

# Townsville Workforce Development Plan



**Jobs  
Queensland**

**2020 - 2025**

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Jobs Queensland would like to acknowledge the Traditional Owners of the North Queensland region and pay respects to their Elders past, present and emerging. Jobs Queensland would also like to acknowledge the diverse Aboriginal groups of the North Queensland region and thank them for their ongoing custodianship of the lands, seas, stories, laws and customs. They have laid the foundations for the creation of a brighter future, not just for their respective communities, but for all Australians.

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### **To make an enquiry, contact Jobs Queensland**

Email: [info@jobsqueensland.qld.gov.au](mailto:info@jobsqueensland.qld.gov.au)

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# Summary



Image courtesy  
Townsville City Council

The Townsville City Deal provides a pathway to build local industry capability, diversity and workforce development opportunities. As part of the Queensland Government's commitment to the Townsville City Deal, Jobs Queensland was tasked with the delivery of a workforce development plan for Townsville.

In collaboration with Townsville City Council, four industries were identified as areas of focus for the workforce plan. These include Manufacturing; Transport, Postal and Warehousing; Health Care and Social Assistance; and Professional, Scientific and Technical Services.

Combined, these industries:

- contribute \$2.67 billion gross value added or 28.1 per cent of the region's economy;
- employ 24,513 people; 28 per cent of the region's workforce; and
- will need an additional 4,640 workers between 2017 and 2022 in the Townsville Statistical Area Level 4 (SA4), according to Jobs Queensland's Anticipating Future Skills (AFS) project.

The workforce plan was finalised prior to the emergence of COVID-19 and does not consider the impact of the pandemic on the economy, industry and the labour market. This black swan event has highlighted the importance of the workforce plan to support rebuilding a stronger and more resilient industry and economy.

Industry	\$b Gross value added	% of region's economy	No of employed persons	% of region's workforce	Projected jobs growth to 2022
Manufacturing	0.57	6.0	4037	4.2	210
Transport, Postal and Warehousing	0.54	5.7	4122	4.8	580
Health Care and Social Assistance	1.13	11.9	12,569	14.6	3020
Professional, Scientific and Technical Services	0.43	4.5	3785	4.4	830
<b>Total</b>	<b>2.67</b>	<b>28.1</b>	<b>24,513</b>	<b>28.0</b>	<b>4640</b>

Source: Jobs Queensland. (2018). *Anticipating Future Skills*. National Institute of Economic and Industry Research, compiled and presented in *economy.id*. (2018). *Townsville City Council, Value added by industry sector*. ABS. (2016). *Census of Population and Housing, 2016, General Community, G51 - Industry of Employment by Age and Sex*.

Local consultation across the industries identified common challenges and opportunities that, at a high level, include the need to:

- Build workforce capability
- Increase industry attraction
- Improve industry retention
- Enhance local collaboration
- Promote workplace diversity.

Three economic indicators of the Townsville City Deal include improvements in the unemployment rate, along with youth and Aboriginal peoples and Torres Strait Islander peoples unemployment rates. There are positive improvements occurring, with the region's youth unemployment rate dropping from 20.7 per cent in October 2017 to 17.4 per cent in October 2019 (based upon 12-month average measures). The overall unemployment rate has also declined from 8.8 per cent to 7.5 per cent over the same period.

Industry	% Youth employment	% Indigenous employment
Manufacturing	11.7	2.9
Transport, Postal and Warehousing	6.5	3.3
Health Care and Social Assistance	11.0	4.2
Professional, Scientific and Technical Services	11.8	2.1

Source: ABS. (2016). *Census of Population and Housing, 2016*.

Youth and Aboriginal peoples and Torres Strait Islander peoples workforce opportunities have been considered across the four focus industries contained within this workforce plan. Improving workforce diversity across all industries will provide opportunities to decrease the unemployment rate.

Townsville would benefit from improved employment outcomes for their youth and Aboriginal peoples and Torres Strait Islander peoples, both now and in the future. Responses to improving employment outcomes need to adopt policies that reduce disparities and address social determinants of employment. A one-size-fits-all approach and relying solely on local employers to tackle the issue is not enough. The recommendation to develop and pilot an employment pathways program, containing key elements of past programs that have shown to deliver positive outcomes within Townsville, has been provided.

Mentoring has been highlighted as a key support mechanism for new entrants and diverse groups participating in the workforce. Industry representatives reported a need to train potential mentors and acknowledge and promote the benefits of this practice.

The rollout of the National Disability Insurance Scheme (NDIS) in North Queensland has placed additional pressure on Townsville's health care sector. While Townsville's economy is increasing in diversity, the city has substantial supply chain links to major mining regions. These include the base for significant minerals processing operations and a source area for a substantial fly-in fly-out (FIFO) workforce for the North West Minerals Province (NWMP). The ongoing economic transition of other regions continues to impact on Townsville's economic and labour market performance.

## Key findings

- To meet future skills needs, the capacity and capability of the local vocational education and training (VET) ecosystem needs to be improved.
- A focus on contextualised and flexible training will lead to better employment pathways for new and existing employees and meet the needs of local industries and employers.
- Building business and professional capabilities of local business leaders will enhance local opportunities.
- Greater collaboration between key representatives from industry, government and other stakeholders is needed to identify and address emerging skills and labour force needs.
- Greater promotion of the region's liveability and growing job opportunities may increase attraction of skilled labour to the region.
- Retaining the skilled workforce during cyclical downturns is challenging, with difficulties attracting them back to the region once they have left.
- Limited access to public transport is a barrier to obtaining and maintaining a job in Townsville, particularly in the outer suburbs.

# Introduction

Image courtesy  
Townsville City Council

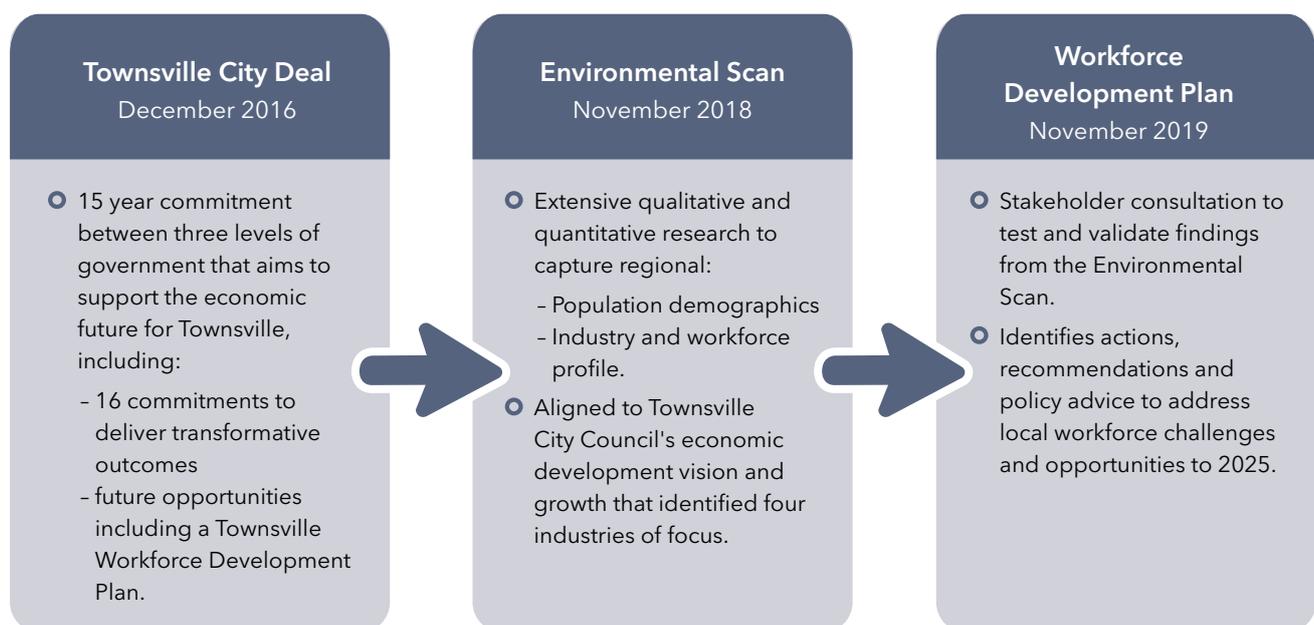
The Townsville City Deal, the first to be signed in Queensland, brings together three levels of government to work with the private sector to drive an economic transformation for Townsville. By 2030, the City Deal will improve the lives of Townsville residents through job creation, economic growth, investment in local infrastructure, a revitalised urban centre, and a more vibrant and liveable city.

As part of the Queensland Government's commitment to the Townsville City Deal, Jobs Queensland has been tasked with delivery of a workforce development plan for Townsville. The intent is to build local industry capability, diversity and workforce development opportunities. This workforce development plan will position the local

workforce to support the opportunities that may emerge through the City Deal in future years.

Townsville has a relatively diverse economy and industry, although it is experiencing challenges in transitioning from traditional industries and jobs to broader based and emerging industry drivers of growth. A continued focus on supporting economic growth and jobs will be critical for Townsville to capitalise on its regional strengths and navigate this period of transition.

Townsville is a key base for FIFO workers employed at mines in the NWMP. This rich mineral-producing region has significant influence on the region's economy and jobs.



## Impact of COVID-19

The Townsville Workforce Development Plan 2020-2025 was finalised prior to the emergence of COVID-19 and does not consider the specific impacts of the pandemic on the economy and workforce. Despite recent challenges, the core long-term strengths of Townsville's economy are still in place. Agility to respond to emerging opportunities has been key to survival for both businesses and workers during this time.

In early 2020, the Australian and Queensland Governments implemented various measures to control the rise of COVID-19, including the closing of non-essential businesses and some borders, which caused immediate economic impacts. Small business, tourism, hospitality and retail sectors have been among the hardest hit. At the time of the releasing of this report, some restrictions are being eased.

Led by the North's five local councils in collaboration with industry and community representatives, TaskforceNQ<sup>^</sup> was established to coordinate and accelerate the health, social and economic recovery of Townsville and the greater North.

The focus includes the importance of getting people back into the labour market and how that could be achieved through training, reskilling and transitioning into new career areas post-COVID-19.

The challenges facing the local economy have highlighted the importance of the need for a workforce plan to support the Townsville labour force to engage, re-engage or remain engaged in work. Opportunities for employment in traditional Townsville industries such as transport and logistics, and manufacturing will continue, while new jobs emerge in growing industries such as health care and social assistance, and professional services.

When this workforce plan was developed during 2019, it identified a strong outlook for employment and jobs growth for Townsville. While longer-term effects of COVID-19 are uncertain, the recommendations contained within this plan continue to remain relevant in providing a focus on industry workforce development to save and create jobs that will contribute to the recovery of the Townsville economy.

Townsville is the base for significant metals manufacturing and the location of the export port for most of the mineral output from the region. The cyclical nature of the minerals and resources sector has previously impacted the retention of skilled labour in the region. The closure of the Yabulu Nickel refinery has impacted Townsville labour market conditions, as has the closure of depleted mines that largely relied on FIFO workers sourced from the region.

Future workforce opportunities are becoming increasingly apparent with growth in the Health Care and Social Assistance industry.<sup>1</sup> Driven largely by an ageing population and the introduction of the NDIS, upskilling and reskilling programs may address the need for skilled workers, reposition displaced workers and provide employment opportunities for new entrants.

Locally based support systems for innovative and new technology are opening the door to increase advanced manufacturing practices. Increased

collaboration between sectors, such as health and the scientific community, provides Townsville with a unique opportunity to transition into higher skill level roles and improve health care outcomes in the area.

In recent years, the region has had relatively high unemployment rates and a substantial decline in labour force participation, particularly for youth cohorts and Aboriginal peoples and Torres Strait Islander peoples. The latest data has shown improvement in the region's labour market with unemployment falling.<sup>2</sup> The focus will be on supporting the region and enterprises as they transition and diversify.

Following the February 2019 floods, regaining and maintaining momentum of the city's large economic development opportunities is critical to underpinning confidence and ensuring that families are attracted to and stay in the region. The release of the Townsville 2020 master plan provides the private sector the confidence it needs to invest and create jobs for the local economy.

<sup>^</sup> [www.townsville.qld.gov.au](http://www.townsville.qld.gov.au)

<sup>1</sup> Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, Employment Region Data, Employment by Industry Data, various editions*. Retrieved from <http://lmip.gov.au/default.aspx?LMIP/Downloads/EmploymentRegion>.

<sup>2</sup> ABS. (2019). 6291.0.55.001, *Labour Force, Australia, Detailed - Electronic Delivery Oct 2019*.

The flood has resulted in a major tightening in a previously soft property market. An acute shortage of rental properties has resulted in a higher cost of living and is having an impact on attraction and retention of workers in the region. In the short term, Townsville's recent economic improvement may be set back with a projected one- or two-year recovery period.

Reconstruction efforts will provide a large one-off economic stimulus to the Townsville economy. The longer-term influences on many businesses, and subsequent impacts on jobs and skills, positive or negative, are more challenging to quantify.

The North Queensland Regional Economic Development Plan 2014-2031 (NQ2031)<sup>3</sup> vision is that "North Queensland will experience sustainable economic and population growth, becoming a nationally competitive and diversified economy and a preferred lifestyle choice for visitors and skilled workers." Supporting the achievement of this, a Smart Precinct NQ is being established to provide a centre to support businesses and entrepreneurs to prototype, test and scale innovative business models.<sup>4</sup>

During 2018, Jobs Queensland worked with the Townsville City Council and key industry representatives to identify existing workforce planning activities to avoid duplication. Examples of industries experiencing growth within the region that have completed or have workforce planning activity underway include:

- **Tourism:** Jobs Queensland worked extensively with industry stakeholders to develop the Townsville North Queensland Regional Tourism Workforce Plan 2018-2020. Released in October 2018 to address the workforce needs of the region's tourism industry, the plan is available on the Jobs Queensland website: [www.jobsqueensland.qld.gov.au/regionaltourism](http://www.jobsqueensland.qld.gov.au/regionaltourism).
- **Construction:** Construction Skills Queensland (CSQ) is an independent industry-funded body supporting employers, workers, apprentices and career seekers in the building and construction industry, including workforce planning activities.
- **Government:** Local Government, the Queensland Government's Public Services Commission and the Commonwealth Government take carriage of all internal workforce planning activity for relevant agencies, including the Department of Defence.

Following the completion of the Environmental Scan, Townsville City Council identified four industries as the focus for the Workforce Development Plan, namely:

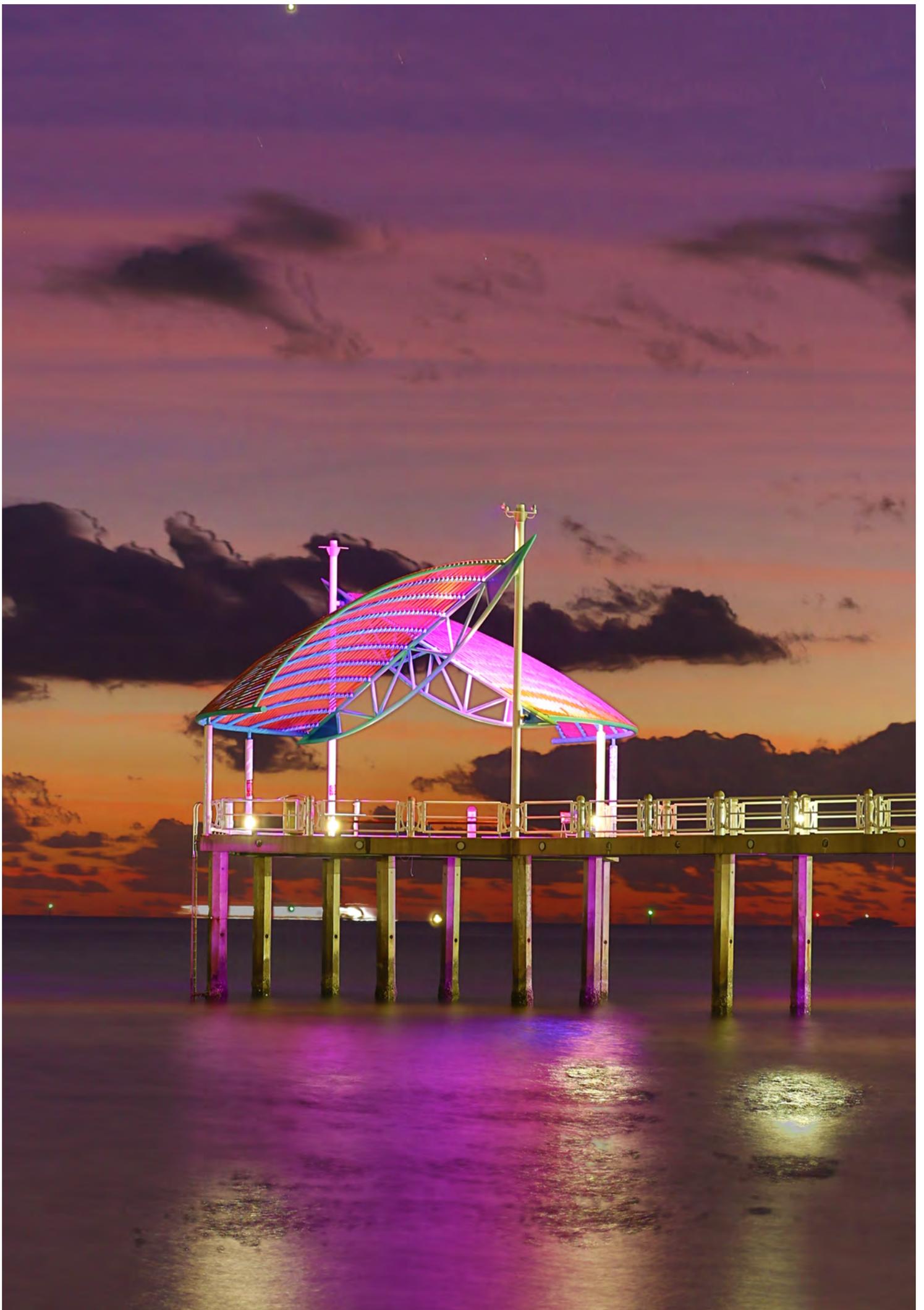
- Manufacturing
- Transport, Postal and Warehousing
- Health Care and Social Assistance
- Professional, Scientific and Technical Services.

