I have recently returned from Melbourne, having spoken on energy resilience at the Australian Institute of Transport Planning and Management (AITPM) annual conference.

Resilience is an especially topical issue in post apocalyptic Christchurch and one that was emphasised to both City Councillors and me, when we went to San Francisco in late May to learn about earthquake recovery. Unfortunately though, without major change facilitators such as earthquakes or tsunamis, decision makers’ support for resilience is fairly low. Like all things that bubble below the more topical issues of the day, these issues are important, but not quite important enough.

Even worse, in the transport arena it is unlikely one big event will present itself as the moment that necessitates resilience change. Rather, the need for transportation change tends to happen over a long period of time. Oil supply and pricing volatility is a case in point. Increasing fuel prices are inevitable, but fuel price rises are a function of demand and supply. There is now a general acknowledgement that future fuel supply will be constrained, and in consequence the cost of fossil fuels will continue to both increase and exhibit volatility, as we have seen in the past few years. The reality, and maybe the ‘elephant in the room’ that no one wants to mention, is that we are all about to be transport disadvantaged in the near future. How then might we respond and build resilience into our transport networks to enable us to overcome this challenge?

One solution is measuring the potential for travel, rather than the status quo of measuring who would travel. Measuring ‘potential use’ rather than ‘actual use’ is a different way to look at common problems and is one that our firm is using to solve very complex problems. One resilience example is work we recently completed for the Hastings District Council. We were asked to consider and rank the importance of 256 bridge structures as part of the transport system.

Abley Transportation Consultants has a strong commitment to exploring new techniques and creative ways of thinking that deliver practical outcomes. Similarly we are focusing on providing clients with different ways to think about resilience and in this example, better asset management solutions. Its certainly not traditional transport planning but we’re not traditional. If you are attending the annual TRAFINZ conference in Hamilton in November – I look forward to seeing you then.

GREATER CHRISTCHURCH EARTHQUAKE RELATIONSHIP MAP V1.6

Abley Transportation Consultants has developed a figure that shows the governance structures that have developed as a result of the Canterbury earthquakes. This is available on our website HERE (www.abley.com/publicdocs/Greater_Christchurch_Earthquake_Governance.pdf). Abley welcomes you to distribute the figure to whomever you think may find it equally interesting.
FEATURE PROJECT: RoNS – PEKA PEKA TO OTAKI ACCESSIBILITY STUDY

Accessibility is a measure of a person’s ability to access goods or services via the transport system. The location of households (i.e. origins), opportunities such as jobs and schools (i.e. destinations), and networks all affect the quality of access.

Abley has completed an assessment of the change in accessibility resulting from a proposed RoNS project for 6000 households between Peka Peka and Otaki. The project utilised the GIS-based accessibility methodology our firm developed for the NZTA and incorporated three modes of travel (vehicle, walking and cycling). An existing level of accessibility was established and compared to accessibility using various new proposed road layouts for the expressway. On ramps, off ramps and connections including walking and cycling only overbridges were also assessed and compared.

Presenting the results was a complex task, as there were a vast number of different option combinations that needed to be evaluated. Instead of creating individual maps for printing Abley created interactive maps. The client used the map at their will, turning layers on and off to compare options of interest. This included different modes and the accessibility to different destinations such as primary schools, secondary schools, shopping centres, supermarkets, tertiary education and employment locations.

All the options had differing benefits (some positive others negative) depending entirely upon the destinations being travelled to, which mode was being assessed and the impacts of the various network layouts. This accessibility analysis has assisted decision makers to optimise the various network layouts.

