Topics that have been suggested so far include parking management or alternative approaches to road safety funding. We will consider any other ideas. Perhaps if our members are passionate about a particular issue they will suggest a topic and volunteer to speak.

Our next event is on Tuesday 20 Sept 2011 at 12:00 when Andrew Martindale will present the findings of research into the effectiveness of "Transverse Road Markings as a Speed Mitigation Device".

Auckland/Northland Branch **Chairman Daniel Newcombe**

The Auckland/Northland branch has been actively preparing and revising a programme of topical events for branch members. We recognise that many members have specialist interests or have commitments that make it difficult to attend lunchtime or evening events, so we aim to provide a range of types of events in different locations and times of the day, so that there should be something to appeal to all branch members. We are also investigating ways to video events and make this available to members who were unable to attend. If any technologically-savvy members would like to assist, this would be greatly appreciated.

There will continue to be an increasing focus on making our events accessible to younger professionals and university students, not just to introduce them to the Transportation Group but also to allow networking with more experienced members. So when we hold a 'young professionals' event, older members are more than welcome to attend! The aim is to increase the size and breadth of the membership, and in doing so improve its capability and value.

The July event was an exciting new concept for us – a light-hearted panel debate on a provocative transport topic. The event, held at Auckland University's Engineering School, was MC'd by Jon Bridges (producer and occasional panellist on TV3's '7 Days' show) and attended by over 80 people, including a number of University students for whom this was their first experience of the Transportation Group. It's fair to say Jon stole the show, despite the intelligent speeches given by the two panels. He opened the debate with a recital of the detailed hand-washing instructions found in the University's male toilets, incredulous as to their complexity and the need for instructions at all. It was later noted that there were no such instructions in the female toilets. See the article elsewhere in Roundabout for a full summary.

Most recently the branch invited Bridget Burdett from Beca to present a follow up to her well-received IPENZ conference paper on how we plan for and deliver transportation infrastructure and where there may be gaps in making our built environment accessible for all. Bridget's presentation included an interactive session with the audience to consider a 'systems thinking' approach as a way of understanding how change might be influenced.

The September event is currently planned to be a presentation on the Auckland Council's upcoming City Centre Masterplan, which contains a wide range of transformational actions designed to make Auckland a more liveable city, including significant changes to the transport networks. As the Masterplan is yet to be launched, this event is still to be confirmed.

The annual branch Christmas function has been pencilled in for Thursday December 1st at a new central city venue. Put the date in your diary and look out for details in the near future!

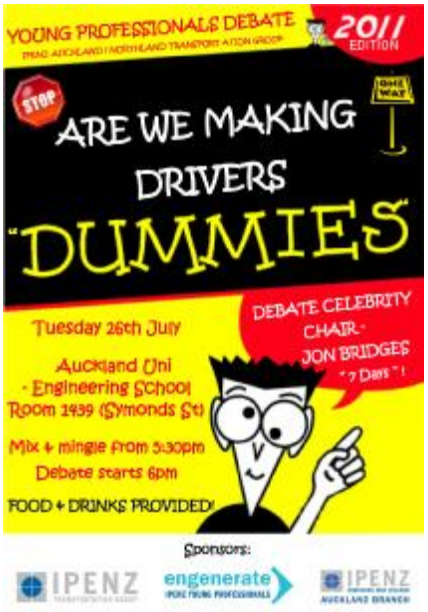
Australia: Australian Institute of Transport Planning and Management
President Peter Doupé
Visit the new AITPM website: http://www.aitpm.com.au/
AITPM newsletters can be downloaded here:
http://www.aitpm.com.au/index.php?option=com_docman&task=cat_view&gid=31&Itemid=19

2011 AITPM Conference Melbourne, 10 – 12 August
A summary of the 2011 AITPM conference, which was attended by a number of IPENZ Transportation Group members, will follow in the December issue.

