ABSTRACT
The authors were the recipients of the IPENZ Transportation Group sponsorship to attend the 2012 Australian Institute of Traffic Planning and Management (AITPM) Conference in Sydney. This paper will focus on the key themes from the Conference and their relevance in the New Zealand transport industry.

The conference was entitled "The Traffic and Transport Merry Go Round", which referenced the tension between the need for long term transport planning and the short term political cycles that occur in Australia.

Integration between transport modes, long term transport planning for freight and public transport, and collaboration between agencies were themes of the conference and these key philosophies are also a focus for the New Zealand transport industry. With the introduction of High Productivity Motor Vehicles (HPMV's) onto our roads, a shifting focus towards integrated planning and our need to work together to provide optimised effective transport solutions, our focus is shifting to collaboration across networks and transport modes. This paper details the conference presentations, and identifies that there are lessons to be learnt from emerging practices in both Australia and NZ.
INTRODUCTION
The following paper provides a summary of the AITPM annual conference held at Luna Park, Sydney in October 2012. The conference was entitled ‘The traffic and transport merry-go-round’, a reference to the tension between the need for long term transport planning and short political cycles – which inevitably leads to a feeling of going around in circles. The conference papers were intended to focus on approaches that broke this cycle – these included greater collaboration, the role of government versus private sector, commitment to data collection, preserving traveller choice and the management of road space and safer roads.

The conference consisted of two days of streamed presentations and the final day was split into a Modelling Workshop or Multi-Modal Tour.

CONFERENCE PRESENTATIONS
The conference opened with a Keynote address from Duncan Gay, NSW Minister for Roads and Ports and Gladys Berejiklian, NSW Government Minister for Transport. These speakers provided a brief overview of the current issues facing transport in New South Wales and the benefits of working together in collaboration – something that they stressed does not always happen. The message from this presentation was mainly political in terms of highlighting how much value was being created from their respective policies. However, what was clear was their intent for smarter collaboration – of services, operations, data sharing and in particular cross-mode integrated fare charging.

Dr Andre Dantas, Brazilian National Association of Urban Transport Companies (NTU).
Latest developments on the implementation of Bus Rapid Transport (BRT).
Andre, formerly a lecturer at the University of Canterbury, is now employed by the NTU which is an organisation to represent the interests of public transport operators in Brazil. Andre’s key message was that BRT should be understood, conceptualised and implemented as part of the whole transport network and more specifically the PT network. BRT is characterised by same level loading, prepaid fares, modal interchange and exclusive busways however the advantage of BRT over light or heavy rail is that it can operate both on and off network. Andre presented a number of interesting busway projects around the world including O-Bahn in Essen, Germany, Yusuko in Japan, Tehran in Iran, Bogota in Colombia, Santiago in Chile and Belo Horizonte in Brazil. Andre explained that some of the current busways projects under development include interchanges to support expected demand of up to 244 buses per hour (1 bus every 15 seconds) with some busway corridors planned to support up to 1 million passengers per day.

At the conclusion of the opening speeches the conference was split into two streams and the following summaries are from the presentations that were attended by the representatives from IPENZ.

Australian and International scan of public transport advocacy and information campaigns, Sarah Mahmoud, RACV.
Sarah presented the work undertaken by ARRB to identify best practice for public transport campaigns and initiatives undertaken by key public transport advocacy groups internationally. The key focus of this work was a telephone /email survey of a shortlist of over 70 international organisations and initiatives. Sarah presented a summary of the work of three organisations, one in North America, another in the UK and a third which has an international focus (UITP International Association of Public Transport). The common methodologies between the successful campaigns were presented and included; online communication, online tools (carbon calculators), surveys and video/social-media. Sarah also presented common barriers to success. These included inconsistent messages, political cycles, engagement outside membership, resource constraints and perception of unsuccessful pilot studies/initiatives.
The case for Government buy back of toll roads, Tim Veitch. Veitch Lister Consulting
Tim presented a general case study of the general economic impact of tolls. Starting by defining the economic metrics used to make our economic decisions (travel time, emissions, accidents, operating costs). Tim presented a modelled comparison between traffic volumes both with and without a toll on the newly opened Clem7 tunnel in Brisbane. Current observed volumes are approximately one third of predicted volumes if a toll was not in place. In economic terms this equates to about half the economic benefit being realised city-wide for tolled versus untolled ($1.34B versus $2.16B based on a 50 year horizon). Buy back of the tunnel is estimated to cost in the region of $800m. The Gateway bridge was also presented as a case example. In contrast to the tunnel, very little additional economic benefit would be realised by removing toll – this was determined to be due to the lack of competition for the route. These two cases highlighted a mechanism by which tolls can be used to maximise economic benefit – which isn’t necessarily the same as minimising journey time for all. Tim’s conclusion was that buy-back of the Clem7 tunnel from the private operator is worth considering.

