

18/05/2020

Mr Oleg Sannikov & Mr Ganesh Vengadasalam
Australian Institute of Traffic Planning and Management (AITPM)
NSW Branch President & Vice President

RE: AITPM Young Professional Awards Nomination 2020 – NSW

Dear Mr Sannikov and Mr Vengadasalam,

My name is Isabella Kim and I am writing to you to put forward my nomination for the AITPM Young Professional Awards 2020.

A Career in Traffic and/or Transport

I am a Graduate Traffic Engineer at Cardno having graduated from the University of NSW with a Bachelor of Civil Engineering and Environmental Engineering (Honours Class 1). Early on in my education, I understood that transport is an integral part of a functioning society to move people, goods and ideas. Over time, my passion in transport grew stronger when I delved deeper into the industry and found an appreciation for the positive difference transport engineering can make to society. As engineers, we have the ability to make significant changes to the transport system on the largest of scales to the finest detail. With this comes great responsibility but most importantly, it is a career with a future that excites me.

I became interested in transport after completing my first major assignment where I conducted a sustainability review of transport system options between Parramatta and Badgerys Creek Airport. This is now a fully realised project known as the Western Sydney Airport, a major piece of infrastructure that will help shape Sydney as a metropolis of three cities. Through this project I considered a number of factors such as peak traveller demand, consequences on society and environmental impacts to draw a conclusion. Through this work, I could imagine the direct contributions and implications on the decision-making process. This motivated me to pursue transport related courses to deepen my knowledge, which led me to select two final year subjects and one postgraduate course as my final year professional electives. My eagerness to learn and seek knowledge helped me achieve a distinction or higher in all my transport subjects. I was also given the opportunity to be selected as a demonstrator for one of the introductory transport courses where I could inspire other students and help them realise the importance of transport engineering.

To further my passion, I chose to do my research thesis in transport in my final year of studies. My thesis topic was chosen based on my interest in commuter behaviour on public transport, particularly on Sydney's train network. In Sydney, public transport service frequencies and capacities differ across regions and due to the rapid population growth, people are opting to live further away from metropolitan Sydney. As a result, communities are required to adjust their travel behaviour to align with the availability of services within their locality. By analysing over 47 million Opal card data entries using R Studio, the results indicated that commuters who started their journey further away from the Sydney CBD displayed greater consistency in travel patterns than commuters who started their journey closer to the Sydney CBD. This was quantified by a new metric coined as "Tap on Time Deviation" that calculates the deviation between the journey start times (i.e. the time the commuter taps on their Opal card) over a given period of time. This metric was developed as part of the research to assess accessibility and gain a better understanding of geographic impacts on individual travel behaviour. Continuing this research, it is hoped that this information can assist in demand modelling to improve public transport services and enhance the understanding of travel behaviour. Another finding of the research indicated that the boundary between regional and metropolitan Sydney are blurred due to urban sprawl. As population increases, this will have implications on future town and city planning.

Following on from my thesis, I was fortunate to be part of the select few to present my research at the 2019 AITPM National Conference in Adelaide. So far, this is one of the top achievements in my career. Through this opportunity, I was able to share my research findings, contribute to the existing wealth of knowledge and be acknowledged by other professionals within the field. At the National Conference, I was able to network with people from around the country, who I wouldn't have otherwise met if it wasn't through this opportunity, and had insightful discussions about the current and future state of the industry. These conversations inspired me to think about the bigger picture and ask more questions that will help me become a transport professional

who pursues different ways to progress the industry forward. This motivated me to continue my research to investigate a method to predict commuter behaviour on public transport and how this can be practically applied in the industry. By combining research and technical application, this is a way forward in innovation and increasing efficiency in solving society's problems.

To gain firsthand experience and pursue my passion further, I spent the last 1.5 years of my degree as an Undergraduate Traffic Engineer at Cardno and transitioned into a Graduate Traffic Engineer. During my time at Cardno, I am focusing on developing and refining my technical skills in traffic engineering and modelling, especially in SIDRA, through a variety of projects for private and public clients. Some of my most notable projects being the Sydney Metro Northwest and a transport and traffic review on one of the key strategic corridors in Penrith. On these projects, I was responsible for developing and calibrating SIDRA models, with some projects involving up to 105 models representing three traffic peaks over a number of study precincts, under a tight timeframe. The model development process involved interpreting SCATS data to determine traffic signal settings for signalised networks, making engineering judgement to determine appropriate parameter values based on survey data and understanding the SIDRA performance results. With the support of my team at Cardno, I am always encouraged to question and understand model results, particularly when the outcome is unexpected. As a result, I am starting to build my own database on the modelling processes and learning to identify the inconsistencies. Other projects, such as the Sydney Clearways Program, have challenged and thus, refined my data analysis skills. I have learnt to combine my Excel skills with other software like ArcGIS, which is a mapping and analytical tool. I am now better equipped as I am capable of transferring data between programs to effectively analyse and visually represent results, which helps with communicating with clients and stakeholders.

