ONE-WAY, OR THE OTHER?

Jeanette is completing her Masters of Engineering in Transportation (MET) and as part of her final year research topic is developing an assessment tool to help local decision-makers.

“In my literature review, I found that there are a range of reasons why streets are converted from one type of flow direction to another, the reason most cited for one-way to two-way is to help ‘central city regeneration’. The majority of the regeneration examples I looked at came out of the US, where converting streets back to two-way is considered to have contributed to the economic regeneration of the commercial areas.”

“The economic regeneration was linked to the creation of a more pleasant pedestrian environment as speeds are generally lower on two-way streets; there was more visibility of the building frontages to both directions of traffic, and an overall creation of a sense of ‘place’.”

Jeanette also found that there have been recent conversions from two-way to one-way as a means to better use the street space. For example, in Brooklyn, New York a cycleway was established in the space that was once a traffic lane; this was only possible by re-thinking how the movement of traffic was handled.

She has also undertaken a series of industry interviews to better understand the views of various parties involved in planning our built environment, primarily transport and urban design.

Both the literature review and the industry interviews enabled Jeanette to develop a preliminary decision making framework that she tested on a case study in Dunedin. As part of the research, a workshop was held with Dunedin City Council (DCC) and NZTA staff to test the framework on a range of one-way and two-way options. This was very useful and enabled the framework to be adjusted and made more flexible.

Jeanette has been selected to present the findings of her research to the IPENZ Transportation Group Conference in April.

Our new Streetscape Design website outlines the streetscape design services offered by Jeanette and the rest of the Abley team (www.streetscapedesign.co.nz).
KURT JANSSEN – ALWAYS KEEN TO PUSH THE BOUNDARIES

“Nothing better than challenging projects that push the boundaries of spatial analytical techniques and increase your own knowledge at the same time.” Developing new innovative methodologies for solving complex problems is a hugely rewarding aspect of Kurt’s role.

SafetyNET, developed for the NZTA, is one such project. It was born out of the opportunity to add spatial intelligence to NZTA systems that already had some great data, but the true value of the geographical component of the data was unrealised.

SafetyNET is at the front end a website allowing the NZTA to identify which areas of the State Highway network should be targeted for safety upgrades. An analysis is carried out at a 100m level resolution that utilises crash data from NZTA’s Crash Analysis System (CAS), data detailing the physical and engineered road attributes every 100m and combines this data with crash prediction formulas.

Kurt was recently appointed President of the New Zealand ESRI User Group, after serving one year on the committee.

“I was very proud to be elected by my peers to this challenging and fascinating role and I’m looking forward to working with the rest of the committee on behalf of ESRI GIS Users New Zealand wide.”

Kurt is highly experienced with many ESRI GIS platforms including ArcGIS Desktop and extensions, Server, Explorer and Reader. He recently attended a Business Partner 10.1 Server boot camp where he has learned how to fully utilise the latest version of this important software. It is ArcGIS Server, which allows Abley to build custom mapping websites for our clients. Abley now hosts several production websites for clients including the NZTA, NZ Police and Hamilton City Council.

Kurt brings eight years of comprehensive GIS work experience to Abley, where he has worked since 2010. He previously worked at the Ministry of Health, the Ministry for the Environment and for ESRI in Redlands, California. ESRI are the biggest GIS software company in the world, developing the tools Abley’s GIS team use every day. Kurt has recently been certified by ESRI in the ArcGIS Desktop package. Abley are also an ESRI Business Partner, one of only a dozen in New Zealand and we are one of the few specialist transport engineering partners worldwide.

From the Front

CONT. From page 1

I give back to the industry as a Practice Area Assessor for IPENZ. In that role I am responsible for reviewing the technical competence of applicants seeking to gain or renew Chartered Professional Engineering (CPEng) status within my area of expertise. Regulating the competency of people holding professional status helps ensure the professionalism of the industry.

As a Director of Abley, I am proud of the significant contribution our staff make to raise the profile, knowledge, competency and professional standards of the industry.

I am also immensely satisfied to inform you of our success at the recent NZ Engineering Excellence Awards. Jeanette Ward, one of our principal transportation engineers, led the Streetscape Team involved with redesigning the streets of Kaiapoi and was heavily involved in the consultation process with the local community. This project received top honours in the Excellence in Community Engagement category. Congratulations to Jeanette and the Waimakariri District Council.

In this edition of Street Smart we highlight our people and continue the theme of how we are contributing to the industry. Happy reading.

Paul Durdin Director
FEATURE PROJECT: ABLEY PROVIDE FULL TRANSPORTATION MODELLING

TRANSPORTATION MODELLING PLAYS AN INCREASINGLY IMPORTANT ROLE IN THE WORK WE DO, AND THE PROJECTS ON WHICH MODELLING CAN BE USED RANGE FROM TESTING NEW ROAD LINKS OR PUBLIC TRANSPORT ROUTES FOR LOCAL AUTHORITIES, TO ASSESSING THE TRAFFIC EFFECTS OF NEW DEVELOPMENTS FOR THE PRIVATE SECTOR. WE PROVIDE FOR THE FULL SPECTRUM OF TRANSPORTATION MODELLING NEEDS AND HAVE A WEALTH OF SOFTWARE TOOLS IN-HOUSE:

Cube – Strategic Transportation Modelling

Strategic transport modelling is undertaken using Cube Base and Cube Voyager modelling software. Cube is used worldwide for three-step and four-step cube – Strategic Transportation Modelling to demonstrate the impact of roading and public transport infrastructure investment, and vehicle drive cycle models. Abley use SIDRA to assess intersection capacity, level of service and performance analysis for different types of intersections including priority, roundabouts and traffic signals. The performance of an intersection often determines the overall road network performance. Assessing intersection performance enables Abley to determine if a development is appropriate and able to be accommodated on the existing road network or what mitigation is required to support that development.