Future Freight Demand Challenges, Michael Wills, Road and Maritime Services (RMS), NSW.
Michael provided an overview of the predicted growth of road freight over the next 30 years in NSW. These forecasts show significant non-linear freight growth over the next 30 years based on the historical data which shows freight movements have doubled in the past 20 years. The presentation discussed various options which either reduced the total number of vehicle movements required for a given freight task or reduced the impact on the pavement surface. These options included; matching vehicle types with roads (vehicle length/mass), vehicle options to minimise wear and tear (trailer hitching options and road trains), road friendly suspension, and an initiative known as the Intelligent Access ProgramThe Intelligent Access Program (IAP) is a voluntary program that uses the Global Navigation Satellite System (GNSS) to monitor heavy vehicles’ road use, giving transport operators flexible access to the Australian road network to suit their specific business and operational needs. In return, IAP provides road agencies with confidence that heavy vehicles are complying with the agreed road access conditions. (Transport Certification Australia, 2013) RMS is also working with operators in regard to productivity incentives. This includes more productive articulated vehicles, concessional mass limit and operator accreditation. Michael noted that most road freight is constrained by volume not mass.

Smarter Data Collection for Road Authorities, Steven Swann, Albury City Council.
Steven gave a brief introduction about Albury City which is located at the centre of the Sydney-Melbourne-Adelaide triangle and has a population of approximately 48,000. In 2010 they became the first government agency in Australia to purchase Miovision’s Automated Turning Movement Counters for collecting traffic data. The presentation was based on their experience of the system which has reduced the cost of their traffic surveys and improved the health and safety of their staff by reducing the time they are exposed to the elements. The data is also auditable which has been important in ensuring accuracy of the outputs. Steven detailed the types of data collection the Miovision system has been used for, which included turning count surveys, parking turnover surveys, pedestrian and cycling counts and qualitative investigations that have led to targeted police enforcement.

Mastering the Art of a Proper Risk Assessment, Zoran Bakovic, Parsons Brinckerhoff
Zoran’s presentation discussed the current risk guideline in Australia and New Zealand -AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines (Standards New Zealand, 2009). This standard is not specific to road safety and is used across many industries and disciplines. Zoran proposed that we change our approach to risk management and consider deficiency identification as opposed to risk identification. Once a deficiency has been identified, hazard identification should then be completed. Zoran used his experience in risk management to show the vast range of risk assessment matrices that are currently in use throughout Australia and suggested that a standardised matrix should be developed to ensure consistent risk assessments are completed.
Making better use of the open source transit timetable databases in transport model development, Andy Wilson, AECOM

Andy presented an overview of the use of the General (or Google) Transit Feed Specification (GTFS) to enhance the regional travel demand model for Wellington. He discussed the refinement of the existing model, the process of matching transit stops to travel nodes and the validation of the model against surveys and published timetables. Andy discussed the key input files created for the model and concluded that the process could be replicated in other centres.

Using electronic ticket machine data to develop public transport matrices, Marc Caplan, Arup

This presentation built on the information supplied by Andy Wilson’s presentation on Open Source Transit Timetable Databases (discussed above). Marc discussed the development of the Greater Wellington Regional Council strategic model using available data sources. Data supplied for the model development included 2.9 million unique bus records from "smart card" systems and cash payment records. A number of these records did not have a recorded end point and Marc detailed the methodology used to determine the most likely end point of each of these trips and the process for excluding unusable records. Further processing was required to determine the origin and destination of multi leg trips. The process led to around 90% of the records being usable and this information will be used to determine future service needs.

SCATSIM/VISSIM interface as a platform for performance evaluation of signalised intersections, Zarko Andjic, Urbsol

Zarko’s presentation discussed the capability of the SCATS system to determine simultaneous measurements on a cycle by cycle basis of delay using an Area Traffic Control (ATC) system. He used five case study examples to demonstrate how the interpretation of model outputs from SCATSIM/VISSIM shows a relationship between signalised sites as well as the effect that linked intersections have on each other during both the peak and the interpeak period. The level of detail available using these systems make it possible to see the effects of small changes at signalised intersections.

Mobility management toolbox – MMove EU project. Kyriakos Tyrologos, Brisbane City Council

Kyriakos presented an overview of this European initiative, named Mobility Management over Europe (MMOVE) (Mobility Management Over Europe, 2013). Mobility Management is a concept to promote sustainable transport and manage the demand for car use. The MMOVE project basically focused on two areas – firstly the identification of European wide best practice and secondly the development of a mobility toolbox to collate information into a searchable database for the geographic transfer of successful practice between cities. The toolbox also includes the whole mobility story/explanation including principles, case examples and policy to support mobility (www.mobilitytoolbox.eu).