At the beginning of this year, I was selected to be placed on a 12-month part-time secondment and of those 12 months, six months on a full-time basis as a traffic engineer at local government. I am assisting Council in project managing and delivering a local area traffic management study for one of their major strategic centres with a number of challenging issues. Due to the geographic location and environmental constraints, understanding the existing transport systems and Council's strategic vision is essential to ensure that proposed recommendations are suitable for the area. This involves constant collaboration and discussion with Council directors and teams so that the needs of the community are met. I am also managing and developing a priority infrastructure plan and a sustainable travel plan. So far, I have gained a unique insight into the operations of local government and I am gaining an understanding of the differences in the project approach between a client and consultant. Already, I have gained a better understanding of client objectives, the determining factors involved in the decision-making process and the difficulty in proposing a solution that satisfies infrastructure needs whilst adhering to the voice of the community. Through the projects I am delivering on this secondment, I aim to make a positive difference to the local community.

My career in traffic and transport has only begun. I have only started to explore, learn and contribute and I am aware that there is still a long way to discover what the industry has to offer. I am eager to continually learn and thrive on the challenges ahead that will grow my passion into a life-long journey. I hope to become a leader in this industry where I can make meaningful contributions to help better society and inspire others. I believe that my passion, drive and experience will become a positive contribution to AITPM in providing a strong foundation for professional development, networking and achieve industry sustainability.

Benefits from Attending the National Conference

The AITPM National Conference offers a number of benefits such as the opportunity to learn and directly engage with experts, network with other like-minded professionals from Australia and around the world, and be actively involved in discussions regarding the challenges in the industry. This makes the National Conference an invaluable experience for a young professional like myself, who is starting their career in traffic and transport. The quality and calibre of the National Conference is shown by the breadth and depth of the selected topics for the event. As a first-time presenter and attendee at the 2019 National Conference, one of the most memorable discussions was about the importance of identifying public transport priorities as a key factor in smart city planning, which is particularly relevant in NSW with the recent operation of the light rail in the Sydney CBD. I also learnt that project successes are not only determined by technical work but also relies on extensive planning, clear and consistent communication and careful consideration of intended users as demonstrated by the Station Link Program during the construction of the Sydney Metro Northwest.

As a driven individual with a strong willingness to learn, I am keen to expand my knowledge in transport planning regarding urban design of places and modelling, especially around incorporating new data sources such as GPS mobile data and big data. I also want to learn more about the impacts of travel behaviour on public transport and the road network due to ramifications of unexpected changes in the future such as COVID-19. At the event, I look forward to connecting with other professionals and being involved in meaningful conversations around the issues we face as engineers in this industry and the future role of transport in society.

Young Professional Representative on the NSW Branch Committee

Since I was a student, AITPM has played a pivotal role in nurturing my interest into a strong passion and providing me with a platform to further my skills and knowledge. As a member of the NSW Committee, this will be a great opportunity for me to make my contribution to an organisation that has already done so much for me. As the Young Professional Representative, I want to help other aspiring engineers by sharing my personal experiences and assist in organising events that will help them throughout their professional journeys.

During my time on the NSW Committee, I hope to be the voice of young professionals and provide them with the necessary resources to reach their goals and aspirations. This has always been a personal passion and I have done so throughout my various roles in university as an engineering mentor and my involvement in societies such as the UNSW Engineering Society as a Careers Director. In this position, I was able to make a difference by organising tailored events to meet the needs of my peers. Examples of events include an opportunity for students to interact with alumni about the industry and career successes, creating a space to network and understand the work of high-profile engineering organisations such as Transport for NSW and Mott MacDonald, and encourage the development of personal skills such as networking and technical writing through workshops. I aim to do the same as the Young Professional Representative.

Based on my personal experience in AITPM, I would like to organise more events that bring together young professionals to instigate discussions about the future and the anticipated changes ahead of us. An example is the current impact of COVID-19 on the way people travel and its future implications. Having these discussions now will encourage collaboration and innovative thinking, which will become increasingly valuable as young professionals will become the next generation of leaders in traffic and transport.

With my skills, experiences and willingness to learn, I am ready to accept the challenges of this position. I am excited to build relationships and work together with other NSW Committee members to continually provide the opportunities and support to fellow professionals. I look forward to stimulating discussions and forward-thinking approaches to improve Australian transport systems. I am eager to make a positive difference and assist the NSW Committee to achieve AITPM's vision of providing the leadership in traffic and transport to contribute to the development and management of transport systems that benefits everyone.

Thank you for your time to consider my nomination. Should you require further information or have any questions, please do not hesitate to contact me.

Yours sincerely,



Isabella Kim
Graduate Traffic Engineer