A photograph of a construction site inside a large industrial building. The foreground shows a complex network of grey steel beams forming a floor or ceiling structure. In the middle ground, several workers wearing high-visibility yellow-green shirts and hard hats are working on a wooden platform. Large windows on the right side of the building offer a view of the outdoors. The overall scene is one of active construction.

# Infrastructure Productivity and Workforce Roadmap

July 2024



Queensland  
Government

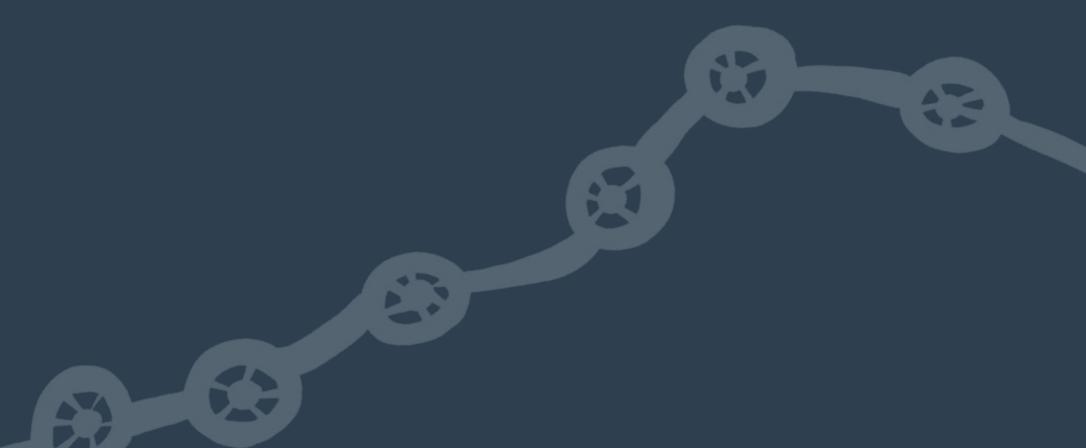


# ACKNOWLEDGEMENT OF COUNTRY

---

The Department of State Development and Infrastructure acknowledges the Aboriginal peoples and Torres Strait Islander peoples of Queensland and their connections to the lands, winds and waters we now all share. We pay our respect to Elders, past, present and emerging. We also acknowledge the continuous living culture of First Nations Queenslanders – their diverse languages, customs and traditions, knowledges and systems. We acknowledge the deep relationship, connection and responsibility to land, sea, sky and Country as an integral element of First Nations identity and culture.

The Country is sacred. Everything on the land has meaning and all people are one with it. We acknowledge First Nations peoples' sacred connection as central to culture and being. We acknowledge the stories, traditions and living cultures of First Nations peoples and commit to shaping our state's future together. The department recognises the contribution of First Nations peoples and communities to the State of Queensland and how this continues to enrich our society more broadly.







Queensland  
Government

#### COPYRIGHT

This publication is protected by the Copyright Act 1968.



#### LICENCE

This work is licensed by the Queensland Government under a Creative Commons Attribution-Non-Commercial-No Derivative Works (CC BY-NC-ND) 4.0 Australia licence. To view a copy of this licence, visit: [creativecommons.org.au/by/3.0/au/](https://creativecommons.org.au/by/3.0/au/)

You are free to copy, communicate and adapt this publication, as long as you attribute it as follows: © Department of State Development and Infrastructure 2024.

The Queensland Government is committed to providing accessible services to Queenslanders of all cultural and linguistic backgrounds. If you have difficulty understanding this publication and need a translator, please call the Translating and Interpreting Service (TIS National) on telephone 131 450 and ask them to contact the Queensland Department of State Development and Infrastructure on (07) 3452 7100.



#### DISCLAIMER

While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing.

Copies of this publication are available on our website at [dsdilgp.qld.gov.au](https://dsdilgp.qld.gov.au) and further copies are available upon request to:

Department of State Development  
and Infrastructure

PO Box 15009, City East, QLD 4002

Ph: 13QGOV (13 74 68) | [dsdilgp.qld.gov.au](https://dsdilgp.qld.gov.au)  
[info@dsdilgp.qld.gov.au](mailto:info@dsdilgp.qld.gov.au)

# CONTENTS

01   WHY THE ROADMAP AND ACTION PLAN ARE NEEDED	6
02   OBJECTIVE	11
03   PROCESS	12
04   PRODUCTIVITY AND WORKFORCE LEVERS	13
05   DELIVERING THE ROADMAP	18



## **The Honourable Grace Grace MP**

**Minister for State Development  
and Infrastructure and  
Minister for Industrial Relations  
and Minister for Racing**

# MINISTERIAL FOREWORD

Queensland's economy is growing and so is the need for more infrastructure like hospitals, schools, houses, and transport services to support our expanding regions and communities.

To meet increasing demand and futureproof the lifestyle we all love, Queensland is in the biggest decade of infrastructure delivery in our state's history. Critical to the success of this program is the productivity and health of our construction industry.

In recent years, the cost of building new infrastructure has risen. A shortage of construction workers, disruptions to supply chains for materials, an increased number of insolvencies, low levels of diversity, and the industry's attractiveness have continued to challenge the construction industry.

The productivity, innovation and attractiveness of the construction industry lags behind other areas of the economy. The Infrastructure Productivity and Workforce Roadmap and Action Plan have been developed

in partnership with industry so we can begin to address some of these challenges.