In consideration of these industries, the plan puts forward recommendations and actions to support economic and jobs diversity, resilience and growth.

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<sup>3</sup> North Queensland Regional Organisation of Councils. (2014). *North Queensland Regional Economic Development Plan 2014–2031*. Retrieved from <http://rdanwq.org.au/files/resources/NQ2031%20Regional%20Economic%20Development%20Plan%20FINAL%2012%20June%202014.pdf>.

<sup>4</sup> Townsville City Council. (2018). *Smart Townsville*. Retrieved from <https://www.townsville.qld.gov.au/about-council/news-and-publications/city-update-online/smart-townsville>.



# Manufacturing

## INDUSTRY PROFILE



**\$570**  
million

| GROSS VALUE ADDED<sup>1</sup>

**6%**  
of the



| REGION'S ECONOMY<sup>1</sup>



**402**

| REGISTERED BUSINESSES<sup>2</sup>



| SMALL BUSINESS<sup>2</sup> (<20 STAFF)



| MED BUSINESS<sup>2</sup> (20-199 STAFF)



| LARGE BUSINESS<sup>2</sup> (>200 STAFF)



## WORKFORCE PROFILE



**4037**

| EMPLOYED PERSONS<sup>3</sup>

**4.2%**  
of the



| REGION'S WORKFORCE<sup>3</sup>



**+210**

| JOBS BY 2022<sup>4</sup>

| EMPLOYMENT



INDIGENOUS<sup>5</sup>



YOUTH<sup>5</sup>



MALE<sup>3</sup>



FEMALE<sup>3</sup>

**40.6**  
YEARS



| MEDIAN AGE<sup>5</sup>

<sup>1</sup> National Institute of Economic and Industry Research, compiled and presented in *economy.id*. (2018). *Townsville City Council, Value added by industry sector*.

<sup>2</sup> ABS. (2019). 8165.0, *Counts of Australian Businesses, including Entries and Exits, June 2014 to June 2018*. Information on counts of registered businesses is produced by the ABS and presents counts of businesses sourced from the Australian Bureau of Statistics Business Register (ABSBR). The ABS applies a confidentiality methodology to ensure data are not likely to enable identification of a particular person or organisation which may explain the result for large businesses. It also means that component values will not always sum to the total due to perturbation. Figures presented here are based upon the sum of component values.

<sup>3</sup> ABS. (2016). *Census of Population and Housing, 2016, General Community, G51 - Industry of Employment by Age and Sex*.

<sup>4</sup> Jobs Queensland. (2018). *Anticipating Future Skills*.

<sup>5</sup> ABS. (2016). *Census of Population and Housing, 2016*.



## Key findings

- The Manufacturing workforce has shown signs of recovery following a prolonged period of decline. It is now the sixth largest employing industry in the region.<sup>5</sup>
- Queensland Government has invested \$10 million over 3 years into a Manufacturing hub based in Townsville to support the industry's growth.
- The industry has an ageing workforce. A focussed approach to the attraction of youth and underutilised cohorts is needed to improve workforce diversity and address the ageing workforce.
- In order to embrace Industry 4.0, local employers need a skilled workforce. To provide the skills required for the future, gaps in the local education and training ecosystem need to be addressed.
- Expanding the Gateway to Industry Schools Program (GISP) in the region offers opportunities to address the need for Science, Technology, Engineering and Mathematics (STEM) and coding skills critical to business growth.
- Continued exploration and growth in diversified industries will play a key role in determining the industry's long-term strength and viability. This will help reduce the loss of skilled workers due to the cyclical nature and impact of the mining sector previously experienced.

The Manufacturing industry is an important source of jobs, exports, investments and innovation for Townsville and has diverse range of sectors.

## Manufacturing diversity in Townsville

### Traditional sectors



FOOD  
PRODUCTION



MINERALS  
PROCESSING



PRIMARY METAL AND  
METAL PRODUCT  
MANUFACTURING

### Niche sectors



POLYMER  
PRODUCT  
MANUFACTURING



AQUACULTURE  
(SEAFOOD  
PRODUCTION)

The industry is in transition, facing both challenges and opportunities. Embracing technological change and transitioning to Industry 4.0 are imperative for local employers. This section aims to identify the local challenges and identify local solutions to maximise the long-term diversification and sustainability for the Manufacturing industry and workforce in Townsville.

<sup>5</sup> Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, Employment Region Data, Employment by Industry Data, various editions*. Retrieved from <http://lmp.gov.au/default.aspx?LMIP/Downloads/ABSLabourForceRegion>.

## Where are we now?

Over recent years, manufacturing in Townsville has endured significant challenges, with a variety of domestic and international factors contributing to a prolonged period of decline.



Source: ABS. (2019). 6291.0.55.001, RM1 - Labour force status by Age, Labour market region (ASGS) and Sex, October 1998 onwards.

A production downturn in the NWMP and job losses associated with the Yabulu Nickel refinery closure contributed to employment in manufacturing in Townsville falling.

Contributing to the industry's recovery are significant infrastructure projects including the \$250 million North Queensland Stadium, \$225 million Haughton Pipeline Duplication, and the \$1.64 billion Port of Townsville expansion and channel widening. Private sector investments, such as the \$300 million Sun Metals zinc refinery expansion, will also support manufacturing employment growth.



Almost 17 per cent of the Manufacturing workforce are **Automotive and Engineering Trades Workers**. It also employs almost 13 per cent of all Technicians and Trades Workers and over 13 per cent of all Machinery Operators and Drivers in the region.<sup>6</sup>

More than 12 per cent of the Manufacturing workforce are Factory Process Workers, with a large proportion of these working in Food Product Manufacturing.<sup>7</sup>

### Attraction and retention

Across the Manufacturing industry, challenges to attracting and retaining workers include:

- Wages competition from the mining and resources sector. Anecdotally, one organisation reported losing eight skilled staff to the Western Australia mining sector.
- The seasonal nature of some sectors, such as meat and sugar processing, results in workers leaving and not returning.
- Many skilled workers have left the region. Between 2011 and 2016, 1785 workers between the ages of 25 and 64 have relocated outside of the region.<sup>8</sup>
- Broader diversity within the Manufacturing workforce is needed.
- The workforce is ageing with more than 43 per cent aged 45 years and older, compared with 13.1 per cent aged 24 and under.
- Attracting young workers in some sectors, such as metal fabrication, is not an issue. One organisation advised they had 450 applications for six apprenticeship vacancies. However, attracting women is a challenge, with only one applicant being female.

<sup>6</sup> ABS. (2016). *Census of Population and Housing, Counting Employed Persons, Place of Work*.

<sup>7</sup> ABS. (2016). *Census of Population and Housing, Counting Employed Persons, Place of Work*.

<sup>8</sup> ABS. (2011 and 2016). *Census of Population and Housing, Place of Usual Residence*.



## Looking ahead

Employment in the Manufacturing industry in Townsville has grown by 13.1 per cent over the period May 2018 to August 2019.<sup>9</sup> AFS modelling projects that an additional 214 workers by 2022 will be required within the Townsville Manufacturing Industry,<sup>10</sup> with Labour Market Information Portal (LMIP) projections suggesting a five per cent growth (300 people) to 2023.<sup>11</sup>

Factors contributing to the growth and demand for skilled labour include:

- Recent increases in resource commodity prices. This has improved regional employment prospects, particularly for manufacturing services that support the rebounding North West Minerals Province.
- The opening of the Galilee Basin which can provide opportunities with the Adani Carmichael Mine 'green light' and five other mine projects in the pipeline. Townsville is the regional headquarters for Adani and a key proposed centre for FIFO workers. This will help to strengthen employment prospects.

Additional opportunities include a renewal of minerals processing and manufacturing. These include the potential reopening of the Yabulu Nickel refinery, and an adjacent nickel-cobalt refinery proposed by Pure Minerals.

Attracting new and growing existing Manufacturing sectors in Townsville will be fundamental in determining future employment and economic growth opportunities. This will help build local resilience and minimise the impact on skills and jobs that flows from a cyclical mining and resources sector.

The development of a number of solar farms in North Queensland, along with support to build a 15 GWh lithium-ion battery manufacturing facility, suggests manufacturing of components for renewables could be Townsville's niche.

Townsville has been highlighted as a potential Manufacturing hub, particularly for solar panels and renewable energy projects. The proposed battery plant may create up to 1000 direct jobs and position Townsville as a global leader in advanced manufacturing.

Attracting and retaining the skilled and diverse workforce needed will be key to the future success of such projects.

## Skills in demand

Stakeholders were varied in their expectations of future skills needs, particularly in the context of the impact from transformative technologies and automation.

In the meat processing sector, stakeholders expect that there will be minimal impact from emerging technology.

*'It is a very labour-intensive workforce, and the inherent biological variation of meat and the commercial characteristics of the supply chain provide a lot of challenges around the implementation of automated systems.'*

~JBS Australia

This is not the case in all sectors. The metal and fabricated metal product sector considers emerging technology will have an impact on the skills required, particularly in automation, computer aided machining (CAM) and computer interfacing.

*'STEM will play a key role in the future skills required, and the understanding of programming and how software interfaces with robotics will be critical to business growth.'*

~ Thomas Steel Fabrication

There is a lack of local registered Training Organisations (RTOs) with the scope and/or capacity to deliver advanced level skills training. Current and future skill shortages include advanced computer numerical control (CNC) and computer aided design (CAD), estimating/drafting, use of supervisory control and data acquisition (SCADA) systems, as well as the skills to transition to Industry 4.0, such as programming and coding, machine learning, the Internet of Things (IoT), and managing big data.

To build long-term resilience and skills capabilities, it is critical to expand Townsville's Manufacturing industry. Growing the aquaculture seafood production sector is one opportunity, with recent significant investment in Townsville and outlying regions driving the sector forward.

Further support is needed for the North Queensland seafood production sector. Concerns about the lack of local training providers to provide even the base-line entry skills required to meet current and future demands has been raised as an area of concern. The only RTO based in Townsville offering seafood production related training is not a pre-qualified supplier for User Choice funding.



\* Includes Townsville LGA. Source: Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, Vacancy Report, IWI Regional Data - May 2010 onwards.*

<sup>9</sup> Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, Employment Region Data, Employment by Industry Data, various editions.* Retrieved from <http://lmip.gov.au/default.aspx?LMIP/Downloads/ABSLabourForceRegion>.

<sup>10</sup> Jobs Queensland. (2018). *Anticipating Future Skills.* Retrieved from <https://jobsqueensland.qld.gov.au/anticipating-future-skills/>.

<sup>11</sup> Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, Employment Projections by Industry - Five Years to May 2023.* Retrieved from <http://lmip.gov.au/default.aspx?LMIP/Downloads/EmploymentRegion>.

## Building capability

Education pathway programs are bridging the skills needs gap through partnerships with industry and providing job-ready new entrants. Tec-NQ – a private RTO in Townsville – is delivering Pathways in Technology (P-TECH). P-TECH is an educational model that promotes collaboration between education, industry and community. Focussed on STEM pathways, P-TECH aims to increase the number of young people achieving a post-school STEM-related qualification.

Key stakeholders are working together to develop a pilot program in Townsville, focussing on high-level technical skills in engineering, technology and innovation. The proposed Industry 4.0 Higher Apprenticeships Program aims to build skills and develop capabilities needed to support the introduction of transformative, cutting-edge technologies.

The Queensland Government's GISP for Manufacturing and Engineering is a component of a state-wide industry engagement and workforce development strategy. The strategy aims to support the long-term development of a highly skilled workforce in Queensland and promote STEM skills. The establishment of a GISP Hub in Townsville would raise the profile of careers in Manufacturing, as well as create opportunities and pathways to university in preparation for trade, para-professional and professional careers.

Supporting the growth of regional manufacturers is a priority of the Queensland Government. \$10 million has been invested into a Manufacturing hub based in Townsville to support local manufacturers to become more productive, increase international competitiveness and access emerging and diversified growth opportunities.<sup>12</sup>

### P-TECH Tec-NQ

*Based in Townsville, Tec-NQ's P-TECH is a local innovative and collaborative industry-supported senior school program for advanced manufacturing career pathways. Aligned with regional skills demand, the two-year program features an advanced mathematics curriculum and an industrial STEM-based VET qualification. Featuring a work-based training environment, the program is delivered by trade-qualified instructors and aligns to a pre-apprenticeship qualification in engineering.*

*The North Queensland P-TECH industry partners have identified a range of skills and knowledge for an individual to learn the principles of, and be competent in, a range of applied STEM skills for industrial applications. The program aims to equip students with the skills and knowledge to identify, integrate, operate, maintain and repair existing and emerging technology in an industrial setting, and equip them for the careers of the 21st century.*

*P-TECH prepares students through Vocational Education and Training in Schools (VETiS) pathways for apprenticeship, cadetship and diploma/associate degree post-school pathways. At the time of publication, 27 P-TECH students were due to complete Year 12 in 2020. Five students had already secured indentured (school-based) apprenticeships with local industry.*

## Recommendations

### PRIORITY: BUILD WORKFORCE CAPABILITY

**RECOMMENDATION:** Drive the advancement of the Manufacturing industry in the region through enabling the existing workforce to develop high-level skills, adaptability and capability

- Identify and inform the gaps/opportunities in VET funding mechanisms to meet the skills development needs for the region's Manufacturing and Engineering businesses.
- Identify and advocate funding of, and training in, emerging and innovative industries (e.g. pilot the Diploma of Applied Technologies<sup>13</sup>). Extend to include skills development identified within Advanced Manufacturing 10 Year Roadmap<sup>14</sup> and Jobs Queensland's Advancing Manufacturing Skills strategy<sup>15</sup> and other project work.

<sup>12</sup> Queensland. Department of State Development, Manufacturing, Infrastructure and Planning. (2016). *Advanced manufacturing*. Retrieved from <https://www.statedevelopment.qld.gov.au/industry/priority-industries/advanced-manufacturing.html>.

<sup>13</sup> AiGroup Workforce Development. (2018). *Industry 4.0 Higher Apprenticeships Program*. Retrieved from [https://cdn.aigroup.com.au/Reports/2018/Industry\\_4\\_Higher\\_Apprenticeship\\_Program\\_July\\_2018.pdf](https://cdn.aigroup.com.au/Reports/2018/Industry_4_Higher_Apprenticeship_Program_July_2018.pdf).

<sup>14</sup> Queensland. Department of State Development, Manufacturing, Infrastructure and Planning. (2016). *Advanced manufacturing*. Retrieved from <https://www.statedevelopment.qld.gov.au/industry/priority-industries/advanced-manufacturing.html>.

<sup>15</sup> Jobs Queensland. (2018). *Advancing Manufacturing Skills: A Skills, Training and Workforce Development Strategy for the Manufacturing Industry in Queensland*. Retrieved from <https://jobsqueensland.qld.gov.au/projects/advancing-manufacturing/>.



**RECOMMENDATION:** Strengthen the role of higher level apprenticeships and traineeships, and more broadly the capacity/capability of the regional VET ecosystem, to support the sector with the skills required to transition to Industry 4.0

- Work with local training providers to identify gaps in training capacity/capability (i.e. advanced CNC, Certificate IV in Drafting, Competitive Systems and Practices qualifications), and develop strategies that build regional capability.
- Develop a program that will provide workforce skills development services in Industry 4.0 to accelerate the retraining of existing workers.



