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2023 Selection Committee
Young Professionals Award
AITPM
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Nicholas Grice



Nomination – 2023 AITPM Young Professionals Award

My name is Nicholas Grice, and I would like to nominate for the 2023 AITPM Young Professionals Award. Whilst I have only recently become involved in AITPM, my introduction to traffic and transport engineering came with a childhood awe for how my father was able to count down on his fingers, the time left until we were given a green light. His last finger would go down and with a pump of the fist he would accelerate as the light flicked green. Whilst this childhood magic has faded with a greater understanding of signal phasing and intergreen times, this was the spark that has inspired me to embark on a career in traffic and transport and the beginnings of my passion for creating efficient, optimised, and practical solutions to the myriad of traffic and transport challenges we encounter in this profession.

CAREER

At high school, my desire to solve problems led me to pursue mathematics, design, and economics, and I finished with an Overall Position (OP) 1 in 2018. I then attended the University of Queensland as an Excellence Scholar and completed a Bachelor of Engineering (Hons), majoring in civil engineering with a specific focus on completing all available traffic and transport subjects. At the completion of my second year, I had the opportunity to join AECOM as an undergraduate transport engineer and began working on a variety of traffic and transport projects. I continued to work at AECOM part time throughout the remainder of the degree and was privileged to gain invaluable experience.

Whilst at university, I also completed a voluntary undergraduate thesis on “The Impact of Heavy Vehicles on Road Safety and Road Damage in Australia”. Within the thesis, I explored multiple new methods of road safety and road damage quantification, completed a thorough audit of the current road user charging system, and developed a detailed multiple criteria analysis of 6 global alternatives across 5 criteria and proposed key strategic, governance and policy recommendations. In delivering this thesis, I was able to work with an industry partner, iMOVE, who gave me the privileged to present at their showcase. I was awarded full marks for my thesis, and the ITEANZ University Level Award for the most outstanding undergraduate student in traffic and transport engineering (UQ) as well as being nominated for the Australia and New Zealand award. This experience encouraged my passion for research and the development of new methodologies to analyse large data sets as well as the importance of road safety. It also fuelled my desire for a career in planning, innovating, and designing a sustainable, inclusive, and connected future transport network.

I finished my degree in 2022 with First Class Honours and joined the AECOM transport advisory team as a graduate transport engineer for 2023. Being immersed completely within the transport environment has been a welcomed change and has broadened my perspective on the true range of challenges and possibilities that we are faced with. I have thoroughly enjoyed the opportunity to join AITPM as a member, to take part in the mentoring program for 2023, and to recently join the Branch Young Professionals Network committee.

During my professional career, I have had the opportunity to work on a wide range of projects. I have a desire to challenge the analysis and evaluation process where appropriate and where the potential for a cost and time saving solution presents itself. It is through this that I have been able to contribute to elevating the technical capabilities of the team with the skills that I have attained.

During my involvement on some large-scale projects, I have been able to evaluate the current methodology and develop highly technical spreadsheets with in-built scripting, designed to significantly improve the assessment processes on traffic impact assessments and strategic corridor assessments. These spreadsheets are designed to interface with external software and keep rework to a minimum in the cases of rapidly changing inputs. This work has been able to automate significant time taking exercises and begin to be applied beyond the projects in which they were built.

In a similar way, during my time as an undergraduate, I forecasted and analysed the effects of network upgrades and mode shift changes on large strategic corridors as part of Project Sunset. Within this project, I was again able to develop the required scripting and spreadsheets to optimise the process of testing countless vehicle fleet configurations across 5 scenarios and multiple impact years. This was then presented in the format of an interactive tool that improved client engagement by providing the ability to test limitless options without the requirement of additional work.

In the spatial data sphere, I was able to address a requirement to optimise and manage data received in a challenging format. Through this process, I combined previously unused GIS analysis techniques together into a methodology that was able to achieve the required outputs in shorter time with greater depth and a higher level of accuracy than previous. This technique, whilst designed within specific project requirements, has key applications into the transport sphere in managing, analysing, and presenting vehicle route data in an efficient way.

In the recent months as a graduate, I have had the opportunity to delve into the technical intricacies of Microsimulation modelling for the next stages of Gold Coast Light Rail. Again, applying an attitude that challenges the assumptions made, has enabled discovery of key existing oversights. Through this, I have developed logic flows within the VisVAP capabilities of Vissim to mimic the strict parameters of light rail signal phasing in a level of depth which goes beyond precedent and current experience within the team. I am excited to see the implementation of this optimised operational programming both onto the Gold Coast and also into the future of light rail throughout Australia.

Finally, I have enjoyed contributing to key projects that are at the forefront of new developments in the transport industry. I was able to assist in the planning and designing for next level electrified public transport opportunities as well as contribute to the team qualification for the Mobility as a Service (MaaS) panel and the ongoing works – an area where I have key university interaction and experience.

Overall, in sharing my journey and these involvements, I hope to demonstrate, across the broad spectrum of transport challenges, my passion; to pursue the opportunities that I am given; to challenge and contribute to optimising the established processes; and to display hard work and quality outputs.

NATIONAL TRAFFIC AND TRANSPORT CONFERENCE

My experience with research whilst at university alongside my experience at AECOM has me continually excited by the opportunity to work on the edge of the latest developments in our industry. I see the National Conference as a hub for this excitement and energy and a place to both foster my desire to be involved and to build a network that enables these pursuits into the future. It is one of my career goals to publish research papers and to present at the conference and so I would prize the opportunity to be emersed in this process.

The focus on 'Pathways to a connected Modern Australia' and the three key sub themes really speak to a desire for a bright future for transport but also how transport can and should be a mechanism for enabling a brighter Australia. These two outcomes are inspiring and certainly objectives that I would love to discuss, as well as listen to the variety of opinions on how we as an industry can take those next key steps. I am particularly interested in the hearing from Professor Marco te Brömmelstroet and hearing his diagnosis of the Australian transport environment and how we can take key steps towards the inclusive and active transport focus that is so prominent in Europe.

Further, I would simply be eager to learn what is happening on the cutting edge of the industry and be inspired by solutions and how they could be applied to solve problems in the spheres in which I work. I see the conference as a fantastic networking opportunity and a place to engage with the thought leaders of our industry. I believe the biggest developments are born out of collaboration and iteration and the conference serves as an established meeting point for those pushing the industry forward. This is an event that I would not otherwise be able to attend and so would be extremely appreciative of the opportunity.

BRANCH YOUNG PROFESSIONALS NETWORK COMMITTEE

I am excited by the opportunity to continue to engage with other young professionals and be involved on the Branch Young Professionals Network committee. Alongside my love for transport engineering is a passion for leadership. From high school where I was able to be a prefect and take charge of the public purpose committee to serving as the president of Power to Change whilst at university, there have been many opportunities where I have been privileged to be in leadership and have cherished those chances. In the last two years, I have taken on the lead responsibility in organising and coordinating a camp for high school age children where I manage a team of 20 adults and have this year become the team lead for the weekly program provided for these students.

Throughout these different hats that I have worn, I have come to understand the requirements of how organisations are managed and come to put a high value on effective leadership, on successful teamwork and on clear communication skills; and so am committed to embracing the opportunity to contribute to the direction and practical function of the committee and organisation. Importantly, I believe that I can bring experience in; event coordination; establishing and outworking strategic vision; and working within diverse teams.

I am excited about the opportunity that this award brings, and I hope to take another step towards my commitment to a career in transport engineering that makes a significant difference to the world around me. Thank you for taking the time to read my application and I hope to join you at the National Conference.

Yours Sincerely,

Nicholas Grice