Confronting comfort – Recommendations from the BMW Guggenheim Lab. Rachel Smith, Aecom

Rachel presented a very passionate summary of her experience with the BMW laboratory established to identify new ideas, designs and strategies to address the serious challenges urban centres face today. Rachel's work with the BMW lab involved a series of facilitated workshops focused on sustainable transport including cycle super highways, electric vehicles, parking (car parking day), cultural literacy and collaborative consumption – which aligns with BMW’s and Audi’s principles of improving access to motor vehicles rather than ownership. Rachel also spoke about the crowd sourced cycle route map initiative (www.dynamicconnections.de). This is an online map produced by users who identify their cycle route and answer questions about it (do you feel safe? Does it have a cycle lane?) – from which a full network user-preferred cycle map is produced.

Eco-driving in the Australian Context, Michael Roth. RACQ

Michael spoke about the EcoDrive research project which draws on the input from 1,000 participants to understand whether drivers would change their behaviour to reduce fuel consumption. It was a controlled, blind trial where participants didn’t know that they were being...
targeted with a decision to change behaviour. There were 5 interventions including 20 minutes online learning (all participants), 2 hour classroom session (20%), driving lesson (20%), classroom & driving lesson (20%), 3 hour workshop with a pre and post vehicle drive with score rating their Eco-driving (7%). The key conclusion was that irrespective of the initial attitude of the participants at the end of the study, the vast majority of participants were convinced that changing their behaviour would save fuel. Interestingly all interventions achieved approximate equal results in terms of fuel savings. A BCR up to 5 was achieved based on the cost of the education/intervention versus benefit of saved fuel costs.

Optimising Sydney’s Separated Cycleways, Alan Finlay, Bitzios Consulting
Alan presented an interesting discussion on separated cycleways – these are two-way dedicated cycle paths that are physically delineated through kerbs and medians from the live traffic lanes. In a city like Sydney these cycleways presented a number of challenges – particularly at signalised intersections. Interestingly, the presentation focused on the deficiencies of the system for cyclists (as opposed to the trade-off disbenefits to motorists) such as delay time, short/insufficient green times, detection problems, delivery of cycling green waves etc. The project described by Alan was a study of three intersections within Sydney CBD with cycleways. One of the intersections was cross point for two one-way roads and where two cycleways cross. This requires a four stage traffic signal cycle of which two were dedicated to cyclists. The study included a review of both the signal operation and a behavioural study of cyclists. Interestingly the study showed that only 40% of cyclists stopped in the correct location to activate the signal detector loops. The study also showed that between 10 and 20% of cyclists cross on red. Key recommendations for this study were improved cycle detection, proposed diamond dot markings, education and flashing yellow bicycles signals.

Getting bums on seats – a practical guide, John-Paul Maina. Cardno
John-Paul presented an overview of the key components of land-use planning and urban transportation systems that influence the demand for public transport. Using the City of Toronto as an example, John-Paul presented what he described as the ‘four fundamental pillars’ of changing network-wide practice (getting more bums on PT seats). These were; governance of land use and transportation, funding of public transport systems, strategic investments in infrastructure, and design of neighbourhoods. John-Paul argued that a philosophical change is required amongst decision makers which moves from a mobility focus to an accessibility focus. His presentation was very high level and general - presenting the case for ideas such as transit oriented development and bus rapid transit.

Optimising existing systems, the rebirth of the partially controlled right turn. Matthew De Marco, SMEC
Matthew provided an argument for changing the approach to right turns at signal controlled intersections. A partial controlled right turn is one in which the right turn can operate as an unopposed (green arrow) phase or under ‘red-arrow dropout’ to continue to operate as a filter right turn (gives way to oncoming traffic). Matthew presented the relative merits of using various combinations of phase types and time of day phasing/timings. He stated research that suggested that fully controlled right turn intersections were (not unsurprisingly) less efficient than those which operated under partial control. Matthew acknowledged that he was not presenting anything new or innovative, but rather re-highlighting the issues to be considered for partial control of right turns – concluding that the decision/methodology should be decided on a location by location basis. Matthew presented a case study from which VicRoads have decided to increase the use of partial control over full control for right turns at their intersections.

