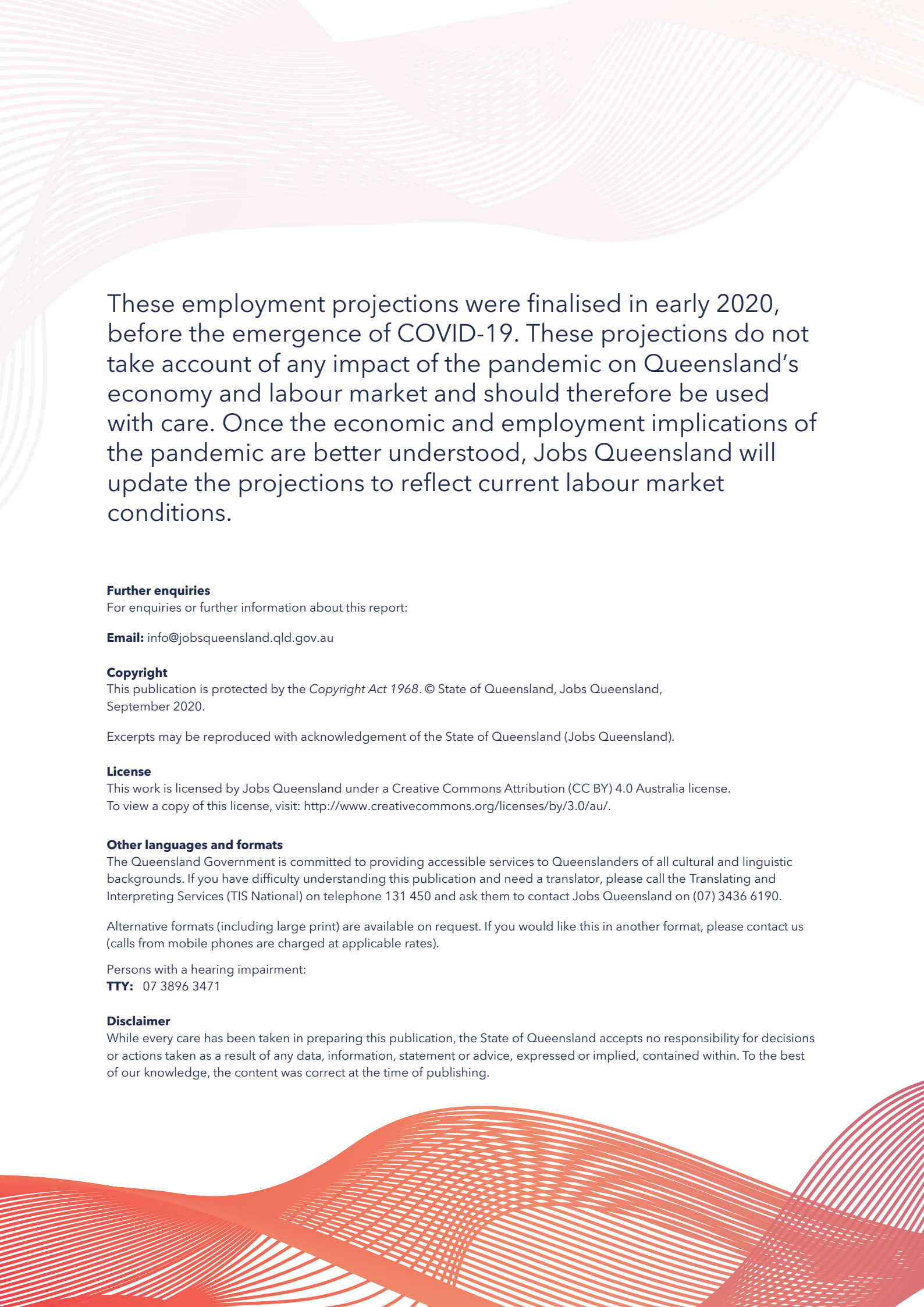


Anticipating Future Skills Series

**Pre-COVID-19
projected employment
in Queensland**

2019 - 2024



These employment projections were finalised in early 2020, before the emergence of COVID-19. These projections do not take account of any impact of the pandemic on Queensland's economy and labour market and should therefore be used with care. Once the economic and employment implications of the pandemic are better understood, Jobs Queensland will update the projections to reflect current labour market conditions.

Further enquiries

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Contents

Executive summary	2
Background and context	4
Impact of COVID-19	5
Employment in Queensland	7
Industries	8
Regions	10
Occupations	12
Qualifications	14
Scenarios	17
Questions for policy and practice	18
Replacement demand	21

Executive Summary

The Anticipating Future Skills projections were finalised prior to the emergence of COVID-19 and the projections do not take into account the long-term impacts; the report has been amended to indicate this. A high-level summary is included in this report to provide some guidance as to the emerging effects.

When this modelling was performed in late 2019, it identified a strong outlook for employment across Queensland. By 2024, it was projected that there would be more than 2.7 million people employed across the State, an increase of 9.4 per cent from 2019. Employment was projected to expand across all industries.

Employment opportunities in traditional Queensland industries such as mining and agriculture were projected to continue, while new jobs were projected to emerge in growing industries such as health care, social assistance, professional services and education.

However, Queensland is changing. Our population is ageing, and we are living longer. Consequently, we are also working longer and in different ways. Technological change is transforming industries and occupations, demanding new and different levels of skills and capabilities. When, how and to what extent change will occur is not always clear. For example, no one could have foreseen the changes triggered by the emergence of COVID-19.

Change is inevitable, but the right information can help us manage that change. The Anticipating Future Skills project assists Queenslanders to prepare for and respond to change by combining economic modelling with scenarios. Pre-COVID-19 employment projections are available for regions, industries, occupations and qualifications from 2019 to 2024. The modelling of different scenarios enables Queenslanders to identify the skills needed under a variety of different circumstances. What we found was this:

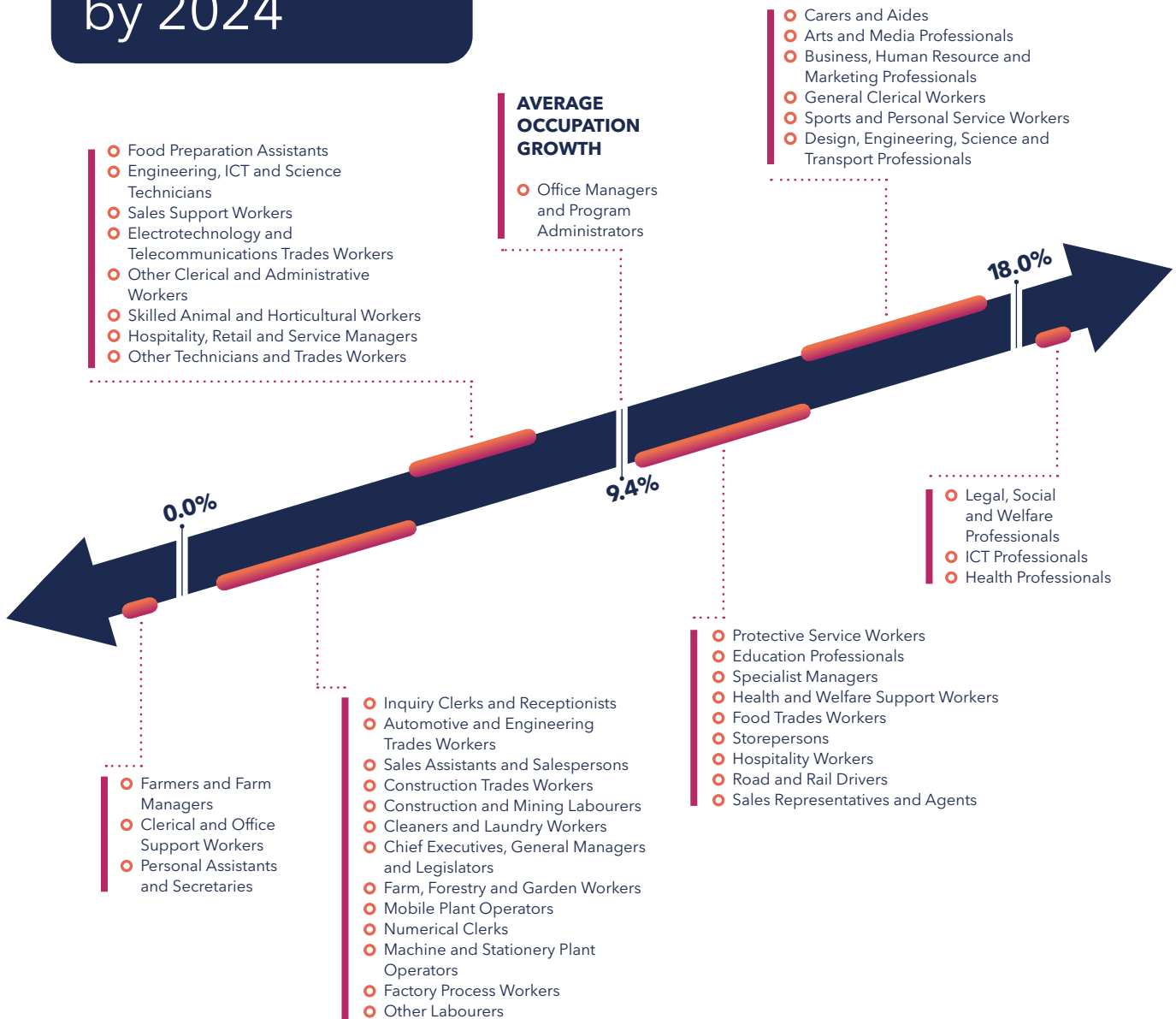
- Queensland was to experience strong employment growth regardless of the scenario modelled.
- Replacement demand was projected to create more job opportunities than employment growth.
- Nine out of ten future jobs were projected to be supported by the attainment of a VET qualification.
- It was projected that almost 60 per cent of all new workers would be employed in just four industries - Health Care and Social Assistance; Professional, Scientific and Technical Services; Education and Training; and Accommodation and Food Services.
- More than one in six workers would have been employed in the Health Care and Social Assistance industry, while around one in ten would have worked in Retail Trade.
- Regions with high proportions of service industries were projected to have the greatest growth in employment, with most of the growth in the South East corner.
- Queensland is becoming more educated, with almost two million workers projected to possess a qualification in 2024.

