

# THE FUTURE WORKFORCE: MELBOURNE'S NORTH

2022-2032

EVIDENCE  
REPORT



SUPPORTING PARTNERS:



Jobs,  
Precincts  
and Regions



# **A report for NORTH Link**

**March 2022**

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**While the National Institute endeavours to provide reliable forecasts and believes the material is accurate it will not be liable for any claim by any party acting on such information.**

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# **THE FUTURE WORKFORCE: MELBOURNE'S NORTH 2022-2032**

## **EVIDENCE REPORT**

# List of contributing organisations to roundtables and interviews

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7 Chefs  
Advanced Business  
Always Time For Cake Melb  
Araluen  
Austracold  
Australia Pacific Airports Corporation  
Banyule City Council  
Bob McQuillen (NORTH Link Board)  
Bolton Clarke  
Brite  
Brotherhood of St Laurence  
Brunswick Industries Association Inc  
Caravan Industry Victoria  
Central Ranges LLEN  
Classica International  
Close the Loop  
Connect Health  
Contemporary Arts Precincts  
Corpus Christi Greenvale  
Creative Victoria  
Darebin City Council  
Denim 108 Pty Ltd  
Department of Education and Training  
Department of Jobs, Precincts and Regions  
DHL  
District 3429  
Dorothy Impey Home  
DPV Health  
Edlyn Foods  
Empirics Data Solutions  
FCW Lawyers  
Florida Cheese  
Food Inc  
Food Pro  
Forget Me Not Eatery  
Gallery 7six5  
Glenroy Bakery  
Goonawarra  
GOTAFE  
Greg O'Brien (NORTH Link Board)  
Health Ability  
Hume City Council  
Hume Whittlesea Local Learning Employment Network (HWLLEN)  
IAPA  
ICAL International Customs and Logistics Pty Ltd  
Independent Software Advisors  
Inner North Community Foundation  
Inner Northern Local Learning Employment Network (INLLEN)  
Integra Systems  
Jemena  
Kangan Institute

Krash and Co.  
La Trobe University  
Linc Horton (Chair, NORTH Link Board)  
Living Legends  
LLEN Group  
MAB  
Mantra  
Marnong Estate  
Marshall Street Studios  
Melbourne Airport  
Melbourne Innovation Centre  
Melbourne Market Authority  
Melbourne Polytechnic  
Mitchell Shire Council  
Moreland City Council  
Music Victoria  
Nationwide Seafood  
Naturally Good Products Pty Ltd  
NBN Co  
Nillumbik Shire Council  
NORTH Link  
Northern Councils Alliance  
Northern Health  
Northern Metropolitan Partnership  
OCG  
Outer Urban Projects  
PPHG  
Pracademy  
Procal Dairy  
Quest Apartments  
RCA  
Repurpose It  
Riverlee  
Rizo Desserts  
RMIT University  
Royal Nut Company  
Safi  
Sealane  
Snap Preston  
Terra Firma  
Textured Concept Foods  
The Push  
This Undercurrent  
Three Blue Ducks  
Urbsurf Melbourne  
Victoria University  
Victorian Skills Authority  
Vincent Care  
Vision Automotive Technology  
Whittlesea City Council  
Yarra Valley Water



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# Melbourne's North

### Planned transformative projects

- Beveridge Intermodal Freight Terminal
- Broadmeadows Revitalisation
- Epping Innovation and Food Export Hub
- La Trobe University City of the Future Redevelopment
- Melbourne Airport Rail
- Melbourne Metro 2
- New Outer North Hospital
- North East Link
- Outer Metropolitan Ring
- ES (proposed)
- Suburban Rail Loop

### Existing key infrastructure

- La Trobe University
- Melbourne Airport
- Melbourne Market
- Rail network
- State Significant road corridor
- Hospitals

### Local government areas

- Banyule
- Darebin
- Hume
- Mitchell
- Moreland
- Nilumbik
- Whittlesea

### Priority precincts

- Broadmeadows
- Cloverton/Beveridge
- Epping
- La Trobe

The map illustrates the strategic infrastructure and development plans for Melbourne's northern region. It highlights several key areas and projects:

- Planned Transformative Projects:** These include the Beveridge Intermodal Freight Terminal, Broadmeadows Revitalisation, Epping Innovation and Food Export Hub, La Trobe University City of the Future Redevelopment, Melbourne Airport Rail, Melbourne Metro 2, New Outer North Hospital, North East Link, Outer Metropolitan Ring, ES (proposed), and the Suburban Rail Loop.
- Existing Key Infrastructure:** This section identifies existing assets such as La Trobe University, Melbourne Airport, Melbourne Market, the Rail network, State Significant road corridors, and Hospitals.
- Local Government Areas (LGAs):** The map delineates the boundaries of Banyule, Darebin, Hume, Mitchell, Moreland, Nilumbik, and Whittlesea.
- Priority Precincts:** Specific areas within the LGAs are designated as priority precincts, including Broadmeadows, Cloverton/Beveridge, Epping, and La Trobe.
- Infrastructure Details:** The map shows various rail lines (e.g., Airport Line, Broadmeadows Line, Epping Line, La Trobe Line, North East Line, Outer Metropolitan Line, Suburban Rail Loop), bus routes, and stations (e.g., Airport, Broadmeadows, Epping, La Trobe, North East, Outer Metropolitan, Suburban Rail Loop).
- Geographical Context:** The map includes a location map inset in the top right corner, showing the region's position within the broader Melbourne area.

# Melbourne's North

### Planned transformative projects

- Beveridge Intermodal Freight Terminal
- Broadmeadows Revitalisation
- Epping Innovation and Food Export Hub
- La Trobe University City of the Future Redevelopment
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### Priority precincts

- Broadmeadows
- Cloverton/Beveridge
- Epping
- La Trobe

The map illustrates the northern region of Melbourne, highlighting various infrastructure and development projects. Key features include:

- Planned transformative projects:** Indicated by colored icons and labels for projects such as the Beveridge Intermodal Freight Terminal, Broadmeadows Revitalisation, Epping Innovation and Food Export Hub, La Trobe University City of the Future Redevelopment, Melbourne Airport Rail, Melbourne Metro 2, New Outer North Hospital, North East Link, Outer Metropolitan Ring, ES (proposed), and Suburban Rail Loop.
- Existing key infrastructure:** Shown with icons for La Trobe University, Melbourne Airport, Melbourne Market, the Rail network, State Significant road corridors, and Hospitals.
- Local government areas (LGAs):** Labeled in blue boxes, including Banyule, Darebin, Hume, Mitchell, Moreland, Nilumbik, and Whittlesea.
- Priority precincts:** Labeled in blue boxes, including Broadmeadows, Cloverton/Beveridge, Epping, and La Trobe.
- Stations and Transport Hubs:** Marked with icons and labels, including Wallan Station, Hurstbridge Station, Mandla Station, Epping, Broadmeadows, La Trobe, Banyule, Darebin, Moreland, Mitchell, Hume, and Port of Melbourne.
- Infrastructure Corridors:** Shown as lines representing the Suburban Rail Loop, North East Link, and other proposed or existing transport routes.
- Geographical Features:** Includes Port Phillip Bay and the Port of Melbourne.
- Legend:** A color-coded key for the various symbols used on the map.
- Location Map:** An inset map in the top right corner showing the location of Melbourne's North within the broader context of the state of Victoria.

- # Melbourne's North
- ### Planned transformative projects

  - Beveridge Intermodal Freight Terminal
  - Broadmeadows Revitalisation
  - Epping Innovation and Food Export Hub
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  - Infrastructure Corridors:** Shown as lines representing the Suburban Rail Loop, North East Link, and other transport routes.
  - Geographical Features:** Port Phillip Bay is shown to the east.
  - Legend:** Located at the bottom, defining the symbols for projects, infrastructure, LGAs, and precincts.
  - Location Map:** An inset map in the top right corner shows the location of Melbourne's North within the broader context of Victoria and Australia.

# Melbourne's North

### Planned transformative projects

- Beveridge Intermodal Freight Terminal
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- Legend:** Located at the bottom, defining the symbols for projects, infrastructure, LGAs, and precincts.
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- # Melbourne's North
- ### Planned transformative projects

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  - Geographical Features:** Port Phillip Bay is shown on the right side of the map.
  - Legend:** Located at the bottom left, detailing the symbols for planned projects, existing infrastructure, local government areas, and priority precincts.
  - Location Map:** A small inset map in the top right corner shows the location of Melbourne's North within the broader context of Victoria and Australia.

# Melbourne's North

### Planned transformative projects

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- Stations and Transport Hubs:** Marked with icons and labels: Wallan Station, Hurstbridge Station, Mandla Station, Epping, Broadmeadows, La Trobe, Banyule, Darebin, Moreland, Mitchell, Hume, and Port of Melbourne.
- Infrastructure Corridors:** Shown as lines representing the Suburban Rail Loop, North East Link, and other transport routes.
- Geographical Features:** Port Phillip Bay is shown on the right side of the map.
- Legend:** Located at the bottom left, detailing the symbols for planned projects, existing infrastructure, LGAs, and priority precincts.
- Location Map:** A small inset map in the top right corner shows the location of Melbourne's North within the broader context of Victoria and Australia.

# Glossary

ABS	Australian Bureau of Statistics
ACFE	Australian Centre for Further Education
ALGA	Australian Local Government Association
ANZSCO	Australian and New Zealand Standard Classification of Occupations
ANZSIC	Australian and New Zealand Standard Industry Classification
API	Application program interface
ARC	Australian Research Council
ATAR	Australian Tertiary Admission Rank
ATLAS	ARC Training Centre in Lightweight Automotive Structures
ATO	Australian Taxation Office
BAC	Boosting Apprenticeships Commencements Scheme
BDD	Brunswick Design District
BEV	Battery electric vehicles
BRT	Bus Rapid Transport
CAC	Completing Apprenticeship Commencements
CALD	Culturally and linguistically diverse
CBD	Central Business District
CEO	Chief Executive Officer
CO <sub>2</sub>	Carbon dioxide
COVID pandemic	Also referred to as COVID-19, COVID and pandemic
CRCs	Cooperative Research Centres
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSL	CSL Limited (once the Commonwealth Serum Laboratory)
DELWP	Department of Environment, Land, Water and Planning
DHHS	Department of Health and Human Services
DTPLI	Department of Transport, Planning and Local Infrastructure
ERA	Excellence in Research for Australia
FCV	Hydrogen fuel cell electric vehicles
FLEET	Future Low-Energy Electronics Technologies
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GHG	Greenhouse gas
GPs	General practitioners
GRP	Gross Regional Product
ha	Hectares
HEV	Hybrid electric vehicles
IAGs	Industry Advisory Groups
ICTs	Information and communication technologies
IMF	International Monetary Fund
IMP model	Integrated Multi-purpose model
INLLEN	Inner Northern Local Learning Employment Network
IoT	Internet of Things
IVI	Internet Vacancy Index
JTW	Place-of-work
JVEN	Jobs Victoria Employment Network
LGA	Local Government Area
LIAF	La Trobe Institute for Agribusiness and Food

LLENs	Local Learning Employment Networks
MACs	Major Activity Centres
MADIP	Multi-Agency Data Integration Project
MAV	Municipal Association of Victoria
MIC	Melbourne Innovation Centre
MICE	Meetings, Incentives, Conferences and Events sector
MMA	Melbourne Market Authority
MWh	Megawatt hour
NatHERS	Nationwide House Energy Rating Scheme
NBN	National Broadband Network
NCA	Northern Councils Alliance
NCAT	Northern College of Arts and Technology
NCVER	National Centre for Vocational Education Research
NDIS	National Disability Insurance Scheme
NDP	No data published
NEIC	National Employment and Innovation Cluster
nfd	Not further defined
NIEIR	National Institute of Economic and Industry Research
NILFET	Not in the labour force, education or training
NISPP	Northern Industry Student Placement Program
NMIT	North Melbourne Institute of TAFE
NSC	National Skills Commission
NTQ	National technical qualification
OECD	Organisation for Economic Co-operation and Development
OQP	Overseas Qualification Program
pa or p.a.	Per annum
PHEV	Plug-in hybrid electric vehicles
Q1, Q2, Q3, Q4	First quarter, second quarter, third quarter, fourth quarter
RMIT	Royal Melbourne Institute of Technology
RTOs	Registered Training Organisations
SEMMA	South East Melbourne Manufacturers Association
SMEs	Small and medium enterprises
STEM	Science, technology, engineering and maths
SWL	Structured Workplace Learning
TAFE	Technical and Further Education
TWI	Trade Weighted Index
VAGO	Victorian Auditor-General's Office
VCAL	Victorian Certificate of Applied Learning
VET	Vocational Education and Training
VETDSS	Vocational Education and Training Delivered to Secondary Students
VME	Vocational Mentoring Exchange
VNDA	VET National Data Asset
VSA	Victorian Skills Authority
WHO	World Health Organization
WOW	Worlds of Work



# Introduction

## The reports: Summary report (Master Plan) and Evidence report (research and data)

*The Future Workforce: Melbourne's North 2022-2032* has been prepared by the National Institute of Economic and Industry Research (NIEIR) as a regional workforce planning analysis that forms part of a broader project “Opening the doors to employment for young people in Melbourne's North” made possible with the support of the Northern Metropolitan Partnership and funding from the Victorian Government. The project relates to the Metropolitan Partnerships Program overseen by the Victorian Government's Department of Jobs, Precincts and Regions' Office of Suburban Development and addresses priorities of the Northern Metropolitan Partnership.