**RECOMMENDATION:** Strengthen the capabilities of manufacturing businesses and their leadership teams to successfully transform to advanced manufacturing

- Map regional supply chain businesses in each priority industry area to build regional manufacturing capacity and supply chains.
- Develop workshops and forums to support small to medium-sized businesses build capacity in new and emerging technologies.

### **PRIORITY: INCREASE INDUSTRY ATTRACTION**



**RECOMMENDATION:** Facilitate enhanced partnerships and engagement between the Manufacturing industry, schools, VET and employment providers to better prepare new entrants, and position Manufacturing as a first-choice career for new entrants and experienced and skilled workers

- Promote the industry and career opportunities through case studies, videos, breakfast information sessions and seminars regarding skills development best practices in advanced manufacturing.
- Develop a digital interactive tool on successful careers in Manufacturing and Engineering as a mechanism to attract young people into careers and training pathways.
- Work with key stakeholders and the Gateway to Industry Schools Program (GISP) for Manufacturing and Engineering to identify opportunities to establish a Manufacturing and Engineering Gateway Hub in the region.

### **PRIORITY: PROMOTE WORKPLACE DIVERSITY**



**RECOMMENDATION:** Increase the diversity of the Manufacturing workforce to best harness the available skills and talent in the labour market

- Identify and develop targeted skills and employment pathway programs and other strategies to attract and retain a diversified workforce including underutilised cohorts, such as youth, Aboriginal peoples and Torres Strait Islander peoples, migrant workers, and ex-Defence members into a career in the Manufacturing industry.

# Transport, Postal and Warehousing

## INDUSTRY PROFILE



| GROSS VALUE ADDED<sup>1</sup>



| REGION'S ECONOMY<sup>1</sup>



| REGISTERED BUSINESSES<sup>2</sup>



| SMALL BUSINESS<sup>2</sup> (<20 STAFF)



| MED BUSINESS<sup>2</sup> (20–199 STAFF)



| LARGE BUSINESS<sup>2</sup> (>200 STAFF)

## WORKFORCE PROFILE



| EMPLOYED PERSONS<sup>3</sup>



| REGION'S WORKFORCE<sup>3</sup>



| JOBS BY 2022<sup>4</sup>

### EMPLOYMENT



| MEDIAN AGE<sup>5</sup>

<sup>1</sup> National Institute of Economic and Industry Research, compiled and presented in economy.id. (2018). *Townsville City Council, Value added by industry sector.*

<sup>2</sup> ABS. (2019). 8165.0, *Counts of Australian Businesses, including Entries and Exits, June 2014 to June 2018.* Information on counts of registered businesses is produced by the ABS and presents counts of businesses sourced from the Australian Bureau of Statistics Business Register (ABSBR). The ABS applies a confidentiality methodology to ensure data are not likely to enable identification of a particular person or organisation which may explain the result for large businesses. It also means that component values will not always sum to the total due to perturbation. Figures presented here are based upon the sum of component values.

<sup>3</sup> ABS. (2016). *Census of Population and Housing, 2016, General Community, G51 - Industry of Employment by Age and Sex.*

<sup>4</sup> Jobs Queensland. (2018). *Anticipating Future Skills.*

<sup>5</sup> ABS. (2016). *Census of Population and Housing, 2016.*



## Key findings

- With an ageing and predominantly male workforce, the industry is struggling to attract new employees. A focus on improving diversity is needed.
- A lack of coordinated training and development in some occupations and sectors is further impairing skills development and career progression.
- The impact of automation and what skills of the future workforce may look like, or be required, is not of concern to the industry. Customer centric operating models will drive future skills needs.

Townsville is Queensland's third busiest port, supported by high capacity road and rail networks. As northern Australia's largest container and automotive port, and the country's largest sugar, zinc, lead, copper and fertiliser port, Townsville represents a vital trade gateway connecting North Queensland with national and international markets.<sup>16</sup> Supporting over 3000 direct and indirect jobs and contributing \$420 million to the economy, Townsville Airport is also a major economic enabler for the region.

Port operations, intermodal freight and storage operations are key growth sectors for the Townsville economy. Regional trade is expected to grow over the coming years, driven by a recovering resources sector, a strong long-term outlook for agriculture, and a growing regional population base and economy.

## Where are we now?

Nationally, the industry has the second oldest workforce, with a significant proportion of workers set to retire in the next decade.<sup>17</sup> The Townsville workforce is also an ageing one. A focus on the attraction of youth and underutilised cohorts is needed to improve diversity and fill skills gaps.



### ROAD AND RAIL DRIVERS

The industry also employs large numbers of Clerical Workers and Automotive and Engineering Trades Workers.

# 38%

of the workforce<sup>18</sup>

There has been significant investment in Townsville's transport infrastructure from the private sector and all levels of government, including:

- The recently completed \$40.7 million upgrade of Berth 4 Port of Townsville, which resulted in efficiency improvements and accommodation of larger vessels.
- The commencement of the \$193 million Townsville Channel Capacity upgrade.
- The Stuart Intermodal Facility located in the Townsville State Development Area (SDA). The facility includes a freight distribution centre, a modern container terminal, and three rail tracks specifically designed for intermodal operations, and an improved road link and intersection at Stuart Bypass Road. It has direct links to the North Coast Rail Corridor.

Strengthening and growing strategic alliances to develop logistics clusters would increase benefits from this investment.

<sup>16</sup> Port of Townsville. (2019). *About Us*. Retrieved from <https://www.townsville-port.com.au/about/about-pot/>.

<sup>17</sup> Australian Industry Standards. (2017). *Transport and Logistics IRC Skills Forecast 2017*. Retrieved from <https://nationalindustryinsights.aisc.net.au/industries/transport/transport-and-logistics>.

<sup>18</sup> ABS. (2016). *Census of Population and Housing, Place of Work*.

## Attraction and retention

According to the Australian Industry Standards (AIS) Transport and Logistics Skills Forecast 2019,<sup>19</sup> over 80 per cent of employers reported experiencing a skills shortage in the last 12 months. At present, trucks move around 75 per cent of (non-bulk) domestic freight, the volume of which is expected to double by 2030.<sup>20</sup>

But while the demand is rapidly swelling, the number of people behind the wheel is rapidly declining. Townsville employers identified the region is not immune to this issue.

A resurgent NWMP has increased the need for transport related services and subsequent demand for local jobs. Local employers are unable to compete with the wages offered by the mining sector resulting in a skills shortage.

The workforce is ageing with more than 46 per cent aged 45 years and more compared with 6.2 per cent aged 24 and under. Almost 80 per cent of the workforce in Townsville is male.<sup>21</sup>

Attracting a diversified workforce of younger workers and other cohorts will be important to avoid significant knowledge and skills gaps, which may emerge as technology and innovation evolves and the current workforce retires. This is proving to be a challenge. Part of the difficulty is that a career in the industry isn't seen as attractive. When coupled with the industry's poor perception in the broader community, this amounts to a significant barrier.

There are a number of other factors contributing to a driver shortage, these include the structure of training and education (cost/time to achieve required qualification), ageing workforce retiring, low levels of remuneration and long working hours. Industry regulations that prohibit young people from driving heavy vehicles on the roads, such as B-Doubles which requires drivers to be 25 years of age, also contribute to attraction issues.

To combat the shortage, some organisations in Townsville have moved to an owner/operator model as a way to attract and retain the drivers required. One organisation is attempting to tackle the issue head on by employing driver trainers. Currently four trainers are travelling nationally to meet business needs, however, they are looking at strategies to establish a driver training centre hub in Queensland.

## Looking ahead

AFS modelling projects that an additional 580 workers will be required within the Townsville Transport, Postal and Warehousing Industry by 2022.<sup>22</sup>

The Townsville City Council and other key local stakeholders are working to strengthen intermodal freight and logistics capabilities to ensure the long-term capacity of Townsville's transportation and export corridors.

There are many on-going activities that will support this growth and strengthen Townsville's position as the premier northern Australia transport and logistics hub. Initiatives include upgrades to the Port of Townsville and Townsville Airport, as well as promoting the strategic location of the Stuart SDA.

Additionally, the Australia-Singapore Military Training Initiative (ASMTI) will support local transport and logistics businesses through both the construction and operational phases of the project. This will drive a growth in jobs and an increased demand for skilled workers.

The proposed Townsville Eastern Access Rail Corridor (TEARC) rail freight line would connect the North Coast rail line directly into the Port of Townsville. The project would create capacity for the growing tonnage demand on the critical Mount Isa rail system that provides a link between the mines in the NWMP and the port.<sup>23</sup>

Recent Queensland Government budget announcements of \$1.5 billion for major infrastructure projects in the region will increase regional freight capacity across all sectors and flow-on demand for jobs. Funding includes Bruce Highway upgrades, the final stage of the ring road and major port and rail investments,<sup>24</sup> as well as the building of a \$48 million intermodal facility alongside a new \$30 million crane and cargo terminal<sup>25</sup> at the Port of Townsville.

With significant infrastructure planned or underway and increased activity in the NWMP, it is expected there will be increased demand for workers in the coming years.

<sup>19</sup> Australian Industry Standards. (2019). *Transport and Logistics IRC Skills Forecast 2019*. Retrieved from <https://nationalindustryinsights.aisc.net.au/industries/transport/transport-and-logistics>.

<sup>20</sup> Volvo Group Australia. (2017). *Tackling driver shortages head-on*. Retrieved from <https://www.volvotrucks.com.au/en-au/news/press-releases/2017/sep/pressrelease-170912-1.html>.

<sup>21</sup> ABS. (2016). *Census of Population and Housing, 2016, General Community, G51 - Industry of Employment by Age and Sex*.

<sup>22</sup> Jobs Queensland. (2018). *Anticipating Future Skills*. Retrieved from <https://jobsqueensland.qld.gov.au/anticipating-future-skills/>.

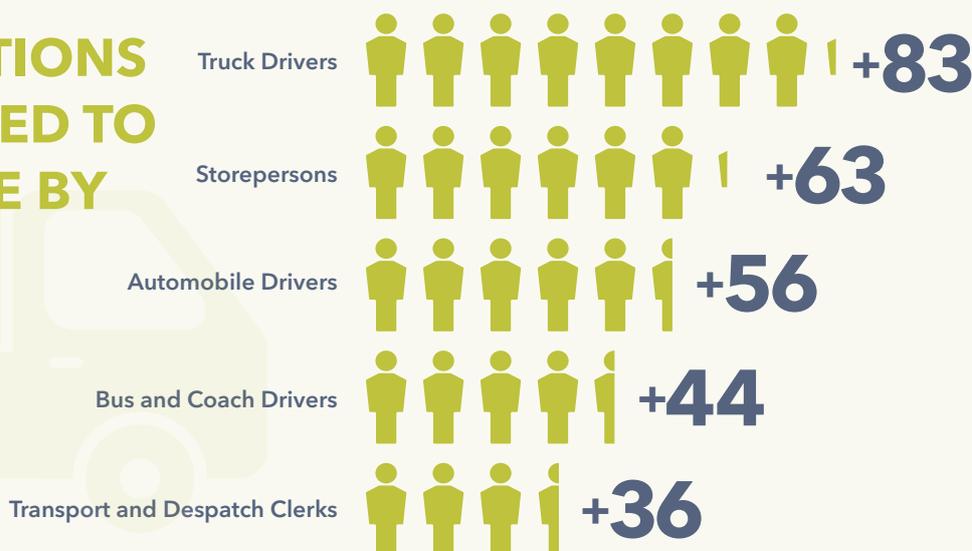
<sup>23</sup> Queensland. Department of Transport and Main Roads. (2019). *Townsville Eastern Access Rail Corridor*. Retrieved from <https://www.tmr.qld.gov.au/Projects/Name/T/Townsville-Eastern-Access-Rail-Corridor>.

<sup>24</sup> Queensland Media Statements, *Jobs focus in Townsville region infrastructure investment, 28 June 2019*.

<sup>25</sup> Queensland Media Statements, *\$30 million Townsville Port project delivers new jobs, 20 June 2019*.



## OCCUPATIONS PROJECTED TO INCREASE BY 2022<sup>26</sup>



### Skills in demand

Road transport and tanker drivers are in shortage. Drivers are required to have a dangerous goods licence as well as a safe load program (SLP) licence and complete a basic fatigue management (BFM) course. The combination of these skills sets and other eligibility requirements has resulted in not enough drivers to meet demand.

Locally, the impact of automation on the industry's future skills needs is not seen to be a concern. The industry cannot, however, ignore new and emerging technologies. Emerging technologies, such as blockchain, robotics, artificial intelligence and cloud computing, facilitate solutions ranging from automated warehousing and logistics to autonomous vehicles and need to be monitored. With the predicted shift to automation, including the evolving profile of the future skills required, the industry needs to plan for the future.

(full qualifications) may reduce due to the cost and lack of flexibility within the local VET ecosystem. While targeted training in identified skill sets is an option, the cost inhibitors and poaching of skilled staff is causing some employers reluctance to skill new staff and upskill existing employees. For example, one organisation advised the cost for high risk work licence in dogging/rigging is in excess of \$3,000 per employee (including five days' wages while off the job).

Increasing goods to person automation processes will continue to expand to make e-commerce more effective and efficient. The introduction of automation and robotics will have an impact on the future skills and workforce.

The impacts of 24 hour online shopping and customer delivery expectations is evident through the shift from traditional single and multi-channel logistics to omni-channel logistics to maintain competitiveness. As key enablers to ensure retailers receive the inventory required in a timely manner, this impacts the logistics and supply chains mechanising and ordering systems. The existing and future workforce will need to be equipped with the necessary digital skills and higher-level skills if the benefits of this technology are to be realised.

The IoT has the capacity to improve asset tracking, warehouse operations and freight transportation. It will have an impact on the workforce, driving a demand for new skill sets. To operate within a technically evolving environment, it will be necessary to develop the skills to interface with technology and take advantage of the operational improvements provided.



### Building capability

The need for structured training has been identified as a priority, particularly for entry pathways in logistics and warehousing. Industry investment in training

\* Includes Townsville LGA. Source: Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, Vacancy Report, IWI Regional Data - May 2010 onwards.*

<sup>26</sup> Jobs Queensland. (2018). *Anticipating Future Skills*. Retrieved from <https://jobsqueensland.qld.gov.au/anticipating-future-skills/>.

## Recommendations

### **PRIORITY: BUILD WORKFORCE CAPABILITY**



**RECOMMENDATION:** Support greater alignment between the industry skills needs and training delivered by training providers

- Through the Queensland Skills Strategy, explore opportunities to develop a micro-credentialing pilot that will align with the national heavy vehicle regulations and licensing requirements. Units could include Chain of Responsibility, Fatigue Management and Safe Load Restraint.

### **PRIORITY: INCREASE INDUSTRY ATTRACTION**



**RECOMMENDATION:** Improve community awareness of careers in the industry to provide greater interest from school leavers, youth, those looking for a career change, and other underutilised cohorts

- Develop key messaging and marketing material to promote attractiveness (diversity of opportunities and career pathways within the industry, need for digital and technological literacy). Partner with industry to develop case studies and career opportunities.
- Identify and develop targeted skills and employment pathway programs, and other strategies, as a way to attract and retain diversified and underutilised cohorts including youth, Aboriginal peoples and Torres Strait Islander peoples, women, migrant workers, mature age workers and ex-Defence members into a career in the Transport, Postal and Warehousing industry.

### **PRIORITY: IMPROVE INDUSTRY RETENTION**



**RECOMMENDATION:** Support employers to better plan for their ageing workforce, and the impact of their predicted retirements on longer-term workforce sustainability

- Promote flexible working arrangements to better support workforce retention and transition to retirement.
- Provide structured workforce planning tools, such as Workforce Planning Connect,<sup>27</sup> that will support employers with identifying and developing longer term retention strategies.

<sup>27</sup> Jobs Queensland. (2019). *Workforce Planning Connect*. Retrieved from <https://jobsqueensland.qld.gov.au/workforce-planning-connect/>.



### **PRIORITY: ENHANCE LOCAL COLLABORATION**



**RECOMMENDATION:** Support local collaboration opportunities to develop human resource frameworks and systems that will allow businesses to plan for their future workforce

- Identify regional collaboration opportunities with industry stakeholders to develop, facilitate and promote workshops for business owners and managers on effective workforce planning.



**RECOMMENDATION:** Promote the many benefits that can be achieved through the formation of a logistics cluster in the region

- Identify and engage key industry stakeholders to form a regional strategic logistics alliance to promote the many advantages of clustering, such as:
  - increase in productivity due to shared resources and availability of suppliers
  - improved human capital networks, including knowledge sharing
  - promoting high trust level among companies in the cluster
  - improved access to a specialised labour pool.

### **PRIORITY: PROMOTE WORKPLACE DIVERSITY**



**RECOMMENDATION:** Promote employer benefits of an inclusive and diverse workforce and support the development of best practice cultural change strategies that will assist a more female inclusive workplace

- Develop a regional marketing strategy on the business benefits for gender diversity.
- Identify, create and promote occupation specific gender programs that address barriers to entry.