Figure 1 reflects the changes projected to occur in the Queensland economy pre-COVID-19. It shows the projected growth of occupational groups by 2024. Those to the right were projected to experience above-average growth, while those to the left were projected to change the least. The jobs to the right tend to be more highly skilled and in fast-growing industries, particularly service industries.

As workers are required to become more adaptable, specialist occupations such as Numerical Clerks will give way to General Clerical Workers. An ageing population will create demand for Carers and Aides, as well as Health and Welfare Support Workers. Employment of ICT Professionals will increase as technological change continues apace.

Figure 1

Jobs growth by 2024



This report contains an overview of the Anticipating Future Skills project and high-level results. More detailed information and a complete set of data tools is available on the Jobs Queensland website at jobsqueensland.qld.gov.au/afs.

Background and context

The Anticipating Future Skills project is one of the ways in which Jobs Queensland provides advice to Queenslanders about future skills needs. It combines economic modelling with scenarios to provide employment projections for regions, industries, occupations and qualifications from 2019 to 2024. Unlike other employment projections, the Anticipating Future Skills project makes detailed data available for industries and occupations at both State and regional levels, based on Australian Bureau of Statistics Classifications (Figure 2).

The employment projections are provided for a baseline and three scenarios. The baseline (or “business as usual”) projection was developed around the Queensland Government’s 2018-19 Budget Paper. The scenarios examine the effects of technological change, increased interstate migration and a fall in coal and iron ore prices.

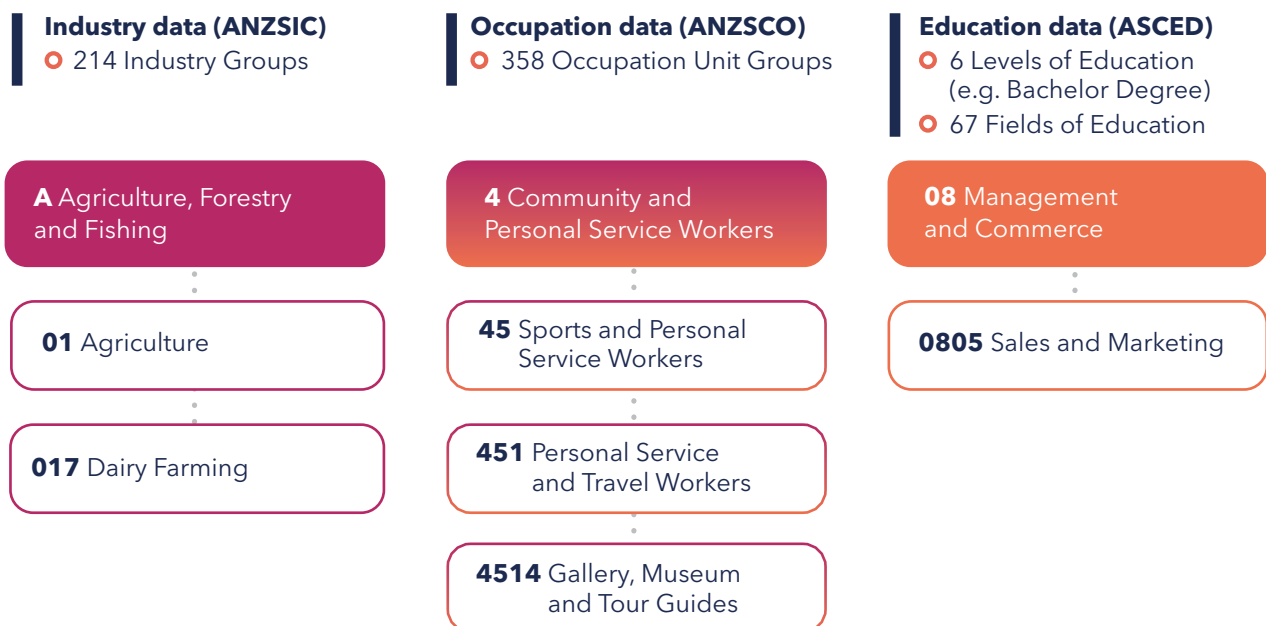
Scenarios present an arc in which the future may evolve. When contrasted with a baseline, the deviations of the scenarios from the baseline can be examined to measure their impact. This assists us to understand the underlying forces influencing the need for future skills.¹

Modelling was conducted using the Victoria University Employment Forecasts (VUEF) model, which is a family of models centred on the Victoria University Computable General Equilibrium (CGE) model of the Australian economy. It brings together a large body of demographic, employment and macroeconomic data, government and industry forecasts into a single set of detailed employment projections.² In late 2019, results were tested with a wide range of industry stakeholders.

Changes to government policy, economic forecasts, labour supply or other variables within the model may affect the modelling outcomes. It is more productive to focus on the trends that emerge rather than the numbers in isolation. It is important to note that modelling was finalised prior to the emergence of COVID-19 so does not take into account its impacts.

This report contains an overview of the Anticipating Future Skills project and presents high-level results concentrating on the baseline scenario. More detailed information about the methodology and scenarios is contained in the previous report.³ A complete set of data tools is available on the Jobs Queensland website at jobsqueensland.qld.gov.au/afs.

Figure 2 | Example of Australian Bureau of Statistics Classifications



1 Schoemaker, P.J.H. (1991). *When and How to Use Scenario Planning: A Heuristic Approach with Illustration*, Journal of Forecasting, 10:6, 549-564. Retrieved from ProQuest Central.
 2 Dixon, J. (2017). *Victoria University Employment Forecasts 2017 edition*. CoPS Working Paper No.G-277. Retrieved from <https://www.copsmodels.com/ftp/workpapr/g-277.pdf>.
 3 Jobs Queensland. (2017). *Anticipating Future Skills: Jobs growth and alternative futures for Queensland to 2022*. Retrieved from <https://jobsqueensland.qld.gov.au/anticipating-future-skills/>.

Impact of COVID-19

These employment projections were finalised in early 2020, before the emergence of COVID-19, and do not take into account the impact of the pandemic on the economy. At the time of publication, it was unclear how the current employment situation will affect the trends identified in the Anticipating Future Skills data or the length of time employment will be affected.

The data contained within this report remains relevant as a reference to trend for economic recovery and as an important tool in understanding the linkages between occupations and skills.

Initiatives

In 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 had immediate economic impacts.⁴ To help alleviate these impacts, the Australian Government announced additional welfare measures and the State government introduced a series of grants.

As the number of new infections slowed, some restrictions were eased. At the time of publication, the long term economic and employment implications of the pandemic were still unclear, however the immediate effects of government measures to contain the virus were emerging.

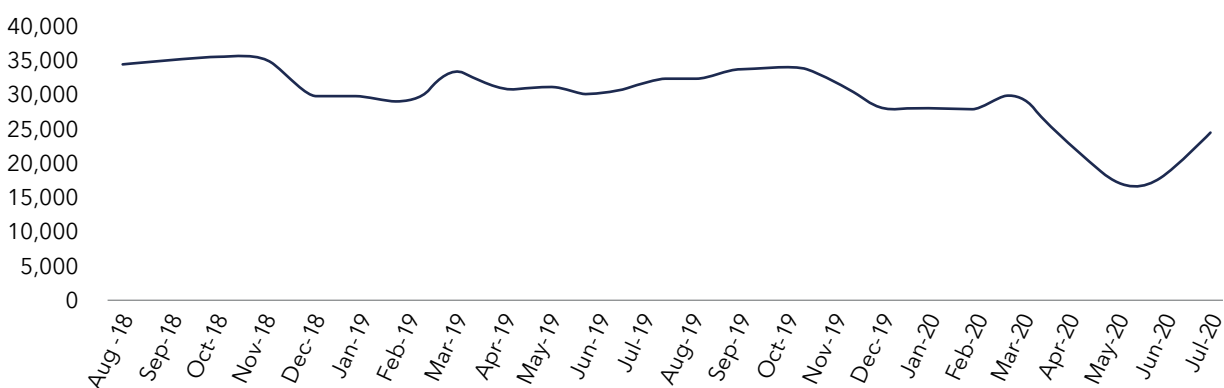
Economic impacts

In the March 2020 quarter, Australia entered a recession and Queensland State final demand fell by 0.3 per cent.⁵ A national business survey conducted in May 2020 by the Australian Bureau of Statistics (ABS) found that more than half of all Australian businesses had reduced the hours worked by staff while 24 per cent reduced their number of employees.⁶ By July 2020, 54 per cent of all surveyed businesses were in receipt of temporary cash flow support.⁷

Employment

Employment across many industries was negatively affected by the restrictions. International travel restrictions affected education and tourism; business closures saw jobs lost in hospitality, arts and recreation and parts of retail. Online vacancies halved between February and April 2020 before recovering somewhat by July (Figure 3).⁸ Between 14 March⁹ and 25 July 2020, the number of payroll jobs fell by 3.4 per cent. Anecdotally, some industries, such as supermarkets, mining and agriculture, were reported as experiencing limited or positive effects. However, the latest payroll jobs data shows most industries experienced an employment downturn (Figure 4).¹⁰

Figure 3 | Online vacancies, Queensland, 2 Years to July 2020



4 ABC. Retrieved from <https://www.abc.net.au/news/2020-05-04/charting-100-days-of-the-coronavirus-crisis-in-australia/12197884?nw=0>.

5 ABS 5206.0 - Australian National Accounts: National Income, Expenditure and Product, Mar 2020.

6 ABS 5676.0.55.003 - Business Indicators, Business Impacts of COVID-19, May 2020.

7 ABS 5676.0.55.003 - Business Indicators, Business Impacts of COVID-19, July 2020.

8 Department of Employment, Skills, Small and Family Business. Retrieved from <https://lmip.gov.au/default.aspx?LMIP/GainInsights/VacancyReport>.

9 This marked the week when the 100th Australian case of COVID-19 was confirmed.

10 ABS 6160.0.55.001 - Weekly Payroll Jobs and Wages in Australia, Week ending 25 July 2020.

Figure 4 | Change in Queensland payroll jobs (%) by industry, from week ending 14 March 2020 to 25 July 2020.