The Roadmap provides a framework for government and industry to work together to improve productivity and workforce outcomes. The Action Plan provides practical and tangible actions aimed at progressively harnessing innovation, growing a strong and diverse workforce, and embracing best practice approaches to infrastructure planning and delivery.

The performance and health of the construction industry is critical to the delivery of infrastructure that will improve the lives of Queenslanders, and collaboration between government and industry is an essential part of this.

By working together, we can grow a more productive and healthier construction industry – for the benefit of all Queenslanders.

# 01 WHY THE ROADMAP AND ACTION PLAN ARE NEEDED

The infrastructure industry, which comprises the residential, civil, and commercial construction sectors, is one of the largest employers in Queensland and nationally. The industry employs a range of skilled people, including construction workers, engineers, designers, consultants, project managers, and the many tradespeople essential in delivering infrastructure.

In Queensland, there are around 237,300 people employed full time in the construction industry (May 2023), representing around 8% of total full-time employment. This is an increase of around 18% over the last five years<sup>4</sup>. The construction industry is also a major economic contributor, contributing around 8% of the State's total gross state product in 2021-22<sup>2</sup>.

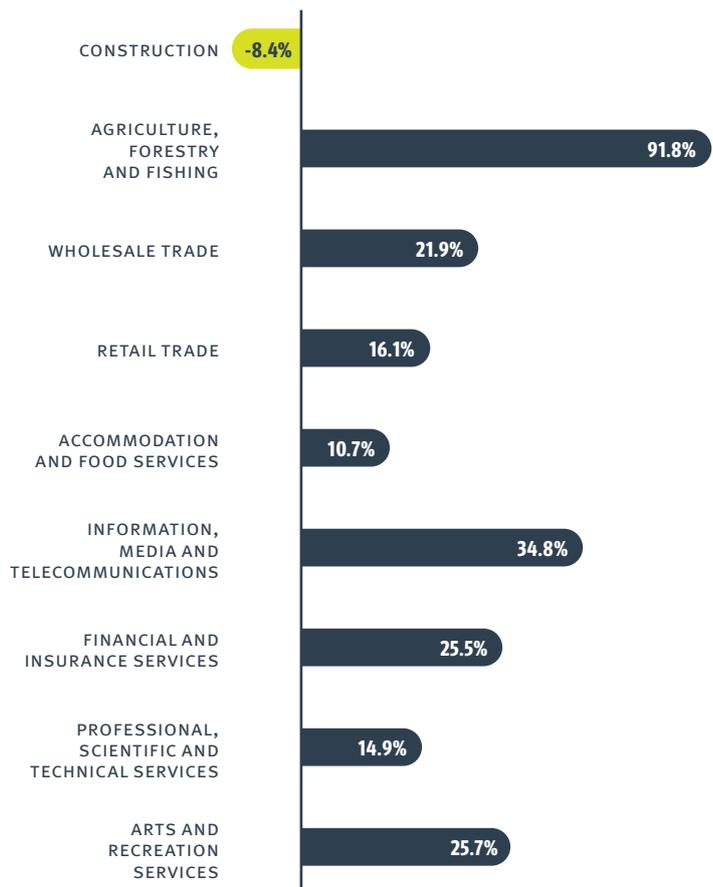
Just in the 2023 June quarter, Queensland had the third highest value of construction work done (\$11.2 billion) in Australia, an increase of almost 10% compared to the previous year<sup>3</sup>.

Here in Queensland, we are reliant on this industry to deliver the infrastructure that underpins our economic growth, our communities, and our quality of life.

A surge in demand for skills, labour and materials to meet increasing infrastructure investment and delivery has placed significant pressure on the capacity of the market to respond to and meet this demand.

However, productivity in the construction industry is low and has remained stagnant for the past 30 years. Improvements to productivity in the Australian construction industry have not kept pace in comparison to other industries when measured for efficiency, productivity, innovation, digitisation, sustainability, industrialisation, and value for money. Figure 1 shows growth in productivity<sup>4</sup> between 2002 and 2023 in the construction industry compared to other industries. Over the past 20 years, construction industry productivity has declined by 8.4%, compared to the agricultural industry, which has grown 91.8% over the same time<sup>5</sup>.

**PRODUCTIVITY GROWTH 2002-03 TO 2022-23**



**Figure 1** Estimates of Industry Multifactor Productivity in the construction industry  
*Note: Gross value added-based Multifactor Productivity Index on an hours worked basis.*

The industry's low productivity was estimated to result in an opportunity cost of \$10.93 billion in Queensland in 2022-23<sup>6</sup>, meaning we are paying more and using more resources but getting the same or less output. A range of challenges are adversely affecting the productivity and resilience of the infrastructure industry, including:

- > supply side constraints, both in terms of inputs and workforce
- > a lack of standardisation in construction methods and materials
- > low levels of vertical integration in the industry
- > low levels of investment in research and development (R&D), limited innovation and digitisation.

Workforce challenges such as low retention rates and culture and wellbeing issues are also impacting the prosperity and sustainability of the infrastructure industry. We know that employees in construction are at elevated risk of suicide compared to workers in other industries and the construction industry has the highest incidence rate of work-related injuries or illnesses<sup>7</sup>. It is a male-dominated industry with 23% of workers working in excess of 50 hours per week. In short, the industry has low diversity, low work-life balance and high injury and illness rates. These factors all impact the industry's capacity to attract, retain and grow an engaged and productive workforce.

## INFRASTRUCTURE PRODUCTIVITY AND WORKFORCE - KEY CHALLENGES



### MARKET CAPACITY AND SUPPLY CHAIN

All infrastructure inputs are experiencing supply constraints, including labour, raw material and equipment.