# Health Care and Social Assistance

## INDUSTRY PROFILE



**\$1.13**  
billion

| GROSS VALUE ADDED<sup>1</sup>



| REGION'S ECONOMY<sup>1</sup>



**1037**

| REGISTERED BUSINESSES<sup>2</sup>



| SMALL BUSINESS<sup>2</sup> (<20 STAFF)



| MED BUSINESS<sup>2</sup> (20-199 STAFF)



| LARGE BUSINESS<sup>2</sup> (>200 STAFF)

## WORKFORCE PROFILE



**12,569**

| EMPLOYED PERSONS<sup>3</sup>

**14.6%**

of the

| REGION'S WORKFORCE<sup>3</sup>



**+3020**

| JOBS BY 2022<sup>4</sup>

| EMPLOYMENT



INDIGENOUS<sup>5</sup>



YOUTH<sup>5</sup>



MALE<sup>3</sup>



FEMALE<sup>3</sup>

**41.7**  
YEARS



| MEDIAN AGE<sup>5</sup>

<sup>1</sup> National Institute of Economic and Industry Research, compiled and presented in economy.id. (2018). *Townsville City Council, Value added by industry sector.*

<sup>2</sup> ABS. (2019). 8165.0, *Counts of Australian Businesses, including Entries and Exits, June 2014 to June 2018.* Information on counts of registered businesses is produced by the ABS and presents counts of businesses sourced from the Australian Bureau of Statistics Business Register (ABSBR). The ABS applies a confidentiality methodology to ensure data are not likely to enable identification of a particular person or organisation which may explain the result for large businesses. It also means that component values will not always sum to the total due to perturbation. Figures presented here are based upon the sum of component values.

<sup>3</sup> ABS. (2016). *Census of Population and Housing, 2016, General Community, G51 - Industry of Employment by Age and Sex.*

<sup>4</sup> Jobs Queensland. (2018). *Anticipating Future Skills.*

<sup>5</sup> ABS. (2016). *Census of Population and Housing, 2016.*



The Health Care and Social Assistance industry is the fastest growing industry in Queensland.<sup>28</sup> This narrative does not change within the Townsville SA4. Locally, the Health Care and Social Assistance industry is currently the largest employing industry<sup>29</sup>, growing by 26.5 per cent (4000 persons) over the five years to August 2019 compared with 22.3 per cent (65,400) for the state overall (based upon four quarter average measures).<sup>30</sup> Introduction of the NDIS<sup>31</sup> has contributed largely to this growth.

In collaboration with the Townsville City Council, Queensland Health and key industry representatives, three sectors were identified for further investigation, namely:

- Aged Care
- Indigenous Health Care
- Oral Health (Dentistry).

The NDIS is a major competitor for the attraction of a skilled workforce for the aged care and Indigenous health care sectors, thinning the available labour pool across the sectors. As the workforce ages, increasing industry attraction to youth and Aboriginal peoples and Torres Strait Islander peoples requires innovative place-based and targeted approaches to maximise the opportunity they present.

Consumer directed care and market contestability has prompted a review and adjustments to workforce models. There are a variety of workforce planning activities in existence or underway. The shift from 'right fit' attributes to legislative-led training and qualification requirements is evident. Despite this, the upskilling of new and existing workers requires an injection of funding, energy and focus to improve the training culture of the industry.



In the Oral Health (Dentistry) sector, research and local consultation has identified a national graduate oversupply of Oral Health (Dentists) practitioners. Local service providers acknowledged graduates in northern Queensland are often trained in Cairns, the nearest university campus offering a dentistry program.<sup>32</sup> The need to independently service regional and remote locations leads providers to seek practitioners with over 10 years' experience, rather than graduates. This often results in a limited to zero response rate to recruitment efforts.<sup>33</sup>

Despite changes to the skilled migration policy encouraging skilled migrants to settle within a regional area, employers suggest few suitable applicants are willing to do so. This is further exacerbated by many skilled migrants lacking the experience to work in regional and remote locations. In the absence of a clearly identified unmet workforce development need, Oral Health (Dentistry) is not focussed on within this workforce plan. Rather, greater promotion of the region's liveability may improve attraction of skilled applicants to this sector.

The following recommendations relate to common themes raised across both focus sectors of the Aged Care and Indigenous Health Care workforce where the most benefit can be provided through workforce planning for Townsville.

<sup>28</sup> Health and Community Services Workforce Council. (2018). *Health and Community Services Workforce, 2018-2023, Industry Research Report*, unpublished.

<sup>29</sup> ABS. (2019). 6291.0.55.003, *Labour Force, Australia, Detailed, Quarterly, Aug 2019*.

<sup>30</sup> ABS. (2019). 6291.0.55.003, *Labour Force, Australia, Detailed, Quarterly, Aug 2019*.

<sup>31</sup> Queensland Government. (2017). *Townsville, Hinchinbrook, Burdekin, west to Mount Isa, and up to the gulf*. Retrieved from <https://www.communities.qld.gov.au/swe/ndis-rollout/townsville-hinchinbrook-burdekin-west-to-mount-isa-and-up-to-the-gulf.page>.

<sup>32</sup> James Cook University. (2019). *Bachelor of Dental Surgery*. Retrieved from <https://www.jcu.edu.au/courses-and-study/courses/bachelor-of-dental-surgery>.

<sup>33</sup> Jobs Queensland. (2019). Consultation with Townsville Oral Health practitioners.

## Recommendations

### **PRIORITY: BUILD WORKFORCE CAPABILITY**



**RECOMMENDATION:** Promote workforce planning and Human Resources (HR) management practices

- Promote existing support systems, such as Grow Your Own Workforce, Choose Your Own Health Career, Workforce Planning Connect and Business Queensland, across the sector to increase uptake.

### **PRIORITY: IMPROVE INDUSTRY RETENTION**



**RECOMMENDATION:** Support underutilised groups

- Introduce a consistent place-based mentoring program to provide ongoing support and guidance.

### **PRIORITY: PROMOTE WORKPLACE DIVERSITY**



**RECOMMENDATION:** Improve cultural awareness

- Identify and deliver cultural awareness training programs locally.

# Aged Care

Image courtesy  
Queensland Training Awards

## Key findings

- Improving workforce diversity is needed.
- The sector is focussed on 'right-fit' personality characteristics rather than prioritising the creation of a training culture.
- Employers are largely unaware of flexible training opportunities that are available. Local coordination may increase offerings.
- Training needs are increasing to remain compliant in the market.
- There is a large volunteer workforce providing in-home care support.
- Pathway programs into the industry require a boost in resources and funding.

By showcasing new workforce delivery models, such as the introduction of teleservices, developing targeted training programs for digital literacy, and preventative health,<sup>34</sup> Queensland Health aims to upskill its workforce and attract new entrants by highlighting the benefits of the industry. As the largest employer of the local Health Care and Social Assistance workforce, attraction and upskilling will benefit the entire ecosystem.

## Where are we now?

In June 2018, there were a reported 56 aged care services, with 1868 operational places in the Townsville SA4, contributing close to 4.4 per cent of Queensland's Aged Care services.<sup>35</sup>

There are approximately 3300 Carer and Aides and 1219 Health and Welfare Support workers in Townsville.<sup>36</sup> It is important to note, though data for the aged care sector cannot be separated, these figures do not include in-home care providers or the voluntary care provision by family and friends to

those requiring support and assistance. It is likely the Townsville sector is larger than currently reported.

The sector has experienced change through consumer directed care, market contestability and the introduction of reforms through the new Aged Care Quality Standards<sup>37</sup> driving adjustments to long standing funding models, shifting the focus to productivity efficiency and cost competitiveness.

The Aged Care Quality Standards<sup>38</sup> outline a requirement for providers to have a workforce that is qualified and knowledgeable. Local providers expressed concern that ongoing financial viability is difficult as funding models do not extend to offset the compulsory training expense.

The establishment of a Royal Commission into Aged Care Quality and Safety<sup>39</sup> has created further uncertainty and unease as providers adjust to the changing landscape. Local providers are nervous that further legislative requirements will be introduced that cannot be funded within existing budgets.

<sup>34</sup> Queensland Health. (2019). Action 2.3.3 *Advancing health service delivery through workforce, 2017-2026*. Retrieved from <https://www.health.qld.gov.au/system-governance/strategic-direction/plans/health-workforce-strategy>.

<sup>35</sup> Australian Government, Department of Health. (2019).

<sup>36</sup> ABS. (2016). *Census of Population and Housing, Counting Employed Persons, Place of Work*.

<sup>37</sup> Australia. Government, Aged Care Quality and Safety Commission. (2019). *Quality Standards*. Retrieved from <https://www.agedcarequality.gov.au/providers/standards>.

<sup>38</sup> Australia. Government, Aged Care Quality and Safety Commission. (2019). *Quality Standards*. Retrieved from <https://www.agedcarequality.gov.au/providers/standards>.

<sup>39</sup> Commonwealth of Australia. (2019). *Royal Commission into Aged Care Quality and Safety*. Retrieved from <https://agedcare.royalcommission.gov.au/Pages/default.aspx>.

## Attraction and retention

More than 68 per cent of the workforce within the Townsville Health Care and Social Assistance industry are full-time, compared with 60 per cent state-wide (four quarter averaged measures).<sup>40</sup> Promoting the flexibility the industry provides and the stable employment options locally, may attract new entrants seeking full-time employment.

The Health Care and Social Assistance industry is female dominated. In the Aged Care sector, providers expressed a willingness to improve gender diversity through simple measures, such as reviewing and adjusting gendered advertisement and course descriptors.

Workplaces are changing; becoming increasingly multigenerational.<sup>41</sup> Attraction and retention of a diverse workforce that is reflective of the local area's composition is needed. Higher rates of youth unemployment provide an opportunity to fill the gap left by retirement of an ageing workforce. Local business requirements to hold an open driver licence inhibit the attraction of a younger workforce and other new entrants. Reevaluating the necessity of an open licence for each role is suggested.

Aboriginal peoples and Torres Strait Islander peoples represent 7.9 per cent of the region's population and 7.0 per cent of the total Health Care and Social Assistance workforce. In the aged care sector, this drops to 4.3 per cent of the workforce. The sector would benefit from collaborating with local Aboriginal peoples and Torres Strait Islander elders to increase awareness of career opportunities available.

Migrants represent 12.6 per cent of the Townsville population,<sup>42</sup> predominantly born in non-English speaking countries. Multicultural support groups suggest utilising the opportunity migrants present by harnessing experience gained through cultural differences, such as volunteer home care arrangements for their elderly.

Employers and community groups both report the transition to paid employment for all volunteer carers is low. Support through training opportunities is suggested as a potential attraction model.

Employers are largely focussed on 'right fit' personality values and attributes of individuals rather than attainment of a qualification. Partnerships

with training providers and employment agencies is essential to ensure that screening for attributes and suitability aligns with the Aged Care Quality Standards requirements.

## Looking ahead

AFS modelling projects that an additional 3020 workers will be required within the Townsville Health Care and Social Assistance industry, with 500 in the Residential Care Services sector alone by 2022.<sup>43</sup>

## Skills in demand

The roll out of the NDIS in North Queensland from January 2016 has placed additional pressure on Townsville's health care sector, as NDIS providers target aged care workers to fill their workforce needs. Whilst the specific skills required differ, the client-centric care model is transferrable, increasing competition for staff entering the industry.

Employers reported an increased demand for business and professional skill sets and aged care specific skills, suggesting contextualised and flexible training is urgently needed to accommodate operational needs.

Training offerings should be delivered in short timelines, for example, two hours per week for six weeks and where appropriate include the volunteer workforce.

Innovative models of delivery to meet local workforce training needs are required. Increasing promotion of existing support systems, such as Grow Your Own Workforce<sup>44</sup> Choose Your Own Health Career,<sup>45</sup> Workforce Planning Connect<sup>46</sup> and Business Queensland,<sup>47</sup> is required to build capability. Organisational level workforce planning to plan for the skills and training needs of the future would also benefit the sector.



\* Includes Townsville LGA. Source: Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, Vacancy Report, IVI Regional Data - May 2010 onwards.*

<sup>40</sup> ABS. (2019). 6291.0.55.003, *Labour Force, Australia, Detailed, Quarterly, Aug 2019.*

<sup>41</sup> Jobs Queensland. (2019). *The Future of Work Literature Review.* Retrieved from <https://jobsqueensland.qld.gov.au/projects/future-of-work/>.

<sup>42</sup> ABS. (2016). *Census of Population and Housing, General Community Profile, G09 - Country of Birth of Person.*

<sup>43</sup> Jobs Queensland. (2018). *Anticipating Future Skills.* Retrieved from <https://jobsqueensland.qld.gov.au/anticipating-future-skills>.

<sup>44</sup> Grow Your Own Workforce. (2019). *About Grow Your Own.* Retrieved from <https://www.gyoworkforce.com.au/about-grow-your-own/>.

<sup>45</sup> Choose Your Own Health Career. (2019). *About CYO Health Career.* Retrieved from <https://www.cyohealthcareer.com.au/about/>.

<sup>46</sup> Jobs Queensland. (2019). *Workforce Planning Connect.* Retrieved from <https://jobsqueensland.qld.gov.au/workforce-planning-connect/>.

<sup>47</sup> Queensland Government. (2019). *Business Queensland.* Retrieved from <https://www.business.qld.gov.au/>.



## Building capability

While an increased demand for allied health assistants in aged care and hospital setting is predicted, enrolments are relatively low and unlikely to meet the future demand of the region.<sup>48</sup>

Although Townsville has healthy enrolment rates (998 individuals in 2018) in the Certificate III in Individual Support, completion rates (324 individuals in 2018<sup>49</sup>) are not meeting existing demand. This is placing further strain on a sector facing increasing workforce competition from NDIS and compliance requirements via the introduction of Aged Care Quality Standards.

The recent introduction of funding for eligible under 21s to undertake a traineeship in Certificate III in Individual Support (Ageing)<sup>50</sup> may improve completion rates and age diversity of the sector.

To improve the training culture of the sector and promote lifelong learning, the sector needs to have a continual focus on upskilling, not just meeting compliance obligations.

Programs, such as Skilling Queenslanders for Work, offer Certificate III in Individual Support within the Townsville SA4, supporting transition into the sector for underutilised groups and improving workforce diversity. Training through the Certificate 3 Guarantee program<sup>51</sup> and recognition of prior learning may benefit the large volunteer workforce and increase transition into paid employment.

Increasing promotion of flexible and blended learning options, such as Massive Open Online Courses (MOOC), online, face-to-face delivery and traineeships, may build capability of the existing workforce and increase retention rates.

Establishment of a place-based pathway program, such as the GISP, can increase awareness of careers available in aged care and strengthen partnerships between education and industry.

## Recommendations

### **PRIORITY: BUILD WORKFORCE CAPABILITY**

#### **RECOMMENDATION: Build business and professional skill sets**

- Identify locally based training providers to deliver training on topics, including:
  - Digital readiness and adoption
  - Business planning
  - Finance and business acumen
  - Application and grant writing
  - Understanding legislative requirements
  - HR management
  - Mentoring – how to do it well
  - Mental Health
  - Nutrition
  - Dementia
  - Palliative Care.
- (workforce planning, professional development, performance management, diversity)
- Explore opportunities to deliver training offerings in smaller more frequent modules, e.g. two hours per week for six weeks.

#### **RECOMMENDATION: Promote flexible and blended learning opportunities**

- Promote training options, including online, face-to-face delivery and traineeships.

<sup>48</sup> Workability Qld. (2016). *Workability Qld - North Queensland Workforce Profile*. Retrieved from <https://workabilityqld.org.au/state-wide-initiatives/workforce-intelligence/>.

<sup>49</sup> National Centre for Vocational Education and Research. (2019). *VOCSTATS, preliminary results*. Retrieved from <https://www.ncver.edu.au/research-and-statistics/vocstats>.

<sup>50</sup> Queensland. Department of Employment, Small Business and Training. (2019). *Free apprenticeships for under 21s*. Retrieved from <https://desbt.qld.gov.au/training/training-careers/incentives/freeapprenticeships>.

<sup>51</sup> Queensland. Department of Employment, Small Business and Training. (2019). *Certificate 3 Guarantee*. Retrieved from <https://desbt.qld.gov.au/training/providers/funded/certificate3>.

## **PRIORITY: INCREASE INDUSTRY ATTRACTION**



### **RECOMMENDATION: Decrease obstacles for youth entrants**

- Review the necessity of an open licence for each role to reduce barriers for youth.



### **RECOMMENDATION: Promote careers in health through the education system**

- Introduce a coordinated program such as Gateway to Industry Schools Program, locally focussed on health.



### **RECOMMENDATION: Increase transition from volunteer to paid employment**

- Extend training opportunities to include the volunteer workforce.
- Promote the VET pathway opportunities including the traineeship system within the volunteer workforce.