The State unemployment rate increased by more than 50 per cent, or 3.2 percentage points, between March and July, while the participation rate fell as people left the labour force (Table 1).¹¹

Table 1 | Labour force status, Queensland, July 2020

	Unemployment Rate (%)	Persons Unemployed ('000s)	Persons Employed ('000s)	Labour Force ('000s)	Participation Rate (%)
March 2020	5.6	153.1	2,558.9	2,711.9	65.5
June 2020	8.8	229.2	2,420.6	2,655.4	63.9

Specific impacts^{12 13}

- Those regions which are less reliant on the worst affected industries, such as Central Queensland and Mackay-Isaac-Whitsunday, have experienced fewer job losses than regions such as the Gold and Sunshine Coasts.
- People aged between 20 and 29 have suffered a decline in payroll jobs of 5.3 per cent, while payroll jobs for those older than 70 have fallen by 8.8 per cent.

- The impact on different sexes varies depending on the data source. According to the Payroll Job Index, males have lost a higher percentage of jobs than females. However, labour force survey data shows that the proportion of females in the labour force and in full-time employment has declined between March and July 2020.

While longer-term effects of COVID-19 are uncertain, this summary identifies some early impacts. Jobs Queensland will be undertaking further modelling to refine the Anticipating Future Skills projections.

¹¹ ABS 6202.0 - Labour Force, Australia, July 2020, seasonally adjusted, Table 6.

¹² ABS 6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, May 2020.

¹³ ABS 6160.0.55.001 - Weekly Payroll Jobs and Wages in Australia, Week ending 25 July 2020.

Employment in Queensland

Under the baseline scenario, employment in Queensland was projected to grow strongly with 2,728,883 workers in Queensland by 2024, compared with 2,494,452 in 2019.

By **2024...**



2.7 million
employed



+234,431
workers

↑9.4%

KEY FINDINGS

- >> Queensland is becoming more educated, with almost two million workers possessing a qualification.
- >> VET will be crucial in developing future skills and as a pathway to higher education.
- >> It was projected that almost 60 per cent of all new workers will be employed in just four industries - Health Care and Social Assistance; Professional, Scientific and Technical Services; Education and Training; and Accommodation and Food Services.
- >> More than one in six workers would have been employed in the Health Care and Social Assistance industry, while around one in ten would have worked in Retail Trade.
- >> Regions with the highest proportion of service industries were projected to see the greatest growth in employment, with most of the growth in the South East corner.

Industries

Size

Employment in all Queensland industries was anticipated to increase between 2019 and 2024 and more than half of all workers were projected to be employed in five industries (Figure 5):

- Health Care and Social Assistance
- Retail Trade
- Construction
- Education and Training
- Accommodation and Food Services

By 2024, one quarter of those employed in Health Care and Social Assistance were projected to work in Hospitals and around 16 per cent to work in Allied Health. Supermarket and Grocery Stores were projected to be the largest employing group in Retail Trade, while over 40 per cent of the Construction industry were projected to be employed in Building Installation and Completion Services.

School Education was projected to employ more than 50 per cent of all those employed in Education and Training. Almost 70 per cent of those employed in Accommodation and Food Services were projected to be employed in Cafes, Restaurants and Takeaway Food Services by 2024.

Growth

Besides being the largest employing industry in Queensland, Health Care and Social Assistance was also projected to grow most strongly, at 17.1 per cent (Figure 6). By 2024, more than one in six Queensland workers were projected to be employed in this industry, with employment in Residential Care Services projected to increase by more than 20 per cent.

Eight other Queensland industries were projected to experience above average employment growth (Table 2). Of these, the industry subdivisions increasing at the greatest rates were:

Table 2 | Largest industry subdivision growth, 2019-2024

Industry	Subdivision	Growth
Professional, Scientific and Technical Services	Computer System Design and Related Services	25.6%
Rental, Hiring and Real Estate Services	Property Operators and Real Estate Services	14.7%
Education and Training	Tertiary Education	17.8%
Arts and Recreation Services	Sports and Recreation Activities	11.4%
Transport, Postal and Warehousing	Other Transport	15.4%
Information Media and Telecommunications	Motion Picture and Sound Recording Activities	17.7%
Accommodation and Food Services	Accommodation	13.1%
Wholesale Trade	Machinery and Equipment Wholesaling	10.4%

While employment in some industries may have been projected to grow more slowly overall, this does not mean that all sectors of these industries would grow at the same rate. For example, while employment in Agriculture, Forestry and Fishing was projected to increase by 2.3 per cent, Aquaculture was projected to increase by more than ten times that amount.

Similarly, employment in Pharmaceutical and Medicinal Manufacturing was projected to increase at six times the rate that employment in Manufacturing was projected to increase by 2024.

Figure 5 | Industry employment and growth, 2019-2024

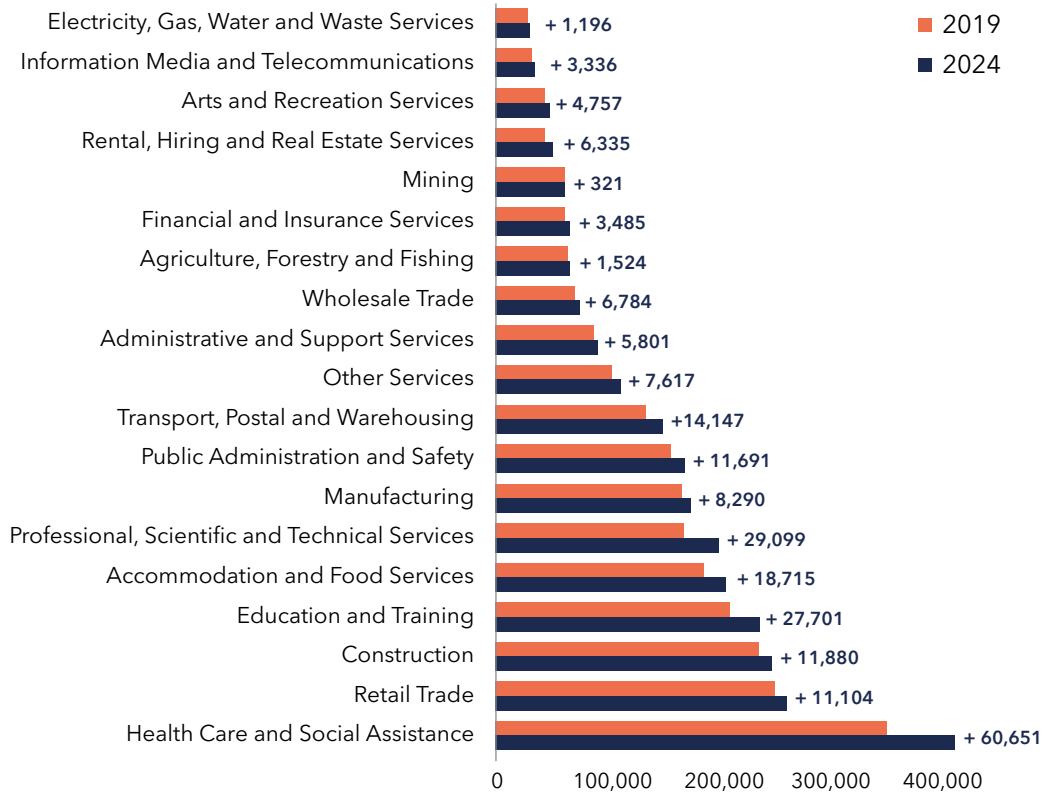


Figure 6 | Industry growth (%), 2019-2024



Regions¹⁴

Size

In 2024, the proportion of the Queensland workforce employed in South East Queensland was projected to remain around 71 per cent (Figure 7). Half of all Queensland workers in Financial and Insurance Services and Professional, Scientific and Technical Services were projected to be employed in Brisbane, which was projected to host 837,000 workers by 2024. The next biggest labour market is the Gold Coast, where more than 370,000 workers were projected to be employed by 2024. Around 53,000 of these were projected to be employed in Health Care and Social Assistance and almost 85,000 employed in Retail Trade and Accommodation and Food Services combined.

Cairns was projected to be the largest regional employer outside of the South East, with employment of 128,000 equating to almost five per cent of the State's workforce. By 2024, more than 19,000 people in the region were projected to be employed in Health Care and Social Assistance and a further 15,000 in Retail Trade.

The two smallest labour markets were projected to be Darling Downs-Maranoa (67,396 workers) and Queensland-Outback (40,071 workers). With 10,125 workers employed in Agriculture, Forestry and Fishing, Darling Downs-Maranoa was projected to be the second largest employer of workers in this industry, just behind Central Queensland. Queensland-Outback was projected to be the fourth largest employer of Mining workers, with more than 8,000 working in this industry by 2024.

Growth

Numerous factors influence employment growth in regions, including population growth and industry composition. The six regions projected to experience average or above average employment growth by 2024 were all regions with large service industries as well as strong population projections (Figure 8). Combined, they were projected to account for employment growth of almost 115,371 new workers by 2024.

An additional 23,000 workers were projected to be employed in Ipswich due to strong growth in Health Care and Social Assistance, Education and Training, and Public Administration and Safety. Growth in Health Care and Social Assistance, Professional, Scientific and Technical Services, and Accommodation and Food Services were projected to contribute to the additional 39,000 workers employed on the Gold Coast by 2024. The Sunshine Coast was projected to gain almost 20,000 new workers on the back of employment growth in Health Care and Social Assistance, Construction, and Education and Training.

The slowest growing regions in Queensland were those with a significant reliance on mining and agricultural employment, as well as smaller concentrations of fast-growing industries such as Health Care and Social Assistance, and Professional, Scientific and Technical Services. Population growth forecasts for these regions are also low, particularly for Queensland-Outback and Darling Downs-Maranoa. Nevertheless, it was projected that there were to be an additional 2,500 additional workers in each of these regions by 2024.

14 The regions used in this project are based on Statistical Area Level 4 (SA4) regions, as defined by the Australian Bureau of Statistics (see Appendix C). There are 19 SA4s in Queensland; the five Brisbane SA4s have been combined in this report to take into account the larger natural labour market.