Abley Contact: Kurt Janssen
kurt@abley.com
tel +64 3 367 9008

Client Contact: Rowan Oliver
Rowan.Oliver@nzta.govt.nz
tel +64 4 931 8917

STAFF PROFILE: KURT JANSSEN

SENIOR GIS ANALYST/PROGRAMMER  BSc(Hons)

Kurt is currently working on the delivery of a number of interesting projects including:

- Hamilton City Accessibility Modelling
- Prioritisation of intersections in Wellington based on safety outcomes.
- Pilot study looking into automated methods for School Bus Transport eligibility for the Ministry of Education

Kurt is a committee member on the NZ ESRI Users Group

Kurt grew up in Christchurch studying at the University of Canterbury specialising in Geography/Geology with a strong emphasis in GIS. Being a Christchurch lad the earthquakes have been heartbreaking, however Kurt was pleased to be back for them to help family and be around to engage where possible in the reconstruction of Christchurch. Kurt’s favourite pastimes include travel, mountain biking, road biking and snowboarding.

Kurt joined Abley Transportation Consultants at the beginning of 2010 as a specialist Geographical Information Systems (GIS) consultant with extensive central government and research experience. He is very knowledgeable regarding spatial analysis techniques and the manipulation of large quantities of data for the betterment of client outcomes.

Kurt prefers the ESRI ArcGIS platforms including ArcGIS Desktop and a number of extensions, Server, Explorer and Reader. Kurt has worked in the United States at ESRI’s headquarters in Redlands California for 2 years prior to starting work at Abley Transportation Consultants. His primary role at ESRI was as a software tester working on the latest pre-beta releases to enhance user workflows and screen the software for showstoppers and public release.

After completing university Kurt worked in Central Government as a GIS Analyst, both at the Ministry of Health and Ministry for the Environment before moving to California.

Kurt loves challenging projects which push the boundaries of spatial analytical techniques. Developing new innovative methodologies for solving complex problems is a very rewarding aspect of working for Abley Transportation Consultants.
STEVE ABLEY REPORTS ON HIS TRIP TO SAN FRANCISCO AS PART OF A DELEGATION OF CHRISTCHURCH CITY COUNCILLORS AND BUSINESS LEADERS.

Steve Abley was very fortunate to join a delegation of five councillors and seven business leaders to San Francisco. Steve was invited to learn from the city’s experiences in overcoming natural disaster. A TVNZ film crew accompanied the delegation and reports were screened on One News.

The San Francisco area is familiar with disasters, having been hit by large earthquakes several times in the last two centuries. The most famous event was the San Francisco earthquake of 1906 and the resulting fire which levelled the city. There is a 62 per cent chance of a magnitude 6.7 or greater earthquake striking before 2032. This is the reality of living in a seismically active area, one people in New Zealand are all too familiar with.

The professionalism of the disaster planning and recovery teams we met was outstanding. We returned with five key lessons. The first is to “build back better”, meaning not just replacing “like with like” but taking the opportunity for improvement. This includes seismic strengthening and streetscape enhancement along with bridging any political divides that may have existed pre-quake.

“Collaboration”: after the 1989 Loma Prieta earthquake, Santa Cruz created a new governance structure. The “gang of 36”, as it was known, consisted of mixed council and business representation. Interestingly, its decisions were unanimous and were endorsed by the formal council.

CHRISTCHURCH HAS THE POTENTIAL TO BE GREAT ONCE AGAIN, EVEN GREATER THAN IT WAS PRIOR TO THE FEBRUARY EARTHQUAKE.

The gang’s meetings were televised, improving communication and instilling public confidence, exemplifying “transparency and permissiveness”. At an early stage the gang made clear its vision for the city’s redevelopment, enabling property owners and developers to “get on with it” quickly within the planning frameworks.

“Involving business” will bolster confidence and aid the rebuild with capital. A large proportion of the rebuild has to be funded by the private sector. As such, the private sector must be included in decision making at an early stage. New Orleans is an example of what not to do. It is 25 per cent smaller than it was the day before Hurricane Katrina hit, partly due to the lack of clarity and uncertainty during the critical first year. Investors sought lower risk alternatives for capital investment and took their money, energy and talent elsewhere.

“Earthquake insurance” is vital. With large premiums and excesses of around 15 per cent of insured value, many San Francisco residents do not have earthquake cover. When the next major event hits, insurance inflows will be less than 20 per cent of total damage, and the balance will have to consist of funding from central and local government and the private sector.