Newsletter
The AITPM Newsletter continues to be circulated to IPENZ members in a reciprocal arrangement struck many years ago. The AITPM also encourages IPENZ members to contribute articles for consideration for inclusion in the magazine. Current AITPM National President (and IPENZ member) Peter Doupé co-ordinates the magazine and would be pleased to accept articles from New Zealand members.

"I want you to find a bold and innovative way to do everything exactly the same way it's been done for 25 years."

Extended branch report: Are we making drivers dummies?



On the evening of 26th July, over 80 students, young professionals and experienced members of the IPENZ Transportation Group packed out an Auckland University Engineering School lecture theatre for a heated debate on a hot transportation topic: "Are we making drivers dummies?"

The pre-debate refreshment drinks and nibbles went down well and there was definitely a rush for the sushi - thanks to our generous sponsors:

- Engenerate
- IPENZ Auckland branch
- IPENZ Transportation Group Auckland branch

The debate teams consisted of a great mixture of expertise, passion and enthusiasm for or against the topic. The panellists were:

Debate team	Name	Organisation
Affirmative	Ludo Campbell-Reid	Auckland Council
	Kobus Mentz	Consultant
	Jarrod Darlington	Engenerate / Transportation Group
	Pippa Coom	Cycle Action Auckland
Negative	Sam Charlton	Waikato University
	Pippa Mitchell	Consultant
	Jenson Varghese	Engenerate / Transportation Group
	Janet Van	Engineering student

The MC for the debate was Jon Bridges, the well known comedian from the hit show '7 Days' and he proved to be a hit with the young audience. Jon began the event with a humorous transportation-themed introduction...

"I'm very excited about being here today to talk about my favourite 'Sport', Transport...I think I was asked to chair this event today at this academic venue as I've not got one but 2 degrees (as my cell phone provider)..." (Jon Bridges)

As Jon handed over the podium space to each of the opposing debating team members in turn, he provided some great introductions for those of us unaware of their expertise....

"I'd like to introduce the first speaker, a man called Ludo Campbell-Reid... Auckland Council's first ever 'design champion' – word has it that he fought off all the other design contenders in a hand-to-hand mixed martial arts contest to become the design champion!" (Jon Bridges)

"One of Dr Charlton's areas of research is self-explaining roads. I asked him to explain what that is and he said if I wanted to know I'd have to ask the roads, they explain themselves....surprisingly I didn't really get a response!" (Jon Bridges)

Ludo Campbell-Reid and Sam Charlton went head to head with introducing the argument for their respective teams – shared space versus safety requirements!

Pippa Mitchell (co-organiser of the event) stepped up with only a few hours to go as planned panellist Karen Hay was unable to attend. This stumbled Pippa Coom who had planned her response to Karen's road safety arguments but she picked up the pace nicely with her 'Frocks on Bikes' campaign!

Jarrod and Jenson followed with some great arguments and then it was time for the refreshment break to enable the debate teams to discuss their finale tactics and to munch on hot pizza!

The final 'Right of Reply' was led by Janet and Kobus for their debate teams. Janet led the finale with some interesting and slightly controversial comments.....

"We shouldn't be playing a game of chess whilst driving (!), driving isn't meant to be a big thinking exercise." and "We're human, we can't judge everything perfectly every time. We need direction, signage and rules." (Janet Van)

Whilst Kobus closed the debate with a reality check supported by strong academic points....

"Over design of our environment is causing us to take up more and more space for transport in the interests of making things similar and dumber for drivers. If you overdesign you get less interaction, causing less communication and less empathy, resulting in competition between users of the road space, which as public realm should belong to everybody." (Kobus Mentz)

And then it was time for the winner to be announced based on the audience's votes and Jon's humorous comments – the affirmative team took the prize, but it was definitely a close call!