Figure 7 | Industry employment by region in 2024

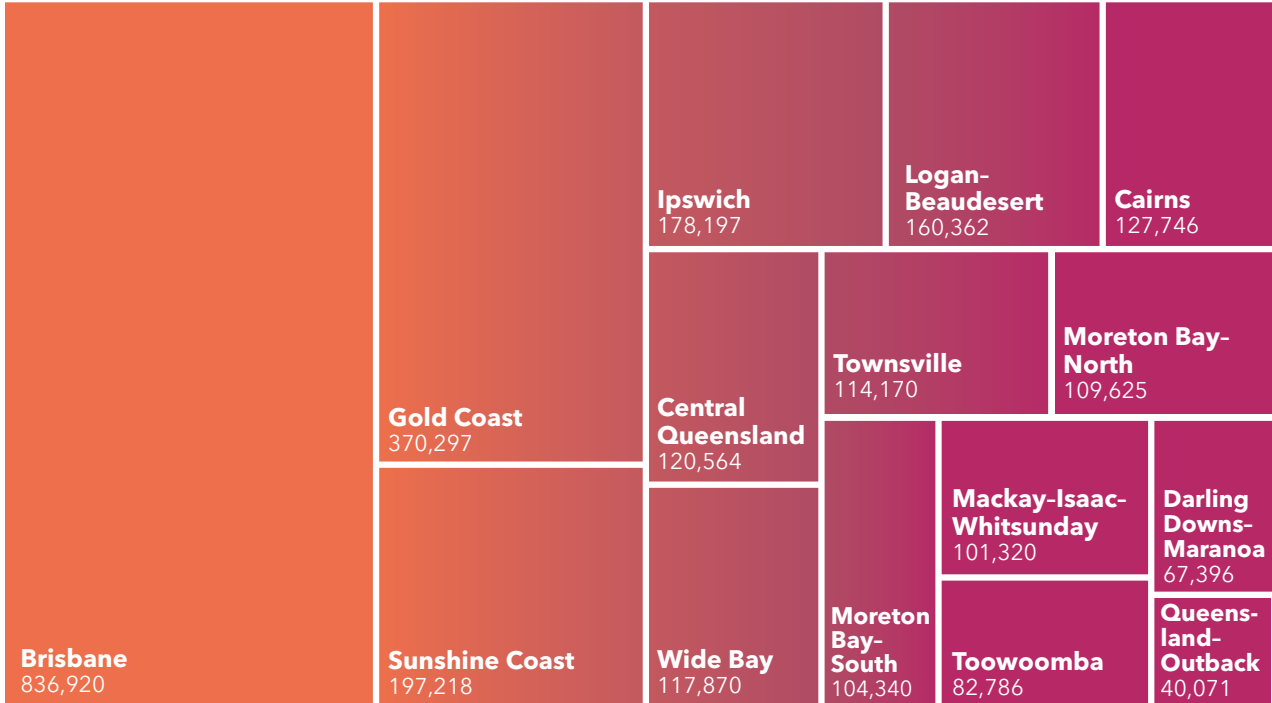
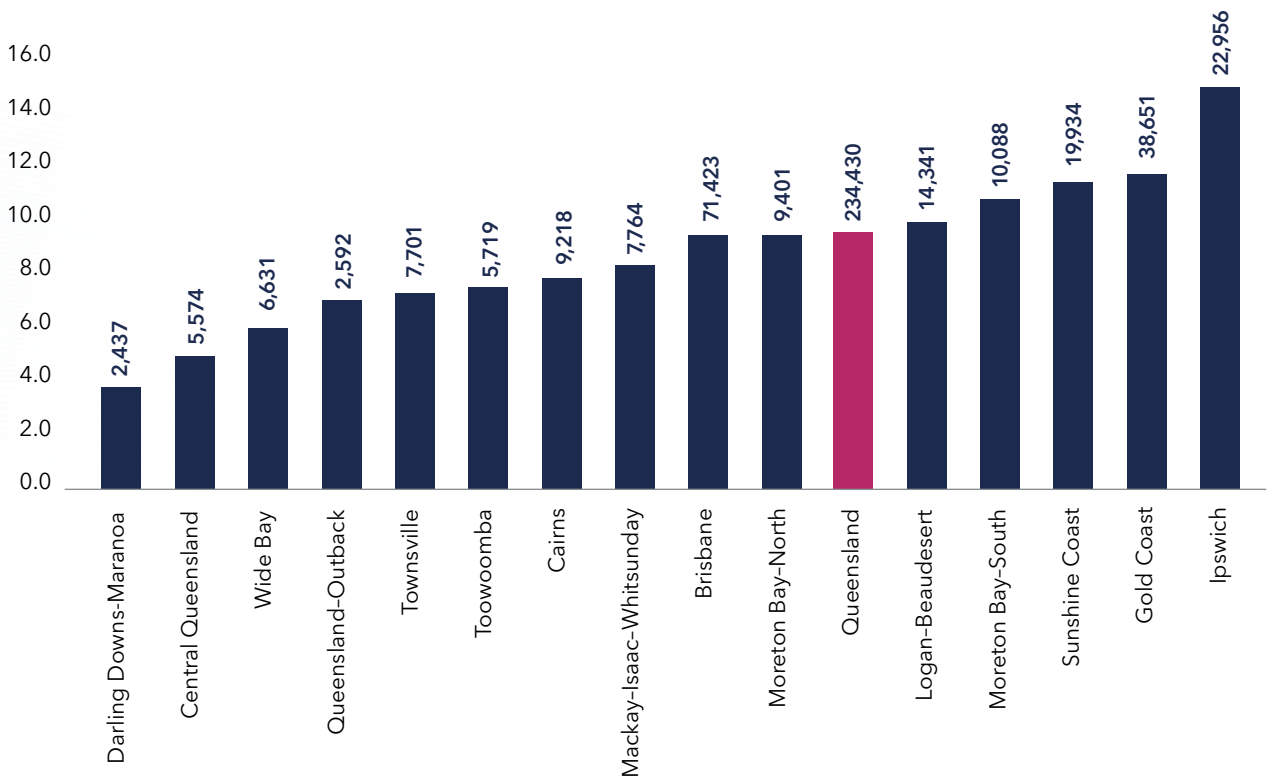


Figure 8 | Regional employment change (% and numbers), 2019-2024



Occupations

Size

By 2024, it was projected that there would be almost 620,000 Professionals employed in Queensland - over 1.5 times more than the next largest Major Occupation of Technicians and Trades Workers (Figure 9). One quarter of these were Health Professionals, but significant numbers were also employed as Education Professionals and Business, Human Resource and Marketing Professionals.

The largest occupations in Technicians and Trade Workers were projected to be Automotive and Engineering Trades Workers and Construction Trades Workers, which, combined, accounted for more than 40 per cent of the workforce. At almost 45 per cent, Carers and Aides were projected to be a significant part of the Community and Personal Service Workers occupations. Specialist Managers were projected to make up a similar proportion of Managers.

Around one in four people employed as Labourers were Cleaners and Laundry Workers, while two-thirds of people employed in the Sales Workers occupations were Sales Assistants. Almost half of those in the Machinery Operators and Drivers occupations were projected to be employed as Drivers.

Growth

Professionals, the largest major occupational grouping, was projected to increase by almost 23,000 people or 16.1 per cent by 2024. The greatest increase was to be in Legal, Social and Welfare Professionals, followed closely by ICT Professionals.

Unsurprisingly, the projected growth in Health Care and Social Assistance between 2019 and 2024 saw employment in occupations related to this industry anticipated to expand. Employment for Community and Personal Service Workers was projected to grow by 14.3 per cent or almost 42,000 workers, with over half of this growth attributed to Carers and Aides.

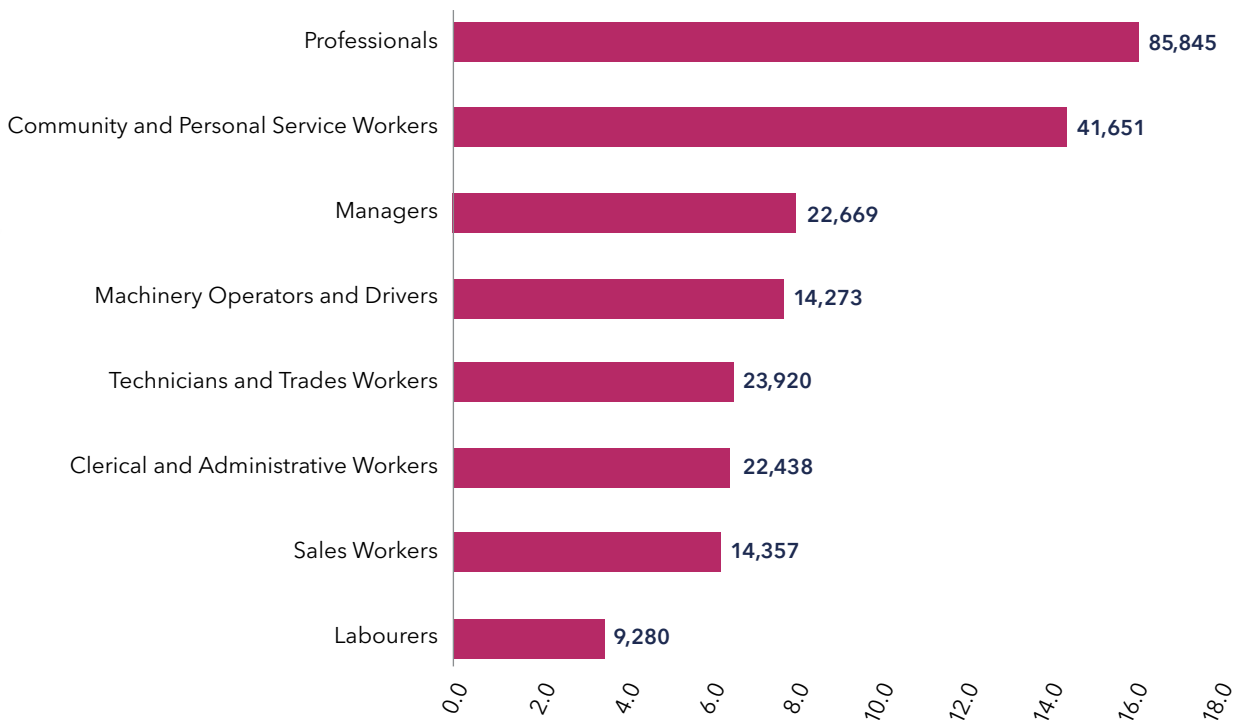
The Major Occupation group of Managers was projected to increase by around 23,000 people, with Specialist Managers to increase by 12.1 per cent. However, the number of Farmers and Farm Managers (part of this Major Occupation) were projected to decline by 1.6 per cent, or around 540 people, by 2024.