Christchurch, in contrast, at least has a significant proportion of rebuild capital that can be sourced offshore through reinsurance funds (however, it is burdened with the initial administration of insurance claims, assessors and approvals).

Steve’s feeling is that Christchurch has the potential to be great once again, even greater than it was prior to the February earthquake. This can only happen, however, if learnings from cities like San Francisco are applied. It is especially important business takes a lead in recovery. Business is the source of employment and livelihood, an investor of intellectual capital, innovation and funding – it is not just another stakeholder to be consulted within meetings.
In December 2010, Environment Canterbury appointed Abley to develop a public transport network plan that would form part of the Regional Public Transport Plan (RPTP). The RPTP provides the long term direction for public transport in the Canterbury region. The purpose of the project was to evaluate the efficiency and effectiveness of the existing public transport network, identify where people want to travel (now and in the future) and then develop and test a number of public transport network options against a set of assessment criteria to determine the preferred approach to enhance performance against those criteria. The network plan was to identify a hierarchy of routes to 2041 that would be included in the RPTP and help guide short-term service planning and local council infrastructure provision over the coming years.

Abley was part way through the project when the devastating earthquake struck Christchurch in February. Instead of deferring the project, ECAN sought the accessibility planning expertise of Abley to focus on more immediate public transport network issues that arose due to damaged roads, changes in the places people wanted and could travel to, and the ever-changing road closures. Abley mapped and modelled the accessibility changes resulting from the reduced public transport services, and suggested enhancements to maximise service coverage.

The earthquake also proved to be the impetus for bringing longer-term public transport plans forward to the short-term. The relocation of business activities away from the central city to suburban locations provided both the change opportunity and need to change the manner in which public transport is delivered in Christchurch. Abley assessed a number of proposed public transport networks using our bespoke accessibility model, which models walk and public transport travel times to any destination of interest, such as shopping centres and employment hubs. Numerical and mapped outputs were generated from the model. The accessibility mapping proved especially valuable, as it enabled areas with poor accessibility to be readily identified and ‘tweaks’ to the network could be made to improve service coverage or another performance criteria.

In 2012, it is likely that some significant changes will be made to the public transport network in Christchurch. These changes will be a departure from the absolute reliance on a central city hub with radial routes, to a multi-hub approach with more orbital routes and a greater emphasis on interchange.

Abley Contact: Paul Durdin
paul@abley.co.nz
tel +64 3 367 9004

Client Contact: Simon Milne
simon.milne@ecan.govt.nz
tel 027 549 7733

The saying goes, ‘A picture is worth a thousand words’ and when engaging with stakeholders this is definitely true. In today’s information saturated society, being able to view data and concepts in meaningful ways is critical to engaging stakeholders. Spatial representation using Geographic Information Systems (GIS) enables data to be organised and trends more easily understood. 3D visualisation of land use and/or transport proposals ensures they are scrutinised and viewed in detail before development begins.

Abley are often asked to present complex and technical information in an easy to understand format using spatial tools. For example, Abley produced several strategic planning maps of the north west of Christchurch to inform a key stakeholder workshop discussing the way forward with regard to the western transport corridor. The maps included summary household and jobs forecast data along with key transport networks such as road network flows, public transport networks and pedestrian accessibility isochrones.

Abley are skilled at 3D visualisation outputs at micro and macro scales, from individual street or intersection improvements using specialised 3D software to representations of accessibility or other indicators for entire regions.

As an example, a 3D visualisation model was developed by Abley to show the visual and operational impact of speed thresholds near the intersection of Sawyers Arms and Gardiners Roads in north-west Christchurch. A short video was produced incorporating moving views along the roads as well as views from specific points to enable the local community to visualise the proposed changes.

Abley Transportation Consultants continually endeavour to develop new and innovative methods to share complex information in ways that are simple and easy to understand.