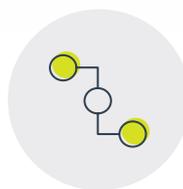
### WORKFORCE SKILLS AND SUPPLY SHORTAGE

There are significant shortages in skilled labour. Australia will continue to face severe shortages in the workforce available for public infrastructure until 2027.



### CULTURE AND DIVERSITY

There is difficulty in attracting and retaining employees to the sector due to poor perceptions around work culture in the construction industry. Further, a lack of diversity, including female underrepresentation, is inhibiting unlocking additional workforce supply.



### INDUSTRY STRUCTURE

The sector's commercial structure creates an environment that favours short term planning and conservatism and disincentivises investment in areas other than business-as-usual.



### INNOVATION, R&D AND ADOPTION OF MODERN TECHNOLOGIES

The industry has lower levels of innovation and slower adoption of digital technologies when compared to other industries.

Figure 2 Key challenges related to productivity and workforce in the construction industry

## MARKET CAPACITY AND SUPPLY CHAIN

Queensland's boom in infrastructure investment, on top of growing nation-wide demand, has added significant pressure to the market. This pressure is being felt by construction companies facing increasing costs and greater project risks. In 2022, construction insolvencies sharply rose, leading to fewer companies capable of delivering the infrastructure pipeline. Consequently, the companies left are operating at or above 90% capacity<sup>8</sup>.

In addition to market capacity constraints, market challenges in the availability and cost of materials and labour supply are increasing project delivery risks, including risk of project slippage. With some procurement and contracting practices, project risks are also transferred to contractors, which, in the current market, is putting additional stress on companies already under pressure. This may lead to higher levels of risk being priced into tenders, putting further strain on capital budgets<sup>8</sup>.

During and since the COVID-19 pandemic, the infrastructure industry experienced unprecedented volatility, primarily driven by economic instability, rising inflation, labour and supply chain issues. Material costs rose due to global supply chain disruptions and limitations, including international conflicts. Supply chain issues, including longer lead times, have made it more difficult and costly to procure materials. In turn, this is increasing project costs and delaying project timelines. In addition to materials constraints, the shortage of available and readily skilled workers has negatively impacted project resourcing. This has contributed to increased labour costs.

## WORKFORCE SKILLS AND SHORTAGE

Skilled labour shortages are being felt Australia-wide and this is having significant impacts on project delivery, project cost overruns, increased labour costs, and overall supply chain issues<sup>9</sup>. In 2023, infrastructure labour shortages are the sector's top capacity constraint, with an estimated deficit of 229,000 public infrastructure workers nationally. Infrastructure Australia predicts that demand for labour generated by the national public infrastructure pipeline will increase to a peak of 405,000 workers in 2024, and that significant labour shortages will continue through to 2027<sup>10</sup>.

In Queensland, forecasts for infrastructure labour demand are consistent with national predictions. Construction Skills Queensland (CSQ) estimates that the average monthly headcount needed to support the current pipeline of funded and planned major infrastructure projects in Queensland will peak in December 2024 at a possible total of 125,000 workers. That is well above the average headcount of 54,218 in December 2023<sup>11</sup>. Infrastructure labour supply risks are further compounded by a mismatch between changing industry skill needs and existing workforce skills, and by Australia's ageing workforce- with 40% of the workforce potentially retiring in the next 15 years<sup>12</sup>.

Historically, Australia has been able to bridge the skilled worker gap through attracting skilled migrants. However, due to international border closures, Australia has forgone around a million people in net overseas migration between 2019-2020 and 2021-2022<sup>13</sup>.

Australia's labour supply is also concentrated in larger cities, with 78% of the construction workforce located in major cities. This means that capacity to deliver public infrastructure is a particular challenge in regional and remote Queensland. This impact is compounded when coupled with workforce retention challenges, adding further pressure to infrastructure delivery.

## CULTURE AND DIVERSITY

Despite unprecedented demand, reports continue to emerge of employers having difficulty attracting and retaining entry-level workers due to perceptions around jobs or careers, long and irregular hours, travel and inconsistent work. Businesses experience disruption from staff movement, with 70% of respondents to a skills survey reporting a voluntary turnover rate of between 10 to 20%, making staff retention a key challenge<sup>14</sup>.

Research found that cultural issues are costing the Australian economy nearly \$8 billion<sup>15</sup> annually due to workplace injuries, mental illness, suicide, long work hours, and a lack of diversity. People employed in the construction industry suffer from poor physical health and some of the highest rates of mental health incidences in Australia.



Photo Credit: Queensland Reconstruction Authority



#### LONG WORKING HOURS

**64%** report working >50 hours per week

**59%** unsatisfied with work life balance

**14%** construction industry employees experiencing presenteeism



#### WELLBEING

**2x** suicide rate vs national average

**75%** report moderate to high stress levels

**46%** experiencing burnout



#### LACK OF DIVERSITY

**#1** most male-dominated industry

**12%** of the workforce is female

**<2%** of on-site roles occupied by women

Source: Culture in Construction, Cultural Standard Overview

The construction industry also experiences a lack of diversity, which is demonstrated in part by women accounting for just 12% of the total construction workforce in 2022. Underrepresentation across a range of cohorts, including women, Aboriginal and Torres Strait Islander peoples, and people with disability, limits the industry's ability to grow its workforce and build a more inclusive culture. At a time of unprecedented infrastructure

investment and significant labour shortages, the industry culture needs to change to support its workforce and improve productivity.