Wynyard Bus & Streets Feasibility Case Study- Quantifying person delay across all modes in a “new” but logical approach to planning transport in NSW, Alan Stewart, GTA Consultants
Alan began the presentation by saying that “Transport Projects bring people to places. Places bring people alive.” This phrase set the scene for his presentation about the Wynyard Bus Improvement Feasibility Study. Currently there are around 900,000 Northern Sydney residents with one railway line and therefore a significant proportion of these people are reliant on buses for
Lessons from the AITPM Conference Kelly Blackie & Angus Bargh

commuter travel. During the am peak period (8:00am to 9:00am) approximately 375 buses are timetabled to arrive in the Sydney CBD which have come from north of the harbour bridge. However, due to congestion only around 360 buses are able to access the area during this time. As part of the study evaluation methods for analysing delay benefits and disbenefits across all modes were investigated. It was determined that conventional modelling tools were not going to be sufficient to evaluate the impacts of any changes that were proposed for Wynyard and it was decided to use a software package called Commuter for simulation modelling. Alan spoke about the outputs from Commuter, which included Person Kilometres Travelled (PKT) and Person Hours Travelled (PHT). He also discussed the methodology for public domain improvements to ensure that the study outcomes provided an integrated solution.

The Panmure-Papakura Busway: Future-proofing urban transport infrastructure, Dan Ross, Opus International Consultants
The Panmure-Papakura Busway is part of the first package for the Auckland Manukau Eastern Transport Initiative (AMETI). The busway will be the first urban segregated arterial busway in New Zealand. Dan spoke about the predicted population growth in East Auckland and the need for improving transport choice for the historically car dominated area. He spoke about the cultural and physical constraints along the route including the historical pa sites and the need for new retaining structures. Dan spoke about the design of Panmure interchange, which included intersection configuration changes as well as consideration of active modes and traffic movements.

Trams and CAMS-accessing the Gold Coast rapid transit, Benjamin Vardon, Aurecon Australia
Stage One of the Gold Coast Rapid Transit (GCRT) project is currently being constructed and will consist of 16 stations between Griffith University and Broadbeach South, a total distance of 13km. Ben’s presentation explored the Corridor Access and Mobility Study (CAMS) which focussed on identifying cycling and walking improvements to improve accessibility to the stations. He stressed that commuters consider the entire trip from door-to-door and the importance of providing a route that is accessible, convenient and comfortable. The study used the Pedestrian and Cycle Environmental Review System (PERS and CERS) to record the current condition of each facility within the catchment areas and discussed the scoring system used to prioritise improvements to walking and cycling facilities.

Safer roads lead to safer communities, Agota Berces, 3M Australia
Agota began by discussing the changing driving environment with aging drivers, changes to headlight performance, improved vehicle and the complexities of driving. She showed a number of scenarios where the day light visibility of signs and markings differed dramatically when compared to their performance at night. She discussed the whole of life costs of signage and the benefits of installing retroreflective signage. Agota also discussed recent trials of Stamark wet reflective tape instead of conventional pavement marking in New Zealand and Australia.

A fairer and more effective driver licence points scheme for NSW or revenue vs road toll results, Lex Stewart, Gamaro Pty Ltd
Lex spoke about the current NSW demerit system for drivers, which is similar to the NZ system. He looked at alternatives to this system including increasing the amount of demerits given to drivers who currently receive a small demerit fine for speeding. He suggested reductions in the number of speed cameras with further targeted enforcement and education.

Conflict path analysis: Analysing and managing the cyclist-driver interface, Bob Cumming, Road Safety Audits Pty Ltd
Bob discussed the methodology for conflict path analysis using four different intersection configuration examples. He discussed the five step process of determining conflict paths which included plotting the paths of the vehicles and cyclists, plotting constraints, determining whether conflicts could be removed or reduced and considering the sight distance for each mode. The presentation focussed on ensuring awareness between cyclists and motorists and showed the versatility of conflict path analyses.
Car Pooling – sharing the journey of Tally Ho business park, Matt Harridge. O'Brien Traffic
Matt presented a general overview of the rising annual Vehicle Kilometres Travelled (VKT) forecasts, reducing trends in car occupancy and the changing cost of fuel and used this to justify the requirement for the adoption of car pooling. Matt presented a detailed case study of the Tally Ho Business park located in the suburb of Burwood East, Melbourne (60,000sqm floor space, circa 3,000 employees). Matt highlighted that a number of opportunities existed to make Tally Ho a good choice for the promotion of car pooling – this included the willingness of employees to travel with other employees from the same business park and at similar times. He highlighted that car pooling champions are key to success. Greenride (www.greenride.com) was chosen as the coordination management tool for participants to enter details, find matches and log trips. Matt also discussed the key barriers to uptake including personal security, lack of flexibility, liability and insurance, lack of registered users and a large supply of free parking. The key conclusion for the success of the scheme was to find champions. The scheme currently has approximately 120 active users.

