

AITPM New Zealand Study Tour Award: Submission Addressing Selection Criteria

Thank you for considering my submission for the AITPM New Zealand Study Tour Award. This paper provides my responses to the three selection criteria questions.

Outline the knowledge that you will focus on acquiring from attending the conference

This year's theme for the IPENZ Transportation Group Conference, Design Innovation Technology, is such a broad yet succinct concept. To me, these three aspects are relatable to all the projects I have worked on; using technology to gather the relevant background data, brainstorm innovative ways to deliver an appropriate solution and design it such that all road users' needs are met. With this in mind, being able to attend the IPENZ TG Conference will be an invaluable opportunity to learn and apply new ideas to my work.

Design

Since the time that congestion has begun to develop on our roads, the traditional approach has been to prioritise space for vehicles, with other road users largely cast aside. This has led to multi lane roads dominating urban spaces, just think of the sixteen lane motorways in the United States bisecting, and in effect isolating, suburbs. Only in recent times have thoughts been shifting towards more equitable use of land, bringing streets back to the people. However, I have found that balancing the demand for both vehicle space and people space can be a difficult task. In particular, it is difficult to quantify the effectiveness of limiting road space to enable a modal shift. Much of the time, this modal shift relates to an aspirational target rather than a quantifiable proportion based on historical data.

Last year, I attended an AITPM technical seminar which presented the planning and design that has come out of rebuilding Christchurch following the 2011 earthquakes, with particular focus on cycling infrastructure. The main vision for the new Christchurch city centre was to make walking and cycling the priority. If this was any indication for the rest of the country, in terms of designing road space particularly for non-vehicular road users, New Zealand is at the forefront.

Therefore, I am keen to gather more insight and learnings in these areas by attending the *Designing Road Space for All Users* sessions. Additionally, being able to participate in the design workshop held by Skye Duncan would be a great opportunity to gain hands on experience while learning from an expert in the field.

Innovation

Having attended the AITPM 2015 National Conference, a couple of major topics which stood out to me were autonomous vehicles and toll road pricing. These topics are brought to the forefront again on day two of the IPENZ TG Conference, during the *Innovative Future in Transport* session.

The topic of autonomous vehicles is of particular interest for me as the question of how traffic engineers will be analysing and designing road space in the future is one I believe should be considered now. Will the widespread use of autonomous vehicles mean road safety audits will become obsolete? Will new road design standards need to be researched and implemented to be compatible with the operation of these vehicles? How will these vehicles interact with and impact on cyclists and pedestrians? With these questions in mind, I am quite interested in Graham McCabe's presentation on *Traffic Engineering in the Age of Autonomous Vehicles* as I hope that some new perspectives, if not answers, will be put forth.

Technology

One of the interesting aspects of working in the transportation industry is the human factor which influences much of the analysis and design that traffic engineers undertake. Traffic flow is driven by people, be it in their vehicles, on their bikes or as pedestrians. And as is part of human nature, travel choices are decided both rationally and

emotionally, adding a layer of complexity to predicting traffic patterns. Being able to interrogate large databases to try and understand these patterns is one of the more fascinating parts of my role.

What is amazing is the ability to harness and manipulate large datasets to better understand behavioural patterns, be it mode choice, route choice or choosing what time of the day to travel. The next step, influencing future travel behaviour, is to me a truly powerful notion. Therefore, the *Big Data Technologies* presentations appeal as an informative and interesting session, where I can gain new skills in data analysis.

Outline the potential application of this knowledge to your current role

My current professional role is working as a traffic engineer in a private consultancy in Brisbane. The majority of the projects that I have worked on are located in Queensland, with the design standards and guidelines being issued by local or national authorities. However, I am keen to be exposed to international standards and best practices to broaden my knowledge base and contribute new ideas to my work.

Design

I have worked on a number of community master planning studies which have progressed to the road cross section design stage. More often than not, these studies require a balance to be made between designing safe and sufficient spaces for all road users and maximising land for economic return. I am excited to learn about new and innovative methods of accommodating all road users in constrained corridors, which will hopefully be addressed in the Glen Koorey's presentation *Making Space: Innovative Ways to Fit Multiple Modes Within Narrow Cross-sections*. Applying the learnings from this presentation, as well as Skye Duncan's design workshop, will enable me to face these challenges with a new perspective.

Innovation

Innovation in our industry is so important. Working for a consultancy, with clients in the private and public sectors, it is my job to add value where possible, providing solutions in innovative ways. Be it finding an economical solution, a safer way of designing road space or a more efficient way of analysing data. Being ahead of the curve in terms of looking forward to the possibilities of travel, will be just another form of adding value for clients. While impacts will not necessarily be felt in the short term, by having a greater understanding of the potential that autonomous vehicles will have on traffic flows and driving patterns in the medium to long term, considerations can be made now for long term planning projects.

Technology

With the release of the Queensland government's datasets, Open Data QLD, the limits for accuracy in traffic studies, not to mention a plethora of other applications, have expanded greatly. Having access to these large databases has allowed for more certainty to be placed on assumptions for both the client and the authorising body. However, while more data is available, being able to efficiently extract the information required can be a challenge. While software such as Microsoft Excel and Access are powerful tools, I am keen to enhance my skills in datamining through developing alternative thought processes. I anticipate that the presentations on big data will open up new avenues of thinking about data analysis.

While not a technical role, I am also a member of the QLD AITPM committee. My role as state branch secretary involves organising branch matters and participating in committee discussions. My intention is that while at the IPENZ conference, I will engage with IPENZ TG committee members to discuss the culture and structure of the group. Following the conference, I will be able to report back to the QLD committee on points of difference and initiate discussions with regards to potential improvements to AITPM, be it providing maximum member benefits through interesting events for example, or enhancing the internal organisational structure to gain efficiencies.

Outline how you will enhance the AITPM/IPENZ relationship while at the conference

I understand that one of the main objectives of this award is to strengthen the bilateral relationship between AITPM and IPENZ. To be honest, I am not clear on the current state of the relationship however, from the point of view of an AITPM member, I do not feel that the two organisations are strongly connected. However, I am keen to assist in this matter to the best of my abilities.

While at the conference, I will take the opportunity to maximise the networking interactions with other delegates and presenters. This will allow me to learn more about the IPENZ Transportation Group while also discussing the upcoming 2016 AITPM National Conference. This year's location, Sydney, will be a valuable talking point, particularly from a tourism point of view given delegates from New Zealand will be more likely to stay on for longer than the conference period. Additionally, AITPM's 50th year celebrations will be an exciting topic.

In advance of the conference, I will contact with the IPENZ TG Chairperson, Pravin Dayaram, and/or the conference convenor, Daniel Newcombe, to extend a personal introduction as the recipient of the Study Tour Award. Following up on preparing an article for the AITPM newsletter, which I would be happy to write, I would ask Mr Dayaram and/or Mr Newcombe, as the editor of IPENZ's quarterly publication *Roundabout*, to publish an article about my experience at the IPENZ Conference in addition to my involvement with AITPM. This will hopefully shed some light on AITPM for New Zealanders and perhaps attract more delegates to the AITPM National Conference from across the Tasman Sea.

I hope that this submission clearly addresses the criteria for consideration by the selection panel. Should there be any queries, please do not hesitate to contact me.

Kind regards,



Alice Shi