

SUMMARY – 2021 INFRASTRUCTURE MARKET CAPACITY REPORT

November 2021



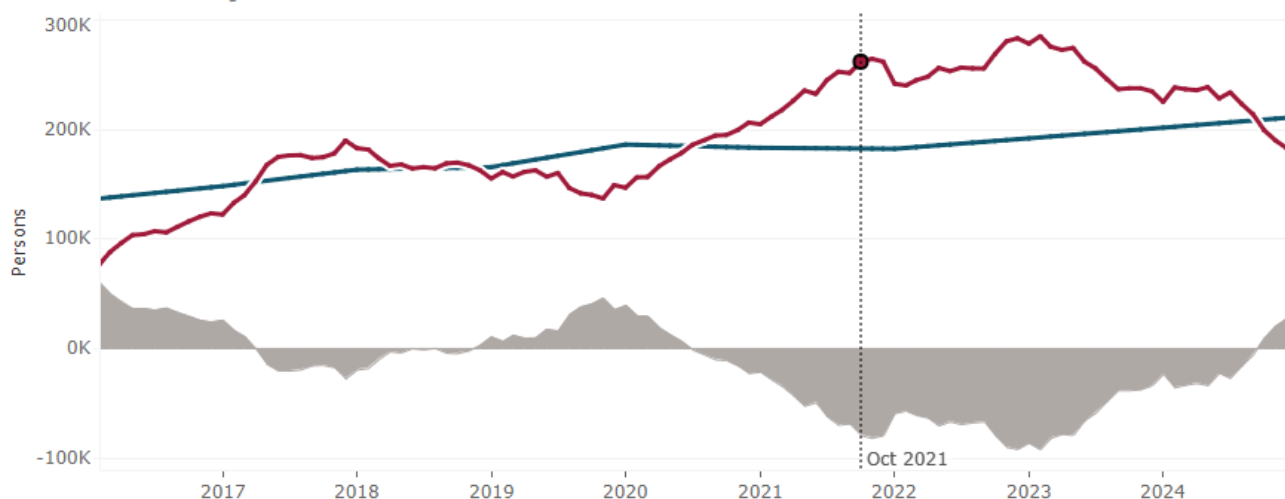
Infrastructure Australia's [2021 Infrastructure Market Capacity Report](#) is a response to the Council of Australian Governments' request for regular reports on the capacity of the market to deliver on the record investment in infrastructure projects across the nation. This is the first market capacity report produced by Infrastructure Australia.

The key findings of the report support Consult Australia's advocacy on skills shortages in the market, providing some sobering statistics, including the need for 57,000 full-time engineers for the projects scheduled in 2021-2022 and a peak deficit of 70,000 engineers, scientists, and architects between 2022-24. The graph below demonstrates that the supply of people currently exceeds demand and is expected to do so until around September/October 2024.

This demand cannot be met if we continue the way we have been. Consult Australia will be using the statistics from this market capacity report in our advocacy on uplifting productivity and thinking smarter about skills. This includes implementation of key reforms from Infrastructure Australia's [2021 Australian Infrastructure Plan](#). We cannot wait any longer for action, and the data supports this.

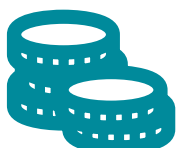
Supply vs demand over time

Click on the chart to change the selected date



KEY FINDINGS SUPPORT CONSULT AUSTRALIA'S ADVOCACY

Australia is currently experiencing a record level of investment in infrastructure



- Investment in infrastructure over the next five years across Australia will exceed \$218 billion. This is a never seen before scale of investment and rate of growth.
- It is expected that *known* infrastructure spend will peak at around \$52 billion in 2023, this does not account for private investment such as residential and non-residential buildings and private engineering construction.
- Over the next 5 years, 80 megaprojects represent less than 20% of the total number of projects in the major public infrastructure pipeline but are worth 80% of the total investment.

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- Approximately over 434 projects will be completed by 2025. Over the next 3 years, the investment in infrastructure will at least double current spending.
- NSW, QLD & Vic account for 87% of activity over the next 5 years and will consume more than 85% of projected resource demands.
- The transport sector will dominate demand. Over the next 5 years, \$4 out of every \$5 are allocated to transport projects.

Demand for skills, now and into the future

Across the entire infrastructure workforce, the peak demand will require an annual growth rate of 25% over the next two years, this is more than eight times higher than the projected annual growth rate of 3.3%. When asked, industry participants had high confidence in delivering 10-15% annual growth, and low confidence in delivering growth over 18%.



Current skills shortages

- There are currently a total of 234,000 engineers, scientists, and architects:
 - 43,000 engaged (currently working in public infrastructure)
 - 139,000 adjacent (workforce that is in other construction)
 - 19,000 trainable (workforce that is outside construction but has high levels of overlapping skills)
 - 32,000 distant (workforce outside construction with some overlap in skills, but skill gap exists).
- Engineering occupations are currently most at risk of shortages. Over 41,000 further individuals are required to fill current engineering occupations.
- These shortages are particularly acute for senior experienced positions and will be exacerbated as they retire. Over the next 15 years, the sector could lose over 40% of its workforce through early retirement.



Projected skills shortages

- Engineering, science, and architecture represent 39% of all labour market demand in the next 5 years.
- Approximately 57,000 FTE jobs in engineering are required in 2021-2022. Demand for civil engineers is the largest at 30% of total engineering demand, closely followed by structural engineers at 20%.
- There will be a peak deficit of 70,000 engineers, scientists, and architects, including 15,000 structural and civil trades and 19,000 project management specialists.
- Rapid engineering demand is difficult to source. This is largely driven by long training periods and hyper-unique skillsets to sub-sectors. A good example of this is electronic or electrical engineers in the context of rail projects often becoming rail signalling engineers.
- Migration will play a role in addressing workforce demand as our international borders open again, however, access to skills such as civil engineers are still likely to be inadequate due to strong global demand as other countries leverage infrastructure as part of their COVID-19 recovery plans.

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Shortages by occupation

- Infrastructure Australia have grouped infrastructure occupations into 'likely in shortage', 'potential in shortage' and 'unlikely in shortage' categories.
- 34 of 50 (68%) of the 50 public infrastructure occupations are rated as currently 'likely in shortage' (16) or 'potentially in shortage' (18). Here is the breakdown of the occupations in the engineers, scientists, and architects group:

likely in shortage: building surveyor, civil engineer, electrical engineer, engineering manager, environmental professionals, geologists, geophysicists and hydrologists, geotechnical engineer, land surveyor, materials engineer, quantity surveyor, other professional engineers.

potentially in shortage: electronic engineer, it professional/engineer, maintenance planner, production engineer, structural engineer, telecommunications engineer, mechanical engineer.

unlikely in shortage: architect, landscape architect, draftsperson (note that IA's report finding on draftsperson does not match Consult Australia's data received from members that highlighted draftsperson as one of the top 3 occupations with shortages in our [2020 skills survey](#)).

NEXT STEPS

The resources required to meet the significant pipeline of infrastructure projects far exceed the current demand. Infrastructure Australia has identified key areas for reform which align with Consult Australia's reform agenda, including the reviewing of skills shortage lists and skilled migration programs to ensure they deliver results for industry.

To drive the innovation and productivity required to meet the demand, it is time to think smarter about skills. Industry and government need to work collaboratively to address the key concerns raised in this report and Consult Australia will continue to advocate for the key reforms outlined in the 2021 Australian Infrastructure Plan.