The report analyses the geographic region of Melbourne's North, which comprises seven Local Government Areas (LGAs) of Banyule, Darebin, Moreland, Nillumbik, Hume, Whittlesea and Mitchell. The region is diverse in its social and economic structure and covers inner, middle and outer suburbs and rural and peri-urban communities.

The regional workforce planning analysis identifies and anticipates future industry, employment, skills and training

requirements in the northern region of Melbourne over the ten year period. The report identifies the type of education and training courses, and their accompanying modes of delivery, needed to develop the competencies and skills of the local workforce to meet future business and industry demand.

**NIEIR has prepared two reports: a *Strategic Summary Report* which provides key points and recommendations and a comprehensive *Evidence Report* (research and data) that provides the detailed information generated by the project and provides an essential resource for those involved in economic, employment, training and education developments in Melbourne's North.**

The key objectives of the reports are to:

- assess the skills needed over next decade in Melbourne's North as the economy adjusts and recovers from COVID-19;
- scope the labour market trends over the next decade in Melbourne's North as the economy adjusts and recovers from COVID-19; and
- assess how the education and training system is supporting industry in that context and to describe what is working, what is not, and how gaps can then be addressed.



## Evidence report structure

This Evidence report is structured around three main sections which analyse:

- Where are we now?
- Where are we heading? and
- What is it likely to look like when we get there?

## Melbourne's North

Pre the COVID pandemic, Melbourne was among the fastest growing cities of its size in the developed world. One in five Melbournians live in Melbourne's North, or around one million people. From 2006 to 2016 the region added almost 200,000 people, which represented a faster growth rate than for the city as whole. The pre COVID projections showed that, by 2036, the regional population was projected to rise to around 1.5 million (DELWP 2019), about 100,000 larger than Adelaide today and half a million more than in the region at present. COVID may have slowed that growth because of the very significant slowing of international migration, while at the same time the COVID pandemic caused some city residents to reflect on lifestyle opportunities outside of the city and relocate to regional Australia.

All LGAs within Melbourne's North suffered a loss in employment during the second quarter of 2020. However, for most regions, employment levels have continued to recover on both an industry and resident basis.

The most important industries within Melbourne's North in terms of both high economic output and employment are:

- Health Care and Social Assistance;
- Manufacturing;
- Construction; and
- Transport, Postal and Warehousing.

In 2021, a number of sectors returned to near pre-pandemic levels of employment and economic output. Employment growth was the fastest in:

- Retail Trade;
- Transport, Postal and Warehousing;
- Financial and Insurance Services;
- Public Administration and Safety; and
- Education and Training.

## Melbourne's North competitive strengths

The Northern Horizons report (NORTH Link/NIEIR) which we reference in this report, identified the competitive strengths and weaknesses of Melbourne's North being as follows.

## Strengths

- La Trobe National Employment and Innovation Cluster (NEIC), which is one of only seven NEICs in Melbourne.
- Melbourne Airport.
- The food and beverage industry.
- The established practice of working as a region.
- The region's freight and logistics networks.
- Industrial land availability and affordability.
- Cultural diversity.
- Undulating topography with river and creek corridors.
- Location in Melbourne, with access in all directions, to/from the rest of Melbourne, Victoria and interstate.

## Weaknesses

- A shortage of major clusters.
- Poor connectivity to other parts of Melbourne, especially by circumferential public transport.
- The historically low socio-economic status of much (but not all) of the region. Reflecting this, the region has few elite private schools.
- There is a growing mismatch between resident skills and local job opportunities, resulting in outbound commuting.
- Gaps in regional supply chains, including research and innovation that lead to loss of regional value adding opportunities.
- The tourism base is weak.
- In many parts of the region, particularly inner areas, there is a shortage of open space and canopy cover.
- Looming shortage of workers across the health and allied health occupations.

Melbourne's North has a larger workforce living within the region than there are local jobs available. The hours worked from jobs located within the region are around 31 per cent less than the hours worked by people who live in the North. This means that local residents are currently dependent on the commuter infrastructure network to access employment. Improved travel times by road or public transport will allow greater access to employment opportunities, not only for people living in Melbourne's North, but for residents outside the region who would benefit from greater access to jobs in the North.

In its 2017-18 *State of the Regions* report (NIEIR/ALGA) NIEIR defined the four pillars of productivity growth as:

- skills;
- capital;
- knowledge-creation; and
- supply-chain connectivity.

Productivity growth should be matched by growth in demand, which at the regional level is a far from being an automatic process. In today's context in Melbourne's North, this means a skilled workforce in the areas of marketing and sales, social media, logistics and market development. By maximising the opportunities from the four pillars of productivity growth, then the greater the value of production per hour worked. That means a greater amount available for distribution to the people who contribute to that value – working people of all grades of skill, managers and financiers, as well as those who own the capital of business enterprises. It is self-evident that productivity growth underlies income growth. The analysis found that there was an opportunity to improve productivity outcomes in Melbourne's North by working on improvements on the pillars, the greatest benefit accruing to the outer regions of Melbourne's North.

NIEIR's latest economic modelling and projections are based on actualised data to end Q2 2021, a period which takes into account most of the COVID impacts, thereafter, post Q2 2021, the economic projections are calculated using NIEIR's economic modelling systems.

The latest analysis shows that the planning of the last two decades has resulted in some successes, despite the ravages of COVID. We should recognise the strength of the region over the last 20 years and longer as the capacity the region has shown to work together to address the complex changes that have impacted the Melbourne's North economy. These impacts include rapid population growth, the loss of the automotive manufacturing sector, climate change and associated costs, rapid changes in technology and markets and in recent times, the changes forced on the economy and workplaces by the COVID pandemic.

In saying this, we should also recognise the importance of the organisations and agencies who have facilitated these connections, including the willingness of local governments over the previous decades in Melbourne's North, to address 'northern issues' together and beyond their own individual boundaries, driven largely by organisations such as NORTH Link and the Northern Councils Alliance. The efforts of the education and health sectors have also had positive results and this progression needs to continue. All of these things together chart the pathway to the future and a growing prosperity for Melbourne's North and the people who live there.

The new analysis shows structural improvements in Melbourne's North economy:

- Melbourne's North has closed, or significantly reduced, many of the structural gaps with its peer region in the rest of Melbourne (excluding the central LGAs, that is, Melbourne City and its immediate surrounding LGAs);
- the stand out result is that total labour productivity or GDP per hour worked has gone from 91 per cent of peer region levels in 2001 to 100 per cent in

2021. There has been a steady improvement over the last 20 years and the region is now on par with Western, Southern and Eastern Melbourne, which all have similar levels of total labour productivity;

- in 2021 the production of health and education services per capita of population within Melbourne's North was similar to its peer region of Melbourne; and
- Melbourne's North has maintained its superiority in international exports as a per cent of GDP at a 20 per cent margin above its peers, while interregional exports, as a per cent of GDP, are the same as the Melbourne peer region.

More, however, needs to be done as equivalence in structural indicators is not enough to allow Melbourne's North to catch up to its peers. While the GDP per capita of working age population in Melbourne's North has improved over the last 25 years, in 2021 it remained 17 per cent below the Melbourne peer region indicator. This result had a number of adverse consequences for Melbourne's North in 2021:

- industry hours of work in Melbourne's North per capita of working age population was 17 per cent below the Melbourne peer region;
- usual resident hours of work per capita of working age population was 5 per cent below the Melbourne peer indicator;
- these shortfalls suggest a "locked in" additional unemployment rate/under-employment rate of 5 percentage points when compared to the Melbourne peer region;
- in terms of living standards, this resulted in per capita consumption expenditure in 2021 which was 11 per cent or \$4,700 per capita below the Melbourne peer region;
- the economic projections suggest that, in 2023, when the household saving ratios return to 'normal', that the household savings ratio for Melbourne's North will be 4 per cent below the Melbourne peer region but this may well change as interest rates increase; and
- the capital stock installed in Melbourne's North when measured by per capita of working age population relative to the Melbourne peer region has not improved over the last 25 years and as a result lags the Melbourne peer region by 14 per cent (see Appendix D). The projections show that if Melbourne's North is to reduce the unemployment rate differential, the capital stock will have to increase by \$16,500 per capita of the working age population by 2040. To achieve this there will have to be a shift from public sector investment to business investment.

The key problem for Melbourne's North, although a lot has been done, is that while the infrastructure and business capital stock expanded by 130 per cent over the last 20 years, this was not enough to compensate for the fact the its population growth was faster than the Melbourne peer region. This trend will continue into the future.

Over the last 20 years, the working age population in Melbourne's North has grown by 0.3 per cent per annum faster than the Melbourne peer region and, despite Victorian population growth falling from the last 20 year average of 1.8 per cent per annum, to 1.0 per cent per annum, over the next 20 years, the growth in the working age population in Melbourne's North when compared to the Melbourne peer region will still be 0.2 per cent per annum higher. Given this ongoing differential, the comparison between Melbourne's North and its Melbourne peer region should be measured in terms of per capita of the working age population. When this is done:

- international exports per capita are similar in Melbourne's North and the Melbourne peer region; and
- this is not the case for interregional exports where a gap between Melbourne's North and the Melbourne peer region is \$7,400 per capita of working age population. \$4,000 of this difference can be explained by Melbourne's North under-performance in the professional services and scientific industry sectors and computer systems and administrative services industry sectors.

These findings, yet again, point to the importance of continually improving the availability of skills in Melbourne's North and the importance of education and training in creating the skills as a prime instrument for improving Melbourne's North economic outcomes over the next decade.

## The impacts of COVID

The COVID pandemic created a period of rapid change. It also laid bare the vulnerabilities and disadvantage that are evident in parts of Melbourne's North, doing so in both the student population and the workforce. For the professional services workforce, work continued, but largely from home and via communication on the Internet. Essential workers were exposed to higher risks and in some LGAs in Melbourne's North, where the resident workforce was far more vulnerable, unemployment rates rose quickly. The gig economy continued to grow as demand for online deliveries surged during the pandemic.

From an educational point of view, students who did not have the private space to study from home and access to the NBN and a personal computer, had significant difficulties in continuing their studies. Female workers were more vulnerable to losing their jobs and in the earlier

phases of the pandemic, young people found it even harder to find employment.

The LGAs most severely affected by higher unemployment because of COVID, were Hume City Council and City of Whittlesea because of the vulnerability of unskilled and casual workers. The LGAs most severely affected by slower recovery from COVID impacts in average quarterly GRP growth, were the inner regions of Banyule City Council (1.3 per cent) Moreland City Council (1.1 per cent) and Darebin City Council (1.1 per cent) where the creative economy struggled to recover.

There were significant reversals too, the loyalty to employers that was a feature of the early phase of the pandemic, with workers remaining in their jobs, has now changed, with around one in five workers seeking new jobs or reviewing their lifestyle options. Female employment bounced back strongly and more opportunities became available for younger workers. What the pandemic has done is to expose structural features that are weaknesses in the economy and has brought forward those changes that would have happened anyway at some point over the next 10 to 15 years.

For students and workers, the Internet became more important as a pathway to completing study and work. While the Internet held up during peak demand there needs to be a change in thinking about standards. The question, are download speeds of 50 Mbps and upload speeds of 20 Mbps really adequate in a contemporary learning and business environment? The answer to that question is no and the efficiency of the system as a whole needs continual improvement across the region.

What was also evident throughout the period was that disadvantage really did matter. During the worst phases of the pandemic, the disadvantaged were hit the hardest, with illness and with unemployment. The climb back to pre-pandemic circumstances is going to be much harder for workers coming from disadvantaged cohorts and levels of disengagement for disadvantaged young people are likely to remain far higher and for far longer than those of the well-connected and advantaged young. This applies to both study and work.

There are mixed messages regarding two changes brought about by the pandemic, these are working from home and online learning. While some people embrace the idea of working from home, many workers are also eager to return to the office and engage with colleagues. It is also evident from discussions with education and training providers, that while online and blended learning represents the future, it suits some students and some courses, but not others. The younger cohort at TAFE have shown a preference for face-to-face learning and being with fellow students. Again advantage and disadvantage play a significant role here. Enrolment data for residents of Melbourne's North during the lead up to and earlier phases of the pandemic show decline, it appears the older the age group the greater the decline in enrolments.



What has also become increasingly evident is that COVID has provided an opportunity, doing so through necessity, to look closely at ways of improving educational delivery. A key component of this is better connecting all levels of education with each other, and then with the needs of local industry. So we are talking about a more integrated system with improved and better informed pathways to employment. There is also a need to properly recognise the importance of the organisations in Melbourne's North who are assisting these connection processes and to ensure their funding and role is properly adequate and well defined, so as to produce the best possible outcomes. Initiatives include Structured Workplace Learning (SWL), Northern Industry Student Placement Program (NISPP), Jobs Victoria Employment Network (JVEN) and Vocational Mentoring Exchange (VME).

This has been a particularly difficult period for the universities in Melbourne's North because of the impact of the pandemic on international student numbers. Universities in the region have a central role in place-based research activities, aligned with Melbourne's North industrial strengths. It is therefore extremely important that universities are encouraged and assisted to continue the engagement with the region which, in the case of Melbourne's North, has developed over the last decade.

TAFEs are now charting a new course and appear, COVID aside, to be on a pathway of improvement in terms of their role, structure and relationships within the education and training system and these changes are described in this report. COVID has created a roadblock in terms of TAFE course completions because students have not been able to attend the work placements that allow them to complete their courses. The danger here is that a lag in the training system, when combined with the forecast exodus of a COVID stressed workforce, particularly marked in some sectors such as health, is likely to exacerbate worker shortages over the next couple of years. The pandemic has also highlighted the opportunities for short courses, micro-credentialing and vocational mentoring and other innovations.