"Normally a transport debate would be solved behind closed doors by rich men with vested interests and end up in a motorway being built! That's not going to happen tonight. Tonight we've got no closed rooms except for this lecture theatre, nothing rich except the irony, and the only vested interested are hi-vis vests!" (Jon Bridges)

Thank you to everyone who attended, supported and provided assistance with the event, it was a truly entertaining evening enjoyed by all – keep your eye out for more young transportation professional events happening soon.

Debate video link: *coming soon*

Authors: Sarah Alderson (AECOM) and Pippa Mitchell (T2 Engineers) on behalf of the IPENZ Transportation Group Auckland committee

IPENZ ENGINEERS NEW ZEALAND AUCKLAND BRANCH engenerate IPENZ YOUNG PROFESSIONALS IPENZ TRANSPORTATION GROUP

Smart Transport conference

Parliament, 19 & 20th August, 2011
by Bevan Woodward

Summary: A two day conference organised by the Green and Labour parties for transport advocacy groups. Over 20 community groups attended from different parts of NZ, each working to promote the more sustainable and diverse transport modes of passenger rail, bus and ferry services, walking, cycling, rail freight, sea freight and coastal shipping.

It was a well-run gathering where participants got to hear from a range of speakers, share their learnings and discuss 'where to from here'. The over-riding concern was the fallacy of the Government's Road of National Significance (RoNS) programme and what could be done in response.

Speakers included:

- Paul Mees, Senior Lecturer in Transport Planning at RMIT University, Melbourne
- Stephen Joseph, CEO of Campaign for Better Transport UK
- Celia Wade-Brown, Mayor of Wellington
- Lawrence Yule, President of Local Government New Zealand and Mayor of Hastings District Council
- Phil Twyford, Labour Party Local Government spokesperson
- Dr. Chris Harris, Independent Urbanist & Transport Policy expert
- Dr. Russel Norman, Green Party co-leader
- Gareth Hughes, Green Party MP & Transport Spokesperson
- Dr. Rhema Vaithianathan, Assoc. Professor of Economics, University of Auckland
- Steven Selwood, Chief Executive, New Zealand Council for Infrastructure Development
- Bill Rosenberg, Economist and Director of Policy, NZCTU
- Julie Genter, Transport Consultant

A provocative keynote speaker, Paul Mees challenged the current Government's thinking that more roading equates to an increase in GDP. In fact he showed that the cities with high public transport usage share typically have higher GDP per capita.

Paul Mees was reported in the NZ Herald story: "Auckland one of most 'car-biased' cities in world": *http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10746660*

Other speakers re-iterated this message, apart from Steven Selwood, speaking on behalf of the New Zealand Council for Infrastructure Development who supported the Road of National Significance programme but agreed that the other transport modes also needed substantial investment. In response it was pointed out that there would never be sufficient funding for such an approach.

On the morning of the second day, twenty of the advocacy groups gave short presentations. It was motivating to hear the concern about the RoNS programme from a wide range of communities across New Zealand, and of their desire for a more sustainable and diverse transport system.

Where to from here?...

The following people nominated themselves to be a part of a working group to create a national network and campaigning body against the Roads of National Significance (RONs): Lucy Hawcroft, Julie Genter, Gerri Pomeroy, Geoff Montgomery, Jenny Marshall (Cycling Auckland), Tim Gummer (Cycling Auckland), Viviene Shepherd, Paula Warren (RTS), Chris Harris, Mary Williams, Chris Pebberson, Silvia Zuur, Wayne Butson (RMTU), Luke Urlich, Jake Morrison (In the loop).

