Submission No 43

INQUIRY INTO ARTIFICIAL INTELLIGENCE (AI) IN NEW SOUTH WALES

Organisation: Institute of Public Works Engineering Australasia NSW & ACT

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NSW & ACT
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Parliament of New South Wales

Portfolio Committee No. 1 - Premier and Finance

RE: Response to the inquiry into artificial intelligence (AI) in New South Wales

The Institute of Public Work Engineers Australasia, NSW and ACT Division (IPWEA) has prepared this submission in response to the inquiry into artificial intelligence (AI) in New South Wales.

Artificial intelligence is increasingly being used in the NSW public works sector and has the potential to significantly improve the lives of NSW local communities. However, appropriate regulation and oversight of Artificial Intelligence is required in order to ensure equity is maintained for all NSW residents.

We would welcome the opportunity to provide further detail on the issues raised within this submission.

Please contact Joshua Devitt on or email in relation to this submission.

Yours sincerely,

The Hon David Elliott
CHIEF EXECUTIVE OFFICER

Joshua Devitt
CHIEF ENGINEER

Inquiry into Artificial intelligence (AI) in New South Wales

Submission by

IPWEA NSW & ACT

27 October 2023

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Introduction

The Institute of Public Works Engineering (IPWEA) NSW & ACT is the peak industry body for public works professionals in NSW and the ACT. IPWEA has members across the NSW local government sector, as well as within state government infrastructure departments, private consultancies, and other related organisations. The mission of IPWEA NSW & ACT is to enhance the quality of life of NSW and ACT communities through excellence in public works and services. IPWEA is recognised as the leading professional association that effectively informs, connects, represents, and leads public works professionals within both state and local government.

This submission will highlight the role that Artificial Intelligence (AI) is currently playing in the NSW public works sector and will also outline potential opportunities and risks with the widespread adoption of such technology.

Background

NSW councils are responsible for the management of a significant portion of the public infrastructure assets in NSW. As an example, NSW councils are collectively responsible for 167,000 kilometres of the NSW road network, well over 90% of roads in the state. This asset is worth a combined $87 billion, representing the largest single public assets in NSW. Increasingly, however the management of this network is under threat. The NSW public works sector is facing an acute skills shortage, particularly in relation to skilled engineers, asset managers, and other civil maintenance and construction staff. Compounding this shortage are pressures from inconsistent and unsustainable grant funding programs, rising resources and construction costs, and a series of natural disasters which have had a devastating effect on the condition of the local road network. Artificial intelligence is increasingly being adopted by the public works sector as a means of addressing these issues, which in turn is presenting new opportunities and challenges.

Response to Terms of Reference:

(a) the current and future extent, nature, and impact of AI in New South Wales

Artificial intelligence is already having a transformative impact on many areas of the public works sector. Most commonly, AI is being utilised in the public works sector as a tool to aid public works professionals in the undertaking of their duties. Current uses range from the use of Chat-GPT and other similar programs to prepare reports, to the use of predictive analytics to inform decision making on asset management decisions. Over time, IPWEA NSW & ACT expects that the utilisation of AI will become embedded into general usage by public works professionals, leading to the automation of numerous tasks and an overall improvement in efficiency.

(b) the social, economic, and technical opportunities, risks and challenges presented by AI to the New South Wales community, government, economy, and environment

The widespread adoption of artificial intelligence technologies in the public works sector has the potential to significantly improve the lives of all members of NSW local communities. The automation or streamlining of activities relating to the design, construction or management of public assets will allow councils and other organisations to complete these activities faster and cheaper. This will result in an overall higher quality asset base and will lead to increased access and amenity for social, cultural, and economic purposes. However, AI technologies are only as good as the systems and controls that are put in place to monitor and manage them. It is therefore imperative that a thorough understanding of the technical knowledge that underpins AI technologies is retained by the public works industry, such that appropriate oversight of AI technologies can be provided.