The number of Labourers employed in Queensland was projected to increase by 3.6 per cent, or around 9,300 people. While Cleaners and Laundry Workers make up almost 25 per cent of this occupation, they were projected to increase at below average (4.1 per cent). Instead, it was Food Preparation Assistants who were projected to experience the greatest growth by 2024, with an increase of 7.8 per cent or almost 3,200 more workers by 2024. This increase was driven by projected growth in services as well as increased demand from the Health Care and Social Assistance industry. By 2024, it was projected that there will be almost 620,000 Professionals employed in Queensland, over 1.5 times more than the next largest major occupation of Technician and Trades Workers (Figure 10). One quarter of these are Health Professionals, but significant numbers are also employed as Education Professionals and Business, Human Resource and Marketing Professionals.

Figure 9 | Occupation employment by size, 2024



Figure 10 | Major Occupation employment growth (% and numbers), 2019-2024



Qualifications

Qualification levels

The Queensland workforce is becoming more educated, with the number of workers with qualifications increasing by 13.9 per cent by 2024. The number of Queensland workers with

no post-school qualifications will decline by 2024 and the proportion of workers with qualifications was projected to increase at all levels except for Certificate I and II (Table 3).

Table 3 | Proportion of Queensland workforce and new qualifications

Qualification Level	2019	2024	New qualified workers
Postgraduate Degree Level	7.4%	8.5%	49,371
Graduate Diploma and Graduate Certificate Level	2.8%	3.0%	10,056
Bachelor Degree Level	21.0%	22.3%	83,329
Advanced Diploma and Associate Degree Level	11.8%	12.2%	37,909
Certificate III & IV Level	24.3%	24.7%	68,174
Certificate I & II Level	1.3%	0.9%	-10,069
No post-school	31.4%	28.5%	-4,337

It was projected that by 2024 there would be an additional 238,770 qualified workers in Queensland, with more than one-third of these new qualifications at Bachelor Degree level. More than half of these workers with Bachelor Degrees were projected to be Professionals, especially Health and Education professionals.

Postgraduate Degree qualifications were projected to experience the highest growth at 26.9 per cent, while Graduate Diploma and Graduate Certificate qualifications were projected to increase by a more moderate 4.2 per cent (Figure 11).

VET will continue to play a major role in future work, with almost 35 per cent of all workers projected to have Certificate III and IV qualifications by 2024. In addition, VET will make a significant contribution as a pathway to higher-level qualifications.

Field of Education

In 2014, more than 439,000 Queensland workers were projected to have qualifications in Management and Commerce by 2024, which is almost 60,000 more than in 2019 (Figure 12). This Field of Education was projected to be responsible for one in four new qualifications by 2024.

Almost half of these new qualifications are in Business and Management and around one-fifth are in Accounting.

The next largest Field of Education is Engineering and Related Technologies, which was projected to increase by 9.4 per cent to 333,057 workers by 2024. This included an additional 17,239 workers with qualifications in Automotive Engineering and Technology and 8,684 more workers with qualifications in Electrical and Electronic Engineering and Technology

Society and Culture was projected to be the fastest growing Field of Education, increasing by 17.2 per cent, or 40,465 workers, by 2024. Over a third of these qualifications were in Human Welfare Studies and Services and Community and Personal Service occupations accounted for almost 60 per cent of the workers gaining qualifications in this Field of Education.

Health was also projected to grow strongly, increasing by 17.1 per cent to 250,682 by 2024. Of the almost 37,000 workers with new Health qualifications in 2024, more than 17,000 were in Nursing, followed by almost 5,500 in Medical Studies.

Figure 11 | Queensland workforce by Level of Qualification and change (%)

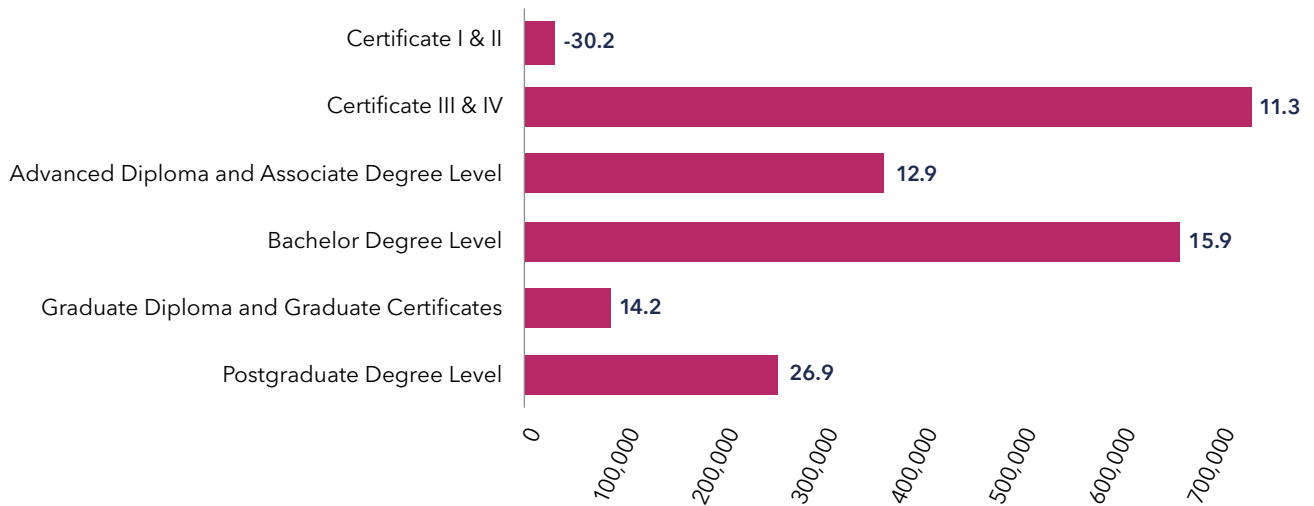
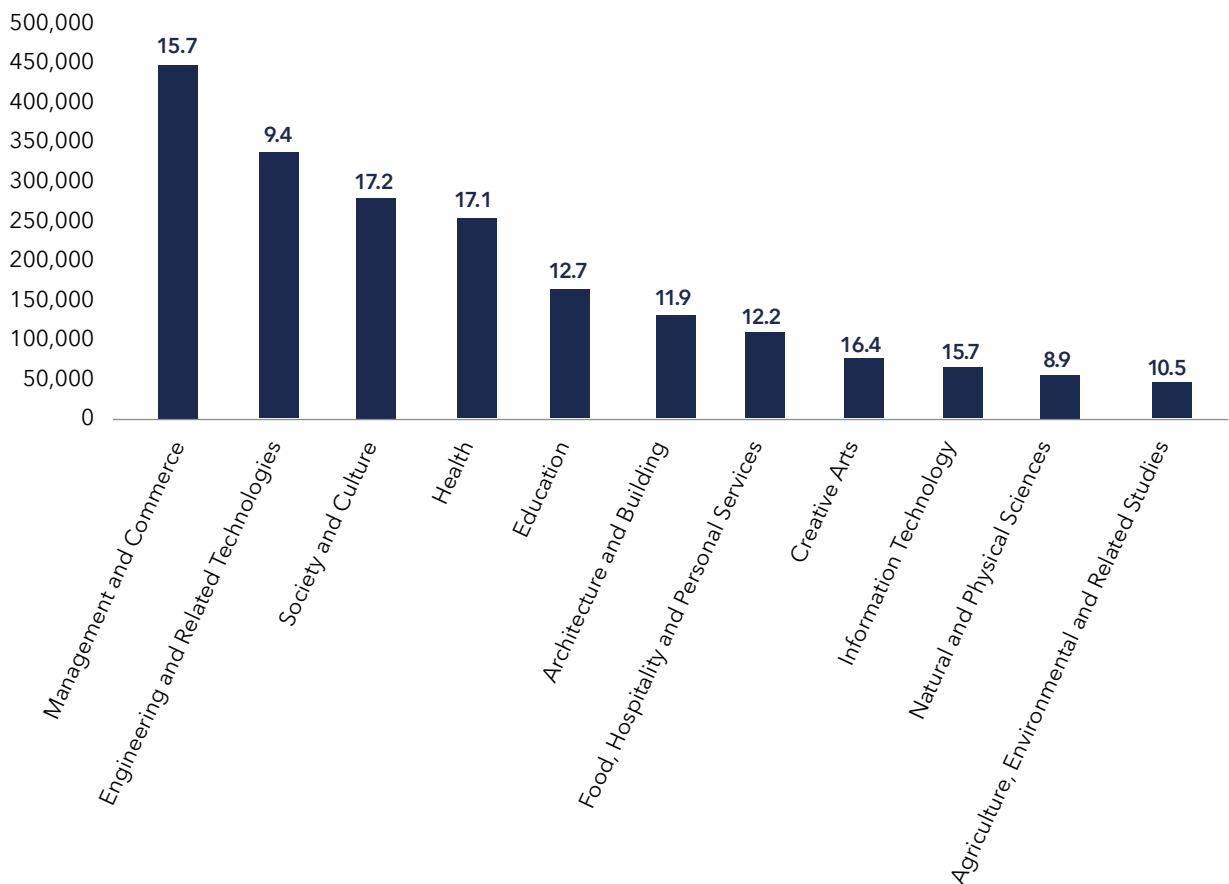


Figure 12 | Queensland workforce by Field of Education and change (%)