While Melbourne's North residents are more highly qualified than before, TAFEs, along with their university counterparts, are central to upskilling the regions workforce, particularly in those disadvantaged groups and localities in Melbourne's North, and hence central to providing a workforce with the capacity and skills to growing the region's economy and employment prospects.

For the TAFE sector, the following factors will help build future success beyond the COVID period.

- A fairer funding model that takes into account the wraparound services and supports public TAFEs provide.
- Policy changes which support the TAFE network to operate more nimbly and collaboratively.

- Digital literacy support for TAFE teachers who have had to adapt their delivery throughout COVID-19, and for many of whom, a blended delivery model will now become the new normal.
- Access to more frequent and granular (regional) employment data and projections, so that TAFEs can better align their course offering to demand and growth, including better tracking of the employment paths of graduating students.
- Better connections and a curriculum designed and delivered in concert with industry.
- Investing in up-to-date campus facilities.
- Closer relationships with industry around student placements, industry course co-design and delivering the micro-credentials industries are wanting.
- Close observation and support for innovations, such as Melbourne Polytechnic's support for the Food Inc incubator.

## Female employment

The female workforce has been more adversely affected during the COVID-19 pandemic with the female share of Victorian total employed falling during the early 2020 and again in late 2021. This structural difference has continued up until recently, where gender employment shares are close to pre-pandemic levels with around 47 per cent employed female. Despite the female share of employment reaching close to parity, females tend to work in more casual/part-time positions with less hours. Two thirds of part time workers are female, while only around a third of all full time workers are female.

The nature of part-time work and the industries that employ many part-time workers (e.g. Retail, Hospitality and Tourism) mean that these workers were more vulnerable to business shut downs during the pandemic. The rate of female underemployment, which is workers that are working fewer hours than desired, increased strongly during 2020 and again during the long lockdown in late 2021. This implies that COVID-19 restrictions led to a higher rate of reduced female hours employed.

While the initial stages of the pandemic led to reduced hours, this turned to disproportionate female job losses throughout 2020. The unemployment rate for females from April 2020 to October 2020 worsened from 6.0 per cent to 8.1 per cent. At the same time, the male unemployment rate improved from 6.2 per cent to 5.8 per cent. In addition, female jobseekers are looking for full-time work at a higher rate than those that are employed in full-time work, which means that many are settling for part-time positions when full-time is preferred.

Labour force participation in the female population continues to be lower than the male population. If the rate of employment was equalised between genders, this could unlock around 62,000 female resident workers in Melbourne's North which could help address current critical workforce shortages. In future, focusing on training for growth occupations and industries will be beneficial for both genders, as detailed in other sections, including professional services (tech-based in particular), and health related occupations. The largest gender industry employment gaps are in male dominated Construction, Transport, Postal and Warehousing and Manufacturing industries, while Health Care and Social Assistance is female dominated. Programs should be designed in encouraging more diverse employment in these industries, starting from secondary school students.

Together, these trends in the Victorian state labour force suggest females are seeking more secure jobs, more full-time positions, and greater hours worked. Melbourne's North initiatives needs to be designed around these goals as industry recovers from COVID-19 disruptions. This could mean helping industries with high levels of casualisation and part-time employed secure more full-time workers. Conversely, it could mean helping industries that insist on full-time employment employ part-time workers on job shares or other arrangements, or encouraging female employment into occupations and industries where they are under-represented. Addressing these goals will also help females achieve higher incomes. Initiatives such as the City of Hume and NORTH Link's Women in Leadership pilot program will help promote these goals.

## Diversity

Melbourne's North is an ethnically diverse region and the percentage of residents who speak a language other than English at home is greater than the Victorian average. However, this does not apply in three of the region's seven constituent LGAs – Mitchell, Nillumbik and Banyule. Among the four relatively polyglot LGAs, European languages other than English are widely spoken in Darebin, Moreland and Whittlesea, while the languages of South West Asia (Turkish, Arabic and others) are prominent in Hume, with some spread into Moreland and Whittlesea. South Asian languages are relatively common in Whittlesea and Hume. Whittlesea is the only LGA in Melbourne's North where the proportion of residents speaking a South-East Asian language (Indonesian etc.) is above Victorian average, and Darebin is the sole LGA in the region where the proportion speaking an East Asian language (Chinese, Japanese, Korean) is above Victorian average. Very few residents speak African, Australian indigenous or Pacific languages. Insofar as it is an economic advantage to speak the language of Australia's major trading partners, the ethnic diversity of Melbourne's North is not particularly advantageous. It may also hinder the recognition of professional and trade qualifications gained overseas.

However, the diversity of cultural heritage should provide artistic and culinary background to the development of industries such as food processing. For those workers who speak a language other than English at home there is some evidence in the data that shows that these workers can be working in an occupation that is below their qualification and skill level. This may mean that this group finds it harder to find employment for which they are qualified when compared to their monolingual English speaking peers.

The region should look to embrace a culturally diverse, age diverse workforce, including older workers and to use the under-utilised skills available in the employment catchment as a way to address worker shortages, so as to maximise on the opportunities that diversity brings. This should be buttressed by government programs that target specific under-represented groups with tailored support as well as specific industries.

## Education, training and research

Two things, which are of major significance, have occurred since the original workforce report was published in 2015, universities have been impacted by COVID and this has significant implications for the capacity of universities to engage and contribute as deeply and broadly with their immediate geographic region as we had all hoped a few years ago. So there will be a rebuilding period as the universities in Melbourne's North adjust to changed circumstances. It remains of critical importance that the universities continue their local engagement activities with local industry in research and high-level education in those industry sectors which are critical to the economic development of Melbourne's North. The second thing that has happened is that progress has been made in rebuilding the public TAFE sector and signs are that public VET strategies in Victoria have improved. That is not to say that the TAFE sector has not suffered from the impact of the COVID pandemic, it has, and particularly due to the complications of delivering hands on subjects and retaining students, not enthused by online learning.

The importance of the relationship between education, training, research and industry has again been sharpened by the COVID pandemic, worker and skill shortages. The solution is a more cohesive system that communicates and integrates pathways and opportunities for skilled employment more effectively. The quality and relevance of what is being delivered by education and training providers is core to the success of the education and training system and to the participation of employers who sometimes express concerns about the ability of training providers to meet their needs.



## Employment, MACs and NEICs

The growth of employment in Melbourne's North is influenced by a variety of government policies, most obviously by Commonwealth macroeconomic policies but also by Commonwealth policies on the finance of services such as education, aged care and disability support and by Commonwealth regulation of telecommunications. Commonwealth policies on service delivery are discussed and the importance of telecommunications is emphasised when discussing industry prospects. The Victorian government influences employment growth through its administration of the major area services (chiefly school education, health and welfare services and justice services including police) and through its controls over infrastructure investment and its direct investments in roads and public transport. The State endeavours to coordinate public sector infrastructure investment with private sector location-specific investment through strategic plans, which are in part implemented through decisions on State investment and in part by incorporation into land-use planning administered primarily by local government.

In *Plan Melbourne* the Victorian government has recognised the La Trobe Employment and Innovation Cluster (NEIC) as an activity centre of national significance. In addition to La Trobe University, this cluster includes the RMIT at Bundoora and the Heidelberg hospitals. Melbourne Airport is ranked as a Major Activity Centre but the wholesale market is not ranked, presumably because it is regarded as a specialised facility.

## Innovation measure: Hi-tech/hi-income employment

This report analyses how hi-tech and hi-income employment have changed since the year 2000 for selected industry sub-sectors in two regions; Melbourne's North and the combined region of Melbourne's North and West, and where significant synergies between the two regions are increasingly important to both. The research indicates that there is an excess in the workforce of hi-tech and hi-income residents in Melbourne's North and Melbourne's North and West combined regions when compared to hi-tech and hi-income jobs available locally, significant numbers of workers travel outside the two regions for employment. It is also evident that Melbourne's North continues to lag Greater Melbourne employment patterns in terms of the share of locally available jobs in Professional, Scientific and Technical Services and Computer Systems Design and Related Services. The positive side of this story is that the residents of Melbourne's North can provide the skills and knowledge required in both hi-tech and hi-income employment for future growth in Melbourne's North industries. Better ways of connecting highly skilled locals to local jobs should

be investigated. In 2020, the share of hi-tech jobs of all jobs in Greater Melbourne was 10.6 per cent, this compares to 7.4 per cent in Melbourne's North and 7 per cent in Melbourne's North and West combined. In 2020, the share of hi-income jobs of all jobs in Greater Melbourne was 14.1 per cent, this compares to 6.7 per cent in Melbourne's North and 7 per cent in Melbourne's North and West combined.

## Skills

Influences on skills formation are global, national and local. In large part the success of a region depends on its capacity to respond to external influences, hence the importance of training, which in combination with tacit knowledge of how things are done in a particular place or business, form the solid foundations on which economic growth is built.

The COVID pandemic has taught us all that flexibility, for both the individual and in the workplace, are central to managing the journey through the years of pandemic. Being adaptable, understanding the types of skills which are transferable, mean that opportunities for employment are enhanced and in a range of occupations and industries.

The National Skills Commission, in its report *The state of Australia's skills 2021: now and into the future*, finds that COVID pandemic aside, Australia's workforce and skill needs have been impacted by a range of major forces including:

- a shift to higher skilled jobs and hence the importance of further education and training;
- an ongoing shift towards services;
- the resilience of non-routine and cognitive jobs in the face of automation; and
- the opportunities and new jobs being created by technology.

NIEIR research found that:

- literacy and numeracy skills are a foundation requirement for most jobs in the economy. Occupations that do not require a reasonable standard in these skills are declining over the long term, albeit now influenced by low skilled worker shortages because of the COVID pandemic;
- adaptability, flexibility and lifelong learning are three critically important components of skills formation;
- the skills of workers and individuals in the region need to be more closely aligned to the needs of the labour market;
- the Victorian Skills Authority is now established and will produce its first Victorian skills plan in 2022;
- importance of linking skills development through education and training with industry clusters;

- the gender differences in skills held in the economy continue to be striking and what opportunities exist in redefining roles in employment and skills development over the next ten years;
- employers recruiting for medium and higher skilled vacancies in areas outside of capital cities (this applies to parts of Mitchell for example) not only have recruitment difficulty most frequently, but also experience a greater severity of difficulty;
- information and communication technologies (digital and data) and the Internet are key drivers of innovation, growth and labour productivity;
- generally, in the Australian economy at this time, skills shortages are greatest among technicians and trades workers occupations, which includes electricians, carpenters, chefs, fitters and motor mechanics;
- over the 20 year period before the impact of COVID-19, employment in STEM occupations grew by 85 per cent, more than twice the rate of non-STEM occupations, which grew at 40 per cent over the period;
- need to stress the importance of the continual improvement of Melbourne's North broadband infrastructure in enabling the greater place based dispersal of the knowledge economy and development of the digital skills that drive innovation and the high speeds and capacity of the communication systems that enable it; and
- in the early stages of employment, the majority of employers consider employability skills to be as important, if not more important, than technical skills.

## NORTH Link

Since 1995, NORTH Link has made a significant contribution to Melbourne's North by strengthening regional partnerships, doing so by enabling the connections between industry, education, health and local government. NORTH Link initiatives include assisting to highlight the importance of research and by taking a leading role in advocacy on behalf of the region as well as encouraging industry connectors such as the Melbourne's North Food Group, Melbourne's North Advanced Manufacturing Group, North and West Melbourne Data Analytics Hub, NISSP and other employment programs, including for the caravan industry.

## Local Government: Place based resilience for communities and employment

Local Government can and does contribute to shaping its local industry and employment strategies. This is achieved by ensuring those things under direct council control,

including planning, land use, open spaces, amenity, sustainability of built form and contemporary waste management strategies, contribute to helping industry grow and to access an increasingly skilled local workforce. Advocating for things not under the direct control of Local Governments is also important and these include major transport systems, education infrastructure, particularly schools, major infrastructure developments (and locally nuancing them) and global standards in telecommunications infrastructure. Shaping clusters of industry development through planning and marketing, while a longer term initiative, is significantly important in growing local prosperity. Closer links and access to Victorian Government departments where knowledge is shared will also help regional development planning.

An important role for Local Government, probably more important since COVID, is connecting community and industry, and economic development departments do great work here. This is a particularly important role when it comes to working with young people in the community and minority or disadvantaged groups. Targeting areas of local disadvantage for special projects does and can help to break the generational cycle of disadvantage. Local Governments can help direct other agencies to those places in need and to help residents untangle often complex bureaucracies and pathways when they engage with governments.

## Economic and employment forecasts

NIEIR have produced economic forecasts for Melbourne's North over the next decade which have been used to provide a detailed workforce outlook by industry and occupation. The Evidence report summarises these forecasts for the next ten years out to 2031, focusing on Melbourne's North total region in Chapter 14 and by the seven LGAs within Melbourne's North in Chapter 15. Comparative macroeconomic and industry forecasts have also been completed for National, Victorian State and by Greater Melbourne sub-region economies.

The Australian economy require another 1,131,000 jobs by 2026 compared to 2021, while the number of jobs required will increase to 2,206,000 by 2031. Melbourne's North will need another 33,900 workers by 2026, and 66,250 by 2031, compared to place-of-work employment levels as of 2021.

