

20 May 2018

Kyriakos Tyrologos  
Australian Institute of Traffic Planning and Management (AITPM)  
QLD Branch President

## RE: AITPM 2018 Young Professional Award Application

Dear Mr Tyrologos

My name is Rachael Amies and I wish to put forward my nomination for the 2018 AITPM Young Professional Award for the Queensland branch.

### Eligibility

I am a Graduate Traffic Engineer employed by Point8 Pty Ltd in Brisbane. In December 2017 I graduated from the Queensland University of Technology with a Bachelor of Engineering (Civil) First Class Honours and a Bachelor of Business (Accountancy). I have thoroughly enjoyed the past 6 months of full time work in the industry and I continue to expand my knowledge in the traffic and transport engineering field both within my employment and by being involved in industry seminars and networking events.

### Pursing the traffic/transport professional career – Where it all began

My interest in traffic/transport engineering began at university when I completed three traffic/transport engineering related subjects which focused on traffic flow theory and intersection/road design as well as the full process of undertaking a civil design project. This included the process of submitting a proposal, existing conditions assessment and delivering a feasibility design study for a busway with the use of software such as SIDRA Intersection, 12D and AutoCAD. Through these subjects I discovered the diverse range of engineering applications used in the traffic industry and found myself surprisingly drawn to this expanding stream of engineering.

I was offered vacation work experience at Point8 in November 2016. This led to me working part time as a Cadet Traffic Engineer during my final year at university and I am delighted to be able to continue my career with Point8 after my graduation. While a relatively small firm, Point8 works with a wide variety of industries and has a broad range of service areas. This has given me the opportunity to work with a range of public and private sector clients on a number of interesting major projects. From my first day with Point8 I was thrown in the 'deep end'. I worked on 'real projects' gaining a better understanding of how to apply the engineering theory and knowledge I had acquired at university in practise and experienced what it is like to be working on projects in the real world. During my first few months with Point8 I was very lucky to be sent

on a week-long work trip to undertake road safety audits on remote roads in the outback involving travelling 2000km between Mt Isa and Tennant Creek. In addition to experiencing the vast distances and issues faced on outback roads, I realised the vast opportunities and experiences available in the traffic and transport industry and how traffic engineering relates to all engineering projects in multiple disciplines.

As a result of the projects I worked on during my cadetship, and the industry events I attended, I became very interested in how transport will evolve in the future with technology and infrastructure. Therefore, I decided to focus my final university year on researching and modelling the impact of introducing autonomous vehicles (AV) in a city environment focusing on whether the transition period will affect travel time. I achieved this with the use of PTV VISSIM by designing an AV with altered operational parameters (such as increasing longitudinal and lateral distances) to allow the vehicle to operate more conservatively as compared to the base human-operated vehicles within VISSIM. I then tested how travel time is altered by gradually increasing the composition of AV within a human-operated vehicles dominant network. I found when the composition of AV reaches 30% the network travel time improves in the slower more complicated congested environments and worsens in free flowing environments.

### Achievements in the Profession

As a Graduate Traffic Engineer at Point8 I work with a range of both public and private sector clients on a number of significant projects. I have already been heavily involved in a diverse arrange of projects that have helped me rapidly develop new skills. This has included microsimulation and strategic network traffic modelling using VISSUM and VISUM and in understanding the master planning process while working on the Petrie Mill Priority Development Area. This project also allowed me to undertake travel demand forecasting using the four step method of traffic engineering with the use of desktop models and SQL.

Beyond the projects I have worked on with Point8, my thesis is my highest achievement to date within the industry. I was fortunate to have been asked to present my thesis publication and findings at the AITPM QLD Half Day Modelling Seminar (24 May 2017). While public speaking is something I find daunting, I took up this challenge and appreciate the opportunity it gave me in learning how to prepare and present at an industry event. For an undergraduate to share their research at a professional seminar was an honour and opened my mind to, and interest in, specialising in a career of transport modelling. Following my presentation I was honoured to be asked to also present at a FutureNet function which allowed me to network with a wider range of people in the engineering profession. I continue to regularly attend AITPM and other industry related events and I am continuously building and expanding my industry network and keep up-to-date on the latest developments in the transport modelling industry.

These experiences have made me more eager than ever to continue to challenge myself and expand my knowledge in the field. I am keen to participate in contributing to planning the future of transport systems as technology and society rapidly changes.

### Benefits from Attending the Conference

If granted this opportunity I believe I will derive immeasurable benefits. The first being the opportunity to network with other young professionals from around Australia and to meet a wide range of industry related professionals. Participation in the seminars and discussion with industry professionals will broaden my knowledge on current industry issues and challenges being faced across Australia. The conference will also allow me to experience the benefits of being a part of the AITPM as well as see the larger picture of traffic and transport engineering opportunities outside of Queensland. I would also use this opportunity to further develop my own skills such as networking and professional public speaking by observation and participation as I hope that one day I will also be able to present at the National Conference.

I have identified a range of seminars I wish to attend at the national conference in the areas of Transport and Land Use Modelling and Traffic Engineering and Management, particularly Pedestrian Microsimulation and Practical Realism and Global Comparisons of Mode Choice and Public Transport Assignment Processes.

### Willingness to sit on the QLD State Branch Committee

As Point8 is a Queensland branch sponsor of AITPM and many of my colleagues are members and highly involved with AITPM, I was motivated and encouraged to apply for this award. Through my colleague Delaware Khan (2017 Young Professional Award winner) I have heard firsthand about the wonderful experiences and benefits of attending the national conference as well as witnessed the flow on benefits that the award has on a young engineer's professional and personal development. I would welcome the opportunity to be a part of the AITPM QLD State Branch Committee and represent young professionals. I would use this opportunity to encourage more young woman to consider a traffic/transport engineering career and promote the modelling aspects of the industry.

I look forward to hearing from you soon.

Yours sincerely,



Rachael Amies

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