Level of Education combined with Field of Education

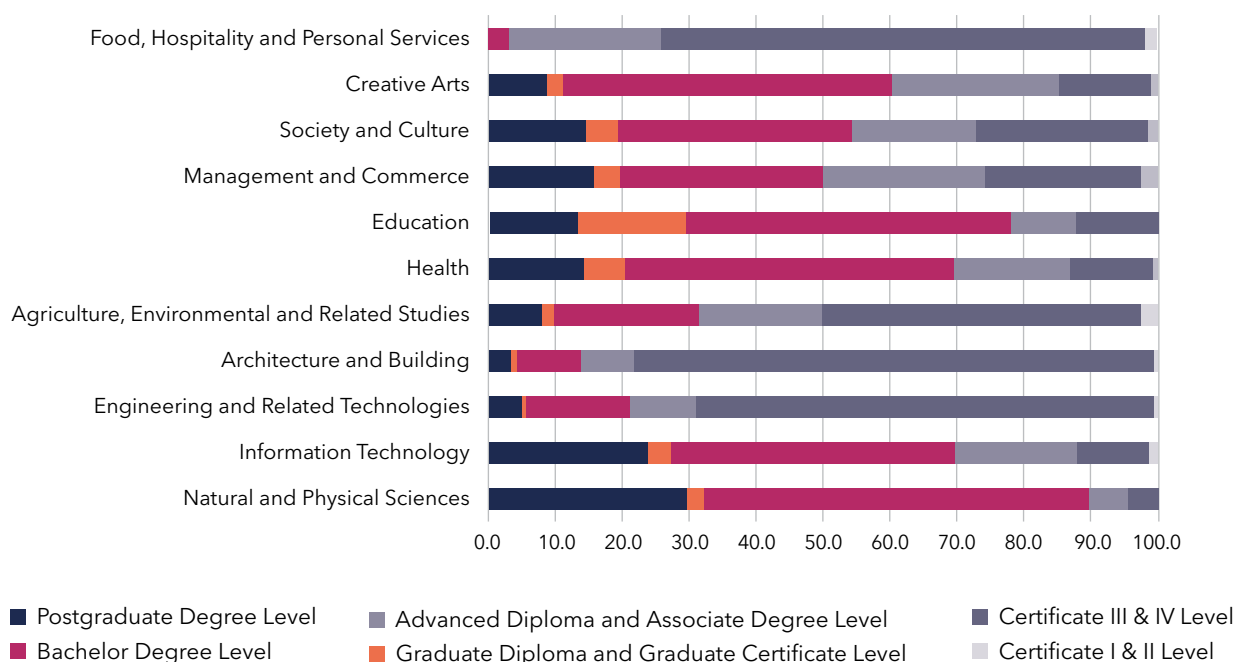
The modelling shows little proportional change for Fields of Education between 2019 and 2024 baseline numbers but changes in rates of growth are evident (Table 4).

For instance, the growth in Bachelor Degrees in Natural and Physical Sciences was projected to be around half that of Engineering and Related Technologies (Figure 13).

Table 4 | Change (%) in Field of Education by Qualification Level, 2019 to 2024

	Postgraduate Degree	Graduate Diploma & Graduate Certificate	Bachelor Degree Level	Advanced Diploma & Associate Degree Level	Certificate III & IV	Certificate I & II
Natural and Physical Sciences	17.4	5.1	6.5	2.3	1.6	-38.1
Information Technology	26.8	14.0	15.6	11.5	11.1	-31.9
Engineering and Related Technologies	23.3	11.1	12.5	9.0	8.5	-32.5
Architecture and Building	24.7	11.7	14.6	11.3	11.5	-29.8
Agriculture, Environmental and Related Studies	25.1	12.7	14.4	10.6	10.3	-31.6
Health	28.4	15.7	17.2	13.7	13.4	-30.2
Education	23.4	11.3	12.8	8.9	8.6	-33.4
Management and Commerce	29.5	16.4	18.1	14.2	13.8	-29.8
Society and Culture	29.3	16.9	18.9	14.7	14.4	-29.0
Creative Arts	28.8	15.8	17.8	13.9	14.0	-29.9
Food, Hospitality and Personal Services	0.0	16.2	17.9	13.7	13.1	-29.0

Figure 13 | Proportion of Qualification Level by Field of Education, 2024



Scenarios

While economic modelling is useful for simplifying and predicting economic trends, it is not necessarily useful for dealing with high levels of complexity and uncertainty. Scenario planning is one method of dealing with this uncertainty, as scenarios present an arc in which the future may evolve. When contrasted with a baseline, the deviations of the scenarios from the baseline can be examined to measure their impact. This assists us to understand the underlying forces influencing the need for future skills.¹⁵

The scenarios used in this project were devised after a series of workshops with Jobs Queensland stakeholders across the State.



SCENARIO ONE: Technological change:

increasing labour productivity of all industries in Queensland so that the productivity of each is 0.25 per cent higher than the baseline annually between 2019 and 2024.

SCENARIO TWO: Changing workforce:

increasing interstate migration with a decreasing proportion of working-age population.

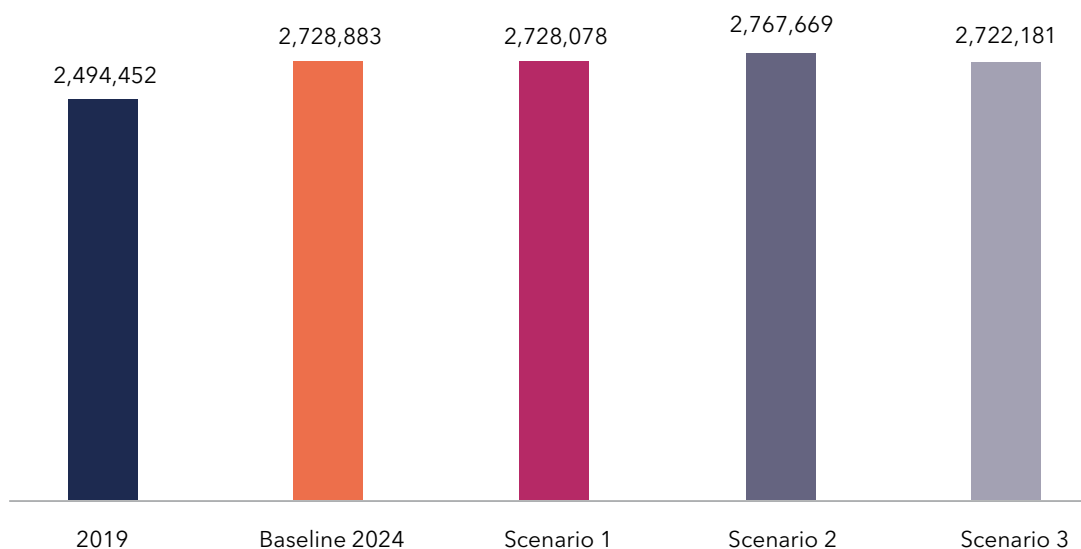
SCENARIO THREE: External impact:

halving the price of coal and iron ore.

Regardless of the scenario, employment in Queensland was projected to increase by 2024 to more than 2.7 million (Figure 14). However, each scenario produces a different effect.

At the State level, Scenario Two was projected to have a greater positive effect on employment than the baseline. The other scenarios slow employment growth slightly.

Figure 14 | Employment in Queensland by scenario, 2024



These scenarios will affect regions, industries and occupations differently. For instance, Scenario Two has a positive effect on employment in the Gold Coast, due to the size of its service industries such as Health Care and Social Assistance and Food and Accommodation Services, which service a larger population.

Unsurprisingly, employment in Mining and mining-related occupations was projected to decline under Scenario Three but export-oriented industries such as Agriculture, Forestry and Fishing tend to increase employment as they react positively to a falling Australian dollar which occurs under this scenario.

¹⁵ Schoemaker, P.J.H. (1991). *When and How to Use Scenario Planning: A Heuristic Approach with Illustration*, Journal of Forecasting, 10:6, 549-564. Retrieved from ProQuest Central.

Questions for policy and practice

In addition to these major findings, the modelling results have also revealed other issues for consideration.

Hours worked

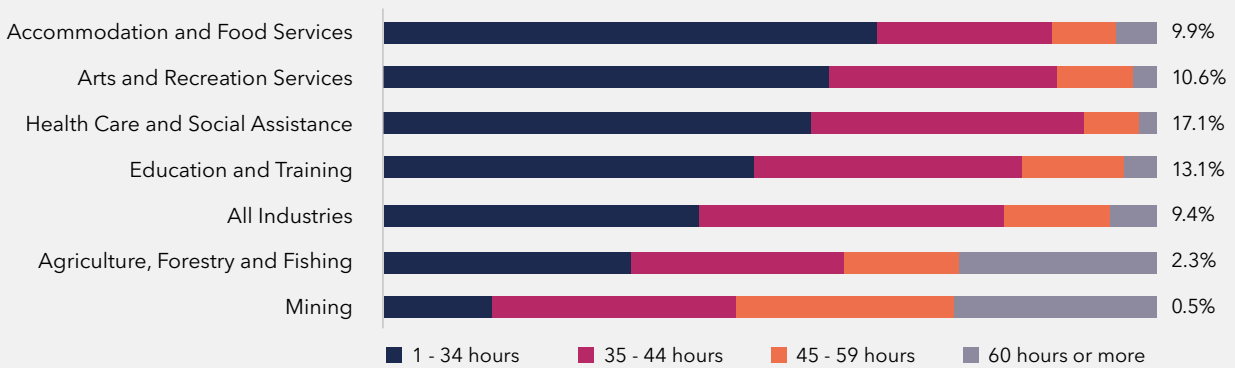
While employment was projected to increase across all industries by 2024, consideration should also be given towards the number of hours typically worked within each.

Industries that employed significant numbers of workers for less than 35 hours per week, such as Accommodation and Food Services, Arts and Recreation Services and Health Care and Social

Assistance, were projected to grow faster than the State average (Figure 15). Workers in these industries were also more likely to hold more than one job relative to all workers in the labour market.¹⁶ This suggested that the issues associated with levels of underemployment may continue.

Conversely, employment growth was projected to be lower than the State average in some industries characterised by employment in excess of 45 hours per week. This included Mining, and Agriculture, Forestry and Fishing, with the latter also the oldest industry by average age of employment.

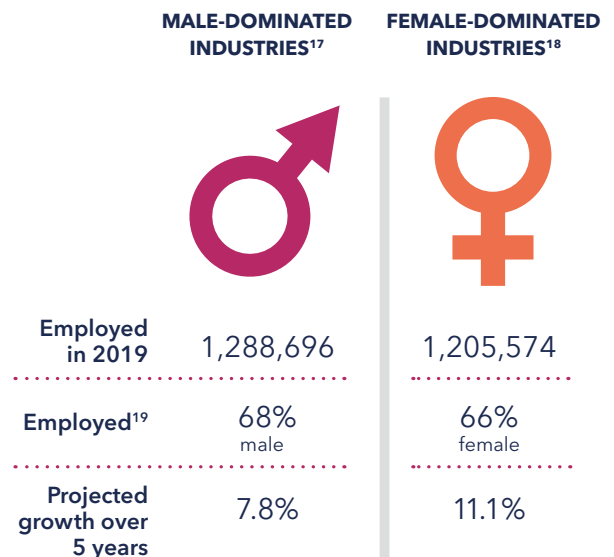
Figure 15 | Selected industries, hours actually worked and growth by 2024



Whether these contrasting results between industry growth and average working hours are issues to address will ultimately depend on the individuals working within each industry and their own personal circumstances and motivations.