The Australian economic outlook for the next ten years is one of weaker growth compared to the previous decade, as the shock brought on by the COVID-19 pandemic hangs over the next ten years. Slower population growth compared to the pre-COVID period will be a major negative factor for reducing Australia's economic outlook. This will flow onto reduced growth in workforce employment compared to recent years. Reduced rates of migration will likely continue given the likelihood that COVID-19 and successor mutations will not be eradicated

in the short-term. Within Greater Melbourne, Melbourne's North and West will continue to lead population growth over the next ten years, however, the rate of growth will be much slower than migration lead pre-COVID rates. Melbourne's North will grow by 1.1 per cent per annum until 2031, while Melbourne's West will lead population growth at 1.4 per cent per annum. This compares to an average rate of 1.0 per cent across both Greater Melbourne and Australia.

Melbourne's North economy is expected to grow by an average of 2.8 per cent per annum. The rate of GRP growth is slightly above the other suburban regions of the South, East and West within Greater Melbourne. However, growth within the central region of Melbourne is expected to remain much weaker over the next ten years compared to the outer regions with average annual growth of only 1.1 per cent per annum.

Inner regions of Melbourne have been particularly impacted by the pandemic, while outer regions have shown more resilience. Within Melbourne's North, job creation is expected to continue to be driven by the outer north LGAs. While the inner regions will recover from large falls in employment that occurred during the pandemic. Employment growth prospects are expected to be strong within Melbourne's North for the following industries:

- Health Care and Social Assistance;
- Professional, Scientific, and Technical Services;
- Transports, Postal and Warehousing;
- Education and Training; and
- Public Administration and Safety.

While the key Manufacturing and Construction industries within Melbourne's North are expected to be weaker over the next decade as Manufacturing activity continues to decline and the Construction industry is impacted by a fall in residential investment as the result of slower population growth. Together, this means that the overall occupational structure of the workforce will become more Professional in the next ten years while the proportion of Technicians and Trades Workers will decline.

## Methodology

### Research

NORTH Link and NIEIR conducted three types of research for the project to build a solid platform of understanding on Melbourne's Northern economy and employment.

NIEIR conducted a series of discussions with key individuals nominated by NORTH Link by telephone or Internet, including education, industry, government and service sector organisations as a core component to informing the report.

NORTH Link and NIEIR conducted a series of seven online industry roundtables which brought together senior individuals across a series of key sectors:

- Food and Beverage Manufacturing;
- Advanced and General Manufacturing;
- Business and Professional Services;
- Health and Community Services;
- Construction and Logistics/Property Development;
- Visitor Economy; and
- Creative Sector.

Delegates to the industry roundtables were then sent a web based survey that allowed respondents to add further detail if they wished to do so.

The research sought to answer questions like these:

- the occupations which had the fastest employment growth;
- which skill shortages constrained enterprise productivity or at the strategic level which constrained total enterprise employment growth;
- what was done to overcome the skill shortages;
- expected employment growth under current trends;
- skills/occupations that would be in demand under in the future;
- if skill shortages are likely to increase and in which areas; and
- long term impacts of COVID-19 on workplace development, cohesion and ongoing training.

### Modelling component

The regional econometric model developed by NIEIR estimates National Accounts variables for local areas, typically LGAs, using a range of data sources to model the accounts within the constraint of State and National estimates provided by the ABS. The regional Integrated Multi-purpose (IMP) models are used to describe and forecast regional economic activity and to assess the regional impacts of economic trends and policies. The state IMP models, which are based directly on ABS data, are used similarly.

These models provide estimates of state and regional economic activity on both a quarterly and an annual basis. Both sets of models are based upon the detailed ABS state accounts with quarterly updates based on key aggregates. The annual model incorporates a detailed industry disaggregation and input-output structure. The dynamic input-output modelling used in this structure allows for detailed impact assessments to be made which incorporate local effects.

An **input-output model** depicts the inter-industry relations of an economy. It shows how the output of one industry is an input to each other industry. Using a matrix representation of an area's economy, a given input is typically enumerated in the column of an industry and its outputs are enumerated in its corresponding row. This format shows how dependent each industry is on all others in the economy both as customer of their outputs and as supplier of their inputs. These input- output models operate subject to macroeconomic constraints at the national, state and regional levels.

The NIEIR state and regional models contain over 400,000 variables at the local level and provide estimates of:

- population growth;
- dwelling commencements;
- housing stock;
- employment by industry;
- hours worked by industry;
- output by industry;
- investment by industry;
- imports and exports by industry;
- gross regional product; and
- estimated consumption expenditure.

Inputs to these models are continually being refined. The primary data become available at different time intervals, from 5-yearly (Census) to quarterly (Labour Force). These inputs include, but are not necessarily limited to:

- Population Census data (especially for the working population);

- ABS National Accounts (income, expenditure and product);
- ABS State Accounts;
- ABS Labour Force Survey regional employment and hours estimates;
- ATO Income tax estimates by postcode;
- Centrelink payments by postcode;
- Real Estate Institute (state) housing price and rent estimates; and
- ABS Household Expenditure Survey.

Some of these sources (particularly Census, the ATO and Centrelink) provide detailed regional data while others provide survey data which can be related to regions. These latter sources include variables for which good data is available at regional level coupled with variables for which data is not available. Various methodologies are used to impute most likely regional values for the variables for which regional data is not directly available subject to the constraint of the survey data and the known regional variables. Microsimulation is employed in cases where survey unit record files are available.

### ***The occupation model***

The occupational model by 86 2-digit ANZSIC industries and 3-digit occupations is used to provide detailed production of occupational demands. The economic and labour market drivers are formed from the corresponding LGA driver outcomes.

## **SECTION ONE:**

# **MELBOURNE'S NORTH – WHERE ARE WE NOW?**

# 1. Melbourne's North economy and society, where we are now

## 1.1 Key findings

### *Employment and labour markets*

- The gap between locally available jobs and Melbourne's North resident workforce continued to grow. In 2019 the region provided enough jobs to employ 70 per cent of its resident workers. This does not mean that 70 per cent of all resident workers worked in the region: some of the region's jobs were taken by residents of other regions, particularly those to the west and east.
- The trend to the decentralisation of employment within the Melbourne metropolitan area was reversed from the 1990s to 2019. From 1994 the proportion of employment in the metropolitan area located within the central region increased from one-quarter to one-third, mainly at the expense of the inner suburban regions including the inner parts of Melbourne's North.
- In the period 1994 to 2019, jobs available in Melbourne's North grew by 3.8 per cent a year while the jobholding population grew by 4.6 per cent, hence the increase in net outbound commuting.
- The rate of growth of resident workers was most rapid in Whittlesea, followed by Hume and Mitchell; it was slowest in Nillumbik and Banyule. The rate of growth of jobs available was again most rapid in Whittlesea, Hume and Mitchell and least rapid in Banyule and Nillumbik.
- Over the 25 years residential growth, both in Wallan and the peri-urban belt, tipped Mitchell from relative self-sufficiency in jobs, as is typical of rural LGAs, to dependence on commuting.

### *Unemployment*

- In the two years prior to the pandemic (2018 and 2019) the average quarterly unemployment rate for Melbourne's North was around 5.3 per cent compared to 5.0 per cent across Greater Melbourne. Since March 2020, the gap between Melbourne's North and Greater Melbourne has worsened. The average quarterly unemployment rate has worsened to 7.6 per cent in Melbourne's North across March 2020 to June 2021 compared to an average of 6.6 per cent across Greater

Melbourne. National and Victorian State unemployment rates have both averaged around 6.2 per cent across March 2020 to June 2021 quarters.

- The worst impacted regions for unemployment in the initial stages of the COVID pandemic include Hume, where the unemployment rate reached 14.5 per cent in the September 2020 quarter, many frontline and unskilled workers exposed to the impact of lockdowns. While Moreland, Whittlesea and Darebin have all reached unemployment rates during the pandemic that have exceeded 8.0 per cent. Banyule and Nillumbik have maintained relatively low levels of unemployment throughout the pandemic with some increases during the worse periods.

### *Registered businesses*

- For Melbourne's North, the fastest growth in business registration in 2020 occurred in the Transport, Postal and Warehousing (1,209 new businesses); Construction (521 new businesses, down from 910 new businesses in the previous year) and Professional, Scientific and Technical Services (397 new businesses, down from 622 new businesses in 2018).

### *GRP*

- The average value added per person employed in Melbourne's North (as distinct from employed residents) was below the national average in all seven LGAs. The lowest value in 2019 was that for Nillumbik, where much of the employment was local demand industries with low value added per worker.

### *Income*

- Commuting redistributes local income from the places where it is earned to the places where people live. The result, at least in 2019, was an increase in inequality of income between the LGAs of Melbourne's North. By place-of-work, average income per hour ranged from \$5 per hour above national average in the highest-income LGA down to \$2 an hour below in the lowest-income LGA. On a residential basis this was stretched to between \$9



an hour above national average down to \$4 an hour below.

- Largely due to commuter incomes, Nillumbik residents earned the highest or second-highest incomes per hour in all industries except construction, and the highest overall. The average resident earned income was below the average for employment located in the LGA, indicating that, on average, the more skilled jobs were taken by in-commuters and Hume residents received bottom or second-bottom earnings per hour in all industries.

## 1.2 An introduction to Melbourne's North

For the purposes of this report, Melbourne's North comprises seven LGAs to the north of the Melbourne CBD. Only one of the seven, Moreland, has a common boundary with the City of Melbourne, but three of them – Moreland, Darebin and Banyule – form a west-east band measuring from 12 to 22 km west to east (the band broadens with distance from the city centre) and approximately 12 km south to north. The northern boundary of Moreland and Darebin follows the metro ring road, more or less, and may be adopted as a convenient boundary between the inner and outer suburbs. Urban development in the inner northern suburbs began in the 1850s and for a century they were known for their brickworks and other industries. Development at first radiated along the main roads and railway lines but subsequent infill has ensured that there are no longer any substantial greenfield developmental sites south of the ring road.

Further north, a second band of LGAs includes Hume, Whittlesea and Nillumbik. This band measures approximately 30 km south to north and around 60 km west to east at its widest point. The belt is now continuously built-up along its southern boundary but further out includes greenfield properties, many of which are held in anticipation of urban development. Though the City of Hume bears the name of the highway running north from Melbourne, it should be kept in mind that one of its major residential areas, Sunbury, is closer to the Calder Highway than to the Hume and is hence north-west rather than north of the city centre.

Mitchell lies further north again. Wallan is 45 km from the Melbourne city centre and the Shire stretches north for a further 50 km. It has a short common boundary with Hume and a longer common boundary with Whittlesea. Though still separated from Craigieburn by open paddocks, there has been significant urban development round Wallan, hence the inclusion of Mitchell in the study area.

The inner northern suburbs are, for the most part, fairly flat, but Ivanhoe and Heidelberg are hilly, and so are the suburbs beyond them, including all of Nillumbik. The

relatively flat country extends into the outer suburbs to include most of Hume, much of Whittlesea and the extreme southern part of Mitchell, round Wallan. The relatively flat country has lent itself to industrial as well as residential development but the hills were never industrial areas. Given their identity as hilly residential suburbs, Nillumbik and the eastern parts of Banyule have much in common with the Eastern suburbs across the Yarra including green-wedge planning controls which limit greenfield expansion.

Though Mitchell LGA extends north of the Melbourne metropolitan boundary, however drawn, Melbourne's North is basically a suburban region. This means that it is neither Central City nor Rural. Its oldest suburbs, along the boundary with Central Melbourne, include subdivisions dating from the 1850s. The date of subdivision becomes more recent as one travels outwards towards the contemporary housing estates on the northern fringe. As the suburbs become newer, unimproved land values and the accessibility of urban facilities both diminish. The metropolitan boundary is conventionally drawn at the limit of continuous subdivision, but it is important to remember that elevated unimproved values extend well beyond this boundary. The metropolitan area is surrounded by a peri-urban belt where land values are higher than can be justified by rural production, supported not only by speculators anticipating subdivision but by the demand for rural retreat housing within easy driving distance of the city.

Though land values continue high well beyond it, the metropolitan boundary is marked by a change of scenery from subdivided suburbs to open paddocks, accompanied by a change from urban to rural employment opportunities. Despite the intensive cultivation of suburban gardens, there is no room for commercial agriculture in the metropolitan area. Urban employment is provided by a wide range of industries, nearly all of them (apart from transport) conducted in buildings of one sort or another.

## 1.3 LGAs and labour catchments

Melbourne's North is both defined and administered as a group of seven local government areas, each with precise geographic boundaries. Both the economy and workforce of Melbourne's North can, however, be defined from two points of view. When work is seen as contribution to production, the emphasis is on workplaces as sites of production. When work is seen as a source of income, the emphasis is on the activities of residents. This report makes use of both concepts.

- The workforce of Melbourne's North on a place-of-work basis is defined as people who work (or at least sign-on) in the seven LGAs, and includes

residents of neighbouring LGAs who commute into Melbourne's North.

- The workforce of Melbourne's North on a residential basis is defined as people who are in paid work, or seeking paid work, who live in the seven LGAs, whether or not they work in one of those LGAs. It thus includes residents who commute to work in neighbouring LGAs as well as those who work locally. It also includes potential workers, though since potential workers receive zero work incomes and are not attached to any industry they are missing from the residential workforce by industry and by income.

These two definitions are linked by commuter flows. Work on commuting behaviour has shown that:

- the chief cost of commuting is the commuter's own time. This is a subjective cost, and varies between commuters. However, as a general rule of thumb half an hour one-way can be considered a satisfactory commute and an hour or more can be considered unsatisfactory;
- the distance that can be covered within a particular commuting time budget depends on the transport available. Money costs are relevant here: active transport is cheap but slow, car-as-driver is generally fast but expensive. Public transport lies in between, with much geographic variation; and
- the subjective time-costs of commuting are affected by incidental benefits and costs, for example, active transport includes exercise but is dangerous on busy roads and public transport may include snoozing or texting but may place one in bad company.