S-PARAMICS Micro-simulation

S-Paramics simulates the individual components of traffic flow and congestion, and presents its output as a real-time visual display for traffic management and road network design. S-Paramics represents the interactions of individual vehicles as they travel through a road network. It models the detailed physical road layout, and includes features such as bus operations, traffic signal settings, driver behavioural characteristics and vehicle kinematics. S-Paramics enables non-traffic experts, such as the public and their elected representatives, to interactively test ‘what if’ scenarios and immediately see the results in terms of real-time flows and congestion.

SIDRA Intersection

SIDRA Intersection is an advanced micro-analytical traffic evaluation tool that employs lane-by-lane and vehicle drive cycle models. Abley use SIDRA to assess intersection capacity, level of service and performance analysis for different types of intersections including priority, roundabouts and traffic signals. The performance of an intersection often determines the overall road network performance. Assessing intersection performance enables Abley to determine if a development is appropriate and able to be accommodated on the existing road network or what mitigation is required to support that development.

ArcGIS Desktop

ArcGIS is a comprehensive geographic information system (GIS) software for visualizing, managing, creating, and analyzing geographic data. ArcGIS enables the understanding of the geographic context of data, allowing users to see relationships and identify patterns in new ways. ArcGIS aids Abley in geospatial analysis, mapping, visualisation, modelling and data administration.

If you would like more detail regarding any aspect of transportation modelling, please contact us.

STAFF PROFILE: PETER COCKREM

GRADUATE TRANSPORTATION ENGINEER

BE(Hons)(First Class) GIPENZ

Peter has been at Abley for a year, pursuing his interest in transportation’s role reflecting and shaping cities.

He is rapidly learning about transportation engineering in the real world, and how consultants work to help their clients.

“Working in a small organisation, albeit the largest single-office transportation consultancy south of Auckland, is providing plenty of opportunities to develop a broad base of experience.”

Peter has been involved in a diverse range of work with private developers, community groups, businesses, councils and government agencies on projects from property access designs, intersection safety reviews, spatial analysis of spending and accessibility, and organising surveys, through to completely novel research.

He has been invited to present his work on the New Zealand Transport Agency’s High Risk Intersections Guide at the Institution of Professional Engineers New Zealand (IPENZ) Transportation Group’s annual conference in April.

“The big picture of how transportation keeps society flowing and links in to everyone’s lives originally drew me to the field of transportation engineering, and here at Abley the professional challenge continues to inspire me,” Peter says.

Taking every opportunity to engage with the engineering profession, Peter has already been elected as a committee member to the IPENZ Canterbury/West Coast Branch Committee.

Peter has also made his presence felt at the Abley office following his recent crash reduction study near the kitchen. “There was an intersection with a history of near-misses and minor crashes involving tea”, says Peter, and the design skills and reference standards he was using in a major resource consent project proved transferable. “The engineering improvements made a big difference – we put them in while the Road Controlling Authority [Managing Director] was away!”

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STRIKING THE RIGHT NOTE WITH NEW URBAN PROJECT

OUT OF THE RUBBLE OF THE CHRISTCHURCH EARTHQUAKES THERE HAVE BEEN EXTRAORDINARY DISPLAYS OF COMMUNITY RESILIENCE. ONE OF THESE IS GAP FILLER, AN URBAN REGENERATION INITIATIVE THAT SETS UP TEMPORARY, CREATIVE SPACES IN THE VACANT LOTS LEFT BY DEMOLISHED BUILDINGS.

Abley is a proud corporate supporter of this initiative, providing help with the Painted Piano Project by way of storage of pianos over the winter months and allowing volunteers to use our offices to transform the pianos into works of art for local communities.

Gap Filler is the brainchild of Coralie Winn, Ryan Reynolds and Andrew Just. The main driver, Coralie, found herself with time on her hands, having lost her job after the September earthquake and her house in the February earthquake. As buildings were demolished and more and more vacant spaces popped up around town, Coralie saw an opportunity to turn dormant gaps left by the earthquakes into creative, communal spaces. After starting as a self-funded experiment, Gap Filler is now a charitable trust with five staff and Coralie as its full-time director.

The first gap that was filled was a once-popular inner-city taco spot into a multi-arts space that was a chill zone by day and a live music and outdoor cinema venue by night. Subsequent Gap Filler projects include a bicycle-powered cinema on the foundations of one of Christchurch’s oldest cycle stores, a giant chess board, a petanque pitch, mini golf holes in all corners of town and a Summer Pallet Pavilion. The most well known project to date is the Dance-O-Mat (recently enjoyed by Prince Charles and Camilla, Duchess of Cornwall) – a dance floor run by a coin-operated washing machine.

Two years on from the first earthquake, the Christchurch rebuild is slowly gaining momentum, but what has been rebuilt, is the attitude of its people. This attitude is personified by the people of Gap Filler who are making positive changes in Christchurch and are testament to how resilient Cantabrians have become.

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One of the decorated pianos.