Sex

Employment in industries with a predominantly male workforce was projected to grow more slowly than in those which employed more females. While the numbers of employed males and females are projected to be similar in 2024, total employment in female-dominated industries was projected to grow at more than 1.4 times the rate of those industries employing mostly males.



¹⁶ ABS. 6150.0.55.003 - Labour Account Australia, Quarterly Experimental Estimates, September 2019.

¹⁷ Includes Construction; Mining; Electricity, Gas, Water and Waste Services; Transport, Postal and Warehousing; Manufacturing; Wholesale Trade; Agriculture, Forestry and Fishing; Information Media and Telecommunications; Public Administration and Safety; Other Services; Professional, Scientific and Technical Services; and Arts and Recreation Services.

¹⁸ Includes Rental, Hiring and Real Estate Services; Administrative and Support Services; Financial and Insurance Services; Accommodation and Food Services; Retail Trade; Education and Training; and Health Care and Social Assistance.

¹⁹ ABS. (2016). *Census of Population and Housing - Counting Employed Persons, Place of Work (POW), State and Age by Industry*. Findings derived from ABS TableBuilder.

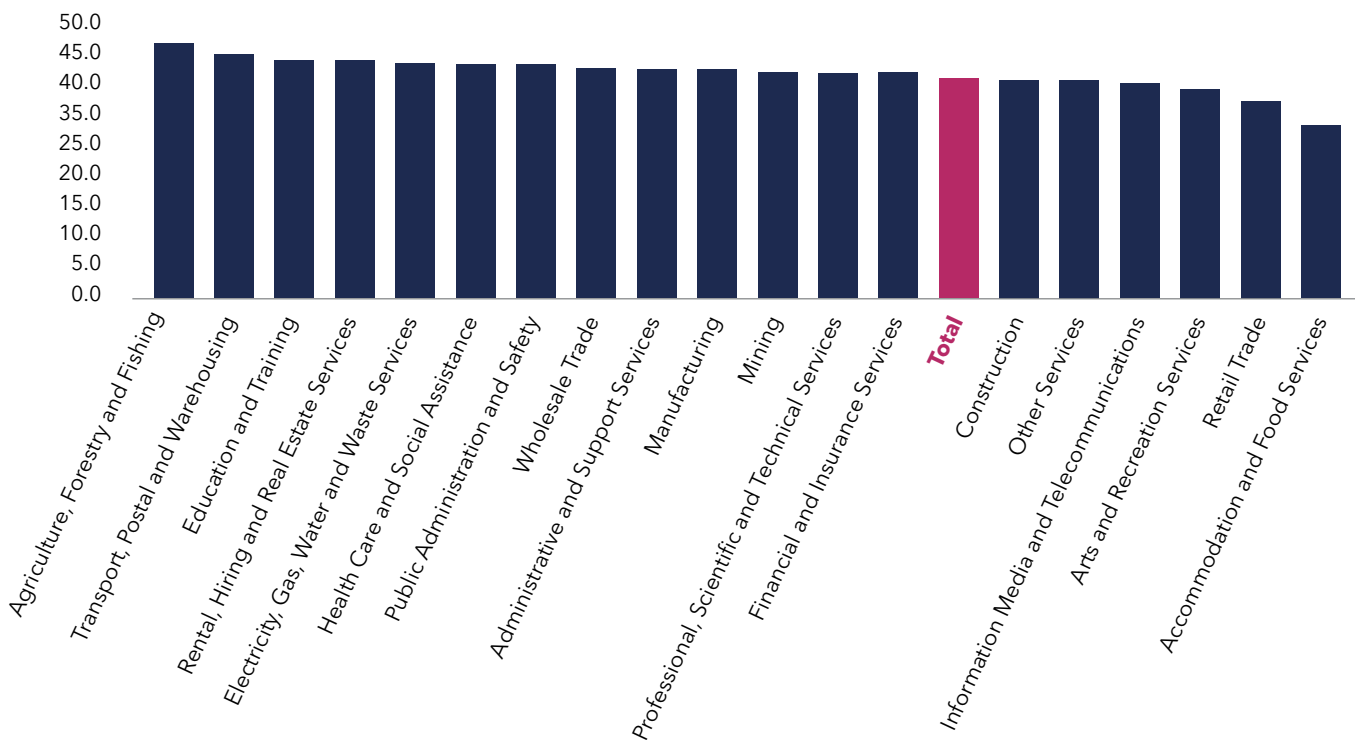
This result partly reflected growth in services industries (particularly Health Care and Social Assistance) and the increasing participation rates and employment of females compared to males. It suggested that there were likely to be varying future employment opportunities between males and females.

Ageing workforce

It was projected that about two thirds of all workers would be employed in industries where the average age was above the current State average of 40.5 years (Figure 16).²⁰ Of the top six industries with the highest average age, four were projected to experience above average employment growth.

As technology continues to alter job roles and tasks, experienced workers (more likely to be older) may be required to reskill or upskill in many industries. This may prove challenging in industries characterised by a high proportion of full-time workers spending higher than average hours working.²¹ Ageing workforces may also have increased caring responsibilities or health issues. As older workers retire, employment opportunities for those entering the workforce for the first time (particularly younger workers) may emerge.²² These circumstances pose challenges for industries and employers in areas such as job design, working conditions and training.

Figure 16 | Average age (years) by industry, 2016



20 ABS. (2016). *Census of Population and Housing - Counting Employed Persons, Place of Work (POW), State and Age by Industry*. Findings derived from ABS TableBuilder.

21 Such as Agriculture, Forestry and Fishing and Transport, Postal and Warehousing.

22 Gahan P. & Healy, J. (2017). *The challenge and opportunity of an ageing workforce*. Retrieved from <https://pursuit.unimelb.edu.au/articles/the-challenge-and-opportunity-of-an-ageing-workforce>.

Entry-level jobs

Occupations more commonly worked part-time and with a lower than average age are those that provide the bulk of entry-level opportunities for younger people seeking to establish themselves in the labour market.

Problematically, employment growth in several of these occupations was projected to be below the State average over the five years to 2024, which may have had an impact on the availability of 'traditional' employment opportunities for younger workers into the future (Figure 17).

Figure 17 | Occupations employing young workers part-time²³

	Shelf Fillers	Sales Assistants (General)	Checkout Operators
Average age (years)	27.6	25.7	20.2
Total workforce ('000s)	10.9	106.3	21.6
Youth employed part-time ('000s)	3.8	42.4	11.8
Projected growth over five years (%)	-4.3	4.8	7.9

An educated workforce

The Queensland workforce will become more educated. As the economy evolves, the number of higher skilled jobs will increase, as will the demand for suitably skilled workers to fill these roles.

Regardless of the scenario, nine out of ten future jobs were projected to be supported by the attainment of a VET qualification, either as the means to secure new employment or as a part of a higher education pathway (Table 5).

Table 5 | Occupations with largest number of new jobs by 2024

Occupations	New jobs
General Clerks	11,331
Registered Nurses	11,014
Aged and Disabled Carers	7,666
Sales Assistants (General)	5,249
Accountants	4,259
Education Aides	4,216
Nursing Support and Personal Care Workers	4,170
Primary School Teachers	3,958
Child Carers	3,792
Software and Applications Programmers	3,448

VET Qualification
 VET Pathway
 Degree

Queensland's vocational education and training (VET) system will therefore remain critical to shaping our future workforce.

An ongoing challenge for the VET system is to ensure that training design and content respond to projected changes in future employment.²⁴

²³ Figures derived from ABS (2016) Census of Population and Housing data and Anticipating Future Skills baseline figures.

²⁴ Jobs Queensland. (2019). *Future work, future jobs*. Retrieved from <https://jobsqueensland.qld.gov.au/futurework>.

Replacement demand

While the Anticipating Future Skills projections deal with new jobs arising from employment growth, this is not the only source of employment. Job opportunities for new entrants also arise through replacement demand when workers leave an occupation. While permanently leaving a job may be associated with retirement from the labour force (e.g. teachers), in others it is associated with leaving one occupation for a different one (e.g. a retail worker becoming a hairdresser).

Replacement demand may be a greater source of job opportunities than employment growth; indeed, if employment in an occupation declines, then replacement demand will be the only source of job opportunities in that occupation.

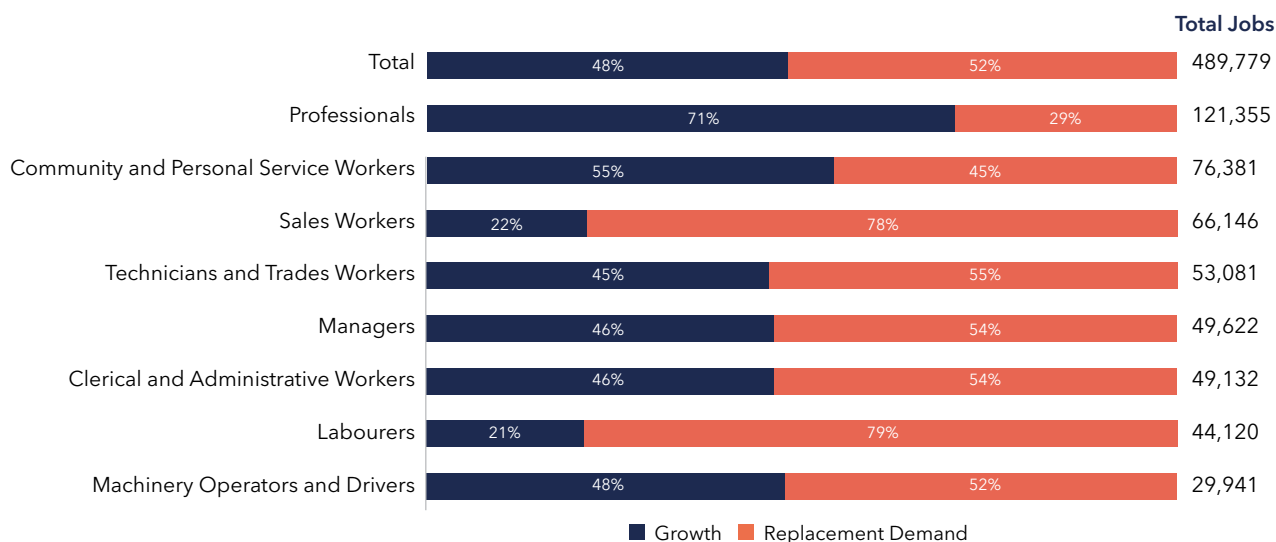
Jobs Queensland has commissioned replacement demand modelling to complement the Anticipating Future Skills data. When combined with employment growth, replacement demand allows users to gain a more comprehensive understanding of total job openings for an occupation at the State level.

