PERFECT TIME TO UPDATE MODELLING NEEDS

WITH THE 2013 CENSUS FAST APPROACHING, THERE IS AN EXCELLENT OPPORTUNITY FOR LOCAL AND REGIONAL AUTHORITIES TO UPDATE THEIR TRANSPORTATION MODELS.

It is useful to start planning a model update as many of the transportation models in New Zealand assume a base year of 2006 (corresponding with the most recently available census data). Given that the next census is only a few months away (March 2013), this is a perfect opportunity for authorities to review their transportation modelling needs for the next five years and beyond.

There are many types of models which are available, and particular confusion about the difference between strategic modelling and micro-simulation modelling. The key distinction between strategic (or macroscopic) modelling and micro-simulation (or microscopic) modelling is that strategic models assign a large number of trips to a road network using a series of assumptions, whereas micro-simulation models provide options for the community.

We are able to provide an independent and objective review of macro, micro and accessibility model functionality in preparation for Census 2013. If you would like more details, please contact:

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CYCLE ROUTE CHOICE… IS IT REALLY FASTER?

TYPICAL CYCLIST NETWORK MODELS ASSUME THAT CYCLISTS MINIMISE THE DISTANCE OR TIME OF THEIR TRAVEL. BUT IN REALITY, HALF OF ALL CYCLE TRIPS ARE 10 PER CENT LONGER THAN THE CALCULATED SHORTEST PATH. ABLEY HAS BEEN INVOLVED IN REVIEWING THESE MODELS.

Cyclist network models are used in a variety of applications, including accessibility modelling, and have wider implications during the economic analysis of new cycle, public transport or private vehicle infrastructure.

Economic analyses related to cyclists are usually based on level of service (LOS) criteria that is established from stated preferences (SP) surveys. These involve showing people pictures or videos of a set of roadway segments, assessing their comfort level with each, then mathematically analysing participant responses to determine the variables that most strongly influence comfort.

For example, in New Zealand, the NZTA Economic Evaluation Manual (GEM) defines cyclist location attractiveness in the form of “weights” for the types of road segment: roads that contain cycle lanes with parking, cycle lanes without parking, roads without cycle lanes and off-street paths. A recent set of studies has developed the use of revealed preferences (RP) data, in which cyclists are given a GPS to record their actual routes. These routes are then mathematically analysed in a geographical information system environment to determine which link and intersection variables actually influence route selection. It is no surprise that cyclists avoid roads with high vehicle volumes, road segments without cycle facilities, and high traffic volumes and right turns on busy roads.

Abley reviewed the current cycle LOS and RP literature, and determined that the cyclist route choice model developed from RP surveys in Portland, Oregon best met the criteria of the project. These model variables were mathematically mapped to New Zealand conditions, building on recent developments in accessibility impedance functions and making use of the 2007 Christchurch Cyclist Survey.

The results show a high level of correlation with the EIM cyclist relative attractiveness values. However, the new metric is sensitive to a much wider range of variables, including curvets on non-curvets trips purposes, vehicle volumes for roads without cycle facilities, and intersections depending on layout, turn movement and vehicle volume. The new cycle route choice model presents an improvement over EIM route attractiveness values. As such the model can be used to better prioritise cycle infrastructure and identify high benefit infrastructure improvements,

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FEATURE PROJECT: ACTIVITY SURVEYS IN AN INACTIVE WORLD

A YEAR BEFORE LIFE IN CANTERBURY WAS TO CHANGE FOREVER, THE WAIMAKIRIRI DISTRICT COUNCIL WAS PLANNING FOR THE FUTURE AND IMPLEMENTING THEIR 2020 STRATEGY FOR THE RANGIORA TOWN CENTRE.

As part of this, Abley surveyed the pedestrian activity around High Street, the main shopping street in the town centre. The surveys were used to inform Council of pedestrian demand, how activity levels varied within the town centre, how crossing facilities and footpaths were popular and when pedestrians crossed away from facilities.