## **PRIORITY: IMPROVE INDUSTRY RETENTION**

### **RECOMMENDATION: Promote training options to the existing workforce**

- Promote recognition of prior learning and opportunities available through the Certificate 3 Guarantee program.
- Increase promotion of benefits of the traineeship system.



## **PRIORITY: PROMOTE WORKPLACE DIVERSITY**

### **RECOMMENDATION: Support diversification of the workforce**

- Review and adjust gendered descriptors in advertisements and courses.
- Visually promote a diverse workforce (age, gender, culture) and discuss benefits locally.
- Peak bodies to include tips on recruiting a diverse workforce in communications.



### **RECOMMENDATION: Promote the sector amongst underrepresented groups**

- Collaborate with local elders to increase awareness of career opportunities available to their community.
- Promote the sector to multicultural support agencies to increase awareness.
- Increase promotion of traineeships to culturally diverse groups.



Image courtesy  
See Foundation Australia

# Indigenous Health Care

## Key findings

- There is an underrepresentation of Aboriginal peoples and Torres Strait Islander peoples across the Health Care and Social Assistance industry.
- A focus is required on the breadth of the Health Care and Social Assistance industry, not only specifically designated Indigenous occupations.
- Cultural preferences and practices are often misunderstood by employers.
- A coordinated approach to professional development planning for staff is required.
- Targeted recruitment practices to increase attraction, retention and progression in the industry.

## Where are we now?

Aboriginal and Torres Strait Islander Health Workers provide cultural support, counselling, case management, clinical and primary health care for individuals and communities across the broader region, face to face and via telehealth to patients receiving services with an aim to improving the health care outcomes of the Aboriginal peoples and Torres Strait Islander peoples and their communities.

Health Care and Social Assistance is the largest employing industry of Aboriginal peoples and Torres Strait Islander peoples in the Townsville SA4. Opportunity to improve attraction to the broader Health Care and Social Assistance industry through gateway positions, such as the Aboriginal and Torres Strait Islander Health Workers, is available in Townsville.

Entry level positions, such as Aboriginal and Torres Strait Islander Health Workers, may choose to specialise in a particular health field or provide generalised coordination and patient support within a hospital, health clinic or health service in rural and metropolitan areas with other allied health professionals.

Clinical knowledge is gained through on-the-job experience and is essential to clinical practice in a cultural setting. The sector reported this knowledge is often undervalued due to the low remuneration level of the position within the health system itself, creating a perception of low skill levels and professional knowledge.

Queensland Health's telehealth program<sup>52</sup> is improving access to specialist healthcare for people in regional communities, reducing the need to travel to Townsville to receive specialist advice. This will drive the need for digital literacy skills for both users and health care workers.

There are pockets of employers providing opportunities to gain a career in the sector. Townsville Aboriginal and Islander Health Services (TAIHS) has a focus on skilling and employing locally. With a goal to employ 75 per cent Aboriginal peoples and Torres Strait Islander peoples, 5 per cent as trainees/cadets and a dedicated annual training budget, TAIHS aims for all staff to obtain a minimum Certificate IV level qualification and access to 10 days of ongoing professional development per annum regardless of the profession they are employed in.

<sup>52</sup> Queensland Health. (2019). *Telehealth*. Retrieved from <https://www.health.qld.gov.au/telehealth>.

## Attraction and retention

Within the Townsville SA4, Aboriginal peoples and Torres Strait Islander peoples represent 7.9 per cent of the population. In comparison, Aboriginal peoples and Torres Strait Islander peoples make up 7 per cent of the entire Health Care and Social Assistance workforce in the Townsville LGA. While this is a close representation, this also provides an opportunity to further increase industry attractiveness for this cohort. Underrepresentation within the industry reduces health care outcomes for Aboriginal peoples and Torres Strait Islander peoples and their communities who rely on the cultural support offered.



Cultural considerations are important to the attraction and retention of Aboriginal peoples and Torres Strait Islander peoples within the Health Care and Social Assistance industry. Family influence and gender specific tasks can be overlooked by employers. Employers seeking to attract and retain Aboriginal peoples and Torres Strait Islander peoples would benefit from cultural awareness training.

Attraction and retention of individual Aboriginal peoples and Torres Strait Islander peoples within the health workforce is not adequately tracked to provide opportunity to adjust practice. It is recommended the region monitors approaches taken to gauge success of recruitment and retention practices. Exit interviews are another measure that can be implemented to gather data.

Locally based advocacy and support groups provide valuable assistance to health care practitioners and could be buoyed themselves through increased promotion of their work via social media, local newspaper articles and eNews.

## Looking ahead

AFS modelling projects that the majority of employment opportunities in Townsville will be across the breadth of the Health Care and Social Assistance industry, accounting for 40 per cent of all local employment growth by 2022,<sup>53</sup> well in excess of the state average.

## Skills in demand

A disconnect between education attainment and industry requirements is reported. With 40.5 per cent of Aboriginal peoples and Torres Strait Islander peoples within the region having Year 12 or equivalent education level compared with 55.7 per cent of non-Indigenous, the educational attainment requirements of the sector are more challenging for this cohort.

Building transferrable skills to support career transitioning through locally based contextualised and flexible training options may increase participation rates and progression through the broader industry. Clinical specific skills can be addressed through increased promotion of the VET system, traineeship options and university pathways.

Health organisations suggested a need to build business capability and acumen. Increasing promotion of existing support systems, such as Grow Your Own Workforce,<sup>54</sup> Choose Your Own Health Career,<sup>55</sup> Workforce Planning Connect<sup>56</sup> and Business Queensland,<sup>57</sup> may address this immediate need.

## Building capability

TAFE Queensland offers a variety of health and community services courses across their Townsville and Aitkenvale campuses, including Certificate III in Individual Support and Certificate III in Aboriginal and/or Torres Strait Islander Primary Health Care. Delivery options include online modes.<sup>58</sup>

According to the National Centre for Vocational Education and Research, commencement and completion rates including Indigenous health qualifications were sporadic between 2014 and 2018. More attention is required to improve both commencement and completion rates at all certificate levels, with a particular focus on the Certificate IV level and above where pathways into the broader industry are more likely to occur.

<sup>53</sup> Jobs Queensland. (2018). *Anticipating Future Skills*. Retrieved from <https://jobsqueensland.qld.gov.au/anticipating-future-skills/>.

<sup>54</sup> Grow Your Own Workforce. (2019). *About Grow Your Own*. Retrieved from <https://www.gyoworkforce.com.au/about-grow-your-own/>.

<sup>55</sup> Choose Your Own Health Career. (2019). *About CYO Health Career*. Retrieved from <https://www.cyohealthcareer.com.au/about/>.

<sup>56</sup> Jobs Queensland. (2019). *Workforce Planning Connect*. Retrieved from <https://jobsqueensland.qld.gov.au/workforce-planning-connect/>.

<sup>57</sup> Queensland Government. (2019). *Business Queensland*. Retrieved from <https://www.business.qld.gov.au/>.

<sup>58</sup> TAFE Queensland. (2019). *Ways to study*. Retrieved from <https://tafeqld.edu.au/courses/ways-you-can-study/index.html>.



*Centred around the First People's Health Program, Seed Foundation Australia offers Townsville students completing health care and community services qualifications a number of career pathways. By recognising that jobs in the Health Care and Social Assistance industry can vary, Seed Foundation Australia have partnered locally with Registered Training Organisations, universities and industries to ensure students are provided with a range of career opportunities.*

*Students are supported in undertaking one of the following to reach their career goals:*

- *school-based traineeship*
- *adult traineeship*
- *cadetship while studying at university.*

*Between 2015 and 2019, Seed Foundation Australia has supported 240+ Townsville graduates through the First People's Health Program.*

James Cook University (JCU) provides a Residential Winter School<sup>59</sup> via industry sponsorship for up to 100 students to support Aboriginal peoples' and Torres Strait Islander peoples' transition into university, including into the Health Care and Social Assistance industry.

On-site, face to face training is the preferred method to equip staff with the necessary skills required by Townsville-based primary health care workers providing health services to regional and remote communities in the broader region.

Cost and internet connectivity were reported as prohibitive to the use of on-site, in-time flexible training delivery options, requiring innovative training delivery models to meet the training needs. Utilising existing technology, such as telehealth, pre-loading of training modules on to laptops and mentoring programs will build workforce capability.

New ways of delivering training and new training approaches are required now to enable the current and future workforce to keep pace with advancing technology and practices.

## Recommendations

### **PRIORITY: BUILD WORKFORCE CAPABILITY**

#### **RECOMMENDATION: Utilise existing technology to increase training access**

- Preload training modules onto laptops prior to remote service delivery.
- Increase the use of online meeting platforms to knowledge share.

#### **RECOMMENDATION: Build business and professional skill sets**

- Identify locally based training providers to deliver training on topics, including:
  - Digital readiness, increasing adoption
  - HR management (workforce planning, professional development, performance management, diversity)
  - Finance and business acumen
  - Application and grant writing
  - Dealing with difficult clients, negotiation
  - Mentoring
  - Mental health.
- Explore opportunities to deliver training offerings in smaller, more frequent modules, e.g. two hours per week for six weeks.

<sup>59</sup> James Cook University. (2019). *Winter School*. Retrieved from <https://www.jcu.edu.au/ierc/winter-school>.

## **PRIORITY: INCREASE INDUSTRY ATTRACTION**



### **RECOMMENDATION: Promote existing local pathways**

- Increase promotion of the traineeship system to improve uptake and completion rates, particularly at the Certificate IV level.



### **RECOMMENDATION: Measure success of attraction and retention methods over a five year period to monitor outcomes**

- Introduction of exit interviews to begin gathering data.
- Employers to monitor staff turnover over a five year period.

## **PRIORITY: IMPROVE INDUSTRY RETENTION**



### **RECOMMENDATION: Create a lifelong learning culture**

- Increase promotion of the VET system, traineeship options and university pathways to the existing workforce.



### **RECOMMENDATION: Encourage career progression**

- Establish professional development plans across the breadth of the industry to improve opportunities for career progression.

## **PRIORITY: ENHANCE LOCAL COLLABORATION**



### **RECOMMENDATION: Promote local Indigenous health care workforce support groups**

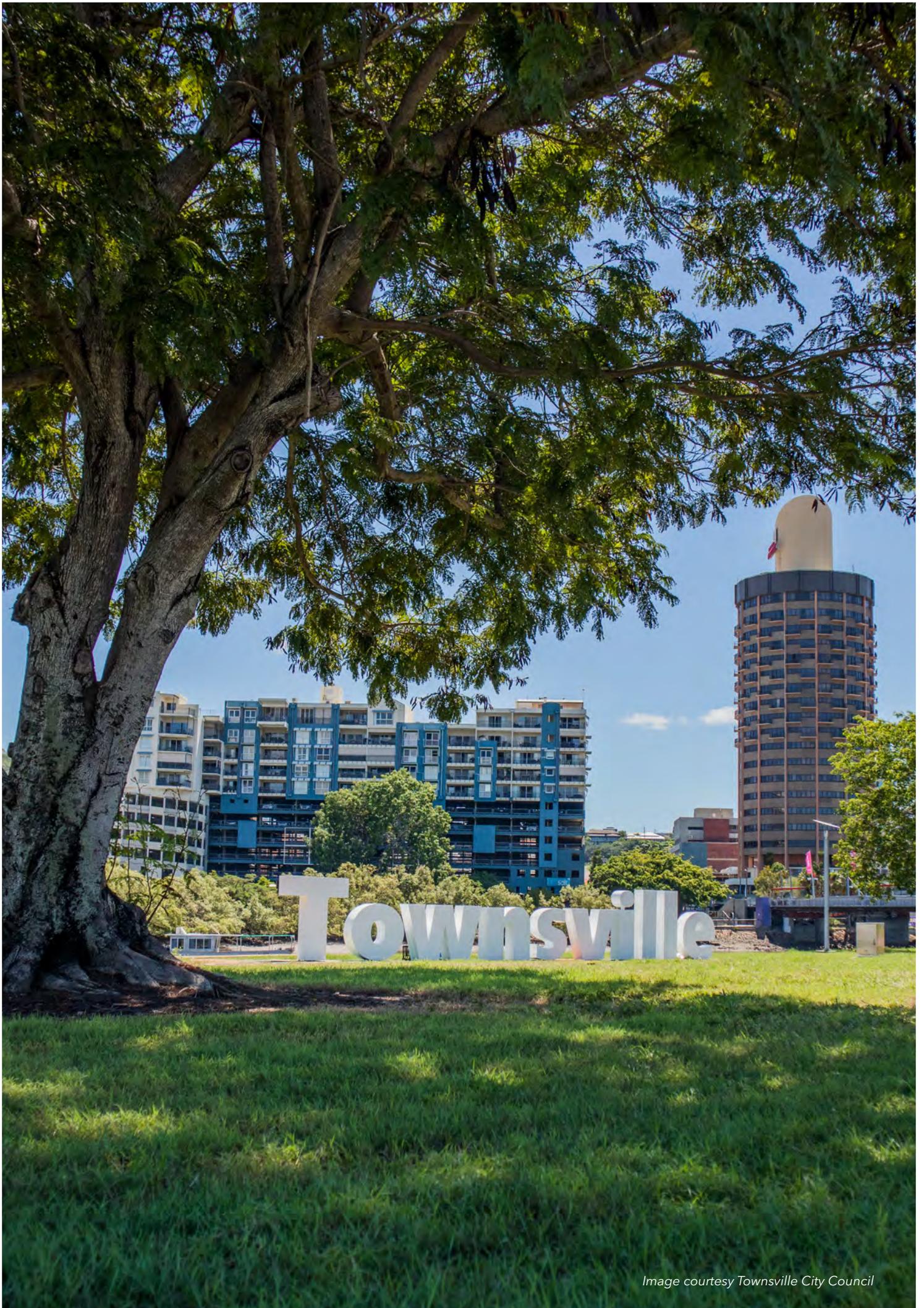
- Increase awareness of advocacy and workforce support groups through promotion on social media, newspapers and eNews to increase participation rates.

## **PRIORITY: PROMOTE WORKPLACE DIVERSITY**



### **RECOMMENDATION: Culturally appropriate promotion of the breadth of the health care and social assistance industry to increase local workforce participation rates**

- Visually promote a diverse workforce (age, gender, culture) and discuss benefits locally using culturally appropriate narrative.
- Collaborate with local elders to increase awareness of career opportunities available to their community.



*Image courtesy Townsville City Council*

# Professional, Scientific and Technical Services

## INDUSTRY PROFILE



| GROSS VALUE ADDED<sup>1</sup>



| REGION'S ECONOMY<sup>1</sup>



| REGISTERED BUSINESSES<sup>2</sup>



| SMALL BUSINESS<sup>2</sup> (<20 STAFF)



| MED BUSINESS<sup>2</sup> (20–199 STAFF)



| LARGE BUSINESS<sup>2</sup> (>200 STAFF)

## WORKFORCE PROFILE

**3785**



| EMPLOYED PERSONS<sup>3</sup>

**4.4%**

of the



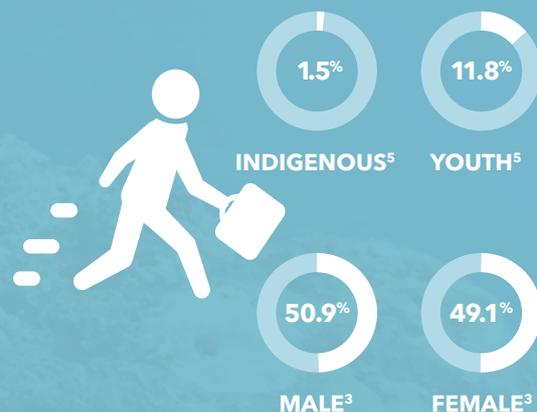
| REGION'S WORKFORCE<sup>3</sup>



**+830**

| JOBS BY 2022<sup>4</sup>

| EMPLOYMENT



**39.3**  
YEARS



| MEDIAN AGE<sup>5</sup>

<sup>1</sup> National Institute of Economic and Industry Research, compiled and presented in economy.id. (2018). Townsville City Council, Value-added by industry sector.

<sup>2</sup> ABS. (2019). 8165.0, Counts of Australian Businesses, including Entries and Exits, June 2014 to June 2018. Information on counts of registered businesses is produced by the ABS and presents counts of businesses sourced from the Australian Bureau of Statistics Business Register (ABSBR). The ABS applies a confidentiality methodology to ensure data are not likely to enable identification of a particular person or organisation which may explain the result for large businesses. It also means that component values will not always sum to the total due to perturbation. Figures presented here are based upon the sum of component values.

<sup>3</sup> ABS. (2016). Census of Population and Housing, 2016, General Community, G51 - Industry of Employment by Age and Sex.

<sup>4</sup> Jobs Queensland. (2018). Anticipating Future Skills.

<sup>5</sup> ABS. (2016). Census of Population and Housing, 2016.