Taking these behavioural factors into account it is possible to define commuter catchments. From an employer point of view, the labour catchment is that centred on the business – it is from this catchment that labour can be recruited. From a resident point of view, the labour catchment is that centred on the residence – it is the area within which paid work may be sought.

From either point of view, Melbourne's North is not a single labour catchment – in fact, there are as many labour catchments as there are employers and residences. Despite these differences, whether from an employer or resident point of view, the typical Melbourne's North labour catchment will extend outside the seven LGAs, and most of them will include part of the Central Melbourne region. This means that employers in Melbourne's North are competing for labour with employers in the Central region, and similarly that most residents have some degree of access to jobs in the Central region. The concept of labour catchments is fundamental to the analytical work described later in this report.

This said, the need for labour within the region depends on its level of economic activity, and the work opportunities of the residents of the region depend in no small measure on the labour demand of regional employers.

## 1.4 Overall measures of Melbourne's North economy

The most frequently used measure of the size of national economies is Gross Domestic Product, or GDP. The regional equivalent of GDP is Gross Regional Product (GRP), defined so that national GDP is the sum of the GRP of all regions within the nation. GRP is conventionally calculated on a place-of-production basis, but can equally well be estimated on a residential basis.

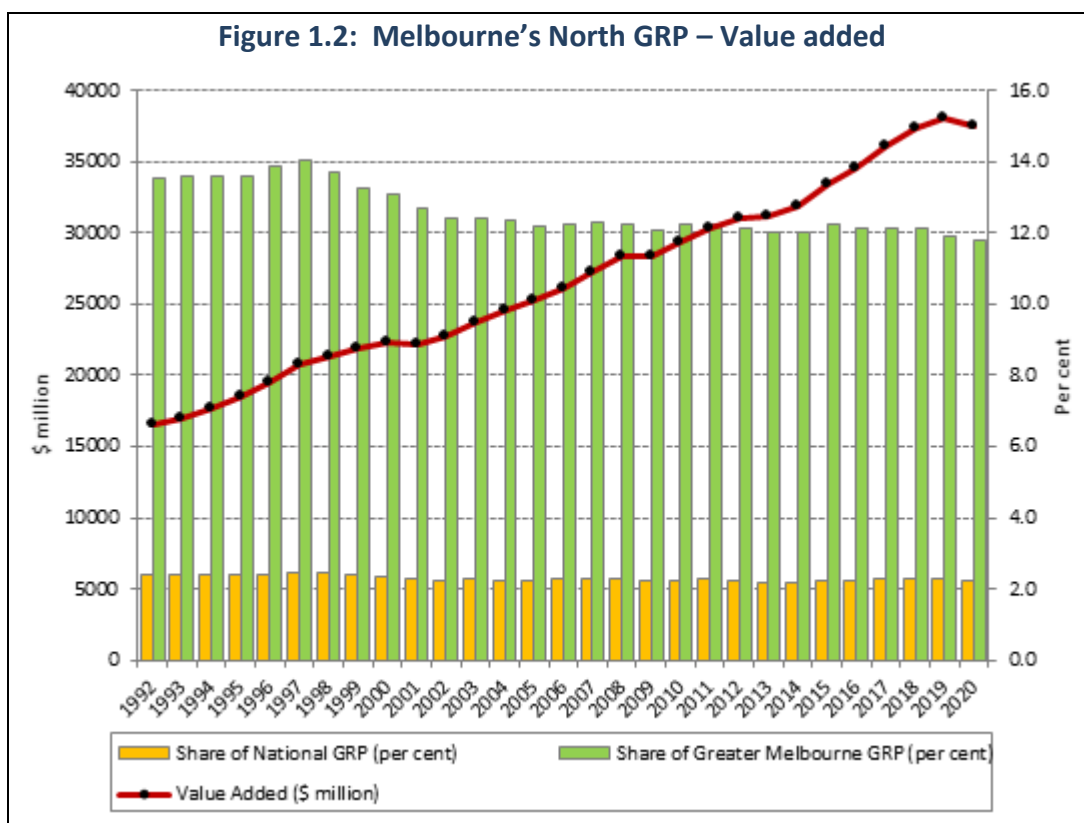
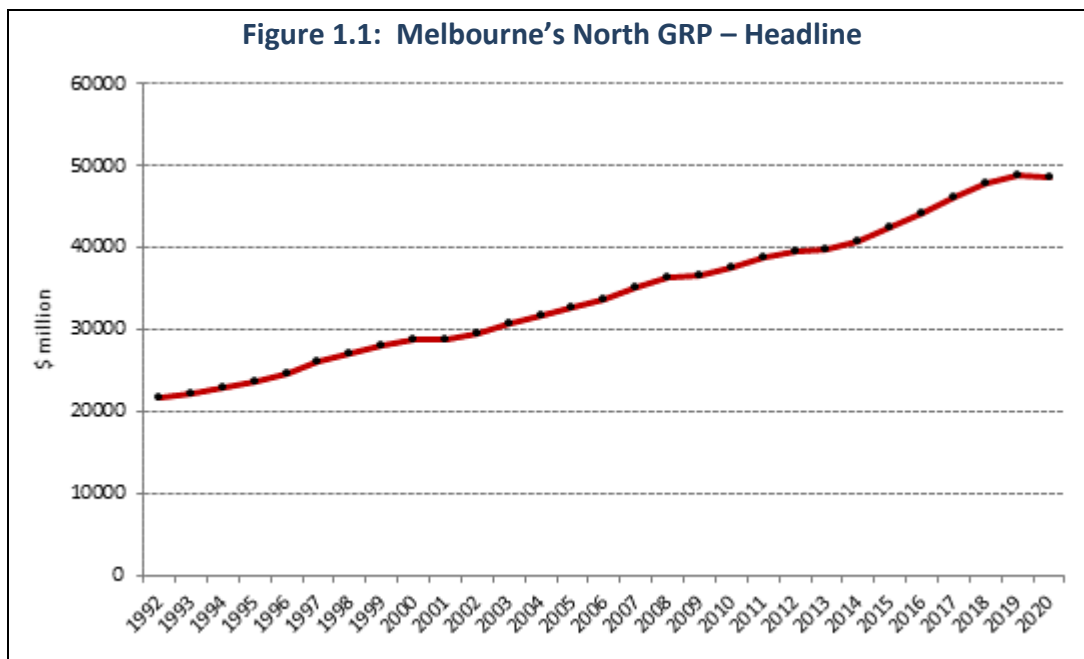
There is, however, a serious problem with estimations of GRP: both the residential and place-of-work locations of the employed people who contribute to production is known, but the locations where profits are generated are not directly observable. On a place-of-work basis it is true that multi-location retailers can assess the profitability of particular stores and multi-location manufacturers can assess the profitability of individual factories, but what about overheads? What about shared functions? There are no set rules for these distributions and, even if rules were applied, there is no requirement for multi-locational businesses to calculate them, let alone publish them. It is even more difficult to calculate GRP on residential basis, since corporate gross profits are pooled before any distributions are made.

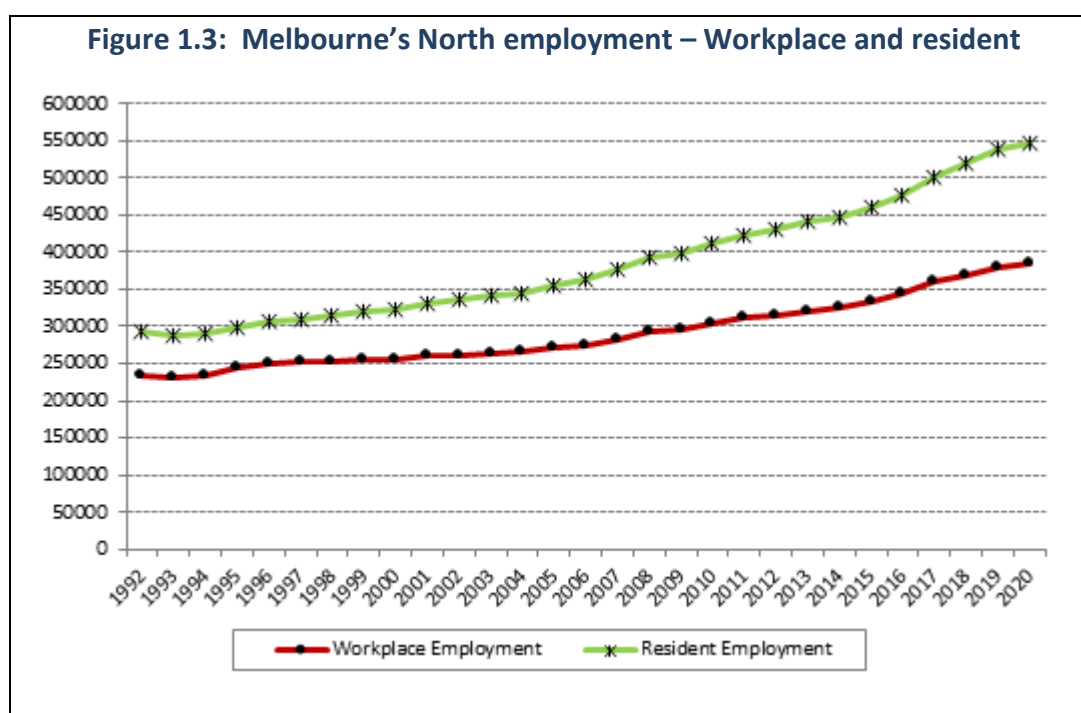
To summarise, regional employment statistics are reasonably reliable since we know where people work. Reasonably reliable regional statistics can be calculated for the labour earnings portion of GRP on both a place-of-work and a residential basis. However, the gross profit element has to be imputed. Estimates of GRP are sensitive to the assumptions used in making this imputation, which are not inconsequential since they affect the allocation of roughly one-third of GRP. The simplest assumption is to distribute gross profits by industry in proportion to regional labour earnings. NIEIR utilises this assumption, with modifications where regional data is available on industry profitability.

Figures 1.1 and 1.2 show that GRP in Melbourne's North grew steadily from 1992 to 2019. Two measures are shown: headline GRP (which includes dwelling rents, both cash rents and the imputed rents of owner-occupied dwellings and indirect taxes) and GRP restricted to value added (which excludes indirect taxes and dwelling rents and is therefore restricted to GRP arising from formal employment including both employee and capital returns. The impact of the COVID pandemic is evident in both figures. The share of Melbourne's North in national GDP declined slightly as the mining industry expanded, mainly

in WA, but declined significantly as a share of Greater Melbourne GRP. In Melbourne's North production and employment in hi-tech industries declined (Chapter 2) while employment in high-productivity services increased in Central Melbourne.

Figure 1.3 shows that employment creation in Melbourne's North, though rapid, has lagged the growth of the resident workforce (see Table 1.4).





## 1.5 Melbourne's North on the brink of COVID

This report was researched during the second half of 2021, during Melbourne's 6<sup>th</sup> COVID lockdown and the ensuing graduated recovery. The lockdowns in the 2020 and 2021 calendar years (2020, 2021 and 2022 financial years) directly affected employment, with significant differences by industry. They also directly affected commuting behaviour and the demand for goods and services: for example, long-distance travel was banned and investment in home entertainment became attractive.

In the following section detailed attention is given to 2018-19, the last financial year unaffected by COVID. It is not implied that the economy of Melbourne's North will simply return to the trajectory it was following up to 2019, but on the other hand it is certain that activities which were suppressed by lockdown will be resumed and 2019 provides at least a starting-point for assessing the consequences for the workforce in Melbourne's North, whether on a place-of-work or a residential basis. A second advantage of an account based on 2019 data is that the statistical estimates for that year are reasonably final rather than preliminary estimates. The following discussion accordingly concentrates on the supply and demand for labour in Melbourne's North as it was in 2019 (including recent trends). Chapter 2 follows this analysis with a quarter-by-quarter account of what happened during the COVID years.

### 1.5.1 The distribution of employment across Melbourne's North

Employers locate by trading off the cost of business premises against accessibility to customers, suppliers and their labour force. As a very rough general rule, the cost of premises (especially the land cost) is inversely related to accessibility. The trade-off varies because businesses have different spatial requirements and value the various aspects of accessibility differently. The trade-off can also change over time, particularly as accessibility patterns are altered by infrastructure and other investments. Natural features also affect locational decisions, most obviously for ports but in various other ways, such as the preference of many industries for large, flat sites.

Business locational decisions are not made every day – once a business has an established location there are generally significant costs in moving elsewhere. Locational patterns therefore reflect history – for example, the Melbourne central business district remains in its original location. The metropolitan area which developed up to the 1920s was strongly influenced by accessibility patterns which depended on ships and railways for long-distance transport and horse-drawn vehicles for short-distance, supplemented by trams within the metropolitan area. However, during the post-war period there were important changes, connected with the development of reliable and affordable road transport. As car ownership increased, employers found that, provided car parking was available, they could recruit both employees and customers from wide geographical areas without regard to active or public transport. Suburban shopping malls surrounded by car parks displaced stores located at public

transport nodes as well as little shops located within walking distance of homes. Developments in road transport also affected freight. As the capacity and reliability of heavy trucks increased, businesses dependant on freight flows no longer needed to locate near the wharves and rail terminals. The result was that employment spread into the suburbs, where land was cheaper than near the city centre yet, with the aid of motor vehicles, had many of the accessibility advantages of the city centre. Indeed, as road congestion increased, the relative accessibility advantages of the city centre decreased further. In the 1970s many observers expected that the city centre would wilt as employment moved to where the people lived.