#### INDUSTRY STRUCTURE

In addition to the capacity issues currently impacting infrastructure delivery, the industry's underlying commercial structure constrains productivity and is a key contributor to its financial vulnerability.

Characterised by a prevalence of smaller-sized firms, vertical and horizontal fragmentation, non-standard project-based work, and a past tendency towards fixed price contracting, the industry's commercial structure creates an environment where access to working capital is constrained. Opportunities for continuous improvement are also limited, as project teams are stood up on a project-by-project basis. These conditions have cultivated an environment that limits investment in areas other than business-as-usual.

#### INNOVATION, R&D AND TECHNOLOGY ADOPTION

The industry has lower levels of innovation and slower adoption of digital technologies when compared to other industries. However, this is progressively changing with parts of the industry starting to leverage investment in R&D and uptake of technology to improve productivity and workforce conditions.

As examples, drones are being used by engineers to map and survey construction sites, while project managers and developers are using them to monitor build progress. Building Information Modelling (BIM) has improved how infrastructure is planned, designed, built and maintained. Greater use of digital technology and data can continue to improve timelines, costs and workforce satisfaction.



**QBuild is a vital part of Queensland's \$50 billion building and construction industry, which employs 235,000 Queenslanders. QBuild plays an important role in communities across the state by building and maintaining government-owned assets such as schools, social housing, police stations, and correctional and health facilities.**

In 2023, the QBuild Rapid Accommodation and Apprenticeship Centre (QRAAC) opened at Eagle Farm in Brisbane. The centre will play an important role in the Rebuilding QBuild Program with a Queensland-made approach to housing construction and workforce training to address the housing needs of Queenslanders.

A further two QRAACs have now been established in the north Brisbane suburb of Zillmere and Far North Queensland's Cairns.

Prefabricated homes will be made at the QRAAC using Modern Methods of Construction (MMC) to bring more housing supply into the market quicker. In partnership with the Queensland building and construction industry, including MMC suppliers, QBuild will deliver up to 439 homes through traditional and modern construction methods approved under the five-year Government Employee Housing Capital Works program (2022-27) for government employees across regional Queensland, such as teachers, nurses, and police officers.

## WHY CHANGE IS NEEDED NOW

The importance of improving productivity and workforce outcomes in the infrastructure industry is more important than ever. Australia, including Queensland, is currently experiencing an unprecedented boom in infrastructure investment, with a total of \$255 billion allocated to infrastructure out to 2024-2025<sup>16</sup>. The nation-wide demand for infrastructure, on top of the industry's productivity challenges, means there is a significant risk to delivering value for money outcomes.

Queensland is delivering the 'Big Build', a \$107.262 billion four-year capital program supporting 58,000 jobs in 2023-24. Queensland's largest capital program undertaken to date, Big Build delivers significant investment across the state, with projects including:

- › New wind, solar, storage and transmission to support the Queensland Energy and Jobs Plan (QEJP). Queensland's Clean Energy Workforce Roadmap (CEWR) notes that the roll out of the QEJP will see increased demand for up to 26,700 construction workers from the early 2020s to 2050.
- › Integrated, safe and efficient transport infrastructure across the state.
- › Initial delivery of venues infrastructure for the Brisbane 2032 Olympic and Paralympic Games.
- › The Queensland Health Capacity Expansion Program<sup>17</sup>.

These issues underpin the importance and need for change now, as well as the opportunities available through embracing enhanced productivity and workforce outcomes.

Improving productivity and workforce outcomes is critical to both the infrastructure industry's sustainability and to the success of Queensland's ongoing prosperity, including:

- › alleviating housing availability and affordability pressures
- › transforming Queensland's energy system to deliver clean, reliable and affordable energy
- › delivering the Brisbane 2032 Olympic and Paralympic Games
- › providing the additional infrastructure needed to support a growing Queensland population and economy.



## 02 OBJECTIVE

In recognising the importance of the infrastructure industry and the challenges it is facing, the Queensland Government committed to developing the Infrastructure Productivity and Workforce Roadmap and Action Plan as a priority action of the *State Infrastructure Strategy 2022-2042* (SIS).

Improved productivity through enhanced workforce practices and government and industry collaboration are important components in responding to market capacity constraints and achieving better outcomes in the infrastructure sector. Given the many contributing factors, improving infrastructure productivity and workforce outcomes isn't something that government or industry can achieve in isolation. Partnerships with industry leadership will be critical to achieving meaningful and sustainable change for the sector, now and in the future.

To ensure Queensland's infrastructure industry remains competitive and an attractive place to invest, the Roadmap and Action Plan will guide government and industry efforts to support the industry to:

- › enhance workforce and industry productivity
- › grow a thriving and diverse workforce
- › enable opportunities to assess and harness innovations
- › ease market capacity issues
- › support growth and sustainability within the sector.

The objective of the Roadmap and Action Plan is to steer government and industry to boost productivity and improve workforce outcomes in the infrastructure industry, including increasing efficiency, supporting innovation, attracting and retaining talent, and promoting a positive workplace culture.

Through the Roadmap and Action Plan, government and industry will progressively drive improvements at a pace in step with the capacity and capabilities of the market. Through focussed and iterative updates to the Action Plan, and by building on past successes, the Roadmap and Action Plan aim to identify ways to improve the overall performance and effectiveness of infrastructure planning, including tendering, contracting, and delivery.