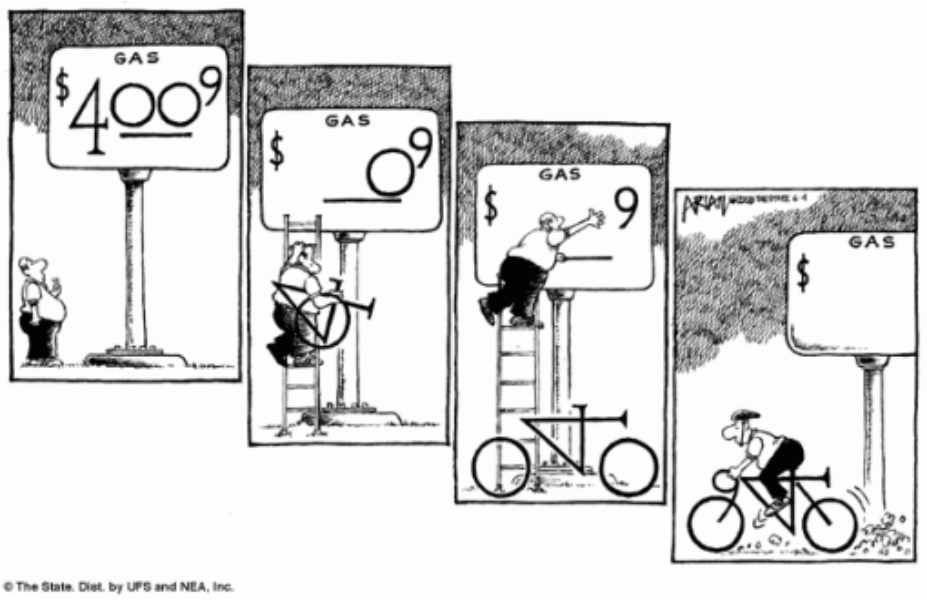
Brainstorming on a joint goal suggested that stopping the RONs was the highest priority. This was followed by saving rail, and supporting a balanced and integrated transport system.

To learn more or join this group, please contact: holly.donald@parliament.govt.nz

To see videos of the keynote speakers Paul Mees and Stephen Joseph, see: http://www.greens.org.nz/misc-documents/smart-transport-new-zealand

Bevan Woodward is a transport planner based in Warkworth, North Auckland and attended the conference with support from the Hikurangi Foundation.

Have you been to any industry events, politically-slanted or otherwise, you'd like to report on? Feel free to write in response to this or any other component of Roundabout. -Editor



Continuing Education

Transportation Engineering Postgraduate Courses 2012

Dept of Civil & Natural Resources Engineering
University of Canterbury

supported by: NZ TRANSPORT AGENCY WAKA KOTAHI

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 five courses
- Master of Engineering Studies (MEngSt) ~ typically ten courses
- Master of Engineering in Transportation (MET) ~ up to six courses plus research project/thesis

All courses run in "block mode" to enable part-time and distance students to take part; dates TBA. All candidates with relevant degrees and/or suitable work experience will be considered. Note: Programme may be subject to change; check with the Dept or our website for confirmation.

COURSE	DESCRIPTION
Anytime (contact Department)	
ENTR401: Fundamentals of Transport Engineering	A self-study programme in: Transportation planning; Road link theory and design; Intersection analysis and design; Traffic studies; Accident reduction; Sustainable transport planning and design; Pavement design; Road asset management. *{bridging course for non-transportation students}*
Semester 1 (Feb-Jun 2012)	
ENTR611: Planning and Managing for Transport	Road/transport administration in NZ; Transport legislative environment in NZ; Communication/presentation skills; Public consultation; Traffic surveys; Transport assessment and economics; Demand management and tolling; Construction planning and contract management.
ENTR602: Accident Reduction & Prevention	Impact on society; Data analysis and interpretation; Hazardous location identification; Road environment factors; Problem diagnosis; Treatment options; Treatment selection; Economic appraisal; Evaluation and monitoring; Safety auditing.
ENTR612: Transport Policy and Demand Management	Transport economics; Travel demand and supply management, congestion pricing; Transport policy objectives and instruments; Traffic management modelling.