Improving the walkability of Brisbane’s city centre, Matthew Tilly, PSA Consulting
Matthew presented an overview of a recent study with urban designers entitled Lap27 to enhance the walkability of Brisbane’s CBD. This study focused on identifying learnings from other cities, appraising deficiencies in safety, connectivity and amenity, redefining the active transport planning framework locally and the creation of a set of practical initiatives for implementation. Matthew presented an overview of the current use of bridges by active modes, bus boarding by location and spider diagrams of origin-destination demands (distribution) and highlighted a range of constraints to enhancing uptake of active modes – these included pedestrian-cyclist conflict on shared paths, footpath quality, poor comfort (shading & shelter), gaps in the modal network, lack of infrastructure on key desire lines and long wait times at intersections. His talk concluded by presenting a range of recommendations, which were largely context/local specific, to address these key deficiencies and constraints.

Electric vehicles – the state of play in Victoria, Rodney Jude, Cardno
Rodney presented his experiences so far in a trial of electric vehicles (EVs) in Victoria by the Department of Transport. The trial involves 60 participants (60 households and some fleet) each being given access to a variety of different electric vehicles for 3 months. Charging on typical outlet takes 6-8 hours. Enhanced outlets can reduce this to 3-4 hours. The trial included travel diaries before, during and after electric vehicle use. At the end of the trial (2012) 15,000 trips had been undertaken and total vehicle running cost were calculated to be approximately 25% of the petrol equivalent. The trail required the installation of a power outlet at each residence. Rodney explained that during his personal 3 month trial he completed 3000km travelling for 2 hours on average per day. Rodney concluded that the high cost of purchase and the limited access to charging points presents a significant barrier to uptake. European governments have incentivised uptake through tax credits which range from $15,000AUD (Denmark) to $4000AUD (Italy) but stated that this would be unlikely in Australia. Rodney also provided detail on an automated battery replacement station (Drive switch & Go brand) which reduces ‘range anxiety’ for longer trips undertaken by EVs.

Connecting the traveller, sharing knowledge is power, Giles Perkins, Mouchel Ltd
Giles presented UK experience of real time access to traffic information, arguing that the ‘prediction’ element is the last piece of the travel information jigsaw. Giles presented an extensive overview of the development of traveller information systems from the advent of motorways to the present day from map based and travel time table planning to personalised real time information on personal mobile devices. Giles explained the principle of ‘snapshot of movement’ across the network which is continual and generally undertaken by third party datahouses employing a machine driven (computational) approach to the provision of data. ENTIS (UK) is currently developing this capability using fixed infrastructure data, real time probe data, wide broadcasts and ‘now’ and ‘future’ information. Giles’ view of the future was one of personalised travel planning through computer learned behaviour of the traveller, integrating it with external influences such as weather.
A real time travel time information service, Gordon Farrelly, RMS NSW
Gordon discussed the recent implementation of real time travel time services on the Newcastle Freeway, Westlink M7 and the Western Motorway. This presentation included a live demonstration of the tool which manages the feed of travel time information across the motorway network. Gordon explained the background to the system including details of the components that allow it to operate. The system effectively uses strategically placed Variable Message Signage (VMS) to inform motorists of expected (and estimated) journey times based on prevailing traffic conditions monitored from electronic toll devices plus in-road loop detectors. This was a very interesting presentation but notably is a solution that is still confined to the motorway network and does not consider the off-highway urban and arterial network.

Application of accessibility measures, Renan Grace, AECOM
Renan discussed accessibility, arguing that it is the ‘best’ method to measure or assess network performance. By making a demarcation between traffic planning, mobility planning and accessibility planning, Renan presented the background to the three main types of accessibility modelling – isochrone, gravity and utility based approaches. He presented the concept of travel based impedance and argued that the use of generalised costs is the most appropriate indicator of impedance (compared to travel time or distance). Renan presented an overview of accessibility modelling in Perth using the Public Transport Accessibility Level (PTAL) method explaining that this can lead to abrupt thresholds between adjacent areas/suburbs – to overcome this, Renan presented an approach that he has developed to smooth this effect.

Sydney Harbour Bridge traffic management – its history, development and operation, Graeme Pattison, RMS NSW
Graeme provided a fascinating slide show of photos showing the Harbour Bridge since it was opened in 1932 after a 4 year construction period. A point of interest from the presentation was Graeme’s comment that all the brick pylons on the bridge are purely decorative – only the steel provides structural integrity, which indicates the focus back in the 1920’s on urban design principles. A second interesting point was that tidal lane flow, time of day tolling and multi-modal access across the bridge have been a part of its history since it opened. Graeme also presented a slide showing an engineer with a scale model of the bridge complete with toys cars and varying configurations of lane markings – true simulation!