The challenges of delivering infrastructure are more acutely felt in regional and remote Queensland and a key objective of the Roadmap and Action Plan is to improve infrastructure delivery outcomes for regional communities.

The Action Plan includes actions for fostering a culture of collaboration and continuous improvement and innovation within organisations, including government, operating in the industry. Encouraging a proactive and forward-thinking approach to problem-solving will lead to better outcomes and more efficient processes across the industry.

Attracting and retaining skilled talent is crucial for the long-term success of the infrastructure sector. The Roadmap and Action Plan emphasise the importance of creating an appealing work environment that supports and promotes professional development, work-life balance, and job satisfaction. By improving workplace conditions, diversity and culture, we can continue to attract and retain top talent, ensuring an engaged and dedicated workforce that contributes to increased productivity.

The Roadmap and Action Plan also aim to address some common challenges including:

- › commercial structures and governance
- › systems for innovation and agile approaches
- › pipeline of work for the sector to reinvest/prepare for
- › workforce challenges and changing needs (capacity, capability and retention)
- › infrastructure supply chain.

By acknowledging and addressing these challenges, the Roadmap provides the strategic direction to improve productivity and workforce outcomes, while the Action Plan outlines government and industry actions to drive positive change, enabling the sector to advance and become more sustainable, attractive and competitive.

## 03 PROCESS

The Roadmap and Action Plan have been developed in collaboration with a range of industry representatives and with input and guidance from members of the government's Infrastructure Industry Steering Committee (IISC). Both documents build on the valuable research and advocacy work that has been undertaken by a number of industry and government organisations, including industry peak bodies and Infrastructure Australia.

The Roadmap sets the strategic framework for advancing infrastructure workforce and productivity outcomes. The Action Plan contains the tangible actions that government and industry will work on together.

Both the Roadmap and the Action Plan have been developed with the aim of identifying tangible and practical actions that, when implemented, will create meaningful change in the sector. The Action Plan will be periodically reviewed and updated to progressively and iteratively improve outcomes, and meet the changing needs of the sector.

To deliver the desired outcomes of the Roadmap, collaboration between government and industry is central to tackling challenges the infrastructure industry faces. Government and industry collaboration to improve infrastructure productivity and workforce outcomes is a clear priority in both national and state agendas, as set out in both the Australian Infrastructure Plan 2021 and

the SIS. The Roadmap serves as a tangible example of this collaborative approach and outlines the essential steps required to fulfill the strategic objectives.

By uniting efforts, government and industry seek to create a collaborative partnership that leverages the strengths and expertise across the sector. Recognising that infrastructure plays a critical role in shaping the economic landscape and societal progress, this collaboration embodies a forward-looking approach to address the complex and multifaceted productivity and workforce challenges. Success in achieving the Roadmap's objectives is underpinned by government and industry working collaboratively.

The contribution and involvement from IISC members in the development of the Roadmap and Action Plan is gratefully acknowledged.



## 04 PRODUCTIVITY AND WORKFORCE LEVERS

Five productivity levers have been identified as key areas where improvements in infrastructure planning and delivery and infrastructure workforce outcomes can be made. A central tenet across all the levers is the need for collaboration.

Collaboration means deepening the shared understanding, cooperation and efficiencies through forums, commercial approaches, leveraging digital technology and data to better align government and industry action and objectives.

It will be key for all stakeholders to work together. Engagement programs or forums for industry, community and governments to discuss and resolve issues are important to promote and encourage collaboration. This Roadmap is a key step.

### COMMERCIAL

### GOVERNANCE AND FRAMEWORKS

### INNOVATION, DIGITAL AND DATA

### SKILLS AND TRAINING

### WORKFORCE WELLBEING AND DIVERSITY

#### COMMERCIAL

The commercial lever focuses on the optimisation and use of best practice commercial practices, including procurement, contracting and delivery models, to achieve positive outcomes for industry, government and the workforce, along with enabling innovation through existing processes, such as standardised contracts, performance measures and outcome-based standards.

The purpose of this lever is to create a commercial environment that allows businesses to innovate and implement new ideas, which is critical to achieving greater productivity.

Under this lever, there is an opportunity to focus on how contracts can support greater transparency, performance, outcomes and innovation in delivering infrastructure projects. It is important to consider what key aspects of contracting arrangements and commercial models can lead to the best outcomes for government, industry and society, and provide the greatest opportunity for collaboration.



**More efficient procurement, standard forms of contract, better approaches to information reliance, and greater use of performance-based specifications would all unlock significant capacity across the industry.**

An Australian Constructors Association commissioned report from Oxford Economics Australia estimates that bringing construction productivity growth into line with the economy-wide average would unlock an additional \$56 billion nationally in construction capacity every year<sup>18</sup>. This would be enough to deliver over 1,000 new schools, 10,000 kilometres of road or 25,000 extra hospital beds with the current workforce numbers.

## GOVERNANCE AND FRAMEWORKS

Infrastructure governance and frameworks are a key area of opportunity for achieving greater efficiencies and for providing greater certainty for the infrastructure sector. The governance and frameworks lever focuses on ensuring that plans, policies, strategies, processes and tools effectively inform infrastructure decision-making for both government and industry, along with clarity and availability of information.

By establishing a central and transparent platform for infrastructure governance and pipeline data through initiatives such as the Queensland Government Infrastructure Pipeline, improved governance will support the continued development of robust infrastructure proposals. It will also provide industry with the guidance needed to confidently undertake workforce planning, planning for collaborative approaches and project prioritisation.