Semester 2 (Jul-Oct 2012)	
ENTR603: Advanced Pavement Design	Stresses, strains and deflections in flexible and rigid pavements; Pavement materials characterisation; Mechanistic and mechanistic-empirical design methods; Pavement performance and evaluation.
ENTR614: Planning & Design of Sustainable Trpt	Pedestrian planning and design; Cycle planning and design; Public transport operations and network design; Travel behaviour change and travel plans.
ENTR615: Transport Network Modelling	Principles of transport modelling; Road network modelling; Macro-simulation and micro-simulation; Traffic intersection modelling; Transport network analysis and reliability.

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

Transportation Engineering

Postgraduate Courses 2012

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).

See following page for course listing.

Other relevant courses at Auckland or Canterbury or elsewhere may also be suitable for credit.
For more details on the courses, please contact the Course Coordinator: Civil 660 + Civil 760 + Civil 761 + Civil 762, (Dr Prakash Ranjitkar), Civil 661 + Civil 765 + Civil 767 (Dr Theuns Henning), Civil 766 (Dr Seosamh Costello), Civil 764 + Civil 768 + Civil 769 (Dr Doug Wilson), Civil 770 (Mr Bevan Clement), 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*

Details of all courses can be found at:

http://www.cee.auckland.ac.nz/uoa/home/about/ourprogrammesandcourses/courses-details

Department of Civil & Environmental Engineering University of Auckland

COURSE	DESCRIPTION
Semester 1 (Mar-Jun '12)	
CIVIL660 - Traffic Engineering & Planning (extended mode)	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)*.
Civil 767 – Advanced Pavement Engineering (block mode)	Pavement construction materials, Analytical and empirical pavement design methods, Pavement maintenance and rehabilitation techniques, Data collection methodologies for the assessment of pavement performance.
CIVIL770 - Transport Systems Economics (extended mode)	Fundamentals of transport economics incl. supply, demand, pricing, congestion and other externalities; principles of economic evaluation in transport planning.
Civil 772 – Public Transport – Planning & Operation (extended or block mode)	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.
Semester 2 (Jul-Oct '12)	
CIVIL661 - Highway & Pavement Engineering (extended mode, integrated with Civil 759, a BE course).	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).*
CIVIL761 – Planning and Design of Transport Facilities (extended mode)	Selected topics from: traffic signal practice/safety audits, two way highways planning, arterial traffic management, modelling and simulation and traffic flow.
CIVIL765 – Infrastructure Asset Management (block mode)	The 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.
> maybe? CIVIL769 – Highway Geometric Design (block mode)	The geometric design of highways including; user, vehicle, road environment, sight distance, vehicle speed, design consistency, horizontal & vertical curve and cross-sectional design, design plans, signs & marking.
CIVIL 771 – Planning & Managing Transport (extended mode)	Integrated planning of transport and land use, Outline of transport planning modelling, District Plans, Requirements of the NZTS, LTMA and RMA, Travel, trips and parking. Integrated transport assessments with multi-modal transport, Travel demand management, Intro to Intelligent transport systems.

UC UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Fundamentals of Traffic Engineering

THE UNIVERSITY OF AUCKLAND
CENTRE FOR CONTINUING EDUCATION

www.cce.auckland.ac.nz/trafficengineering

Introduction

Auckland 13 - 17 February 2012
Advance Notice

The University of Auckland and the University of Canterbury are pleased to jointly offer a five-day course covering the Fundamentals of Traffic Engineering. This is the 16th time the course has been offered. The 2010 course was held in Christchurch during February. The course covers a wide range of topics including material on Transport Policy, Transport Sustainability, Travel Demand Management and Public Transport.

Course Objectives

The course will:

- **provide participants with a solid grounding in the fundamentals of traffic engineering and contextual issues related to planning and managing transport operations**
- **develop participants' practical skills and knowledge of how and when they should be applied**
- **cover the theory of good traffic engineering practice**
- **enable participants to recognize and deal effectively with situations where standard methods are unlikely to work well**

Presenters

The course is to be presented by:

- **Roger Dunn, University of Auckland**
- **Alan Nicholson, University of Canterbury**
- **Other staff from the University of Auckland**

Who Should Attend?