Pedestrian Safety, the vulnerability challenge! Dean Mills, DCD Systems
Dean introduced the most sobering and potentially the most important session of the conference – looking at road safety. Road safety is somewhat of a hot topic in Australia with media-supporting pressure to reduce the use of speed cameras and the use of slow zones – particularly around schools. Dean presented details of the UN Global Plan (UN Road Safety Collaboration, 2013) to reduce the 1.3 million global road deaths per year – of which 50% are people not in a vehicle. The UN Global Plan includes the decade for road safety initiative and is based on 5 pillars – Road safety management, safer roads and mobility, safer vehicles, safer road users and post-crash response. Dean then went on to introduce Ron Delezio and his Day of Difference charity formed from personal experience of tragedy.

Ron Delezio, Day of Difference
Ron is the founder of the Day of Difference charity which provides modern equipment, support and training for the professionals and families of individuals impacted by tragedy – particularly accident related tragedy. Ron shared his personal story of the day his 2 year old daughter was badly burned as a result of a vehicle crashing into her day-care centre in 2003. Ron and his charity also campaigns for safety initiatives including safety zones around schools and day care facilities. Ron’s call to our profession was to for us to understand the pivotal role we have as traffic engineers and transport planners in designing safer systems and transport networks. He reminded us that at the end of every transport tragedy is a family who are impacted for the rest of their lives. This was a wholly appropriate presenter to conclude the conference – reminding us that the work we do is very important and the decisions we make have great power for good.
MODELLING WORKSHOP

The AITPM Modelling Workshop was attended by Angus Bargh on the 12th October and the following is a summary of the key information and themes presented.

Transport Authority Perspective – Current and future direction, Chris Zito Manager of traffic and transport modelling, RMS
Chris presented the current state of play in regard to transportation modelling across states within Australia. Chris summarised the feedback gained from speaking with his counterparts in other states and was clear that interest is building in the area of Dynamic traffic assignment – primarily for ITS testing, better reflection of network congestion, real time planning and operations, better reuse of models and ultimately better value for money. Chris presented some of the challenges in improving the current modelling landscape.

Public transport project modelling, Matt Jones, Bureau of Transport Statistics, Transport for NSW
Matt provided an overview of the development of the Sydney public transport model – which is designed to sit underneath the Sydney Transport Model and includes mode choice (rail, bus, park and ride etc.), station choice, fares, interchange penalty and crowding. The model seemed to be a standard PT model – however of interest was Matt’s description of how intercept surveys were conducted using tablets where geocoding was undertaken ‘on the fly’ by placing pins on electronic maps rather than capturing addresses.

Statistical toolkit for model confidence and stability, David Shteinman, Australian Centre for Commercial Mathematics
David provided an overview of the new toolkit, provided as part of the NSW RMS Modelling Guidelines document (Transport for NSW, 2013), which allows for a statistical analysis of the stability and confidence of models.

Meso modelling and dynamic traffic assignment, Prof Travis Weller, Research centre for integrated transport innovation, University of New South Wales.
Travis provided the background to different model definitions by explaining the basic premise of modelling – that the purpose of models is to mathematically model ‘user choice’ and then mathematically model the network impact of that choice. Then we collect the physics of these choices – congestion, emissions, energy, reliability, accessibility, safety. Models only differ in the choices that are modelled, the impact descriptors and the physics outputted. Travis argued that what transport modelling demands, for it to be of value, is stability across all decisions or choices – that as we ascend or descend through the ‘choice ladder of transport’ the iterative effect of adjacent steps is stable. Traditionally modellers have used functions to maintain stability at each ‘choice level’ but recent advents in modelling is replacing functions with simulated values – the challenge here is to reflect choice but maintain stability across all steps in the model. Travis was quite clear that in dynamic traffic assignment true equilibrium does not exist and efforts to achieve better equilibrium naturally result in more detailed models and more effort. Two current US initiatives were discussed - US SHRP C10 Integrated assignment meso models project (SHRP2C10, 2013) and the FHWA – AERIS Project (US Federal Department of Transportation, 2013) – real-time transport sustainability applications meso/planning. The use and application of dynamic traffic assignment (DTA) models in Australia appears to be in the ascendency. This presentation was ultimately an academic summary of DTA models based on the increased interest in their use over the last few years.

Modelling congested conditions, Dr Rahmi Akcelik, Sidra Solutions
Rahmi presented a focus on the new SIDRA 6 release starting with an explanation of the types of models and their typical characteristics/categorisation. Rahmi is particularly subtle in building a case for the use of SIDRA by suggesting it is the most appropriate balance between model complexity and measurement error in inputted data. Rahmi suggested that the success of Sidra is
primarily due to its lane-by-lane modelling capabilities, which reflect characteristics such as short flares and utilisation. He concluded by presenting new developments in SIDRA which reflect congested conditions – particularly blocking-back and discharge rates (downstream effects). This presentation was a mix of theory and explicit commercial pitch promoting the benefits of Sidra.