## INNOVATION, DIGITAL AND DATA

The innovation, digital and data lever focuses on the implementation of digital, data and smart solutions to improve the planning and delivery of infrastructure and support a 'digital by default' approach, such as Building Information Modelling (BIM), Digital Twins, Modern Methods of Construction (MMC) and Design for Manufacturing and Assembly (DFMA), robotics and other construction technologies.

Government and industry stakeholders will need to prioritise driving innovation and digital transformation in the sector through incorporation of innovation and digital technologies in infrastructure project contracts, planning, design, delivery and operation. Innovation and leveraging digital and data in infrastructure can help manage and reduce risk, increase productivity, and reduce project costs. Investing in (R&D) and commercialisation opportunities will be important for supporting the local production of new, innovative and sustainable construction materials and practices for a future resilient Queensland.

## SKILLS AND TRAINING

The skills and training lever focuses on investment in workforce development and progression through skills development, training, and qualifications to meet demand for growth and future skills.

A key area of opportunity is ensuring there is a suitably qualified and available workforce to deliver the infrastructure pipeline. Implementing training and education programs will help meet the future skills required to deliver the infrastructure Queensland needs.

Industry leaders have already identified the need for future construction workers to be able to quickly adapt to new construction technologies. The emphasis will increasingly be on cognitive and digital skills.



**Recognising the importance of good governance in infrastructure and in response to the anticipated global investment gap (estimated to be \$15 trillion), the World Bank developed the Infrastructure Governance Assessment Framework to help countries overcome governance bottlenecks around infrastructure and enable them to get more bang for their infrastructure buck<sup>19</sup>.**

The approach groups three key dimensions of governance: project lifecycle, cross-cutting issues for good infrastructure investment and service provision.



**The NSW Schools Program has used DFMA to deliver volumetric modules and kit-of-parts to build a range of school buildings. DFMA is a process where structural components or entire sections of buildings are built offsite and then brought to site to be assembled. The benefits of DFMA cited by Schools Infrastructure NSW include:**

- shorter time onsite – 30% faster
- sustainability gains – reduced carbon emissions, reduced material and water waste onsite
- creating new jobs
- safer work environments
- reduced costs
- reduced disruption.

# 27 new skills

*have emerged in relevant public sector public infrastructure job advertisements since 2016, most of which are digital-related<sup>20</sup>*



**The Queensland Department of Regional Development, Manufacturing and Water (DRDMW) supports manufacturers to improve productivity, increase competitiveness and generate new jobs. DRDMW is working with MMC suppliers to boost and support the growth of MMC in the private sector to help grow capacity and capability. DRDMW supports MMC suppliers through:**

- co-funding of design sprints with QBuild
- development of a range of promotional assets

that will be used to influence private sector uptake

- working with private lenders to understand the barriers to finance and facilitating opportunities between lenders and MMC suppliers
- roll-out of a Diversity and Equity Toolkit to encourage diversity in the sector.



**Queensland will need an extra 207,000 workers in the four years to 2025-2026<sup>22</sup>, as employment growth remains strong. New challenges require new approaches, and that is why we have developed the *Good people. Good jobs: Queensland Workforce Strategy 2022-2032*.**

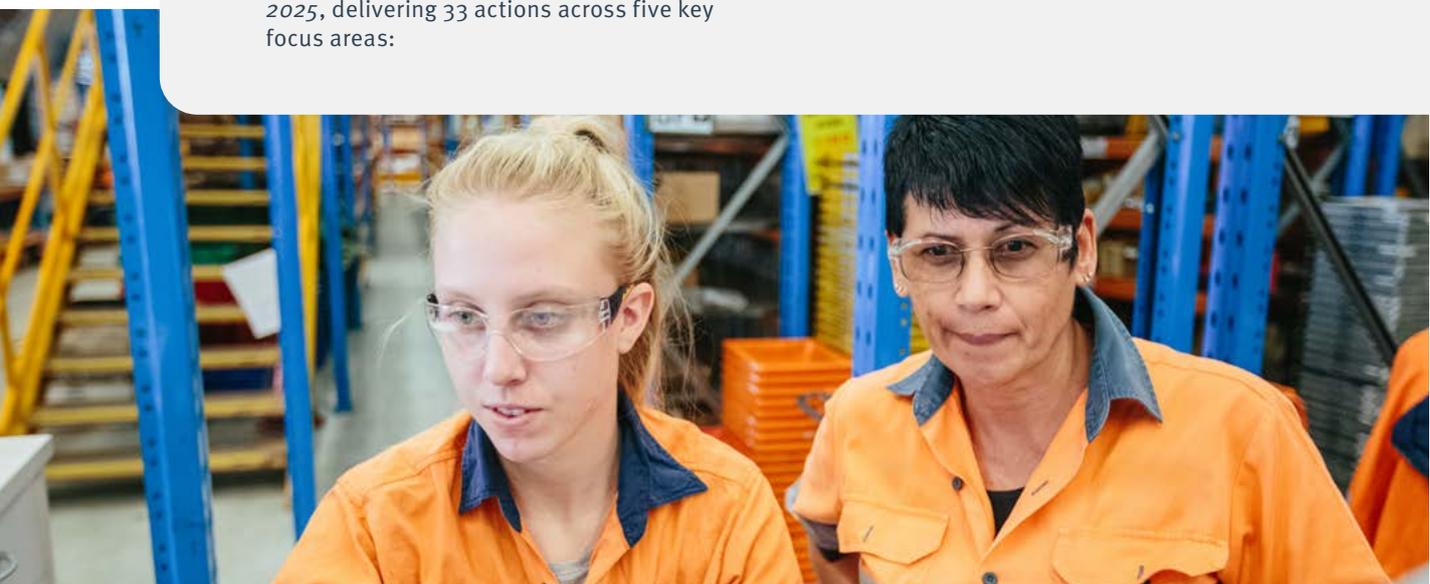
The *Queensland Workforce Strategy* delivers innovative and practical solutions that are needed now to ensure Queensland has a ready workforce to support growth, strengthen communities and keep Queensland at the forefront of new economic opportunities.

