

To whom it may concern,

Please find below my submission for the NSW AITPM Young Professional Award 2018.

A keen interest to continue to pursue a career as a traffic and/or transport professional

As a Civil/Environmental Engineering graduate, I am eager to establish myself in, and continue to forge a career in, the transport profession. Of all the civil/environmental disciplines, transport is a special interest of mine. I am enthusiastic about devising strategies to improve transport and mobility by designing new systems or upgrading existing networks. I am particularly interested in the analysis component of the discipline, involving the consideration of the social, economic and environmental needs of society; and the examination of the impact of new developments on existing transport systems. I understand the importance of trying to influence attitudes towards alternative methods of transport, particularly with my environmental background. Additionally, I see a large opportunity for social responsibility in transport planning, with the need to increase transport accessibility to all socio-economic groups, ensuring that essential facilities such as hospitals and shopping centres can be accessed easily by public transport.

Transport engineering became of resounding importance to me when I travelled to the small Cambodian village of Koh Pdao with Engineers Without Borders in 2015. The aim of the trip was to develop design ideas to alleviate some of the hardships experienced by the extremely impoverished, isolated community. Immediately I was drawn to the road as an opportunity as it was continually eroding away with no drainage system in place, despite the yearly monsoonal rains. Aside from its obvious inefficiencies as a civil piece of infrastructure, it was at this time that I identified how important transport networks are. This single road in the village affected the community's agricultural productivity and highlighted social inequalities. Whilst these were easily identifiable links in this context, I see the connection between transport opportunities and livelihoods of individuals even here in Australia. Since this, I have been passionate about involving myself in the discipline.

I thoroughly enjoy the technical side to the discipline. Network design and optimisation are of particular interest to me as their outcomes are directly linked to the real-world and their impact on society can be seen every day. Moving large amounts of people and products in an efficient manner is a problem faced by today's society that is ever-intensifying with increased population growth and travel demands. Congestion is a daily issue for our cities and furthermore, coming from a rural background, I am acutely aware of the differences between city and rural transport infrastructure. These are issues I am fundamentally motivated by and know this enthusiasm would be manifested in a career trying to improve them. I have confidence in the basic concepts and a desire and willingness to develop further knowledge and skills in the area. I am aware that it is an ever-evolving sector that requires continued learning and adaption to new technologies and programs.

I have considerable experience in the transport sector, having worked in both the Infrastructure and Environment teams on the maintenance and repair of the John Holland Rail-operated Country Regional Network (CRN); as the Environment Coordinator on the WestConnex Stage

1A – M4 Widening project; and as a vacation student, and now graduate, with Arup’s Transport Planning team. These positions have given me significant exposure to the transport industry and ignited my interest in a lasting career in the discipline. I thoroughly enjoyed working on the construction and maintenance phases of both the rail and road transport networks and know that this will be invaluable background experience for a career in the design and consulting phase. Transport planning consultancy has demonstrated to me the great depth of impact that considered transport planning and traffic engineering can have. I relish my current position in that I can integrate specific technical engineering skills, processes and knowledge to provide benefit. Whether it be a small development or a large city strategy, both present interesting challenges that require solutions.

I am a very passionate and driven person, so I hope that I will enjoy, be challenged and excel in the transport engineering industry. I endeavor to become a trusted professional who is not only valued in my immediate work team, but my wider employing company and the broader industry. I want to continually build on my knowledge of general engineering principles, with particular focus on transport planning and traffic engineering. I feel as though my professional goals align very much with the AITPM objectives and vision to contribute to the “development and management of a transport system that benefits all Australians”.

Expected benefits from attending the National Traffic and Transport Conference

To be able to attend the National Traffic and Transport Conference would be hugely beneficial and an incredible start to my career. I consider it invaluable to build professional networks as early as possible, and this would be the perfect opportunity to do so. I would be given the opportunity to expand my knowledge of the traffic and transport profession and likely come away with ideas, energy and enthusiasm to bring them into my future career.

From the brief topic descriptions in the program I can see that there will be an abundance of stimulating and valuable conversations and presentations at the conference. I would relish the opportunity to be a part of these conversations and take away all the information I can. I am particularly interested in the topics of big data and network operations as these are areas that I have some experience in already and would love to learn more about them and contribute to the conversation. Public transport innovations and placemaking/urban design are growing interests of mine, and I’m certain that hearing first-hand from experts in these fields will foster this further.

I have also never been to a professional conference, so exposure to the procedures will build my confidence in a context that I appreciate can be daunting.

Sitting on the State Branch Committee as a Young Professional representative

To be given the opportunity to sit on the State Branch Committee as a Young Professional representative would be both a professional honour, as well as a unique chance to contribute to the profession at such an early point in my career. I know I would enjoy and appreciate this opportunity, relishing the year to immerse myself in the discussions and knowledge. Like attending the conference, sitting on the Committee would also assist in building a network of dedicated colleagues.

Achievements and interest in traffic/transport units

I demonstrated my strong work ethic at university through gaining First Class Honours. I undertook my honours thesis within the transport discipline, collaborating with the Research Centre for Integrated Transport Innovation (rCITI) based at UNSW. My research used crowd-sourced data for disaster analytics, focusing on resiliency in the context of road networks. The aim of the research was to quantitatively evaluate the system performance of 5 road networks across the world, during the time that they experienced a disaster event. From this, a judgement of the resiliency of each network was determined, as well as an estimation of the expected time to recovery, pending another disaster event in the same, or similar, region. My motivation for this research was the fact that road network resilience and disaster management have been highlighted as global influential trends shaping the future of mobility and the built environment. In addition, I identified the need for cities to have quantitative information to understand their existing level of road network resiliency for informed planning. I hope to extend this research further and collaborate with others looking into similar topics.

Following the submission of this thesis, I received the UNSW Transport Discipline Prize. This award recognizes the best performing student in the transport discipline, combining thesis and transport-relevant subject marks. I was also named on the UNSW Dean's Honours List every year between 2013 and 2017. This list recognises high achieving undergraduate students in the UNSW Faculty of Engineering.

During my final semester I took an elective that involved the application of queuing theory to public transit systems, using real-world data. My group modelled queuing at opal ticket gates at Strathfield train station. In early 2018, my group was selected to present our project and findings to representatives from Transport for NSW.

My extensive list of internships is credit to my technical knowledge, professionalism and passion for the industry, things I would undeniably bring to AITPM.

Thank you for your consideration.