CRITICALLY IMPORTANT TRANSPORT PLANNING IS HAPPENING RIGHT NOW. THE AUCKLAND DRAFT UNITARY PLAN AND CANTERBURY LAND USE RECOVERY PLAN WILL HAVE A SIGNIFICANT INFLUENCE ON HOW NEW ZEALANDERS INTERACT AND TRAVEL BECAUSE THESE REGIONS ARE EXPECTED TO HOUSE ALMOST ONE OUT OF TWO KIWIS IN 20 YEARS. IT IS THEREFORE INCREDIBLY IMPORTANT THESE ECONOMIC POWERHOUSES ARE WELL PLANNED AND DELIVERED.

ONE OF THE PLANS IS CURRENTLY UNDERGOING PUBLIC DEBATE, AND THE OTHER IS EXPECTED TO BE MADE OPERATIVE BY THE MINISTER OF EARTHQUAKE RECOVERY SOMETIME AFTER JUNE 2013. THE AUCKLAND DRAFT UNITARY PLAN IS SHAPING UP TO BE A VERY HOT TOPIC AND IT APPEARS THE NOTIFIED PLAN MIGHT BE SIGNIFICANTLY DIFFERENT TO THE DRAFT PLAN CURRENTLY OUT FOR COMMENT. WATCH THIS SPACE...

THIS EDITION OF STREET SMART SHOWCASES SOME GREAT PROJECTS INCLUDING OUR LATEST INTERNATIONAL COMMISSION IN MEXICO. IF YOU HAVE ANY COMMENT OR QUESTIONS, DON’T HESITATE TO CONTACT ANY OF THE AUTHORS. AS FOR ME, I CAN BE CONTACTED ON 09 974 9820 AND 03 367 9003 – I’M HAPPY TO CHAT.

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STREET SMART

FROM THE FRONT...

MANAGING DIRECTOR, STEVE ABLEY

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OPTIMISING BRIDGE ASSET MANAGEMENT

BRIDGE ASSET MANAGERS FACE SIGNIFICANT MID-LIFE MAINTENANCE DECISIONS DRIVEN BY A COMBINATION OF CONDITION, CHANGING USE AND PERFORMANCE AND DESIGN STANDARDS. BRIDGES ARE MAINTAINED TO A SPECIFIED LEVEL OF SERVICE, LEADING TO WEIGHT LIMITS BEING IMPOSED TO REDUCE MAINTENANCE COSTS AND MAINTAIN USER SAFETY.

BRIDGES FUNCTION AS BOTH INDIVIDUAL STRUCTURES AND AT A NETWORK LEVEL, TO ALLOW ACCESS TO ENTIRE AREAS. BRIDGE ASSET MANAGEMENT INVOLVES AGREEING ON PERFORMANCE GOALS FOR AN INVENTORY OF BRIDGES AT BOTH AN INDIVIDUAL BRIDGE AND A NETWORK LEVEL AND OPTIMISING INVESTMENT TO ACHIEVE THE AGREED SERVICE LEVEL. THE FUNDAMENTAL GOAL OF A STRUCTURED APPROACH TO BRIDGE ASSET MANAGEMENT IS TO ESTABLISH A STRATEGY FOR BRIDGE STOCK THAT ACHIEVES AN OPTIMISED BALANCE BETWEEN LIFE-CYCLE COST, RISK AND LEVEL OF SERVICE.

WE WERE COMMISSIONED BY HASTINGS DISTRICT COUNCIL TO DEVELOP AND IMPLEMENT A NETWORK ASSESSMENT MODEL, TO EVALUATE AND RANK THE CRITICALITY OF APPROXIMATELY 260 BRIDGE STRUCTURES WITHIN THE DISTRICT. THE ASSESSMENT INCLUDED THE DEVELOPMENT OF AN ITERATIVE ACCESSIBILITY MODEL IN GIS. THE MODEL IS USED TO CALCULATE THE JOURNEY TIME ON THE TRANSPORT NETWORK BETWEEN LAND PARCELS AND THE STATE HIGHWAY NETWORK WITH THE RESULTS FOCUSED AROUND THE ACCESS PERFORMANCE OF BRIDGES. OUTPUTS INCLUDE THE RELATIVE IMPORTANCE OF LIFELINE BRIDGES AND THE RELATIVE IMPORTANCE OF WEIGHT RESTRICTED BRIDGES FROM A HEAVY COMMERCIAL VEHICLE TRANSPORT PERSPECTIVE.