The course will benefit practicing 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 & Technicians**

C

Course Inquiries

Roger Dunn
Email: rcm.dunn@auckland.ac.nz

Registration of interest

Anne Cave, Centre for Continuing Education
University of Auckland, Private Bag 92-019, Auckland
Phone: 09 373 7599 ext 89541 Fax: 09 373 7419
Email: a.cave@auckland.ac.nz

Price: $2200 + GST

Continuing Professional Development 2011 Training Courses

VIASTRADA
TRAFFIC ENGINEERING AND PLANNING

SIDRA INTERSECTION Version 5.1

ViaStrada is offering beginner and intermediate training using SIDRA INTERSECTION Version 5.1, in October 2011.

City	Level	Date	Early bird closing
Auckland	Beginner	Mon 10 to Tues 11 October	Friday 16 Sep 2011
Auckland	Intermediate	Wed 12 to Thurs 13 October	Friday 16 Sep 2011

Further information and registration forms can be found on our SIDRA INTERSECTION website training page:

http://viastrada.co.nz/sidra_training or by contacting Helen Woodhouse:

E: Helen@viastrada.co.nz Ph: (03) 366 7605 www.viastrada.co.nz

Please contact Helen to register your interest in SIDRA INTERSECTION or any of our other courses.

2012 NZ Walking and Cycling Conference
Hastings, 22-24 February 2012

In February 2012 the first ever *2 Walk and Cycle* Conference will be held in Hastings, New Zealand at the Hawke's Bay Opera House in the Opera House Theatre. Home to one of the country's Model Walking and Cycling Communities, Hastings and the greater Hawkes Bay area provide outstanding examples of walking and cycling opportunities for you to enjoy and learn from.

The focus of this Conference is on everyday walking and cycling for transport, recreation and tourism. It encompasses all aspects of trips made by these "active modes" (including promotion, infrastructure, safety, policy and training) and their integration with each other, other travel options (e.g. public transport), and our lifestyles in general.

This joint Conference provides a great opportunity to bring together a larger number of delegates and speakers, creating a wider audience and leverage for "active transport". It also enables both of the respective walking and cycling sectors to address issues within a broader context of transport and mobility planning, creating opportunities to tackle shared barriers and opportunities.

"Creating smarter connections" is the key to unlocking multiple gains and improvements for our towns and cities throughout New Zealand. Be it transport, tourism, health, the economy, the environment, sport and recreation, or simply a better quality of life, *2 Walk and Cycle* 2012 will bring together a wide range of people and ideas to demonstrate how walking and cycling are central to unlocking these gains.

An exciting programme is currently being finalised. Through a combination of plenary sessions, short presentations, workshops and other interactive networking sessions, this Conference will inform, challenge and equip participants about walking and cycling related actions required for creating smarter connections and thereby greatly improving our communities and country.

For more information (including draft programme, sponsorship opportunities and registrations) visit the website:

www.2walkandcycle.org.nz

Mission: Accessible

Imagine a world where every person, building, transport provider and community is truly accessible. That world is what Be. Accessible has set out to create.

Managed by the Be. Institute, Be. Accessible is a social change initiative and a holistic framework for accessibility with a mission to create a truly accessible country for us all.

With 20% of New Zealanders reporting a disability, this sector known as “access customers” makes up the largest untapped market in the world. Access customers include: someone with a hearing or visual impairment; a person in a wheelchair; a person with a learning disability; a parent pushing a stroller; or an older person.

Be. Accessible has been working in collaboration with Rugby World Cup 2011 to address the accessibility of key locations on the tourist trail in each of the 11 host cities throughout New Zealand.

The Be. Welcome Assessment Programme assesses businesses and organisations on their accessibility using a number of assessment indicators including good customer service, marketing and the built environment.