Collaboration, innovation and partnerships with key stakeholders are essential to the strategy's success. Industry, communities and government are already working together in a proactive and coordinated way.

Supporting the strategy is the *Action Plan 2022-2025*, delivering 33 actions across five key focus areas:

- workforce participation
- local solutions
- school-to-work transitions
- workforce attraction and retention
- skilling Queenslanders now and into the future.

A commitment under the *Queensland Workforce Strategy* is the *Good Jobs, Great Training: Queensland Skills Strategy 2024 – 2028*, which will fund one million subsidised training places for Queenslanders who want to train, upskill, reskill, and pursue careers in the state's priority industries, including construction. The strategy extends the Free TAFE program, funding up to 70,000 Free TAFE places, including 30,000 new places, to bring down costs for Queenslanders to get into better paid jobs or start a career in high-demand industries .



## WORKFORCE WELLBEING AND DIVERSITY

This lever focuses on the infrastructure industry becoming a preferred industry of choice for skilled labour through inclusivity and diversity in the workforce, with health, safety and wellbeing at its heart.

Key areas of opportunity include improved outcomes for equality, diversity and inclusion and ensuring these are systematically pursued to foster a more resilient, diverse and inclusive workforce. Another opportunity exists to improve workforce attraction and retention outcomes through addressing current workforce challenges to create a sector of choice for current and future talent.

The skills and training and workforce wellbeing and diversity levers will also support improved outcomes for First Nations peoples through increased employment opportunities and skills development, contributing to the Closing the Gap priority under the National Skills Agreement, as well as the Queensland Government's Paving the Way – First Nations Training Strategy.



**Improving workforce outcomes and wellbeing through better culture and diversity will be a critical lever to attract and retain the workforce needed. A more diverse workforce will also lead to better outcomes for infrastructure delivery.**

A diverse workforce brings diversity in skills and thought. Fresh ideas, different life experiences and new perspectives lead to increased creativity and improved problem-solving, which brings about greater innovation.

According to the Australian Human Rights Commission, organisations with inclusive cultures outperform those that are non-inclusive, with 39% higher customer

satisfaction, 22% greater productivity and 27% higher profitability.

More women in the workforce makes for better economic outcomes overall. According to Goldman Sachs, narrowing the gap between the employment rates of women and men in Australia could potentially boost GDP by 11%. In an industry with low female participation, the economic gains, especially for the construction industry, are likely to be significantly higher.





# 05 DELIVERING THE ROADMAP

The Roadmap will be delivered in two parts – the Roadmap and an Action Plan, which will be updated over time.



The Roadmap is the strategic framework, setting out the objective for the future, and identifying where government and industry efforts need to focus to boost productivity and enhance workforce outcomes in infrastructure, by improving the performance and efficacy of infrastructure investment, planning, delivery and operations.

The Action Plan identifies how the objective of the Roadmap will be delivered. It will facilitate a culture of continuous improvement in government agencies involved in the delivery of public infrastructure, enhancing and coordinating engagement with industry, ensuring quality, safe workplaces, and attracting and retaining a quality, skilled workforce.

The Queensland Government already has a number of programs and initiatives in place to support and facilitate productivity and workforce diversity in the infrastructure industry, including the One Government Contract Management Framework, the Project Assessment Framework, the Business Case Development Framework, the Queensland Workforce Strategy and the Queensland Skills Strategy.

The actions being undertaken now provide a strong platform for future improvements in productivity and workforce outcomes.

The Action Plan sets out a range of initial actions to iteratively deliver on the Roadmap objective and secure the performance, sustainability and efficacy of Queensland's infrastructure investment, planning, delivery and operations.

As Queensland's infrastructure industry continues to evolve, so too will the industry's needs and development priorities and practices. Planning for and responding to these needs will require an ongoing partnership between government, industry and communities, with a focus on pursuing the actions in this Roadmap.

The Queensland Government will continue to engage with industry stakeholders to identify industry needs and contemporary practices as they change over time. The implementation of this Roadmap via the Action Plan will be monitored, with a check-in after 18 months to track progress and adjust as necessary.

Enhancing the productivity and workforce outcomes of the infrastructure industry translates into growth of the economy, services for communities and employment opportunities for Queenslanders and their families.