The movement to the suburbs was strongest for industries which benefited from large premises and could manage with a labour pool smaller than the metropolitan area at large, particularly manufacturing and wholesale trade. However, as the experiment with VFL Park demonstrated, public transport still had its uses. Transport by private car was not suited to the assembly of large numbers of people in particular places, whether for sport, entertainment or employment. In this context, the radial public transport system inherited from before the motor age demonstrated its capacity to move crowds to and from its central hub, which remained the only place in the metropolitan area where crowds could be assembled.

Comparing Table 1.1 and Table 1.2, throughout the quarter century to 2019 there were more jobs in Central Melbourne than resident workers, complemented by more workers than jobs in the rest of the metropolitan area, with the imbalance reconciled by net inbound commuting to the central region. From 1994 to 2019 the proportion of metropolitan jobs located in the Central region increased by 7 percentage points while the proportion of jobholders resident in the region increased by 3 percentage points, leaving a gap to be met by increased commuting. The proportion of jobs located in the inner suburban regions fell by 7 percentage points, matched by a fall their share of the working population.

The share of the Outer North region in the metropolitan working population rose by 2 percentage points, with no more than a very slight rise in the region's share of employment so that the net outbound commuting increased. The same happened in the other outer metropolitan regions, and in total the increase in outbound commuting from the outer suburban regions matched the increase in inbound commuting to the central region, with the Outer North contributing around one-third of the total. This, of course, is a gross oversimplification of actual commuting patterns, which include circumferential as well as radial movements, and inner-to-outer flows as well as the predominant outer-to-inner flows. Much of the increase in net flow from the outer suburbs to the centre was met by a chain reaction, with inner suburban residents changing from local, within-region jobs to central region jobs, leaving their vacant

inner suburban jobs to be taken by outer suburban residents. Further complications arise if account is taken of jobs taken by ex-urban residents, but there is no need to pursue these complications here.

**Table 1.1 Hours worked at workplaces in 1994, 2009 and 2019 (percentage of total hours worked in the Melbourne metropolitan area)**

Region	1994	2009	2019
Central Melbourne	25.7	31.6	33.7
Total of 3 inner Melbourne regions	33.2	28.5	26.4
Outer North Melbourne	7.9	7.7	8.2
Total of 4 other outer Melbourne regions	33.2	32.2	31.8
<b>TOTAL MELBOURNE</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

*Note:* NIEIR regions as defined in the *State of the Regions* reports, for which see detailed definitions. Central Melbourne comprises the City of Melbourne plus Yarra, Port Philip and former Prahran. The inner suburbs are broadly those surrounding the Centre and subdivided before 1960, to the north extending as far as the metro ring road. Outer North Melbourne runs from the ring road to Pretty Sally hill but does not include Nillumbik, other outer regions run to the metropolitan boundary. Melbourne's North as defined for this study includes all of Outer North Melbourne plus parts of inner Melbourne and the Nillumbik portion of Melbourne Outer East. In the case of employees in transport, the workplace is defined as the sign-on point. Some of these hours will be worked by residents of regions outside the metropolitan area.

*Source:* NIEIR.

**Table 1.2 Hours worked by residents in 1994, 2009 and 2019 (percentage of total hours worked by Melbourne metropolitan residents)**

Region	1994	2009	2019
Central Melbourne	8.1	9.8	11.2
Total of 3 inner Melbourne regions	39.9	35.1	32.9
Outer North Melbourne	9.6	10.2	11.6
Total of 4 other outer Melbourne regions	42.3	44.9	44.4

*Note:* Regions as for Table 1.1. Some of the hours worked will be at locations outside the metropolitan area, but there is a net inflow of commuters into the metropolitan area.

*Source:* NIEIR.

Against this general background, Table 1.3 shows that, over the quarter century to 2019, jobs available in Melbourne's North grew by 3.8 per cent a year while the jobholding population grew by 4.6 per cent, hence the increase in net outbound commuting. The rate of growth of resident workers was most rapid in Whittlesea, followed



by Hume and Mitchell; it was slowest in Nillumbik and Banyule, though even in the latter it was stronger than the national rate (2.1 per cent a year as compared with 1.7 per cent nationally). The rate of growth of jobs available was again most rapid in Whittlesea, Hume and Mitchell and least rapid in Banyule and Nillumbik.

Despite these correlations, in all seven LGAs the rate of growth of jobs available was less than the rate of growth of the resident workforce, so that net outbound commuting increased for all of them. The gap between the two rates of growth varied between LGAs. The largest gap was in Nillumbik, where moderate population growth was accompanied by low job growth. The gap was 1.5-1.9 percentage points in Mitchell, Darebin and Moreland and, at less than 1 percentage point, was relatively small in the two fast-growing LGAs (Whittlesea and Hume). It was smallest in slow-growing Banyule.

LGA	Jobs available	Resident workers	Excess
Banyule	1.9	2.1	0.2
Darebin	2.4	4.1	1.7
Hume	5.0	5.7	0.7
Mitchell	3.4	5.3	1.9
Moreland	3.0	4.5	1.5
Nillumbik	1.9	3.0	2.1
Whittlesea	5.3	6.2	0.9
<b>MELBOURNE'S NORTH</b>	<b>3.8</b>	<b>4.6</b>	<b>0.8</b>

Source: NIEIR.

Table 1.4 records the results of this race between local employment growth and resident workforce growth. Taking the inner suburbs east to west:

- in Banyule the excess of working population over employment within the LGA started at 29 per cent and rose just a little to 31 per cent;
- in Darebin the excess was initially only 12 per cent but rose to the same level as in Banyule, thanks largely to population growth; and
- in Moreland the excess was already quite high, at 40 per cent. Though the rate of growth of local employment was higher than in the other inner suburbs, the rate of growth in the number of resident workers was higher again and drove the excess to 50 per cent.

LGA	1994	2009	2019
Banyule	29.1	30.5	31.0
Darebin	12.3	23.5	31.8
Hume	-35.3	-21.5	-16.6
Mitchell	19.3	32.1	42.3
Moreland	39.5	45.0	52.3
Nillumbik	52.1	59.8	58.6
Whittlesea	25.0	34.0	38.2
<b>MELBOURNE'S NORTH</b>	<b>18.9</b>	<b>25.9</b>	<b>29.8</b>

Source: NIEIR.

Among the outer ring of suburbs, there was a strong contrast between Hume and Nillumbik. Nillumbik is primarily a residential area strongly dependent on commuting for employment, though this level of dependence appears to have levelled off at an excess of employed residents to local employment of 59 per cent. During the 1980s employment in Hume grew faster than the resident population. In 1994 the municipality hosted 35 per cent more jobs than were necessary to employ its resident population. However, during the following 25 years the position was reversed and population growth exceeded job growth, whittling the job surplus down to 17 per cent. Whittlesea was in an intermediate position. In 1994 it was much less dependent on commuting than Nillumbik but more dependent than Hume. As in Hume rapid growth in local employment was outstripped by population growth. It ended up with an excess of resident workers over jobs of nearly 40 per cent.

Finally, over the 25 years residential growth, both in Wallan and the peri-urban belt, tipped Mitchell from relative self-sufficiency in jobs, as is typical of rural LGAs, to dependence on commuting.

It should be noted that these estimates are sensitive to the way municipal boundaries have been drawn. In particular, Hume has two major employment areas, one centred on Melbourne Airport on the border with Brimbank and Moonee Valley, the other at Campbellfield on the border with Whittlesea and Moreland. A shift of a kilometre or so in any of these boundaries would have altered the reported statistics without any change in the location of residences or employment. It is also worth remembering that the outer LGAs are geographically larger than the inner three, which means that a typical within-LGA commute in an outer LGA will be longer than its inner-area equivalent.



## 1.5.2 Industries

The labour force comprises a heterogeneous collection of individuals with a great variety of skills and experience. In crude economic language, and including both those who have paid work and those who are seeking it, these people constitute the supply side of the labour market, the sellers of labour services. The labour market also has a demand side, comprising employers who buy the services of employees, organise them and provide complementary capital to produce saleable goods and services. The demand for labour therefore depends primarily on the demand for the particular goods and services which people work to produce, but also on the technologies used in production and on the managerial skill of employers. In technical terms, it is a derived demand.

Because the demand for labour is derived from the demand for goods and services, it makes sense to analyse it by industry, where an industry is a group of businesses (sometimes a single business) producing a specified range of goods and/or services. This is helpful not only from the demand side, but from the supply side as well, since the mix of skills employed varies by industry. Some skills are industry-specific, and even when an industry employs general skills the balance between these skills differs by industry.

This raises a basic question: what is an industry? The current Wikipedia definition is ‘a branch of an economy that produces a closely-related set of raw materials, goods or services’. For decades statisticians have worked at translating this concept into statistical definitions and a full understanding of industry data for Melbourne’s North requires a basic grasp of the definitions they have developed.

The Australian and New Zealand Standard Industry Classification (ANZSIC) allocates businesses to industries according to the goods and services which they produce at four levels of detail. For example, a business which manufactures ice cream (ANZSIC code 1132) is also a dairy product manufacturer (code 113), a food manufacturer (code 11) and a manufacturer (division C). The classification includes 505 industry classes (4-digit codes), 225 industry groups (3-digit), 86 industry subdivisions (2-digit) and 19 industry divisions (coded A to S).

The 3 and 4-digit codes support detailed work on the markets for particular products, for example as required by competition policy. However, there are too many of them to be manageable in a study of the workforce as a whole, and in any case detailed data is routinely suppressed at the regional level for confidentiality reasons. Accordingly the present study is based on data for the 86 2-digit industries by LGA. This classification is not ideal for our purposes – for example, there is no distinction between long-distance road freight requiring B-double drivers and short-distance time-sensitive deliveries requiring electric bicycle riders.

However, the consistent estimates of industry activity are available by LGA and over time, and the total of 86 industries is manageable in computer-based analytical work. It has been used in the preparation of the forecasts presented in Section 3 of this report but is much too detailed for verbal exposition. For this purpose, the 86 2-digit industries have been grouped in three ways.

- Groups of industries as identified by NORTH Link for discussion purposes.
- The familiar general-purpose ANZSIC grouping into 19 industry divisions.
- A 10-industry classification developed by NIEIR as an aid to understanding regional economic dynamics.

The first of these classifications will be introduced in Chapter 4. The second is a general purpose classification developed by the government statistical offices of Australia and New Zealand. Though it has its arbitrary elements (for example, why classify building cleaners in the same division as travel agents?) is used in this report, particularly in Chapter 3 on the impact of COVID-19 on the economy of Melbourne’s North. However, the present chapter utilises a different classification developed by NIEIR which groups employers according to their role in regional economies. The primary distinction is between businesses which earn income from outside the region (‘export’ industries) and those which primarily serve local demands. In analysis of industry development across regions Australia-wide NIEIR has found it useful to divide industries into three groups.

- Export-oriented industries in which regional employment is largely financed from sales to buyers outside the region.
- Local demand industries in which regional employment is largely financed from sales to buyers within the region, also including tax-financed services to residents.
- Centralised services form an intermediate category which combines widespread local-demand employment with concentrations of specialised employment providing services to hinterlands which include multiple regions. These concentrations are typically located in the metropolitan centres.

Table 1.5 provides basic employment data for the 56 ANZSIC 2-digit industries in which employment in Melbourne’s North exceeded 1,000 employees in 2019, grouped under the 10 headings used in this chapter.

## ***The export-oriented industries***

The export-oriented industries can be divided into those which are typically non-metropolitan and those which are typically urban. Within the typically non-metropolitan industries agriculture can readily be distinguished from mining while within the typically urban industries manufacturing can be distinguished from logistics. The economic base industries thus comprise the following.

### **1. Agriculture and food processing**

Agriculture is here broadly defined to include forestry, aquaculture and fishing – the traditional primary industries, which are notably based on land resources. The primary locational requirement of agriculture is suitable land. This industry is responsible for approximately 5 per cent of all hours worked in Australia.

The only 2-digit industry in this sector to provide more than a thousand jobs in Melbourne's North in 2019 was agriculture narrowly defined – essentially farming plus market gardening. This industry provided 0.6 per cent of all jobs in the region (Table 1.5). Despite the conversion of rural land to urban purposes, employment was growing.

### **2. Mining**

The mining industry is here conventionally defined, but excludes quarrying for construction materials, which is included in the construction industry. The primary locational requirement for mining is the availability of mineral deposits, but as the industry has automated an increasing proportion of its employment is in offices and laboratories away from the physical mines. Mining generates approximately 2 per cent of all hours worked in Australia very few of which were in Melbourne's North.

### **3. Manufacturing**

Though many Australian manufacturers sell to national rather than to international markets, at the regional level they are generally exporters. As in mining, automation has increased the office/laboratory component of manufacturing and in addition much process work has been outsourced overseas. Within Australian, manufacturing firms have been outsourcing activities previously carried out in-house to wholesalers and various professional consultancies, with a possible side-effect in underestimating industry growth. Though manufacturing industry includes boutique operations which do not take up much space, the production side of the industry has been drawn to

suburban locations where large flat sites are available at reasonable cost, with reasonable access to labour and to road transport. Manufacturing is a quintessential suburban industry and generates around 6 per cent of Australian hours worked.