To date more than 100 organisations around NZ have begun a journey towards being more accessible. Each organisation has been assessed and has received a rating based on their accessibility.

The access information for each assessed organisation is then placed on the Be. Accessible website - www.beaccessible.org.nz - enabling access customers to find out about accessible locations in their area.

The site has accessibility information relating to transport, accommodation, dining, shopping and entertainment, useful services and in particular locations and services relating to Rugby World Cup 2011 such as airports and stadia.

Transport is a major aspect of accessibility - to start your accessibility journey by booking a Be. Welcome Assessment, call Be. Accessible on 09 309 8966 or free phone 0800 Be in touch (234 686).

Be. Institute
PO Box 5614, Wellesley Street, Auckland 1141, New Zealand
p 0800 Be in touch (234 686) **or** 09 309 8966
e info@beaccessible.org.nz
www.beaccessible.org.nz

"He hit the brakes,
lost control, was ejected
and struck his head on the road.
He suffered a skull fracture."

— New York State Trooper Robert Jureller,
on motorcyclist Philip Contos,
killed while driving bare-headed
in an organized ride
protesting helmet laws

Quotable Quote submitted by Christopher R. Bennett

Branch contacts

Auckland / Northland

Chair:	Daniel Newcombe	daniel.newcombe@aucklandtransport.govt.nz
Secretary:	Doris Stroh	Doris.Stroh@ama.nzta.govt.nz

Waikato / Bay of Plenty

Chair:	Mark Apeldoorn	mark.apeldoorn@tdg.co.nz
Secretary:	Bridget Burdett	bridget.burdett@beca.com

Central

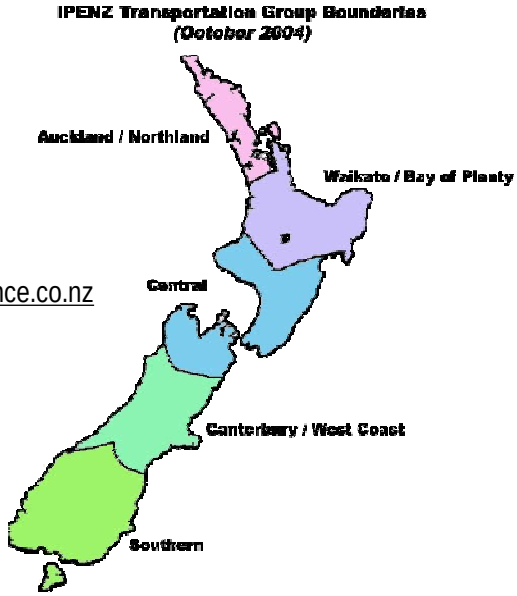
Chair:	Roger Burra	roger.burra@opus.co.nz
Secretary:	Joshua Wright	joshua.wright@tunnelsalliance.co.nz

Canterbury / West Coast

Chair:	James Park	James.Park@opus.co.nz
Secretary:	Ann-Marie Head	ann-marie@abley.com

Southern

Chair:	Phil Dowsett	phil.dowsett@nzta.govt.nz
Secretary:	Lisa Clifford	lcliffor@dcc.govt.nz



Management Committee

Role	Who	Email Address
National Chairperson, Treasurer, Conference Liaison	Mark Apeldoorn	mark.apeldoorn@tdg.co.nz
Vice Chairperson, Membership Coordinator, Submissions Coordinator	Dave Wanty	David.K.Wanty@nz.mwhglobal.com
Administrator Website Administrator	Roger Burra	roger.burra@opus.co.nz
Technical sub-groups liaison	James Park	James.Park@opus.co.nz
Awards Coordinator, Roundabout Coordinator	Daniel Newcombe	daniel.newcombe@aucklandtransport.govt.nz
Other committee positions to be determined.		

Branch chairs (as noted above) are also co-opted onto the Management Committee.

Images submitted by Steve Reddish