The Professional, Scientific and Technical Services industry engages in providing services that require a high level of expertise, training and formal qualifications. These services include scientific research, engineering, computer systems design, architecture, law, accountancy, advertising, market research, management and other consultancy, veterinary science and professional photography.

In collaboration with the Townsville City Council and key industry representatives, three sectors were identified for focus. Research and industry consultation were undertaken relating to:

- Scientific Research
- Engineering
- Information Technology.

Employment within Professional, Scientific and Technical Services in Townsville SA4 declined by 7.6 per cent (270 persons) over the five years to August 2019 compared with 1.8 per cent (350 persons) growth for the state overall (based upon four quarter average measures). The Townsville workforce has been impacted by the downturn of the resources sector in Northern Queensland. Following the February 2019 floods, regaining and maintaining momentum of the city's large economic development opportunities is critical to underpin confidence.

Anticipated growth for the Townsville SA4 Professional, Scientific and Technical Services workforce between 2017 and 2022<sup>60</sup> will position it as one of the top five key industries. The Smart City Strategy<sup>61</sup> supports innovation, entrepreneurship and economic activation to drive the Townsville economy through adoption of digital solutions, diversification and supporting start-ups to grow. By diversifying the economy and employment options for the existing population, a skilled workforce is needed to capitalise on these future opportunities.

Critical pathway programs used to entice youth into tertiary studies into each of the focus sectors are minimal, with schools having a limited understanding of the skills required by industry. Scientific Research, Engineering and Information Technology sectors require a high level of training and formal qualifications to enter the workforce. Graduate supply is not keeping up with demand. To meet this growing need for specialised skills, greater collaboration between education and industry is needed locally.

The following recommendations relate to common themes raised across the three sectors of focus (Scientific Research, Engineering and Information Technology) within the Professional, Scientific and Technical Services industry.

## Recommendations

### **PRIORITY: PROMOTE WORKPLACE DIVERSITY**

#### **RECOMMENDATION: Improve cultural awareness**

- Identify and deliver cultural awareness programs locally.

#### **RECOMMENDATION: Support diversification of the workforce**

- Review and adjust gendered descriptors in advertisements and courses.
- Visually promote a diverse workforce (age, gender, culture) and discuss benefits locally.

<sup>60</sup> Jobs Queensland. (2018). *Anticipating Future Skills*. Retrieved from <https://jobsqueensland.qld.gov.au/anticipating-future-skills/>.

<sup>61</sup> Townsville City Council. (2018). *Smart Townsville*. Retrieved from <https://www.townsville.qld.gov.au/about-council/news-and-publications/city-update-online/smart-townsville>.



Image courtesy Australian Institute of Marine Science

# Scientific Research

## Key findings

- Collaboration across key research organisations is required to improve retention rates.
- There are minimal dedicated vocational education pathway programs for new entrants.
- Information and Communications Technology (ICT) skills, big data, automation and robotics will impact future skills needs.
- Local coordination of graduate programs is preferred.

## Where are we now?

Scientific Research provides support across the agricultural, biological, and physical and social sciences. Scientific and technical laboratory skills can be utilised for testing of geological, geophysical, bio security and pollution monitoring (soil, water, and air quality).

The establishment of a health and knowledge precinct supported by the North Queensland Academic Health Hub Alliance is important to the region, with JCU including this within the 2017 master plan process.<sup>62</sup> As a teaching and learning centre focussed on research and innovation, the Alliance will support the link between science and health and improve local collaboration.

Due to the region’s tropical weather and diverse population, Townsville has an opportunity to undertake and expand world leading medical research<sup>63</sup> into tropical disease prevention and immunology through clinical trials.

Using the highly skilled and interdisciplinary field of science, locally based researchers of bioinformatics are supporting the health care system through the analysis and interpretation of biological data.

Genomic sequencing provides huge benefits for the population, offering medical practitioners the ability to identify the cause of rare diseases and



Townsville aims to become a **global leader in tropical and marine research**

a contributing factor behind the introduction of precision medicine to predict risk, support diagnosis and guide the treatment of patients.<sup>64</sup>

Townsville aims to become a global leader in tropical and marine research.<sup>65</sup> Proximity to the world heritage listed Great Barrier Reef attracts international and specialised researchers across the organisations who often collaborate on key projects and undertake world-class marine research in the region, including:

- Commonwealth Scientific and Industrial Research Organisation (CSIRO)
- JCU through the Marine and Aquaculture Research Facility
- Great Barrier Reef Marine Park Authority
- Australian Institute of Marine Science.

Scientific and technical laboratory skills are utilised locally by organisations, such as the Townsville Laboratory Services, to provide analysis of microbiological and waste water analysis.

<sup>62</sup> James Cook University. (2017). *James Cook University Townsville Master Plan*. Retrieved from <https://www.jcu.edu.au/estate-directorate/campus-planning/townsville-campus-master-plan>.

<sup>63</sup> Australian Institute of Tropical Health & Medicine. (2019). *AITHM Clinical Trials*. Retrieved from <https://www.aithm.jcu.edu.au/research/clinical-trials/aithm-clinical-trials/>.

<sup>64</sup> Queensland Genomics. (2019). *About Genomics*. Retrieved from <https://queenslandgenomics.org/about-genomics/>.

<sup>65</sup> Townsville City Council. (nd). *Townsville City Deal*. Retrieved from <https://www.townsville.qld.gov.au/about-townsville/business-and-economy/townsville-city-deal>.



## Attraction and retention

Global recruitment activities are undertaken for PhD level scientific researchers as required. Sector representatives reported few barriers to attracting a skilled and diverse workforce for specific projects. Retention of these highly skilled employees has not historically been a focus, as contractors relocate on project completion. Discussing existing staff skills and availability to increase retention locally is advised. Local retention of highly skilled labour and family members within Townsville may improve through collaborative efforts between key scientific organisations.

Attraction of youth and Aboriginal peoples and Torres Strait Islander peoples is limited to the JCU Winter School program,<sup>66</sup> offering students the chance to experience university life during school holiday periods.

Increasing promotion and access to other pathways is needed to support local workforce supply in the future. STEM champions and STEM professionals across the education spectrum may improve awareness of local opportunities through increased collaboration to reduce duplication of effort and consultation fatigue.

Employment of graduates within government agencies is viewed as an important step to recruit, retain and build workforce capability locally. Graduate recruitment is currently impacted by public service establishment caps. Government organisations are required to balance the need for a skilled and experienced workforce with providing opportunity for new entrants.

## Looking ahead

AFS modelling<sup>67</sup> projects that, in Townsville, 2110 workers will be required within Engineering, ICT and Science Technician occupations by 2022 – an increase of approximately 100 highly skilled staff.

Employers indicated growth within the health and scientific sectors as the key focus for the region in the coming five years, with an increasing need to undertake analysis of big data and utilise the benefits of robotics and automation.

In the absence of increased training opportunities for the existing workforce and establishment of career pathway opportunities, successful global recruitment practices may continue to meet this need.



## Skills in demand

The Townsville region currently has a highly skilled and specialised scientific community. Support roles for these high level researchers are often filled by graduates as an entry to the sector.

Employers reported the need to send pathology and ecological samples intrastate and offshore for laboratory testing due to the high costs, long wait times and lack of workforce skills associated with testing locally. Increased promotion and utilisation of the apprenticeship and traineeship system may reduce wait times and costs by building workforce capability locally.

## Building capability

There are currently no RTOs including secondary schools offering an entry pathway, such as Certificate III in Laboratory Skills, within Townsville.

Despite the limited offerings of local training, 84 individuals residing within the Townsville LGA enrolled within the Certificate III in Laboratory Skills between 2015 and 2018, while 26 individuals completed during the same time period.<sup>68</sup> These may have been completed via on-line training or travelled outside of the area to undertake training. Recent introduction of free traineeship funding for under 21s<sup>69</sup> to undertake a Certificate IV in Laboratory Techniques may see further uptake of this course.

There is opportunity for a training provider to meet the training needs through an auspicing arrangement or annual promotion of upcoming training availability with key employers to increase enrolment numbers.

Establishment of a GISP focussing on Laboratory Operations or Sampling and Measurement as a pathway for youth into the sector, increased awareness of future employment opportunities, providing professional development opportunities for teachers and trainers and strengthening essential education to industry partnerships is suggested.

\* Includes Townsville LGA. Source: Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, Vacancy Report, IVI Regional Data - May 2010 onwards.*

<sup>66</sup> James Cook University. (2019). *Winter School*. Retrieved from <https://www.jcu.edu.au/ierc/winter-school>.

<sup>67</sup> Jobs Queensland. (2018). *Anticipating Future Skills*. Retrieved from <https://jobsqueensland.qld.gov.au/anticipating-future-skills/>.

<sup>68</sup> National Centre for Vocational Education and Research. (2019). *VOCSTATS, preliminary results*. Retrieved from <https://www.ncver.edu.au/research-and-statistics/vocstats>.

<sup>69</sup> Queensland. Department of Employment, Small Business and Training. (2019). *Free apprenticeships for under 21s*. Retrieved from <https://desbt.qld.gov.au/training/training-careers/incentives/freeapprenticeships>.

## Recommendations

### **PRIORITY: BUILD WORKFORCE CAPABILITY**

#### **RECOMMENDATION: Increase VET offerings locally**

- Identify opportunities for a training organisation to offer relevant VET qualifications locally.

#### **RECOMMENDATION: Improve professional development opportunities for education providers**

- Introduce a coordinated program, such as GISP, locally to enhance professional development and industry links for teachers and trainers.

### **PRIORITY: INCREASE INDUSTRY ATTRACTION**

#### **RECOMMENDATION: Promote the sector**

- Increase promotion of careers in science across the education spectrum to improve awareness of career pathways.

#### **RECOMMENDATION: Improve pathway programs offered locally**

- Introduce a coordinated program, such as GISP, locally focussed on laboratory operations or sampling and measurement.

#### **RECOMMENDATION: Promote the apprenticeship and traineeship system**

- Increase promotion of the apprenticeship and traineeship system with a focus on employers who provide and require pathology and ecological sampling.

#### **RECOMMENDATION: Establish a locally based graduate program**

- Identify opportunities to recruit graduates outside of public service establishment cap requirements, such as utilisation of group training organisations, to improve graduate engagement rates.



### **PRIORITY: IMPROVE INDUSTRY RETENTION**

**RECOMMENDATION:** Retain skilled migrants once settled in the region

- Key research organisations to meet quarterly to discuss workforce availability as research projects come to an end to retain skilled workers and their families locally.

### **PRIORITY: ENHANCE LOCAL COLLABORATION**

**RECOMMENDATION:** Enhance knowledge and resource sharing

- STEM program providers to meet quarterly to share information and coordinate efforts to reduce duplication and consultation fatigue.

**RECOMMENDATION:** Strengthen links between education and industry locally

- Industry to promote careers in science through collaboration with high schools, VET sector and universities by:
  - Participation in career expos
  - Supporting site visits where possible
  - Providing professional development opportunities for teachers, professors and trainers.

### **PRIORITY: PROMOTE WORKPLACE DIVERSITY**

**RECOMMENDATION:** Promote existing entry points

- Promote locally based entry opportunities, such as the JCU Winter School, to increase participation and employment rates of youth and Aboriginal peoples and Torres Strait Islander peoples.



# Engineering

Image courtesy  
Queensland Training Awards

## Key findings

- Improving workforce diversity would be beneficial.
- Introducing contextualised and flexible business and professional short-course training is necessary to meet the immediate and ongoing needs of the sector.
- Networking and professional development opportunities require more focus.
- Support to improve local retention rates of students and early career workers is required.
- Improved partnerships between the sector and education providers are essential.

## Where are we now?

Accredited engineers complete a relevant engineering qualification prior to professional specialisation. Engineers Australia reports<sup>70</sup> the profession is organised into three groups, differentiated by qualification level and the professional specialisation undertaken. These three groups are:

- Professional engineers
- Engineering technologists
- Engineering associates.

Locally, engineers are employed across the spectrum, supporting the broader region's growth through a variety of projects.

An established Engineers Australia, Townsville Regional Group<sup>71</sup> provides support, professional development and advocacy for accredited engineers across all disciplines.

### Attraction and retention

The distinction between engineering specialisations has reduced, largely in part due to technology.<sup>72</sup> This provides opportunity for employers to attract a

workforce with a broader skills base than historically available, reduce its workforce footprint and meet the expanding needs of customers.

The attraction of graduates into the sector was not seen as a challenge. A focus on improving completion rates and supporting graduates when entering the workforce is needed to improve supply. Establishment of a local graduate program which includes small businesses to support movement between employers within the first five years provides opportunity for graduates to broaden their knowledge base and create essential early career networks.

Supporting the diversification of the sector's workforce, reflective of the local community to drive innovation and increase productivity, is needed. Simple, immediate changes can be made to increase the attraction and retention of diverse groups including revision and adjustment of gendered descriptors in advertisements and courses, visual promotion of the sector to include diversity (age, gender, culture) and discussing the benefits to business outcomes locally.

By increasing promotion and uptake of alternative pathway programs, such as school-based apprenticeships and traineeships, young entrants

<sup>70</sup> Engineers Australia. (2019). *A Statistical Overview, Fourteenth Edition*. Retrieved from <https://www.engineersaustralia.org.au/sites/default/files/resources/Public%20Affairs/2019/The%20Engineering%20Profession%2C%20A%20Statistical%20Overview%2C%2014th%20edition%20-%2020190613b.pdf>.

<sup>71</sup> Engineers Australia. (2019). *Engineers Australia Queensland Division - Townsville regional group*. Retrieved from <https://www.engineersaustralia.org.au/About-Us/Divisions/Queensland/Queensland-Division-Townsville>.

<sup>72</sup> Engineers Australia. (2019). *A Statistical Overview, Fourteenth Edition*. Retrieved from <https://www.engineersaustralia.org.au/sites/default/files/resources/Public%20Affairs/2019/The%20Engineering%20Profession%2C%20A%20Statistical%20Overview%2C%2014th%20edition%20-%2020190613b.pdf>.



may transition into tertiary studies after exposure to the industry. For example, organisations offering a school-based administrative traineeship, provide a career pathway to a student who may not have previously considered engineering as a career option. Increased collaboration with education providers to promote the sector to Year 12 female students may also benefit gender diversity in the future.

Leveraging the unique opportunity Townsville's Defence Force presents can be achieved by establishing a local partnership to improve transition programs into the engineering profession. Mentoring new entrants and underrepresented groups may improve retention and enhance leadership skills for mentors.

Flexible work arrangements are often written into a large organisation's business practice but not utilised. Rather, presenteeism and working long hours are rewarded through project offerings and career progression. A change in culture through managers and executives leading by example by reducing hours spent in the office, may increase uptake of flexible work options and productivity of the sector.

Organisationally, the introduction of exit interviews to gain feedback upon an employee's departure will encourage the review of existing practices and increase retention rates.

### Looking ahead

AFS<sup>73</sup> modelling projects that an additional 311 workers will be required within Engineering and Technical Services sector by 2022.

The largest forecasted occupations in this sector include:

- Civil engineering professionals
- Civil engineering draftspersons and technicians
- Industrial, mechanical and production engineers
- Engineering managers
- Electrical engineers
- General clerks.



### Skills in demand

Engineers Australia reports skilled migration is supplementing workforce supply and skills capability in the absence of an adequate national graduate supply.<sup>74</sup>

Changes to the skilled migration policy encourages skilled migrants to settle within a regional area. This provides Townsville an opportunity to promote and leverage its liveability and affordability to attract skilled workers to the region.

Vacancy data for Far North Queensland suggests the resources sector downturn impacted growth of the Engineering workforce with an average of 68 vacancies for engineers per month in 2015. Averaged monthly vacancies have since shown significant recovery averaging 125 and 161 vacancies per month in 2017 and 2018 respectively.<sup>75</sup>

Investment in construction as part of the Townsville City Deal and private investment returning to the broader region may have contributed to the increase. Flood recovery efforts are also likely to impact the sector through reconstruction efforts and increase the need for specialised skills.

Between 2009 and 2018 completion rates of associate engineers fell by 27 per cent nationally, engineering technologists fell by four per cent, while professional engineers increased by 13 per cent.<sup>76</sup>

Nationally there are not sufficient engineering graduates to meet the needs of the sector. A focus on retention of local students through to completion is required. Local employers suggested an increase in collaboration between the sector and education are urgently needed.

By increasing vacation placements, providing regular feedback relating to localised skills needs as they evolve and mentoring university students, the disconnect between education and employers will reduce.

\* Includes Townsville LGA. Source: Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, Vacancy Report, IVI Regional Data - May 2010 onwards.*

<sup>73</sup> Jobs Queensland. (2018). *Anticipating Future Skills*. Retrieved from <https://jobsqueensland.qld.gov.au/anticipating-future-skills/>.