In 2019 13 of the 15 ANZSIC 2-digit manufacturing industries were substantially present in Melbourne's North, each generating a thousand or more jobs. The largest of them was food products, with 9,300 jobs and a positive employment growth rate, a little above the regional average growth rate of total employment. Three other manufacturing industries experienced employment growth – chemical products, wood products and furniture. At the other end of the scale, employment in transport equipment manufacture declined by 4 per cent a year, reducing it from the largest manufacturing industry in 2006 to the second-largest in 2019. Employment in textiles, clothing and footwear diminished at a similar rate while the other manufacturing industries marked time. In 2019 manufacturing provided 18.8 per cent of employment in Melbourne's North. This proportion declined to 12.7 per cent in 2019.

### **4. Logistics**

Wholesaling and high-productivity transport are combined in this industry group. The transport industry as conventionally defined includes businesses which generate high value added per hour worked (such as air transport and rail) and activities which generate low value added per hour, chiefly local transport where economies of scale are not available. Since it is mainly concerned with local distribution, low-productivity transport serves local demand rather than inter-regional demand. Road transport is both long-distance and local, but unfortunately is not so split in the underlying ABS data. On the evidence of low value-added per hour, road transport as a whole is here included in the distribution industries. Logistics so defined generates a similar level of employment to manufacturing and prefer similar suburban locations, but currently pay better.

The logistics group of industries comprises 12 2-digit ANZSIC industries of which eight generated significant employment in Melbourne's North. Five of these were wholesaling industries, in which employment was declining except in grocery and liquor wholesaling. The remaining three industries in the group were transport-related. The largest of these was air transport, in which employment was growing slowly. Employment growth was much more rapid in warehousing and in transport support services such as airport operations. In 2006 logistics thus defined provided 9.8 per cent of employment

in Melbourne's North. This proportion declined to 8.5 per cent in 2019.

Taken together, the four export-oriented industries were responsible for less than 20 per cent of employment Australia-wide and 22 per cent of employment in Melbourne's North.

COVID effects on employment in these industries worked largely through the demand for their services. The demand for air transport (part of logistics) collapsed and there were complex and not entirely negative effects on domestic logistics as international transport was disrupted.

### *The centralised services*

By definition, the centralised services combine wide geographic representation with concentration in the metropolitan centres. Some of them are organised as head offices with branches (e.g. state government administration, banks) but in others the locational pattern arises less formally (lawyers, journalism). There are borderline cases – as noted above, mining is increasingly an urban industry with automated operations in remote regions. When production is automated, nothing is left but administration.

Two main reasons are given for the tendency of administration to concentrate in city-centre offices.

- The knowledge economy. The Australian economy, along with those of other high-productivity countries, increasingly depends on specialised knowledge and skills, many of which are held in public institutions or in consulting firms. The attraction of city centres to these service providers includes ready accessibility to clients wherever they may be located, and ready access to specialist skills which may be brought together to meet client needs.
- Power-broking and status-seeking by decision-makers in major businesses and other institutions concentrates activity in prestige offices. Though there may be knowledge-economy benefits in bringing staff into these central-area offices, and though the head offices have recognised that many routine clerical tasks can either be automated or dispersed to offices in less expensive places, the suspicion is that, for status reasons, the offices are larger than required.

Employment in the centralised services was not much affected by lockdowns, but these industries were strongly affected by work-at-home requirements. As of late 2021 it was difficult to predict how far commuting patterns in these industries would return to 2019 norms.

NIEIR has split the centralised services into two groups.

## **5. Money services**

Finance, banking and property management generate high incomes per hour worked. This industry is responsible for around 6 per cent of hours worked in Australia but in 2019 generated 14 per cent of Australian value added, thanks to its high profitability. It is questionable as to whether this high profitability can be maintained – should a financial crisis occur it could easily go negative, and it could also be curtailed were more efficient and less debt-reliant systems of macroeconomic management implemented.

Six ANZIC 2-digit industries are grouped into Money Management, of which four generated more than a thousand jobs in Melbourne's North in 2019. In 2006 finance (mainly banking) was the largest but, as the banks automated, employment failed to grow. In 2019, in Melbourne's North, employment in real estate considerably exceeded that in finance. Employment in auxiliary financial services (chiefly financial advisors) also grew while employment in hiring services declined. In 2006 this group of industries generated 2.6 per cent of employment in Melbourne's North and in 2019 2.3 per cent.

## **6. Centralised office industries**

Professional and technical services, tertiary education and research, media and public administration generate moderate incomes per hour worked. This group of industries accounts for about 20 per cent of hours worked in Australia.

The centralised office services comprise 16 ANZSIC 2-digit industries of which eight provided more than a thousand jobs in Melbourne's North in 2019. The largest of these was professional, scientific and technical services, closely followed by public administration. The most rapidly growing industry within the group was computer system design and the least rapidly growing were defence and tertiary education. Employment in administrative services grew more rapidly than in public administration, probably due to Commonwealth and state policies which subcontracted public administration to private sector businesses. The centralised office services generated 11.2 per cent of employment in Melbourne's North in 2006 and 11.9 per cent in 2019.

### *Local demand industries*

Finally, there are four service industries which do not display the city-centre orientation of the centralised services. These industries primarily serve local demand.

## 7. Construction

This industry is conventionally defined and is found in all regions, particularly those which are growing in population and employment. It generates moderate incomes per hour worked and 11 per cent of total hours worked.

From 2006 to 2019, in Melbourne's North, employment grew rapidly in all three branches of the construction industry, particularly in heavy and civil engineering construction. In employment terms, by far the largest of the four ANZSIC 2-digit industries in the group was construction services, which consists largely of independent contractors. In 2006 construction provided 9.8 per cent of jobs in Melbourne's North, and in 2019 11.3 per cent.

## 8. Distribution

Retail and local transport generate low incomes per hour worked and in general respond to local demand. Distribution is responsible for 16 per cent of hours worked. Within the industry, COVID accelerated the disruption of in-store retailing in favour of sight-unseen retailing with its greater dependence on local delivery services. Distribution also includes the cleaning and maintenance of business premises.

Distribution includes 10 ANZSIC 2-digit industries. In 2019 eight of these each generated more than a thousand jobs in Melbourne's North. Food retailing and other store-based retailing were major employers, in both of which employment was growing at less than the regional average rate. However, distribution included the most rapidly growing of all the 2-digit industries, waste management, in which employment grew by 7.6 per cent a year from 2006 to 2019. Other rapidly growing industries in the group were road transport and repairs and maintenance, with its heavy concentration on vehicle repair. Between 2006 and 2019 the share of this group of industries in total employment in Melbourne's North was stable at 19.9 per cent.

## 9. Visitor services

Visitor services include accommodation, hospitality, sport, entertainment, the creative arts and personal services like hairdressing. They involve interaction between the service provider and the service recipient but generate low incomes per hour worked. For the most part they respond to local demand, but unlike distribution also serve the extra-regional demands of tourists. These services are responsible for 9 per cent of hours worked in Australia.

In Melbourne's North, at 2-digit ANZSIC level, the predominant visitor service industry was food and beverage services – cafes, pubs and clubs. Employment in food and beverage services grew rapidly, but within the group of industries was surpassed by sports and recreation and also by the creative arts. Employment in personal services grew at the regional average rate. Accommodation was the laggard and in 2019 was the smallest of the industries in the group – an indication that overnight tourism is not a particularly strong contributor to the economy of Melbourne's North, with most visitor-services businesses depending on local demand. In 2006 the various visitor services accounted for 7.8 per cent of employment in Melbourne's North and in 2019 for 9.1 per cent.

## 10. Area services

Like visitor services, education, health, welfare and police services involve personal interactions between service providers and recipients, but in this case the service providers on average receive higher incomes, in most cases supported by governments either directly through public sector service provision or indirectly through contracting out or tax concessions. Despite (or perhaps because of) their dependence on government funding, these services are divided into carefully-defined sectors, of which health and community services is the largest. Education is also significant, though for the purposes of this study tertiary education has been defined as a centralised service.

At the 2-digit ANZSIC level, schools were the second to construction services as an employer in Melbourne's North. Social assistance, medical care and hospitals were also major employers. Employment in schools was growing at around the regional average rate, similar to residential care and hospitals. The most rapidly growing 2-digit industry in this group was social assistance (which includes childcare), followed by adult and community education (with its strong element of sports and fitness instruction). In 2006 this group of industries was responsible for 19.6 per cent of employment generated in Melbourne's North, rising to 23.5 per cent in 2019.

As measured by employment, the major structural change in the economy of Melbourne's North in the decade or so up to 2019 was a decline in the proportion of jobs generated in the export-oriented industries matched by an increase in the proportion generated in the local-demand industries.

**Table 1.5 Growth of employment in Melbourne's North on a place-of-work basis, 2006 to 2019, for 2-digit ANZSIC industries which provided at least 1,000 jobs in the region**

Industry	Jobs 2006	Jobs 2019	Growth 2006-2019 (% per annum)
<b>Agriculture forestry and fishing</b>	<b>1876</b>	<b>2298</b>	<b>1.8</b>
Agriculture	1633	2094	1.9
<b>Mining</b>	<b>240</b>	<b>320</b>	<b>2.2</b>
<b>Manufacturing</b>	<b>51658</b>	<b>47945</b>	<b>-0.6</b>
Food products	6415	9269	2.9
Textiles clothing footwear	5229	3017	-4.2
Wood products (includes prefabrication)	1694	2026	1.4
Paper and converted paper	2818	2792	-0.1
Printing	2440	2430	0
Chemical products (e.g. resins, toiletries, pharma)	1052	2647	3.7
Polymer products (e.g. tyres)	4566	3401	-2.2
Non-metallic mineral products (e.g. ceramic, plaster)	1721	1692	-0.1
Primary metal products (ferrous and non-ferrous)	2701	2549	-0.4
Fabricated metal products (e.g. structures)	3739	3478	-0.6
Transport equipment (motor vehicles and other)	10083	5860	-4.1
Machines and other equipment	4566	3814	-1.4
Furniture and other manufacturing	3680	4551	1.6
<b>Logistics</b>	<b>27087</b>	<b>32230</b>	<b>1.3</b>
Basic material wholesaling	2713	2321	-1.2
Machinery and equipment wholesaling	3482	2621	-2.2
Motor vehicle and parts wholesaling	1327	1264	-0.4
Grocery liquor and tobacco wholesaling	2724	4024	3.0
Other goods wholesaling	4619	4084	-0.9
Air transport	6586	7565	1.1
Transport support services	3584	6355	4.5
Warehousing and storage services	1529	2950	5.2
<b>Money management</b>	<b>7064</b>	<b>8872</b>	<b>1.8</b>
Finance	2259	2412	0.5
Auxiliary finance and insurance services	902	1366	3.2
Rental and hiring services	1217	1068	-1.0
Property operators and real estate	2074	3278	3.6
<b>Centralised office services</b>	<b>30822</b>	<b>45072</b>	<b>3.0</b>
Electricity supply	715	1101	3.4
Telecommunications	1003	1207	1.4
Professional scientific and technical services	8087	13015	3.7
Computer system design	1106	2646	6.9
Administrative services	2819	5099	4.7
Public administration	7862	11015	2.6
Defence	1629	1748	0.5
Tertiary education	5742	6573	1.0



**Table 1.5 Growth of employment in Melbourne's North on a place-of-work basis, 2006 to 2019, for 2-digit ANZSIC industries which provided at least 1,000 jobs in the region (continued)**

Industry	Jobs 2006	Jobs 2019	Growth 2006-2019 (% per annum)
<b>Construction</b>	<b>26856</b>	<b>42737</b>	<b>3.6</b>
Building construction	6062	9645	3.6
Heavy and civil engineering construction	1557	3345	6.1
Construction services	19082	29395	3.4
<b>Distribution</b>	<b>54893</b>	<b>75198</b>	<b>2.5</b>
Motor vehicle and parts retailing	2400	3169	2.2
Food retailing	12107	13914	1.1
Other store-based retailing	16491	20955	1.9
Road transport	8534	14386	4.1
Postal and courier pick-up and delivery services	2542	3369	2.2
Waste collection, treatment and disposal	638	1652	7.6
Building cleaning, pest control, gardening, packaging	4796	6274	2.1
Repair and maintenance	5828	10048	4.3
<b>Visitor services</b>	<b>21511</b>	<b>34577</b>	<b>3.9</b>
Accommodation	1018	1207	1.3
Food and beverage services	12751	20388	3.7
Creative and performing arts	753	1622	6.1
Sports and recreation	2073	4085	5.4
Personal and other services	4870	6992	2.8
<b>Area services</b>	<b>53848</b>	<b>89059</b>	<b>3.9</b>
Public order, safety and regulatory services	3994	6583	3.9
Preschool and school education	15851	21811	2.5
Adult, community and other education	2556	6186	7.0
Hospitals	10067	14331	2.8
Medical and other health care services	8949	15416	4.3
Residential care	5122	6783	2.2
Child care and other social assistance services	7176	17733	7.2
<b>TOTAL</b>	<b>275344</b>	<b>378378</b>	<b>2.5</b>

Source: NIEIR.



### 1.5.3 GRP by industry in Melbourne's North

Table 1.6 indicates the estimated relative contributions, on a place-of-production basis, of the 10 industry groups to GRP in Melbourne's North and in Australia as a whole. To facilitate comparison with previous reports, Table 1.7 re-presents the data by the traditional 19 industries.

The following features of the estimated GRP of Melbourne's North in 2019 are worth noting.