Adelaide City Model, Dr Frank Primerano & Dr Rocco Zito, Dept of Planning, Transport and Infrastructure, South Australia
Frank presented firstly a case for the need for a city-wide model for Adelaide – a case that is common across most Australasian centres and includes the need for integration with a higher level strategic model, detailed CBD planning, public transport strategy development, congestion modelling and highway modelling. Adelaide ultimately chose a meso level approach using the Aimsun hybrid model as a joint research project between UniSA and TSS. The initial step for the model build was the conversion to Aimsun of the 634 zone CUBE strategic model, which includes all signalised parameters and turn penalties. Rocco outlined the detailed process of building the model, explaining that the model conversion process was time intensive. To date, the model is achieving acceptable calibration at a meso level. The interesting points of the presentation included cooperation of local government, academia and private consultancy in addition to the development of a dynamic user equilibrium model. Rocco stated quite clearly that the retention of the link with the strategic model was a fundamental limiter to the speed of development but one which was ultimately required to retain the forecasting ability of the higher tier model.

Trip Generation Rates, Ian Clark, Flow Transportation – Trips & Data Bureau
Ian presented a summary of the Trips and Data Bureau, formed as a focus group of IPENZ TG in 2002. Ian explained that it provides a valuable source of trip rate data based on varying land uses. It has observed survey data from UK, NZ and Australia and is available to private and public sector on an annual fee basis.

VicRoads Data Sources & Systems, Roger Clark, Information & Data Services, VicRoads.
Roger presented an overview of the various data sources available to VicRoads – this included SCATS data, highway loop detection, highway incident detection, weigh in motion detectors, travel time data using floating cars and bicycle data using permanent count sites on cycleways (6.6% annual growth in cycling). Roger provided a summary of an initiative to convert their count data to link based flow data which is updated every night based. From this, VicRoads overlay crash rates to identify safety characteristics and mitigation. The database holding all traffic data required a location reference system (LRS) so that all data can be spatially integrated. Looking forward, Roger and his team are developing automated count validation using SCATS loops and are also talking to communication providers about data they hold.

RMS data sources & systems, Dennis Enriksen, Road information management, RMS
Dennis provided a complementary presentation to the previous speaker about the direction RMS is taking with the future of transport monitoring, particularly GPS data from fleet and buses. RMS have developed a tool to provide full integration of all data with the network (reproject, enrich and snap) to create a single data repository. The system has a series of self-service data access dashboards to provide a summarised overview of the network in real time to its business users. The system also integrates with real time GPS travel time feeds from third parties – providing a visual overview of travel times in addition to direct access to the raw speed data.

Model free networks as a basis for transport data hubs, Dr Marc Miska, Smart transport research centre, QuT
Marc presented an extremely powerful tool looking at the near instantaneous build of a traffic model by harvesting information from open and public sector sources. Marc and his team have developed an open source platform for bringing the various components of traffic models together quickly, cheaply for the benefit of all. The platform comprises a Geo-spatial transport interface to create a data hub and a set of services to undertake actions with the data, which includes geocoding, traffic modelling and travel time prediction for the traveling public. Marc explained the concept of ‘traffic modelling out of the box’, which allows for full network description independent of the modelling package – from which a model can be built automatically at either a macro, meso or
micro level.

MULTI MODAL TOUR

A multi modal tour of Sydney was held concurrently with the Modelling Workshop and was attended by Kelly Blackie.

Chatswood Interchange
The multi modal tour started at Chatswood train station and bus interchange, which was upgraded in 2006. The transport interchange at Chatswood had previously consisted of a rail overbridge with steep steps and poor accessibility and the bus interchange was an enclosed environment that had poor ventilation and amenity. The interchange was constructed as a Public Private Partnership and was to include retail plaza and three towers. The private developer went into liquidation during construction and construction of the towers has not commenced. Future issues for the interchange will include the current limited capacity across the harbour bridge and the need to cater for the new North West Rail link service.

Epping Interchange
The group caught the train from Chatswood to Epping to discuss the Epping Interchange upgrade. Historically there have been congestion problems in the surrounding road network at Epping and the interchange straddles two local council areas, which has made the problem more complex. The interchange consists of a rail underpass with bus interchanges on both sides of the station. A pedestrian bridge to the Epping town centre also forms part of the interchange. We discussed pedestrian crossing desire lines for bus stop access and the use of barriers to direct pedestrians. The interchange has resulted in a reduction in on-street parking on the eastern side of the interchange which concerned the local Chamber of Commerce. Bicycle lockers and racks have been provided at the interchange; however, cyclists are continuing to chain their bikes to barriers located on the edge of the footpath. It was suggested that this may be due to lack of awareness or convenience.