(c) current community and industry use of AI and the potential implications for delivery of government services

A current example of the usage of artificial intelligence in the public works sector, is the use of AI to detect the presence, and severity, of road related defects. This technology typically involves mounting cameras on a vehicle, which feeds data to a machine learning algorithm to determine the presence, type, and severity of defects such as potholes. This type of technology has matured to the point that it is more cost effective to use one of these systems, as opposed to undertaking manual inspections. The implications of this technology to the delivery of government services are significant and have already been identified by several departments. IPWEA NSW & ACT has partnered with Transport for NSW to leverage this technology in the creation of a digital data storage and analysis platform, known as Asset AI®. This platform is designed to utilise passive data collected via AI from vehicles already on the road network, analyse this data and identify the highest risk defects on the road network. Asset AI® is currently in development, but over time will include the function, through AI machine learning, to provide predictions of defect deterioration, enabling road managers to proactively maintain the NSW road network.

(d) the current and future extent, nature and impact of AI on the New South Wales labour market including potential changes in:

(i) earnings

(ii) job security

(iii) employment type

(iv) employment status

(v) working patterns

(vi) skills and capabilities for the current and future workforce

A true sense of the current impact of artificial intelligence on the public works sector labour market is difficult to determine, in part due to the skills shortage and other compounding factors affecting the public works sector at present. IPWEA NSW & ACT maintain that the use of AI within the public works sector is not yet widespread, although is growing and over time will start to replace certain tasks through automation and other efficiency gains. This will naturally lead to reductions in the overall labour demand, which will be advantageous in areas suffering an acute skills shortage but may lead to job losses in areas of high employment. Whilst not expected to be widespread, there will likely be a need for support from both employers and government to assist workers to be retrained who are offset by AI related redundancies.

In terms of potential impact on overall earnings and job security, IPWEA NSW & ACT does not expect there will be a significant impact to our members in the public works sector. There will still be a need for engineers and other related professionals for the foreseeable future, AI solutions will allow engineers to work more efficiently, but will not replace them entirely. Similarly, much of the work in the public works sector relies on customer facing roles, or accessibility during core work hours and as such, IPWEA NSW & ACT do not expect there will be a significant impact to working patterns or flexibility in the public works sector as a result of the adoption of AI technology. Any such impact would be significantly less than that which occurred as a result of the COVID-19 pandemic.

(e) the current and future extent, nature, and impact of AI on social inclusion, equity, accessibility, cohesion, and the disadvantaged

Artificial Intelligence technologies can be a catalyst for addressing social inequality and disadvantage. Through the use of AI technologies, a service could be provided to a community that may otherwise by unable to attract the required professional, creating greater accessibility. Additionally, AI technologies help lower the cost of entry for certain services, making them affordable for organisations which may struggle to supply them under traditional approaches.

However, there need to be safeguards in place to ensure that accessibility is provided equitably for all members of the community. There is a risk that AI technologies will reinforce or exacerbate current social inequalities, such as the difference in the provision of, and access to, services in metropolitan vs rural areas of NSW. An example of this known to IPWEA NSW & ACT is of a particular AI solution which relies upon data provided by light vehicles currently in use on the road network. However, this system requires a minimum volume of data to ensure accuracy and that privacy rights are maintained. This volume is easy to achieve in areas of high traffic, such as metropolitan areas, but much harder in more remote locations.

(f) the current and future extent, nature, and impact of AI on customer service and frontline service delivery in New South Wales

IPWEA NSW & ACT maintain that Artificial Intelligence will never completely replace the need for face-to-face delivery of customer service functions and other services. Our members engaged directly with their community on a daily basis and understand the need to maintain human interactions as a critical component of ensuring trust in government institutions. Whilst we can see benefits realised in the efficiency of service delivery through the use of AI, we strongly recommend that controls are put in place to avoid the wholesale automation of customer service activities and to ensure a core public facing workforce is maintained.

(g) the current and future extent, nature, and impact of AI on human rights and democratic institutions and processes in New South Wales

IPWEA NSW & ACT acknowledges the impacts associated with the use of Artificial Intelligence technologies regarding human rights, particularly in relation to issues of algorithmic bias in machine learning technologies which can lead to discriminatory decision making. This reinforces our earlier point around the need to retain suitable qualified personnel with technical knowledge of the underpinning systems of any AI solution, as well as to ensure appropriate controls and oversight are in place to monitor against such biases. Additionally, we note and acknowledge the work undertaken by the Australian Human Rights Commission in their 2020 report on *Using Artificial Intelligence to make decisions: Addressing the problem of algorithmic bias* and recommend the NSW government consider the findings of this report in relation to this matter.