After the February 2011 earthquake the Council noticed a distinct increase in pedestrian activity in the town centre. In light of these changes, the Council asked Abley to repeat the survey. The survey showed nearly a 5% increase in pedestrian activity compared to 2010, validating Council’s suspicions.

This year, after Canterbury settled into a ‘new norm’, Abley compiled a further survey that showed about 1.5% more growth in pedestrian activity, totalling a 6.2% TMR in activity since 2010.

Pedestrian activity surveys can better inform retail and streetcape improvements. Abley can scope, design, undertake and analyse these types of surveys and provide advice on measures to maximise pedestrian activity levels.

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“Pedestrian survey data has been very useful in quantitatively confirming anecdotal evidence that the Rangiora town centre saw a considerable upturn in people frequenting it immediately following the February 2011 earthquake. It has helped us understand trends in pedestrian activity over time, which have contributed to the body of knowledge informing the development and implementation of the Rangiora Town Centre Strategy. Findings from the pedestrian surveys have proven of interest to a breadth of audiences, from elected members to the wider community.”

HEIKE LULAY

FEATURE PROJECT: GETTING THE RIGHT PLANNING POLICIES IN PLACE

The Kapiti Coast is currently reviewing its District Plan, with Abley preparing the overarching framework of the transport aspects. This is enabling Council staff to focus on preparing supporting objectives and policies covering all aspects of transport that are relevant to the particular issues of the Kapiti Coast District.

The existing District Plan has transport objectives and policies as well as a suite of rules. However, Council consent officers indicated that the transport rules are inadequate, do not apply best practice and refer to obsolete standards and guidelines. Consequently, numerous consents for developments are not achieving the most appropriate transport outcomes and staff currently do not have the means to require developers to consider and mitigate all the transport related effects of their developments.

Abley prepared a transport framework for the new plan process. The framework included development of transport objectives that meet the national and regional directives for transport and included an assessment of alternative policies and methods to achieve their objectives. The framework is currently being used by Council staff tasked with preparing the new District Plan. It will also be used as key input to the Section 37 report, a statutory part of Council’s plan change.

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SETTING THE THEME FOR TRANSPORT DISTRICT PLAN REVIEW, INCLUDING THE NITTY GRITTY OF PATIENTS, RATES AND ULTIMATE HEARINGS IS WHERE ABLEY HAVE LOTS OF EXPERIENCE.

GET YOUR DISTRICT PLAN REVIEW OFF TO A GOOD START, INVOLVE YOUR TRANSPORT CONSULTANT EARLY.

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HEIKE LULAY

STAFF PROFILE: ANDY CARR

ASSOCIATE PRINCIPAL
BSc (Hons), MSc, MBA, Assoc NZPI, MIPENZ, QEng, IntP (NZ)

Our expertise in resource management work is further strengthened with the appointment of Andy Carr as Associate Principal.

Andy brings more than 22 years’ experience in both the UK and New Zealand. He has worked on a wide range of traffic and transport projects using economic analysis of new road pricing infrastructure, to safety audits and assessing ways to minimise the effects of travel activities on the environment.

Since moving to New Zealand in 2004, Andy has focused on resource consent matters, and is now one of the most experienced traffic engineers in the South Island in assessing the effects of both resource consent applications and private plan changes. He is often asked to review large, difficult or high profile projects ranging from major industrial complexes and power generation schemes to large residential subdivisions and commercial developments.

Andy is well known among planners, lawyers and other technical disciplines, and his experience is also regularly sought by local authorities, where he acts as a peer reviewer on traffic matters for applications of all types. Most recently he has acted as the peer reviewer for the new Christchurch Stadium. He has prepared and given expert evidence to Council hearings and to the Environment Court, as well as participating in Court-directed mediation and conferencing. Andy is currently chair of the Canterbury Resource Management Law Association committee.

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