THE OUTCOMES FROM THE STUDY ARE BEING USED TO TARGET INVESTMENT AND OPTIMISE THE ASSET MANAGEMENT PROCESS WITHIN HASTINGS DISTRICT. THIS WILL RESULT IN BETTER INVESTMENT DECISIONS AND MORE EFFICIENT OUTCOMES, EASING THE PROCESSING OF FUNDING APPLICATIONS DUE TO THE TRANSPARENT INVESTMENT METHODOLOGY.

IF YOU WOULD LIKE TO KNOW MORE ABOUT BRIDGE ASSET MANAGEMENT, PLEASE CONTACT STEVE ABLEY.

ABLEY CONTACT: STEVE ABLEY
STEVE.ABLEY@ABLEY.COM
TEL +64 3 367 9003
This follows the successful development of a similar solution called SafetyNET for New Zealand Transport Agency (NZTA).

The platforms being used by iRAP to display road safety information were sufficient if a country was small, but issues were becoming apparent with Mexico where there is well over 46,000 km of highway needing to be mapped through a single portal. As a comparison this is four times the length of the New Zealand state highway network.

This prototype application, developed by Kurt Janssen, Abley’s GIS Team Leader, has been a great success, ultimately altering the direction of development for iRAP’s wider global mapping and database solutions. Key benefits and functionality include:

• Ability to map Mexico’s entire highway network through a single portal. As a comparison this is four times the length of the New Zealand state highway network.

• Ability to query any individual 100m segment of road bringing up all its associated attributes.

• Ability to filter highways based on the results of road assessments.

• Ability to create spatial bookmarks of key locations such as individual Mexican States.

• Ability to display different geometry simultaneously i.e. line features for the roads with crash data displayed as points.

Abley’s fusion of road safety (typically the realm of engineering only), with spatial technologies offering advanced analysis and visualisation within one platform, is proving to be very popular with our clients. This international example reinforces that using GIS in our work is what makes us stand out as an innovative transportation advisor.”

Accessible Mapping, Road Safety, Parking Management, Council Plan Changes, Public Transportation Network Planning, Integrated Transportation Assessments and UI Vulnerability are some areas in which the young engineer has worked.

Jay has been involved in delivering a number of integrated transport assessments for Fonterra, New Zealand’s biggest grocery distributor.

“The opportunity to collaborate with clients, planners and architects in the process of compiling the transport assessments has been an extremely educational experience.”

During his 12 months at Abley, Jay has visited Dunedin, Auckland, Rotorua, Napier, Hastings and Oamaru for project related work.

Jay has a passion for travel and all things sport. He recently visited Japan during the summer holidays and is already planning a trip to Hawaii. But nothing exceeds the passion he has for the game of cricket and his beloved Sri Lankan cricket team!

Abley Contact: Kurt Janssen
Email: kurt.janssen@abley.com
Phone: 03 367 9008

Abley Contact: Jay Baththana
Email: jay.baththana@abley.com
Phone: 03 367 9079

Exploring the potential of existing data sets is a smart way of creating value. Transport data, by its very nature, is spatially referenced i.e. relative to a particular point or length of the transport network. For this reason, different sets of transport data can be brought together inside a geospatial environment and used for a variety of purposes, such as calculating the risk profile of every intersection within a transport network.

In a tight fiscal environment, it makes sense to explore methods of creating value from existing assets. This is especially relevant in the transport sector as budgets are always subject to scrutiny and changing political environments; however, the community’s expectations remain high.