<sup>74</sup> Engineers Australia. (2019). *A Statistical Overview, Fourteenth Edition*. Retrieved from <https://www.engineersaustralia.org.au/sites/default/files/resources/Public%20Affairs/2019/The%20Engineering%20Profession%2C%20A%20Statistical%20Overview%2C%2014th%20edition%20-%2020190613b.pdf>.

<sup>75</sup> Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, IVI Regional data, August 2019*. Retrieved from <http://lmip.gov.au/default.aspx?LMP/GainInsights/VacancyReport>.

<sup>76</sup> Engineers Australia. (2019). *A Statistical Overview, Fourteenth Edition*. Retrieved from <https://www.engineersaustralia.org.au/sites/default/files/resources/Public%20Affairs/2019/The%20Engineering%20Profession%2C%20A%20Statistical%20Overview%2C%2014th%20edition%20-%2020190613b.pdf>.

## Building capability

Engineering practice evolves over time and requires a lifelong learning approach to remain competent and adjust to new methods, techniques, technology and materials. Sector representatives were clear that ongoing training and support is needed to meet the evolving and advancing needs of the sector. Employers reported an increased demand for business and professional skill sets including implementation of flexible work arrangements and HR practices, suggesting contextualised and flexible training is urgently needed.

The sector would benefit from an increased promotion of existing support systems for small to medium-sized enterprises, such as Workforce Planning Connect<sup>77</sup> and Business Queensland,<sup>78</sup> to improve business capability.

Engineers Australia's Townsville Regional Group<sup>79</sup> recommended that local sector network discussions become focussed in nature. Local employers suggested that promotion of benefits of emerging technologies, sharing learnings from key projects and project management best practice principles would maximise the time and be of most interest to them.

The sector would benefit from undertaking anticipatory planning<sup>80</sup> and implementing initiatives early to reduce the scale of immediate change for the workforce. Localised training options offered should be flexible in approach to accommodate the travel needs and long hours the sector operates in across this large regional area.

## Recommendations



### PRIORITY: BUILD WORKFORCE CAPABILITY

#### RECOMMENDATION: Build business and professional skill sets

- Identify locally based training providers to deliver training on topics, including:
  - Business planning
  - HR management (workforce planning, professional development, performance management)
  - Cultural awareness and diversity
  - Implementing flexible work options effectively
  - Project management best practice
  - Mentoring – how to mentor well
  - Transformative technology – transitioning.



#### RECOMMENDATION: Promote flexible work arrangements

- Business owners, executives and managers to lead by example and model flexible work arrangements to improve uptake.



#### RECOMMENDATION: Undertake anticipatory planning locally

- Promote and deliver training locally on anticipatory planning and implementation of initiatives early to reduce the scale of immediate change for the workforce.

<sup>77</sup> Jobs Queensland. (2019). *Workforce Planning Connect*. Retrieved from <https://jobsqueensland.qld.gov.au/workforce-planning-connect/>.

<sup>78</sup> Queensland Government. (2019). *Business Queensland*. Retrieved from <https://www.business.qld.gov.au/>.

<sup>79</sup> Engineers Australia. (2019). *Engineers Australia Queensland Division - Townsville regional group*. Retrieved from <https://www.engineersaustralia.org.au/About-Us/Divisions/Queensland/Queensland-Division-Townsville>.

<sup>80</sup> Jobs Queensland. (2018). *Supporting workforces during industry transition*. Retrieved from <https://jobsqueensland.qld.gov.au/projects/supporting-workforces-industry-transition/>.



## **PRIORITY: INCREASE INDUSTRY ATTRACTION**

### **RECOMMENDATION: Targeted partnerships with Defence Transition Program**

- Establish a local partnership with Defence Transition Programs to improve transitions into the Engineering sector.

### **RECOMMENDATION: Promote the apprenticeship and traineeship system**

- Increase promotion of the apprenticeship and traineeship system as a pathway to the sector.

### **RECOMMENDATION: Establish a locally based graduate program**

- Establish a Share a Graduate Program locally for small to medium-sized enterprises to benefit from hiring a graduate.

## **PRIORITY: IMPROVE INDUSTRY RETENTION**

### **RECOMMENDATION: Improve local graduate completion rates**

- Improve study completion rates and support for graduates when entering the workforce through mentoring.

## **PRIORITY: ENHANCE LOCAL COLLABORATION**

### **RECOMMENDATION: Improve graduate completion rates**

- Increase vacation placements for university students to strengthen partnerships.
- Provide regular feedback to local universities on localised skills needs as technology evolves and impacts the region.
- Establish a mentoring program between the sector and university students.
- Improve study completion rates and support for graduates when entering the workforce through mentoring.

## **PRIORITY: PROMOTE WORKPLACE DIVERSITY**

### **RECOMMENDATION: Targeted partnerships with diverse cohorts**

- Establish a local partnership with Defence Force transition programs to improve transitions into the Engineering sector.
- Promote the industry to female Year 12 students to increase the graduate pool.



# Information Technology

Image courtesy  
Queensland Training Awards

## Key findings

- Graduates are leaving the region to seek opportunities elsewhere.
- Cyber security is growing in importance globally and locally.
- Collaboration is important to the sector.
- The link between education and employers requires a focussed approach.
- Diversification of the workforce is a priority.
- Townsville Smart Precinct provides a future opportunity to support the sector.

## Where are we now?

The Australian Computer Society (ACS) forecasts 79,900 additional workers will be required nationally between 2018 and 2023.<sup>81</sup> In a broader measure, it is expected that 236,700 more will be intensive users of ICT in their jobs.

With fewer than 5000 ICT graduates per year domestically,<sup>82</sup> reliance on skilled migration to fill the workforce needs is ever increasing. Twenty-three ICT occupations are currently listed on the skilled occupation list.<sup>83</sup> Townsville graduates are reported to be leaving the region in search of stable employment. Innovation, collaboration and promotion of global opportunities available locally may stem the tide of this migration and ensure future workforce supply.

In an age of emerging and transformative technologies, ICT workers are at the forefront of technological advancements, developing, creating and innovating new ways to address old issues. With geographical boundaries no longer the barrier they once were, the sector rapidly globalised making way for a mobilised workforce, with the ability to collaborate across time zones and economies.

In the Townsville LGA, several ICT workers were identified as working remotely for organisations based interstate while supporting global projects.

Though local networks provide opportunity for localised collaboration and knowledge sharing, there is recognition through partnerships between government and the sector that more can be achieved to retain those trained locally.

## Attraction and retention

Partnerships with schools and increasing local offerings through programs, such as Coderdojo and Hackathon, will improve career awareness for youth as a future workforce supply. By increasing promotion of the sector and improving digital literacy through local targeted initiatives for young Aboriginal peoples and Torres Strait Islander peoples, participation and completion rates at university may improve.

The retention of graduates locally is seen as a challenge by sector representatives, with competition with large corporations interstate of most concern. Establishment of a local graduate program, which includes small businesses, to support movement between employers within the first five years, provides opportunity to broaden graduates knowledge base and increase retention rates.

Participants in the gig economy seek flexibility and autonomy, offering organisations access to highly specialised skills, cost savings and an adaptable workforce.<sup>84</sup> To attract and retain these individuals

<sup>81</sup> Australian Computer Society. (2018). *ACS Australia's Digital Pulse 2018*. Retrieved from <https://www.acs.org.au/insightsandpublications/reports-publications/digital-pulse-2018.html>.

<sup>82</sup> Australian Computer Society. (2018). *ACS Australia's Digital Pulse 2018*. Retrieved from <https://www.acs.org.au/insightsandpublications/reports-publications/digital-pulse-2018.html>.

<sup>83</sup> Australia. Department of Home Affairs. (2019). *Skilled occupation list*. Retrieved from <https://immi.homeaffairs.gov.au/visas/working-in-australia/skill-occupation-list>.

<sup>84</sup> AiGroup Workforce Development. (2016). *The Emergence of the Gig Economy*. Retrieved from [https://cdn.aigroup.com.au/Reports/2016/Gig\\_Economy\\_August\\_2016.pdf](https://cdn.aigroup.com.au/Reports/2016/Gig_Economy_August_2016.pdf).



into regional areas, innovative approaches are needed. Several jurisdictions are exploring the introduction of portable long service leave.<sup>85</sup> Extending this concept to allow ICT workers to accumulate all leave entitlements based on continuous service in the sector, rather than a single employer, may prove an attractive and flexible retention strategy.

The sector self-identified diversification as a future focus suggesting gendered descriptors in advertisements and courses be reviewed, visual promotions to include diversity of age, gender and culture, and local cultural awareness training supported by promotion of the benefits to business outcomes of a diverse workforce.

Mentoring for underrepresented groups provides support to improve retention rates of existing workers, while also enhancing leadership skills for mentors. Training for potential mentors to mentor well would increase the success of this initiative.

### Looking ahead

Business ICT research and development increased by almost 50 per cent to \$6.6 billion in the five years to 2015-16 driving growth across the sector.<sup>86</sup>

Nationally, at a narrow measure, the ICT workforce is expected to experience growth of up to 15,900 workers per year.<sup>87</sup> AFS modelling projects that an additional 250 workers will be required across 20 ICT related occupations in Townsville by 2022.<sup>88</sup>



### Skills in demand

The ACS reports nationally skills in artificial intelligence, data science and blockchain are required.<sup>89</sup> Townsville stakeholders agreed, with the addition of big data, machine learning, customer service, project and program management skills to remain competitive locally.

A critical skills shortage of cyber security professionals nationally<sup>90</sup> is also evident locally. Stakeholders expressed concern that regional small-medium enterprises in particular have a lack of awareness and understanding of the risks to business and limited ICT skills available to address the issue.

Local employers reported that developers, programmers and system analysts were most in need.

### Building capability

Students studying ICT are required to be equipped with the technical foundations in demand by industry, to be competitive in the skills market. To achieve this, it is recommended industry and education providers improve collaboration to adjust and respond to technological advancements and reduce the risk of course and skill redundancy prior to completion.

Introducing students to IT principles and foundation skills in primary school were viewed as an essential future pipeline of workers. Local offerings, such as Coderdojo via iNQ and Hackathon, were acknowledged as important first steps to strengthening pathway programs with more work needed. STEM coordinators involved in sector peer-to-peer learning events may improve dissemination of information to the education system and strengthen pathway offerings.

There were 32 ICT and Telecommunications Technicians traineeships completed in the Townsville LGA between 2013 and 2018.<sup>91</sup> Promoting the flexibility of the apprenticeship and traineeship system to small businesses in the local area may increase the uptake as few are aware of the system or benefits of employing a trainee. Those completing VET qualifications have the opportunity to transition into tertiary education or entry level positions within the sector.

There were approximately 1500 enrolments in 2018 within the Bachelor of Information Technology (IT) for Central Queensland University (CQU) and JCU campuses in Queensland, comprising of 62 per cent domestic students.<sup>92</sup>

Real-time industry problems that tertiary students can resolve increases experiential learnings, strengthens linkages between education offerings and the sector's skills needs, and greatly increases job-ready graduates.

\* Includes Townsville LGA. Source: Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, Vacancy Report, IVI Regional Data - May 2010 onwards.*

<sup>85</sup> Australia. Fair Work Ombudsman. (nd). *Long service leave*. Retrieved from <https://www.fairwork.gov.au/leave/long-service-leave>.

<sup>86</sup> Australian Computer Society. (2018). *ACS Australia's Digital Pulse 2018*. Retrieved from <https://www.acs.org.au/insightsandpublications/reports-publications/digital-pulse-2018.html>.

<sup>87</sup> Australian Computer Society. (2018). *ACS Australia's Digital Pulse 2018*. Retrieved from <https://www.acs.org.au/insightsandpublications/reports-publications/digital-pulse-2018.html>.

<sup>88</sup> Jobs Queensland. (2018). *Anticipating Future Skills*. Retrieved from <https://jobsqueensland.qld.gov.au/anticipating-future-skills/>.

<sup>89</sup> Australian Computer Society. (2018). *ACS Australia's Digital Pulse 2018*. Retrieved from <https://www.acs.org.au/insightsandpublications/reports-publications/digital-pulse-2018.html>.

<sup>90</sup> Australia. Department of Home Affairs. (nd). *Australia's Cyber Security Strategy*. Retrieved from <https://cybersecuritystrategy.homeaffairs.gov.au/>.

<sup>91</sup> Queensland. Department of Employment, Small Business and Training. (2019). *Direct Entry-Level Training Administration (DELTA) database, Queensland*.

<sup>92</sup> Australia. Department of Education and Training. (2019). *uCube - Higher Education Statistics*. Retrieved from <http://highereducationstatistics.education.gov.au/>.

DevNQ<sup>93</sup> representatives suggest additional support for entrepreneurship and innovation is required to grow the sector locally and support budding entrepreneurs. Increasing promotion of existing business support and start-up programs may bridge this gap.

Introduction of data collection of individuals and participation rates relating to pathway programs from primary school through to tertiary level qualification, via destination surveys to measure outcomes of investment, is recommended.

Contextualised and flexible training delivered locally may address the immediate skills needs of

the existing workforce and support future growth. Increasing promotion of existing business acumen and growth offerings<sup>94</sup>, professional development opportunities via the peak industry body,<sup>95</sup> and establishment of a formal mentoring program within the region is likely to improve capability of the sector.

The sector would benefit from an increased promotion of existing support systems for small-medium enterprises, such as Workforce Planning Connect<sup>96</sup> and Business Queensland,<sup>97</sup> to improve business capability.

## Recommendations



### PRIORITY: BUILD WORKFORCE CAPABILITY

#### RECOMMENDATION: Build business and professional skill sets

- Identify locally based training providers to deliver training on topics, including:
  - Platforms and emerging technologies, cloud computing, quantum computing IoT.
  - Microservices, software deployments through DevOps, SecOps and automation tools and big data
  - Hard skills – programming, design and implementation
  - Soft skills – communication, learning and problem solving
  - Modern solutions for serving data to customers
  - Entrepreneurship – starting a business
  - Effective networking
  - Mentoring – how to mentor well
  - HR management (workforce planning, professional development, performance management, diversity).



#### RECOMMENDATION: Support for entrepreneurship and innovation

- Increase the promotion of existing business support and start-up programs.

<sup>93</sup> DevNQ. (2019). Retrieved from <https://devnq.org/>.

<sup>94</sup> Queensland. Department of Employment, Small Business and Training. (2019). *Small business*. Retrieved from <https://desbt.qld.gov.au/small-business>.

<sup>95</sup> Australian Computer Society. (2019). *ACS events*. Retrieved from <https://www.acs.org.au/cpd-education/event-listing.html>.

<sup>96</sup> Jobs Queensland. (2019). *Workforce Planning Connect*. Retrieved from <https://jobsqueensland.qld.gov.au/workforce-planning-connect/>.

<sup>97</sup> Queensland Government. (2019). *Business Queensland*. Retrieved from <https://www.business.qld.gov.au/>.



## **PRIORITY: INCREASE INDUSTRY ATTRACTION**

### **RECOMMENDATION: Establish a locally based graduate program**

- Establishment of a local graduate program including small business to improve collaboration and increase employment opportunities and early career experiences.

### **RECOMMENDATION: Promote the flexibility of the apprenticeship and traineeship system**

- Increase promotion of the apprenticeship and traineeship system as a pathway to the sector, by targeted digital promotions to the sector highlighting the flexibility within the system (including Schools Based Apprenticeships and Traineeships (SATs)).

## **PRIORITY: IMPROVE INDUSTRY RETENTION**

### **RECOMMENDATION: Address entitlements and benefits for casual workforce**

- Establish a local leave entitlement account for all locally based ICT workers to accumulate all leave entitlements based on continuous service in the sector, rather than a single employer.

## **PRIORITY: ENHANCE LOCAL COLLABORATION**

### **RECOMMENDATION: Strengthen links between education and industry locally**

- Employers to provide real time industry problems that tertiary students can resolve to increase experiential learnings.
- Involve STEM coordinators in sector peer-to-peer learnings to improve dissemination of information to the education system.
- Increase promotion of IT principles and foundation skills in primary school.
- Introduce data collection of pathway programs from primary school through to tertiary level qualification to measure outcomes of investment.

### **RECOMMENDATION: Drive innovation and collaboration**

- Establish an incubator space to build a digital community, offering coding clubs, hackathons, networking events and professional development opportunities to drive innovation and collaboration.

## **PRIORITY: PROMOTE WORKPLACE DIVERSITY**

Recommendations to support diversification of the IT sector are covered in common themes at the start of the Professional, Scientific and Technical Services industry section.