# REFERENCES

- 1 ABS Labour Force Survey Data, Table 1: EQ03 - Employed persons by Greater Capital City and Rest of State (ASGS), Industry division of main job (ANZSIC) and Sex, November 1984 onwards. Accessed 11 September 2023: <https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia-detailed/latest-release#data-download>
- 2 ABS, Australian National Accounts, State Accounts, 2021–22. Accessed 11 September 2023: <https://www.qgso.qld.gov.au/statistics/theme/economy/economic-activity/queensland-state-accounts>
- 3 ABS Construction Work Done, Australia, Preliminary Release, 30 August 2023. Accessed 11 September 2023: <https://www.abs.gov.au/statistics/industry/building-and-construction/construction-work-done-australia-preliminary/jun-2023>
- 4 Multifactor productivity (MFP) is defined as a ratio of a measure of output to a combined input of labour and capital. In empirical analysis, it is expressed in terms of growth rate, that is, growth rate of output minus the growth rate of inputs. At the aggregate and industry level, gross value added-based MFP is defined as the ratio of gross value added to the combined inputs of capital and labour. At an industry level, gross output-based MFP is also measured as the ratio of gross output to the combined inputs of capital, labour, and intermediate inputs.
- 5 Australian Bureau of Statistics, Estimates of Industry Multifactor Productivity. Accessed 25 August 2023: <https://www.abs.gov.au/statistics/industry/industry-overview/estimates-industry-multifactor-productivity/latest-release>
- 6 Australian Constructors Association, Nailing Construction Productivity: A Blueprint for Reform. Accessed 11 September 2023: <https://www.constructors.com.au/wp-content/uploads/2022/06/Cost-of-doing-nothing.pdf>
- 7 Construction Industry Culture Taskforce, The Cost of Doing Nothing Report. Accessed 12 September 2023: [constructors.com.au](https://www.constructors.com.au)
- 8 Infrastructure Australia, Infrastructure Market Capacity 2022 Report. Accessed 12 September 2023: [https://www.infrastructureaustralia.gov.au/sites/default/files/2023-04/2022\\_IA\\_Market-Capacity-Report\\_2.0\\_HR.pdf](https://www.infrastructureaustralia.gov.au/sites/default/files/2023-04/2022_IA_Market-Capacity-Report_2.0_HR.pdf)
- 9 Consult Australia's Skills and Survey Report May 2023. Accessed 24 August 2023: [https://www.consultaustralia.com.au/docs/default-source/people/skills-survey-report---may-2023.pdf?sfvrsn=d2244ce3\\_3](https://www.consultaustralia.com.au/docs/default-source/people/skills-survey-report---may-2023.pdf?sfvrsn=d2244ce3_3)
- 10 Infrastructure Australia, Infrastructure Market Capacity 2023 Report. Accessed 10 April 2024: <https://labourmarketinsights.gov.au/our-research/skills-priority-list/#:~:text=Skill%20Level%203%20occupations%20have,%25%20and%207%25%20respectively,2023%20Infrastructure%20Market%20Capacity%20report%20%28Infrastructure%20Australia%29>
- 11 Construction Skills Queensland, Queensland Major Projects Pipeline 2023 Report. Accessed 10 April 2024: <https://gmca.com.au/advocacy/2023-queensland-major-projects-pipeline-report/2023-QMCA-CSQ-Queensland-Major-Projects-Pipeline-Report-Queensland-Major-Contractors-Association>
- 12 Infrastructure workforce and skills supply, October 2021. Accessed 24 August 2023: [infrastructureaustralia.gov.au](https://www.infrastructureaustralia.gov.au)
- 13 Consult Australia's Skills and Survey Report May 2023. Accessed 24 August 2023: [https://www.consultaustralia.com.au/docs/default-source/people/skills-survey-report---may-2023.pdf?sfvrsn=d2244ce3\\_3](https://www.consultaustralia.com.au/docs/default-source/people/skills-survey-report---may-2023.pdf?sfvrsn=d2244ce3_3)
- 14 Consult Australia's Skills and Survey Report May 2023. Accessed 24 August 2023: [https://www.consultaustralia.com.au/docs/default-source/people/skills-survey-report---may-2023.pdf?sfvrsn=d2244ce3\\_3](https://www.consultaustralia.com.au/docs/default-source/people/skills-survey-report---may-2023.pdf?sfvrsn=d2244ce3_3)
- 15 Construction Industry Culture Taskforce, The Cost of Doing Nothing Report. accessed 12 September 2023: <https://www.constructors.com.au/wp-content/uploads/2022/06/Cost-of-doing-nothing.pdf>
- 16 Infrastructure Partnerships Australia – Australian Infrastructure Budget Monitor 2022-23. Accessed 11 September 2023: <https://infrastructure.org.au/australian-infrastructure-budget-monitor-2022-23/>
- 17 Queensland Government State Budget. Accessed 25 May 2024: <https://budget.qld.gov.au/at-a-glance/>
- 18 Australian Constructors Association, Nailing Construction Productivity. Accessed 12 September 2023: [https://www.constructors.com.au/wp-content/uploads/2023/08/Nailing-construction-productivity-FA\\_web.pdf](https://www.constructors.com.au/wp-content/uploads/2023/08/Nailing-construction-productivity-FA_web.pdf)
- 19 Infrastructure Governance Assessment Framework. Accessed 7 June 2024: <https://thedocs.worldbank.org/en/doc/96550c14d62154355b6edc367d4d7f33-0080012021/infrastructure-governance-assessment-framework-december-2020>
- 20 Infrastructure Australia, Infrastructure Market Capacity 2022 Report. Accessed 12 September 2023: [https://www.infrastructureaustralia.gov.au/sites/default/files/2023-04/2022\\_IA\\_Market-Capacity-Report\\_2.0\\_HR.pdf](https://www.infrastructureaustralia.gov.au/sites/default/files/2023-04/2022_IA_Market-Capacity-Report_2.0_HR.pdf)
- 21 Jobs Queensland, Anticipating Future Skills. Anticipating Future Skills Series – Jobs Queensland.

[statedevelopment.qld.gov.au](http://statedevelopment.qld.gov.au)



**Queensland**  
Government