Given the finite resources available to improve road safety, it is imperative that road safety investigations and investments are targeted at the highest risk parts of the network. This increases the likelihood that projects will deliver the greatest road safety benefits and help achieve the desired outcomes of Safer Journeys. We have been adding value to the New Zealand Transport Agency (NZTA), the NZ Police and local government organisations by bringing together a variety of transport datasets and combining it with industry knowledge inside a geospatial environment to improve road safety. One such example is ‘Intersection Safety Intervention Studies’ (ISS), that identify and prioritize high-risk intersections, have been completed for Auckland Transport, Hastings District Council, the Wellington and Christchurch City Councils and the Waikato Region for the NZTA. The studies are aligned with the risk metric and prioritization techniques set out in The Guide. They provide road controlling authorities with an affordable technique to identify and prioritize intersections across their region for investigation and improvement.

By more information we encourage you to read the paper (http://www.abley.com/public/docs/Durdin_P.pdf) that will be presented by Paul Durdin at the Inognito Conference. The paper has been selected as one of three finalists for the Inyds Paper of the Year at the conference.

Abley Contact: Paul Durdin
Email: paul.durdin@abley.com
Phone: 03 367 9004

This proves road controlling authorities with an affordable technique to identify and prioritize intersections across their region for investigation and improvement. The ISS projects have been enabled by the using of geospatial analysis techniques where large quantities of data are brought together in a single environment for processing and analysis in an automated and standardised manner. They clearly demonstrate the value that can be added to data collected by road controlling authorities and show how GIS is an ideal platform to unlock value.

For more information we encourage you to read the paper (http://www.abley.com/public/docs/Durdin_P.pdf) that will be presented by Paul Durdin at the Inognito Conference. The paper has been selected as one of three finalists for the Inyds Paper of the Year at the conference.

Abley Contact: Paul Durdin
Email: paul.durdin@abley.com
Phone: 03 367 9004
**FEATURE PROJECT : ABLEY LEADS INNOVATIVE RESEARCH TEAM**

**HOW CAN EMERGING TECHNOLOGY MEASURE THE QUALITY OF NEW ZEALAND’S STATE HIGHWAY NETWORK?**

That’s a question we’re answering, following our appointment to lead a high-profile New Zealand Transport Agency (NZTA) research project from the most recent round of technology solutions topics. The aim is to determine if the performance of the State Highway network can be assessed using emerging technology and to identify how this information can measure the performance of the network.

The study team is led by Abley, with Intelligent Transport Systems (ITS) research and business analyst support from URS and database support from Eagle Technology.

The objectives of the research are to:

- Review the availability of and current application of digital data for road network monitoring both here and overseas;
- Determine the extent to which digital data can be used to inform useful State highway network monitoring indicators that support transport planning, transport optimisation initiatives, road safety and asset management in New Zealand;
- Develop a GIS based reporting tool fed by a database of raw digital data and the nationwide State Highway network to test the application of digital data to support the network monitoring indicators identified;
- Deliver a proof of concept study demonstrating how the front end reporting tool can support transport planning, transport optimisation initiatives, road safety and asset management in New Zealand; and
- Build a business case for sourcing digital data from third party suppliers to support the front end reporting tool’s data requirements.

The research project began in January and is scheduled for completion in early 2014. We are proud to be leading this innovative ITS project that will be instrumental in providing NZTA with a better understanding of how best to manage the New Zealand State Highway network.

Abley Contact: Dave Smith  
dave.smith@abley.com  
tel +64 3 367 9001

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[www.abley.com](http://www.abley.com)  
info@abley.com

Christchurch, Level 1 and 2, 30a Carlyle Street  
phone +64(0)3 377 4703  fax +64(0)3 377 4700  
PO Box 25350, Christchurch 8144, New Zealand

Auckland  
phone +64(0)9 974 9820  fax +64(0)9 974 9824  
PO Box 91138, Auckland 1142, New Zealand

Queenstown  
phone +64(0)3 974 4569

Nichola Blue  
Address line 1  
Address line 2  
Address line 3  
Address line 4

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