



17 November 2023

Mr Jeremy Conway
CEO
Infrastructure SA

By email to: Jeremy.Conway@sa.gov.au

Dear Jeremy,

RE: Submission to the Infrastructure SA Discussion Paper

Consult Australia and Engineers Australia welcome the opportunity to provide feedback to the [Infrastructure SA Discussion Paper](#) on the proposed South Australian 20-Year State Infrastructure Strategy. As a reminder, Consult Australia represents businesses in design, advisory and engineering consultancy, while Engineers Australia represents the profession of engineering. Our submission focusses on the themes from the discussion paper that align with the interests of our members:

- Liveable and well-planned places
- A decarbonised, sustainable economy
- A stronger infrastructure industry.

Liveable and well-planned places

Coordinated planning

Consult Australia and Engineers Australia support Infrastructure SA's commitment to coordinated planning of infrastructure projects including community housing, transportation and health and wellbeing needs. Pipeline certainty and transparency are critical to ensure our members can deliver. Stalling projects, delaying decisions on projects, and fast ramping up of projects does not support the development and growth of the profession, industry confidence, workforce planning, or deliver productivity benefits for the community.

Businesses, and the people within them, cannot maintain high levels of outputs without pipeline certainty. Clients need to be aware of how fast businesses need to make resource cuts when projects are delayed or cancelled and how difficult it is to secure people resources when new projects are announced and released. This job uncertainty does not make the profession attractive and contributes to the high attrition rate from the profession and the industry.

Recommendation: Infrastructure SA, in conjunction with key stakeholders, such as the Housing Infrastructure Planning Unit, host an industry roundtable on future infrastructure projects to provide pipeline clarity for confidence of the market and the profession.

Education and skills

Consult Australia and Engineers Australia recognise the need for infrastructure planning to support the capability uplift of South Australian schools, TAFEs, colleges, and universities. Like many occupations, the engineering profession is facing technological advancements and automation at a rapid rate which is transforming the job market. Our people need access to skills development to remain competitive in the Australian and global markets.

With global and local competition for engineers increasing, South Australia needs to maintain a reputation within the international engineering community as a good place to migrate, and a good place for our Australian-trained engineers to stay. For skilled migrants this needs to include clear pathways to permanent residency and the ability to find employment at a level commensurate with their skills and experience.

Australian tertiary engineering graduates are at one of the lowest levels in the [OECD](#). We need to improve the uptake of Australian engineering education, particularly when factoring in the pandemic. The pandemic contributed negatively to engineering courses with the opportunities to complete practical assessments removed and the likelihood of international students studying during this time reduced. We anticipate there will be a significant gap in graduates available in the foreseeable future considering it takes a professional engineer 10 years or more to complete professional education and training (see [Engineers Australia's report](#) for more detail on this statistic).

Further, the rates of engineering graduates were significantly low pre-pandemic. In 2019, approximately 25% of individuals studying engineering undergraduate courses dropped out (5% in the first year, and 20% in later years – see [Engineer's Australia's report](#) for more detail.) Improved demand data, fed back to universities and schools, can help close the information loop and ensure the engineers that we need in the future are being trained now.

Engineers Australia's [Strengthening the Engineering Workforce](#) report summarises the five factors that influence the number of engineers practicing in Australia:

- School education (primary and secondary)
- Engineering study (vocational and higher education)
- Retention in the engineering workforce
- Skilled migrant engineering workforce
- Demand forecasting.

This report also identifies initiatives to build the engineering workforce. Engineers Australia has recently established an Industry Reference Group with the objective of promoting engineering to school students. The South Australian Department of Education is a member of this group and will play an important role in connecting key government agencies and resources to industry.

Consult Australia's [Thinking Smarter About Skills](#) thought leadership paper reflects many of these themes as well. This paper considers the challenges as three-fold:

- Participation
- Access
- Retention.

Consult Australia's paper challenges industry, government, and academics to shift the way we do things and improve the overall experience as well as the culture of our industry.

Consult Australia and Engineers Australia both recognise that resolving the engineering workforce challenges requires collaboration between all levels of government, industry, the tertiary education sector, and professional associations. The time to commence some focused initiatives is now.

Recommendation – Infrastructure SA to encourage the South Australian Government to collaborate with other stakeholders including Consult Australia and Engineers Australia to address skills issues and set up the infrastructure required to have a thriving engineering sector in Australia.