Job openings

Job openings for new entrants are calculated by adding the projected employment growth for an occupation and the related replacement demand. By 2024, almost half a million job openings were projected for Queensland (Figure 18).

Replacement demand was projected to generate more than 253,300 job openings for new entrants across all occupations between 2020 and 2024, compared with around 234,400 jobs created by employment growth.

Figure 18: Proportion (%) and total baseline job openings for new entrants by Major Occupation, Queensland, 2024



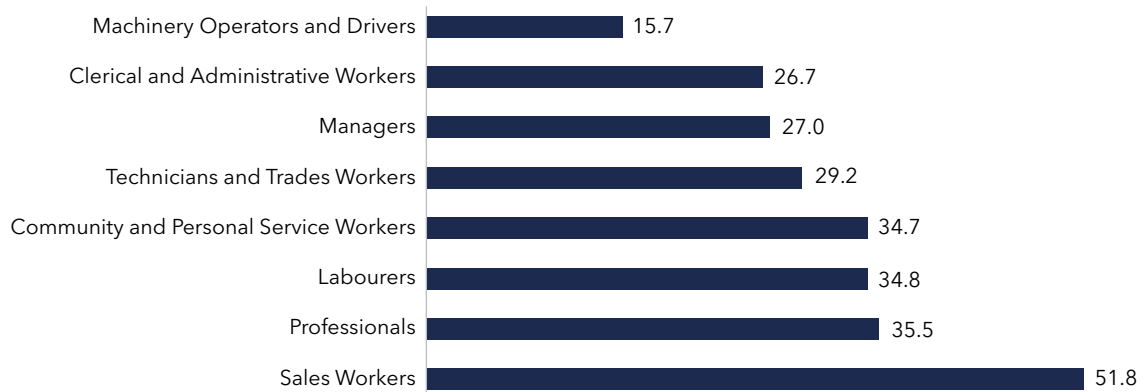
Occupations

The largest number of job openings was for the largest occupational group, Professionals. Of around 121,000 job openings, more than 70 percent was from employment growth. By contrast, replacement demand was responsible for three quarters of all job openings for both Sales Workers and Labourers.

Sales Workers were projected to have the highest replacement demand, with Machinery Operators and Drivers to have the lowest (Figure 19). Almost 40 per cent of Sales Workers are younger than 25 years of age and there is a sharp decline in the proportion aged 25-29, suggesting that most of these workers leave after working for a relatively short period.²⁵ Occupations such as this, with skewed age distributions, are generally projected to have higher replacement rates.

25 ABS, 6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, February 2020.

Figure 19: Baseline replacement demand ('000s) by Major Occupation, Queensland, 2024²⁶

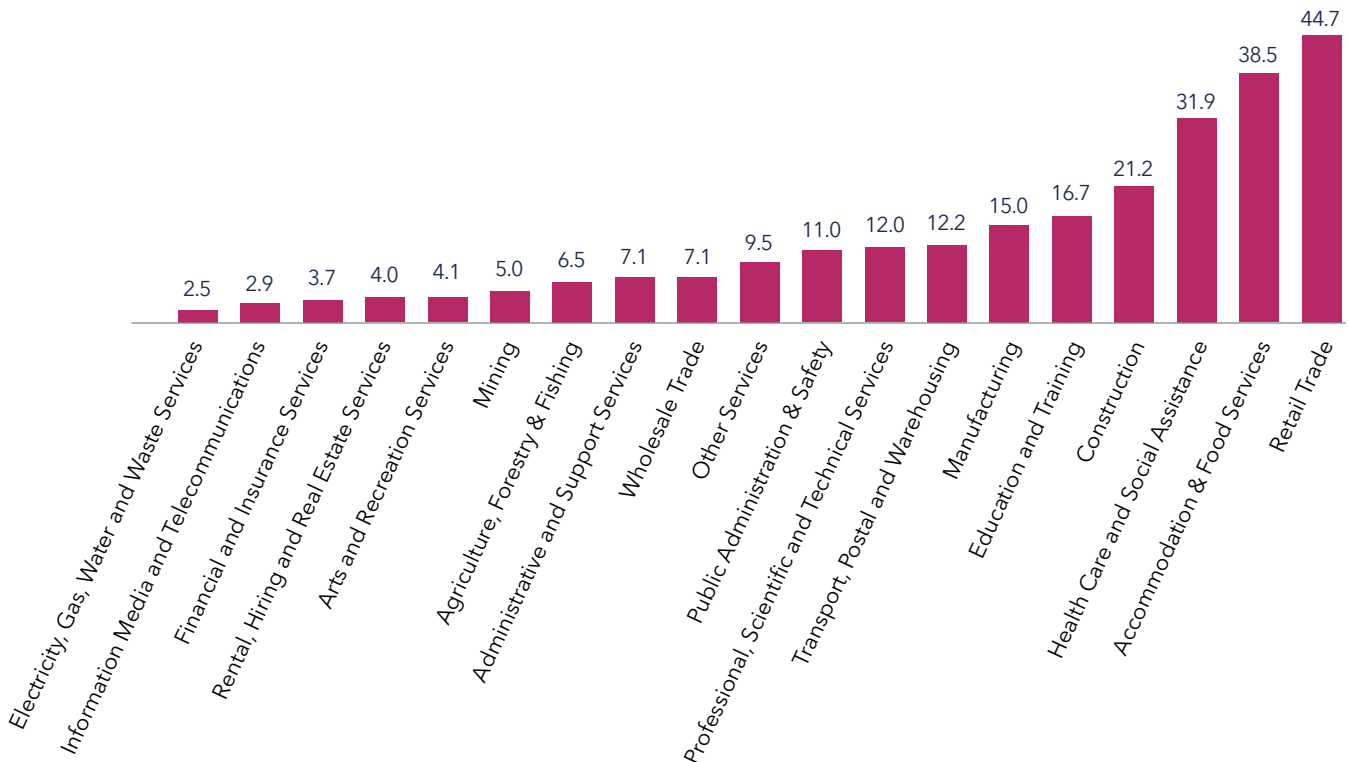


Industries²⁷

The two industries with the highest replacement demand were those with the highest proportions of workers aged between 15 and 24 years and occupations with high replacement demand

such as Sales Assistants and Salespersons, Food Preparation Assistants, Hospitality Workers, and Checkout Operators.

Figure 20 | Baseline replacement demand ('000s) by Industry Division, Queensland, 2024²⁸

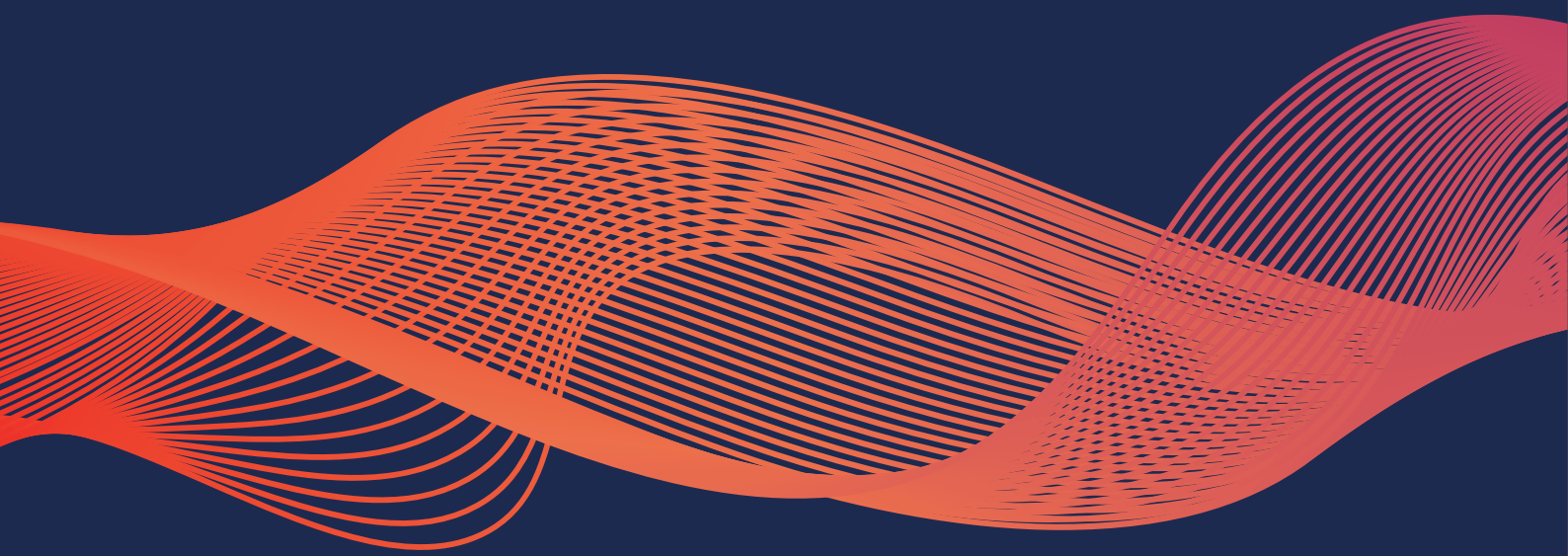


²⁶ Projections derived from aggregating data at ANZSCO Minor level.

²⁷ As industry replacement demand is derived from occupational data, there may be discrepancies between AFS employment projections and the new jobs data used in these estimates.

²⁸ Projections derived from aggregating data at ANZSIC Subdivision level.





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