(h) the effectiveness and enforcement of Commonwealth and New South Wales laws and regulations regarding AI

IPWEA NSW & ACT are of the understanding that there is currently no dedicated laws or regulations regarding AI in effect under either the Australian Federal Government, or the NSW State Government. Given the rapid growth of AI technologies, and their increasing use in everyday life, we would support the introduction of specific legislation to address the issues with AI outlined in this submission. We also suggest the appointment of a dedicated minister and/or parliamentary committee of oversight.

(i) whether current laws regarding AI in New South Wales that regulate privacy, data security, surveillance, anti-discrimination, consumer, intellectual property, and workplace protections, amongst others are fit for purpose

IPWEA NSW & ACT do not have specific legal expertise in relation to this matter, but our members have regularly experienced issues relating to the application of current legislation in the context of AI solutions. Our position is that the laws in question, whilst suitable in most respects, are not fit for purpose, as they were not designed with the purpose of regulating AI in mind. AI technologies have caused significant disruption to traditional ways of working and have tested the existing laws in relation to privacy, data security and intellectual property. With that in mind, we recommend legislation be introduced that directly deals with the issues associated with AI technologies, either as standalone legislation, or as amendments to the existing pieces of legislation listed above.

(j) the effectiveness of the NSW Government's policy response to AI including the Artificial Intelligence Strategy, Ethics Policy, and Assurance Framework

IPWEA NSW & ACT have worked under the NSW Government's Artificial Intelligence Assurance Framework through our involvement with the Asset AI project. Based on this experience the framework appears to be strongly embedded into NSW State Government agencies and is effectively helping to identify and mitigate potential risks on this project. What was less clear, were the expectations on the application of this policy to external parties involved in this project. The government agency took the lead on this component of the project delivery, and other parties were consulted, rather than engaged in the process. We would recommend that the importance of this policy be clearly conveyed to all organisations involved in the development or use of artificial intelligence technologies, and that support be provided in order to deliver on this outcome. This is particularly relevant to NSW local government organisations.

(k) the measures other jurisdictions, both international and domestic, are adopting in regard to the adaption to and regulation of AI

Internationally, the European Union are widely considered to be leading the way in regard to regulation of Artificial Intelligence. Their proposed *Artificial Intelligence Act* will provide a framework for the regulation of AI across Europe and will likely inform legislation in other jurisdictions. Domestically, NSW was the first state jurisdiction to introduce an Artificial Intelligence framework, our position on which is outlined above.

(l) the successes and positive precedents experienced by other jurisdictions, both international and domestic, to better understand best practice

Global leaders in collating and sharing best practice with regard to Artificial Intelligence include the World Economic Forum and the Organisation for Economic Co-operation and Development. Domestically, the CSIRO and the Australian Human Rights Commission are actively engaging with the policy implications of Artificial Intelligence.

(m) recommendations to manage the risks, seize the opportunities, and guide the potential use of AI by government, and

Recommendations:

- Provide grant funding opportunities for NSW councils, and other organisations, to develop and implement AI solutions, as a means of increasing overall efficiency of operational practices.
- Establish a fund to support the retraining of employees impacted by AI related redundancies.
- Strengthen the NSW Government artificial intelligence assurance framework to include consideration of the equitable development of Artificial Intelligence solutions to service all communities in NSW.
- That the NSW government support for the Australian Human Rights Commission's recommendation on the creation of an independent regulator (AI Safety Commissioner) to promote safety and protect human rights in the development and use of AI.
- Provide education and support to relevant organisations, including NSW councils, on the importance of the NSW Government's AI Policy and Assurance Framework and how these organisations can adapt their processes to adhere to the framework.
- That the NSW Government, in consultation with the Australian Government, introduce legislation that directly addresses the issues associated with AI technologies.

(n) any other related matter

IPWEA NSW & ACT would welcome the chance to further discuss the items raised in this submission at a parliamentary hearing.