A decarbonised, sustainable economy

Consult Australia and Engineers Australia support the view of Infrastructure SA for the need of a collaborative effort from all stakeholders in the ecosystem to reduce the emissions across the lifecycle of infrastructure assets. As the [Reshaping Infrastructure for a Net Zero Future](#) report notes, infrastructure contributes around 70 per cent of Australia's annual greenhouse gas emissions.

Consult Australia and Engineers Australia are part of the [Infrastructure Net Zero](#) initiative, a collective of organisations committed to coordinating, collaborating and reporting on infrastructure's pathway to net zero in a manner that aims to deliver value for community, government, industry and the environment.

Recommendation: Infrastructure SA and the South Australian Government to work with the Infrastructure Net Zero alliance to progress a decarbonised sustainable economy.

A stronger infrastructure industry

Planned pipeline

As stated above, pipeline clarity is vital for the confidence of industry and the professionals within businesses. Infrastructure SA recognises the importance of good infrastructure planning as outlined within the discussion paper, and we welcome the statement that '*visibility of the pipeline supports industry planning.*' Some of the impacts we see from poor pipeline planning, and the solutions to address these are identified below.

Negative impacts:

- **Economic disruption:** Pipeline investment is an economic lever. If that lever is pulled too tightly or let loose it has implications on market capacity to deliver, regional growth, and competition.
- **Shifting focus:** Pipeline uncertainty in one jurisdiction leads businesses operating across multiple jurisdictions to shift focus to secure projects and retain talent.
- **Capacity drought:** When businesses shift talent from one jurisdiction to another to follow projects, the first market may experience a capacity drought for a lengthy time.
- **Design domino:** As there is no construction without design, stopping projects then seeking a fast ramp-up often means limited design time leading to issues later.

Recommendation: Infrastructure SA to support and encourage the following solutions to deliver clarity for confidence:

- **Visibility for the industry:** Creating dashboards of design and construction pipeline information for industry is one of the most powerful ways clients can support industry.
- **Announce the 'preferred proponent':** Where an agency has a preferred proponent, that should be announced as soon as possible so other proponents can move onto other projects.
- **Co-ordination:** Government agencies should plan project releases with an awareness of impact on the market, including competing projects by other agencies. A steady stream of projects is preferred over a whole sector release at once.

Digital technology

We welcome Infrastructure SA's acknowledgement of the need for greater adoption of digital technology by governments. Both Consult Australia and Engineers Australia are calling for governments across Australia to support a networked approach to digital by default. We need a coordinated system driven by digital champions in industry and state/territory governments, to allow the communication and connectivity of digital practices.

Consult Australia is leading a campaign on [Digital by Default](#) uptake in infrastructure. The campaign has involved extensive consultation with industry and government across all states and territories. Both industry and government representatives recognise the role digital technology can have in enabling collective goals such as net zero, decarbonisation, productivity improvements, upskilling, safety measures, and as a tool for asset management. However, Australia's infrastructure supply chain is plagued by siloed operations. Where innovative, visionary, and transformative initiatives exist, they do so in isolation, preventing shared learnings and collective productivity benefits.

Industry, particularly design consultants and engineers, cannot operate sufficiently or sustainability with eight different approaches to digitalisation, let alone diverse approaches within states and territories driven by siloed department/agency initiatives. A coordinated, interoperable approach to digital is paramount if we are to utilise digital to achieve the many dividends we collectively seek.



Recommendation: Infrastructure SA to support and encourage the South Australian Government to develop a digital asset strategy that applies to key departments and agencies including Infrastructure and Transport, Health, Education, Energy, Water and Environment.

Effective procurement

We agree with Infrastructure SA that adopting early involvement and collaboration in procurement can support a competitive and sustainable infrastructure industry as well as deliver on shared goals across risk, diversity, social procurement, decarbonisation and innovation.

Government projects can be delayed by unnecessary contract negotiations to address clauses that transfer undue risks onto suppliers.

The risk allocation on government projects is feeding the unnecessary disputation within the industry and having a significant impact on the professional indemnity insurance market – which professional services businesses rely on, and which professional engineers are required to hold to practise.

Recommendation: Consult Australia and Engineers Australia recommend Infrastructure SA collaborate with industry on re-assessing current government contracts and how government risk is addressed in liability provisions. Further, the unresolved issue of contracting out of proportionate liability needs to be tackled to address significant risks on engineers and businesses therefore resulting in a significant productivity uplift.

We welcome the opportunity to unpack our feedback further with Infrastructure SA in a collaborative meeting.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Matthew Williams".

Matthew Williams
State Manager
Consult Australia

A handwritten signature in black ink, appearing to read "Jan Irvine".

Jan Irvine
General Manager SA & NT
Engineers Australia