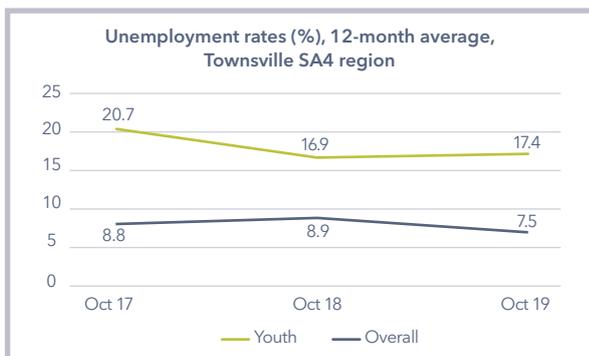


# Townsville City Deal Workforce Economic Indicators

Image courtesy  
Townsville City Council

Three economic indicators of the Townsville City Deal include improvements in the unemployment rate along with youth and Aboriginal peoples and Torres Strait Islander peoples unemployment rates. Workforce opportunities for Youth and Aboriginal peoples and Torres Strait Islander peoples have been considered across the four focus industries contained within this workforce plan. Improving workforce diversity across all industries will provide opportunities to decrease the unemployment rate.

There are positive improvements occurring, with the region's youth unemployment rate dropping from 20.7 per cent in October 2017 to 17.4 per cent in October 2019 (based upon 12-month average measures). The overall unemployment rate has also declined from 8.8 per cent to 7.5 per cent over the same period.<sup>98</sup>



Since the commencement of the Townsville City Deal in December 2016 until September 2019, the Jobactive case load supporting youth within the Townsville employment region has decreased by 30 per cent. During the same period, the case load supporting Aboriginal peoples and Torres Strait Islander peoples has also decreased by four per cent.<sup>99</sup>

Workforce diversity characteristics include older workers, people with disabilities, gender composition and migrants. Workforce diversity has been linked to innovation due to a wider range of views, improved performance and increased profits.<sup>100</sup> Through diversification, businesses are able to succeed in the global marketplace and strengthen Townsville's industries and overall economy.

The workforce of the future is likely to comprise of five generations.<sup>101</sup> An intergenerational workplace provides opportunity for generations to mentor and learn from one another. Former Defence members transitioning into civilian life mid- to late career should also be considered as a source of potential employees, bringing with them a wealth of experience and ability to bridge potential generational gaps between new entrants and an ageing workforce.

Improving overall diversification, reflective of the Townsville community itself is suggested as an immediate focus. There are a number of resources and initiatives available to support employers in attracting people from all these backgrounds. Current resources available can be found at [www.jobsqueensland.qld.gov.au/townsville](http://www.jobsqueensland.qld.gov.au/townsville).

## Youth

With a higher proportion of residents aged 15-24 years (15.6 per cent) than Queensland overall (13.1 per cent),<sup>102</sup> Townsville has an opportunity to build its future workforce through development and implementation of effective training and pathway programs.

Longer times spent by younger Queenslanders in

<sup>98</sup> ABS. (2019). 6291.0.55.001, *Labour Force, Australia, Detailed – Electronic Delivery Oct 2019*.

<sup>99</sup> Australia. Department of Employment, Skills, Small and Family Business. (2019). *Labour Market Information Portal, jobactive Caseload Data – September 2015 to September 2019*. Retrieved from <http://lmip.gov.au/default.aspx?LMIP/Downloads/EmploymentRegion>.

<sup>100</sup> McKinsey & Company. (2015). *Why diversity matters*. Retrieved from <https://www.mckinsey.com/business-functions/organization/our-insights/why-diversity-matters>.

<sup>101</sup> Jobs Queensland. (2019). *The Future of Work Literature Review*. Retrieved from <https://jobsqueensland.qld.gov.au/projects/future-of-work/>.

<sup>102</sup> ABS. (2019). 3235.0, *Regional Population by Age and Sex, Australia, 2018*.

AS AT JUNE 2019



IN OCTOBER 2019



Source: ABS. (2019). 6291.0.55.001, RM1 - Labour force status by Age, Labour market region (ASGS) and Sex, October 1998 onwards.

education has influenced their participation in the labour market over the last decade, as has difficulties in securing entry-level employment.<sup>103</sup>

Experience is predominantly listed in advertisements as an employment prerequisite,<sup>104</sup> resulting in young early-career entrants relying heavily on pathway and intervention programs to gain a foothold during the application process. This can be intensified by an increasing number of older experienced workers remaining in the workforce longer.

Townsville based initiatives, such as The Lighthouse<sup>105</sup> the Townsville Stronger Communities initiative,<sup>106</sup> the Youth Engagement Alliance,<sup>107</sup> Recycle your Dreams<sup>108</sup> and Transition 2 Success,<sup>109</sup> are committed to engagement and re-engagement of all Townsville young people through education, training and employment.

Structured pathway programs within the school setting provides opportunities for youth to gain valuable hands on experience prior to entering the workforce. Programs, such as Gateway Industry Skills Program (GISP) and P-TECH, offer valuable tasters and strengthen the partnerships between industry and education.

The Queensland Government is committed to providing education and employment pathways through programs, such as Skilling Queenslanders for Work,<sup>110</sup> and providing access to fee-free training for eligible youth.<sup>111</sup>

### Aboriginal peoples and Torres Strait Islander peoples

Local employers have expressed a willingness to improve diversity in the workplace though they are uncertain on the best way to recruit and retain a more balanced workforce.

One place-based initiative supporting businesses to employ local job-ready young Aboriginal peoples and Torres Strait Islander peoples is the Queensland Government's Youth Employment Program (YEP). By matching suitable applicants to employment needs, the regional staff from the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP) can guide employers through the process of sourcing and matching potential candidates, hiring new staff and providing post job placement support.

The Queensland Government's Moving Ahead Strategy 2016-2022<sup>112</sup> aims to ensure that Aboriginal peoples and Torres Strait Islander peoples can better participate in Queensland's economy, and equitably share in its benefits by accessing relevant skills, training and employment, and business growth and development.

Employing Aboriginal peoples and Torres Strait Islander peoples can provide additional benefits, including access to employment incentives, training and support, and access to job-ready applicants.

<sup>103</sup> Jobs Queensland. (2019). *The Future of Work Literature Review*. Retrieved from <https://jobsqueensland.qld.gov.au/projects/future-of-work/>.

<sup>104</sup> Jobs Queensland. (2019). *The Future of Work Literature Review*. Retrieved from <https://jobsqueensland.qld.gov.au/projects/future-of-work/>.

<sup>105</sup> Townsville Aboriginal & Islander Health Service. (2019). *The Lighthouse: Youth After Hours Diversionary Service*. Retrieved from <https://www.taihs.net.au/taihs-services/youth-services/the-lighthouse-youth-after-hours-diversionary-service/>.

<sup>106</sup> Queensland Government. (2019). *Townsville Stronger Communities*. Retrieved from <https://townsvillecommunities.premiers.qld.gov.au/>.

<sup>107</sup> Queensland. Department of Education. (2019). *Youth Engagement Alliance*. Retrieved from <https://advancingeducation.qld.gov.au/youth-engagement/youth-engagement-alliance>.

<sup>108</sup> Queensland Youth Services. (2019). *Recycle Your Dreams*. Retrieved from <https://www.qys.org.au/programs/recycle-your-dreams-eyi>.

<sup>109</sup> Queensland Government. (2019). *About Transition 2 Success*. Retrieved from <https://www.qld.gov.au/law/sentencing-prisons-and-probation/young-offenders-and-the-justice-system/youth-justice-community-programs-and-services/t2s/about-transition-2-success>.

<sup>110</sup> Queensland. Department of Employment, Small Business and Training. (2019). *Skilling Queenslanders for Work*. Retrieved from <https://desbt.qld.gov.au/training/training-careers/incentives/sqw>.

<sup>111</sup> Queensland. Department of Employment, Small Business and Training. (2019). *Free apprenticeships for under 21s*. Retrieved from <https://desbt.qld.gov.au/training/training-careers/incentives/freeapprenticeships>.

<sup>112</sup> Queensland. Department of Aboriginal and Torres Strait Islander Partnerships. (2017). *Moving Ahead strategy*. Retrieved from <https://www.datsip.qld.gov.au/publications-governance-resources/policy-governance/moving-ahead-strategy>.

## WORKING AGE ABORIGINAL PEOPLES AND TORRES STRAIT ISLANDER PEOPLES

**7%** (13,040 persons) of the regional population were Aboriginal peoples and Torres Strait Islander peoples

and of those, **60.1%** were of **working age** (15-64 years).



**13.1%** of the regions Aboriginal peoples and Torres Strait Islander peoples **working age** population were **unemployed**.

**55.6%**



of the region's Aboriginal peoples and Torres Strait Islander peoples **working age** population were **within the labour force**.

Source: ABS. (2016). *Census of Population and Housing, 2016, Aboriginal and Torres Strait Islander People Profile*.

Image courtesy  
Seed Foundation Australia

### Improving employment outcomes for Youth and Aboriginal peoples and Torres Strait Islander peoples

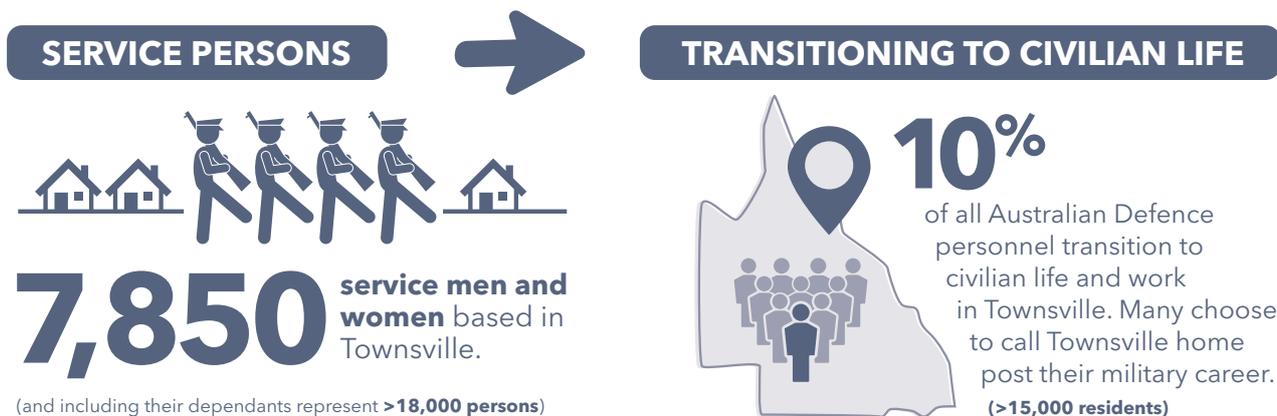
Townsville would benefit from improved employment outcomes for their youth and Aboriginal peoples and Torres Strait Islander peoples, both now and in the future. People who feel engaged through work or education, and who are provided with opportunities to participate, experience a better quality of life and contribute to creating and building a better community.

Responses to improving employment outcomes need to adopt policies that reduce disparities and address social factors inhibiting employment uptake. In order to be successful, employment programs must continue to embrace a holistic, strength based and integrated approach to support the entire needs of the individual.

A one-size-fits-all approach and relying solely on local employers to tackle the issue is not enough.

It is recommended that an employment pathways program be developed and piloted that contains key elements of past programs that have shown to deliver positive outcomes within Townsville. The initial targeted cohorts would be youth and Aboriginal peoples and Torres Strait Islander peoples, though it would also benefit other community members. The key features of the pilot program should include:

- Place-based ownership and decision making
- Consideration of social determinants of employability – health, housing, educational level, access to transport/ability to get to a place of work
- Co-designed and with the commitment of community organisations, government at all levels and community members
- Wrap around services, such as nutrition, wellbeing, mentoring, life coaching
- Voluntary participant engagement
- Ability to customise, with face to face individual support
- Training support with a work experience component
- Flexible/collaborative delivery model
- Culturally safe
- Intense engagement in the first phase to focus on behaviour shifting/adapting, problem solving, e.g. how to get to work
- Longer term focus (greater than two years) including an evaluation component
- Outcome is the job, not the participation compliance to the end of the program life
- Not tied to other government employment programs.



Source: Townsville Enterprise Limited. (2018). Submission to the *Inquiry into transition from the Australian Defence Force (ADF)*.

## Defence

Townsville has a long and proud military history and is Australia's largest garrison city, home to major Defence establishments including Lavarack Barracks, Royal Australian Air Force (RAAF) Base Townsville and the Townsville Field Training Area (TFTA).

Many of the personnel exiting the Australian Defence Force (ADF) are readily employable and have a vast range of transferable skills, such as working in teams, critical thinking and problem solving, technical and trade skills, and the ability to work under pressure.

Programs, such as the Returned and Services League (RSL) Queensland's Ex-Defence Employment, Partner Employment and Veterans On-Board,<sup>113</sup> The Oasis Townsville,<sup>114</sup> Soldier On,<sup>115</sup> and Mates4Mates<sup>116</sup> support ADF members and their partners transition into civilian employment. Their tailored programs include career counselling, training and development, skills transition to the civilian job market, interview coaching, and connection to employers.

In 2017, RSL Queensland delivered a Transitioning Veterans Pilot Program in Townsville. To date, RSL Queensland has engaged 71 ex-Defence members in Townsville, supporting 28 into employment with a further 20 actively working to secure roles.<sup>117</sup>

The Queensland Government is fully supportive of transitioning ADF members with the announcement of an Office for Veterans to lead the coordination of programs across government, and to provide a more concentrated focus on veterans' policies and services.<sup>118</sup> Additionally, the Queensland Government has found work within the public sector for 216 former members of the ADF<sup>119</sup> through the Veterans' Employment Pathway, a program with five targeted actions to attract, identify, promote, recruit and transition ex-Defence members.<sup>120</sup>

<sup>113</sup> RSL Queensland. (2019). *Employment Program*. Retrieved from <https://rslqld.org/find-help/employment>.

<sup>114</sup> The Oasis Townsville. (2019). *About Us*. Retrieved from <https://www.theoasistownsville.org.au/us>.

<sup>115</sup> Soldier On Australia. (2019). *Employment*. Retrieved from <https://soldieron.org.au/how-we-help/employment-pathways/>.

<sup>116</sup> Mates4Mates Limited. (2018). *Employment and Education Support Services*. Retrieved from <https://mates4mates.org/our-services/employment-and-education-support/>.

<sup>117</sup> RSL Queensland. (2019). unpublished data.

<sup>118</sup> Queensland Media Statements, *Palaszczuk Government to establish dedicated Office for Veterans, June 14 2019*.

<sup>119</sup> Queensland Media Statements, *Palaszczuk Government to establish dedicated Office for Veterans, June 14 2019*.

<sup>120</sup> Queensland Government. (2019). *Veterans employment pathway*. Retrieved from <https://www.forgov.qld.gov.au/about-veterans-employment-pathway>.

# Acronyms

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<b>ABS</b>	Australian Bureau of Statistics
<b>ACS</b>	Australian Computer Society
<b>ADF</b>	Australian Defence Force
<b>AEST</b>	Australian Eastern Standard Time
<b>AFS</b>	Anticipating Future Skills
<b>AIMS</b>	Australian Institute of Marine Science
<b>AIS</b>	Australian Industry Skills
<b>BFM</b>	Basic Fatigue Management
<b>CAD</b>	Computer Aided Design
<b>CAM</b>	Computer Aided Machining
<b>CNC</b>	Computer Numerical Control
<b>CQU</b>	Central Queensland University
<b>CSIRO</b>	Commonwealth Scientific and Industrial Research Organisation
<b>DATSIP</b>	Department of Aboriginal and Torres Strait Islander Partnerships
<b>DELTA</b>	Direct Entry-Level Training Administration
<b>FIFO</b>	Fly-in fly-out
<b>GISP</b>	Gateway Industry Schools Program
<b>GBRMPA</b>	Great Barrier Reef Marine Park Authority
<b>HR</b>	Human Resource
<b>ICT</b>	Information and Communications Technology
<b>IoT</b>	Internet of Things
<b>JCU</b>	James Cook University
<b>LGA</b>	Local Government Area
<b>LMIP</b>	Labour Market Information Portal
<b>MARF</b>	Marine and Aquaculture Research Facility
<b>MOOC</b>	Massive Open Online Course
<b>NCVER</b>	National Centre for Vocational Education Research
<b>NDIS</b>	National Disability Insurance Scheme
<b>NWMP</b>	North West Minerals Province
<b>P-TECH</b>	Pathways in Technology
<b>RAAF</b>	Royal Australian Air Force
<b>RSL</b>	Returned and Services League
<b>RTO</b>	Registered Training Organisation
<b>SA4</b>	Statistical Area Level 4
<b>SCADA</b>	Supervisory Control and Data Acquisition
<b>SDA</b>	State Development Area
<b>SLP</b>	Safe Load Program
<b>STEM</b>	Science, Technology, Engineering and Mathematics
<b>SQW</b>	Skilling Queenslanders for Work
<b>TAFE</b>	Technical and Further Education
<b>TAIHS</b>	Townsville Aboriginal and Islander Health Services
<b>TFTA</b>	Townsville Field Training Area
<b>VET</b>	Vocational Education and Training
<b>VETIS</b>	Vocational Education and Training in Schools
<b>YEP</b>	Youth Employment Program

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Image courtesy Townsville City Council







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