North West Rail Link
After discussing the Epping interchange, the group boarded a bus for a tour of the North West Growth centre to view the proposed station locations for the North West Rail Link. The proposed North West Rail Link will consist of high frequency single deck trains from Cudgegong Road to Chatswood with 12 train services per hour during peak periods. The project requires eight new stations, which include a number of underground stations, and around 15km of tunnel that will be the longest and deepest rail tunnels ever built in Australia. Further information about the project can be found at http://northwestrail.com.au/. The group discussed the need for integrating the rail stations with a hierarchy that favours active transport modes and the need to reduce private motor vehicle dependence. The tour included a stop at Castlehill where a 34m deep underground tunnel will be required to house a new train station near the current bus interchange and shopping centre. Approximately 35,000 people live within 2 km of the retail centre and the area is developing rapidly. The current bus layover is located in close proximity to the proposed station and the site will need to be carefully considered during construction which may continue for a number of years. A theme of the tour was making the route attractive for public transport users with a desire to have an integrated ticketing system for public transport and priority for public transport services.

Paramatta City Council Presentations
Following the bus trip the group headed to the Parramatta Heritage Centre to hear about current and future projects proposed by the Parramatta City Council. Parramatta is Sydney’s second largest CBD and the Parramatta City Council is taking proactive steps to ensure a polycentric approach is taken to land use planning. The group heard from Alison McDonagh a member of the Property Development Group about how Council is shaping the future of the CBD through development and public transport initiatives. David Gray spoke about the Regional Ring Roads strategy which will combat the current issues regarding through traffic entering the CBD area and will connect arterial routes to ensure efficiency.
Parramatta City Council has invested in a light rail feasibility study that has considered land use, urban design, social, environmental and economic effects and the effects on the surrounding transport network. One of the main aims of this project is to connect lower socioeconomic areas to education and employment and Parramatta is currently discussing the proposal with ten local councils. (Parramatta City Council, 2013)

Myfanwy Lawrence spoke about current and future walking and cycling projects and discussed Parramatta’s walking and cycling strategy. She discussed the trip generators in the city and the importance of end of trip facilities. Myfanwy showed us a video of the Parramatta to Meadowbank route which is located in an environmentally sensitive area and showed the importance of having vision when considering cycling/walking projects.

**Walking tour in Parramatta**
The group then headed off on a walking tour of Parramatta with Council staff to look at the current facilities in the city. Historically the Council has had issues with illegal rubbish dumping and vandalism in one of their carparks. A section of the carpark has now been turned into a secure bicycle parking area with lockers and bike racks and changing room and bathroom facilities have also been included.

The Parramatta interchange was the next stop on the tour with discussions focusing on the integration of services and the need to balance the provisions that facilitate pedestrian movements against the need for public transport services that operate efficiently.

**Ferry trip to Milsons Point**
The ferry trip back to Sydney focused on discussions regarding the need to provide transit orient projects to combat the high population growth of the area. Integration between urban design, land use planning and transport planning were key themes of the trip. Creating spaces that facilitate walking and cycling and ensuring public transport trips are convenient, reliable and comfortable will be important considerations for future developments.
CONCLUSIONS
The AITPM conference was an incredibly worthwhile and enjoyable experience, which allowed us to explore the current issues facing the Australian transportation industry. The conference challenged the preconception that, due to New Zealand’s smaller population, the issues we currently face would be dissimilar to our Australian counterparts. Presentations that focussed on “regional centres”, technology, collaboration, freight, accessibility and mobility provided parallels to New Zealand and the current issues we face.

Most of the case studies discussed looked at projects that relied on working together with other agencies, stakeholders or industries to achieve objectives and outcomes. The conference reinforced the need to remember that, when working with data sets, the information is used as a base from which assumptions regarding cost, impacts, utilisation of services and ultimately decision making are made. Working together with public transport operators, service users and land use planners is important to ensure data sets are fit for purpose.

When working together, early involvement with other agencies, stakeholders, industry (eg. heavy vehicle operators) and the public is crucial to determine the goals of the project and to determine the roles of all involved.

The way we move from place to place is changing and our focus is turning toward public transport, walking and cycling, integration of land use and transportation planning, investment in real time information, efficient freight movement and unconventional private vehicles. Our need to work together to create solutions across travel modes and provide traveller choice means we will need to work in collaboration. A favourite quote from the conference by Alan Stewart of GTA consultants points to the importance of remembering that we are all working toward the same goal:

“Transport projects bring people to places. Places bring people alive.”
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