- Australia's currently most profitable industry group, mining, was absent from Melbourne's North.
- Though the country's second-most profitable industry group, money services, was represented in all LGAs in the region, its contribution to GRP was well below national average in five of the seven LGAs and somewhat below in the remaining two – Darebin and Nillumbik.
- The contribution of the centralised office services was also below national average in all LGAs except Darebin, where it was above thanks to the presence of La Trobe University.
- The contribution of manufacturing and logistics was above national average in the region as a whole but not in all of its constituent LGAs.
- The contribution of visitor services was around national average: above in LGAs such as Nillumbik and below in LGAs where logistics and manufacturing were strong.
- The contribution of construction was generally above national average, particularly in the growing outer parts of the region.
- The contribution of area services region-wide was above national average – well above in Banyule, thanks to the Austin and its associated hospitals, but below in Hume.
- The contribution of distribution was above national average in all seven LGAs.

Table 1.7 is included to facilitate comparison with other sources which use the established list of 19 ANZSIC industry divisions, and to provide back-data for the industry statistics in Chapter 2. This more detailed classification highlights the effect of particular major employers.

- The prominence of area services in Banyule was due to health care and social assistance, more specifically the Austin hospital and associated facilities.

- The prominence of office services in Darebin could be traced to education and training, in other words, La Trobe University.
- The prominence of logistics in Hume was not due to wholesale trade but to transport, postal and warehousing, with Melbourne Airport as a major contributor.

Thanks to the limitations in the source material, the estimates of value added per employed person in Table 1.8 are not considered very accurate, particularly at the LGA level. This said, the data point once again to the effect of the absence of mining on value added in Melbourne's North. This does not mean that the region should hasten to attract the industry, since its high profitability is largely due to favourable overseas prices which are not expected to last. Technically, its profits consist mainly of economic rents which are due to luck rather than to good management. Politically speaking, it is not in the interests of Melbourne's North that governments should subsidise mining, whereas it is in its interests that governments should support the other economic base industries.

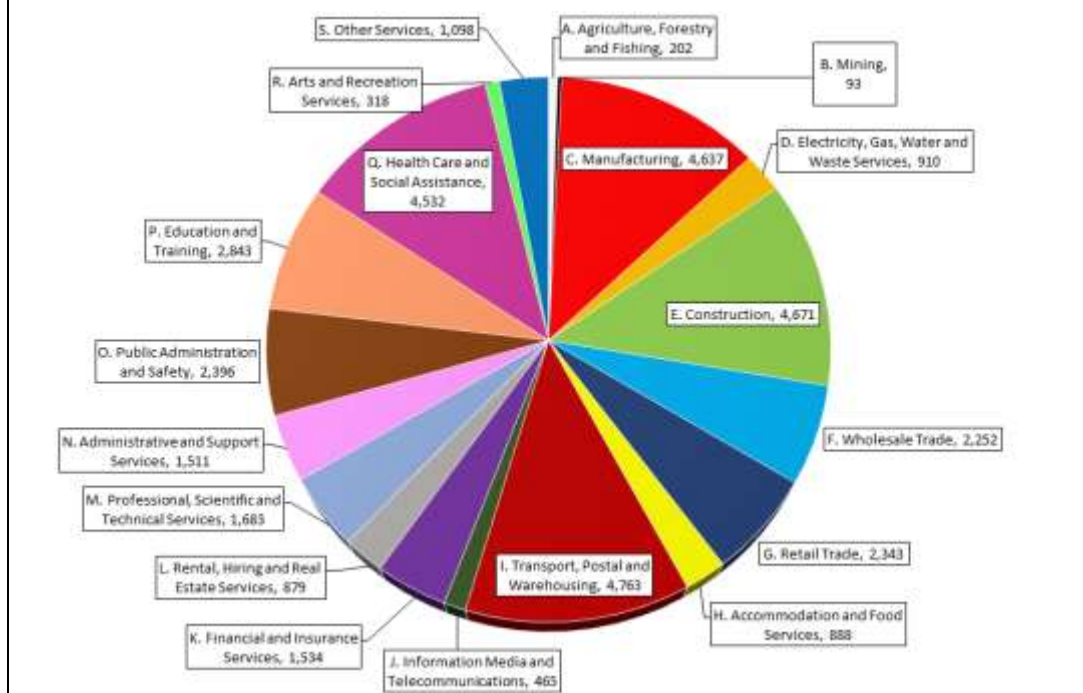
In most industries where Melbourne's North had significant employment, in 2019 value added per employed person was a little below the Australian average for the industry group. Two general factors contributed to this result.

- Since the mining boom, value added per employee in Victoria has tended to be less than in the 'mining states', particularly Western Australia. This affects all industries but is particularly marked in construction.
- A suburban effect. As noted in discussing the knowledge/prestige economy, in a number of industries, particularly the centralised services, value added per employee in the city centres tends to be higher than in the suburbs or, for that matter, in the country.

In the bottom line of the table, average value added per person employed in the region (as distinct from employed residents) was below the national average in all seven LGAs. The lowest value in 2019 was that for Nillumbik, where much of the employment was local demand industries with low value added per worker.

Figure 1.4 gives the breakdown of Melbourne's North value added by industry sector for the 2019 financial year.

**Figure 1.4: Melbourne's North – Value added by industry, financial year 2019**



**Table 1.6 Value added by industry as a percentage of Gross Regional Product – Melbourne's North LGAs and Australia, 2019 (10 major industry groups)**

Industry	Melb's North	Banyule	Darebin	Hume	Mitchell	Moreland	Nillumbik	Whittlesea	Australia
Agriculture	0.3	0.2	0.2	0.3	4.0	0.1	1.1	1.1	2.5
Mining	0.1	0.1	0.3	0.1	0.1	0.0	0.0	0.1	11.4
Manufacture	12.2	5.5	9.7	17.5	5.1	9.8	3.7	13.2	6.6
Construction	12.4	9.5	8.2	11.2	26.0	14.0	12.8	16.8	8.9
Logistics	14.8	4.1	8.7	28.5	3.2	7.6	4.3	10.2	7.7
Distribution	12.8	10.0	12.9	13.4	12.8	12.6	12.0	13.6	8.6
Visitor services	4.3	4.5	5.3	3.0	4.4	6.5	8.7	3.5	4.3
Office services	16.0	18.0	24.9	11.0	20.2	16.5	21.1	14.3	22.5
Money services	6.4	7.3	10.0	3.9	5.7	6.6	10.0	7.1	13.5
Area services	20.4	40.7	19.7	11.2	18.7	26.2	26.3	20.1	14.1

Source: NIEIR.

**Table 1.7 Value added by ANZSIC industry division as a percentage of Gross Regional Product – Melbourne's North LGAs and Australia, 2019**

Industry	Melb's North	Banyule	Darebin	Hume	Mitchell	Moreland	Nilumbik	Whittlesea	Australia
Agriculture, Forestry and Fishing	0.5	0.2	0.2	0.3	4.0	0.2	1.1	1.1	2.5
Mining	0.2	0.1	0.3	0.1	2.4	0.1	0.0	0.3	11.6
Manufacturing	12.2	5.6	9.7	17.5	5.0	9.8	3.7	13.2	6.6
Electricity, Gas, Water and Waste Services	2.4	0.6	1.3	3.3	1.8	0.8	1.9	4.1	2.9
Construction	12.3	9.5	8.2	11.1	23.7	14.0	12.8	16.6	8.7
Wholesale Trade	5.9	3.4	7.3	6.0	1.9	5.8	2.6	7.8	4.3
Retail Trade	6.2	6.2	8.1	4.2	8.1	7.0	6.8	7.3	4.8
Accommodation and Food Services	2.3	2.2	2.8	1.8	2.8	3.3	3.5	2.0	2.7
Transport, Postal and Warehousing	12.5	2.1	3.7	28.5	3.6	4.1	3.3	5.5	5.4
Information Media and Telecommunications	1.2	1.1	1.8	1.0	0.3	2.0	1.2	0.9	2.6
Financial and Insurance Services	4.0	4.1	6.8	2.5	3.4	3.5	5.8	4.7	9.8
Rental, Hiring and Real Estate Services	2.3	3.1	3.2	1.3	2.2	2.9	4.1	2.3	3.4
Professional, Scientific and Technical Services	4.4	7.4	6.4	1.9	3.0	6.6	10.5	3.2	8.0
Administrative and Support Services	4.0	4.1	4.1	4.3	2.6	3.9	5.3	3.3	4.0
Public Administration and Safety	6.3	6.9	7.1	5.9	16.8	6.7	5.9	3.9	6.1
Education and Training	7.5	8.2	13.6	3.8	7.5	7.8	11.7	7.7	5.5
Health Care and Social Assistance	11.9	31.4	11.1	4.0	8.2	16.0	12.3	12.7	8.3
Arts and Recreation Services	0.8	0.9	0.9	0.6	0.8	1.2	2.4	0.7	0.9
Other Services	2.9	3.2	3.4	2.0	1.9	4.4	5.1	2.7	2.0

Source: NIEIR.

**Table 1.8 Value added by industry, \$'000 per employed person – Melbourne's North LGAs and Australia, 2019**

Industry	Melb's North	Banyule	Darebin	Hume	Mitchell	Moreland	Nilumbik	Whittlesea	Australia
Agriculture	91	–	–	–	88	–	–	–	115
Mining	–	–	–	–	–	–	–	–	869
Manufacture	98	88	95	100	113	96	84	99	113
Construction	110	111	108	94	165	142	65	124	124
Logistics	175	175	165	182	142	160	171	159	186
Distribution	65	63	63	69	68	64	56	60	64
Visitor services	47	47	49	48	37	52	44	43	54
Office services	135	130	130	150	123	125	129	141	182
Money services	276	292	317	229	261	283	284	280	308
Area services	87	91	88	92	80	85	77	82	86
<b>TOTAL</b>	<b>100</b>	<b>96</b>	<b>101</b>	<b>108</b>	<b>100</b>	<b>96</b>	<b>81</b>	<b>97</b>	<b>126</b>

Source: NIEIR.

## 1.5.4 Employment by industry in Melbourne's North

The data in Tables 1.9 and 1.10 are considered somewhat more reliable than those in Tables 1.6 and 1.7 and extend the discussion of employment by industry to the LGA level. It is convenient to discuss the 2019 pattern in conjunction with the employment growth rates shown in Table 1.11.

The effect of large employers on the distribution of employment by industry was noticeable in Banyule (the Austin and related hospitals boosted the proportion of the workforce in area services), Darebin (La Trobe University boosted office services) and Hume (Melbourne Airport boosted logistics). During the decade to 2019 employment grew in all three of these industry concentrations by about 2 per cent a year. The defence department was largely responsible for a concentration of 'office services' in Mitchell, though this commitment was not growing. Several other location factors could be seen at the industry level.

- Agriculture was not significant except in Mitchell, where it was in decline.
- Manufacturing was concentrated in Hume, spilling into Whittlesea, in both of which it was growing gently. It was still a significant employer in Moreland and Darebin, but was withdrawing from both these municipalities. As mentioned, when discussing the underlying topography, it was never very important in Banyule or Nillumbik. Manufacturing also declined in Mitchell, in this case probably reflecting a decline in the towns in the north of the Shire where manufacturing was originally developed in response to decentralisation incentives which have since been withdrawn or over-ridden by broader trends.
- As already noted, logistics concentrated in Hume, not only because of Melbourne Airport but because of its position as the metropolitan terminus of the Hume Highway.
- Office and money service employment was present in all the LGAs. Its low relative contribution to total employment in Hume and Whittlesea was largely a consequence of the importance of manufacturing and logistics in these two LGAs and in fact office service employment was growing quite rapidly in both of them. This suggests that office services which support manufacturing and logistics have been moving into the two LGAs – though, as mentioned, there was also evidence from growth in the Central region that the outsourcing of office functions by manufacturing and logistics may have resulted in some transfer of employment from Melbourne's North to the Central region.
- As would be expected in a metropolitan area extending outwards by greenfields development, construction contributed more to employment in the outer suburbs than in the inner. Its rate of growth was particularly impressive in Mitchell, followed by Hume and Whittlesea.
- Employment in distribution was significant in all seven LGAs, ranging from 15 to 22 per cent. It was growing most rapidly in Hume and Whittlesea, most likely thanks to growth in heavy road transport (as noted above, it was not possible to separate road transport into long-distance dominated by B-doubles and short-distance delivery vans and mopeds). The decline in distribution employment in Nillumbik was probably due to the digital disruption of retailing.

**Table 1.9 Employment by industry as a percentage of total employment, place-of-work basis – Melbourne's North LGAs, 2019 (10 major industry groups)**

Industry	Melb's North	Banyule	Darebin	Hume	Mitchell	Moreland	Nillumbik	Whittlesea
Agriculture	0.6	0.1	0.2	0.5	4.5	0.1	1.1	1.2
Mining	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1
Manufacture	12.7	6.1	10.2	19.1	5.1	9.9	3.4	13.3
Construction	11.3	8.3	7.7	12.9	15.7	9.5	16.1	13.1
Logistics	8.5	2.3	5.3	16.9	2.2	4.6	2.0	6.2
Distribution	19.9	15.4	20.5	20.9	18.6	19.0	17.3	22.1
Visitor services	9.1	9.1	10.8	6.7	11.9	12.0	16.1	7.9
Office services	11.9	13.4	19.3	7.9	16.4	12.8	13.4	9.9
Money services	2.3	2.4	3.2	1.9	2.2	2.2	2.9	2.5
Area services	23.5	42.9	22.5	13.2	23.4	29.9	27.7	23.8

Source: NIEIR.

**Table 1.10 Employment by ANZSIC industry division as a percentage of total employment, place-of-work basis – Melbourne's North LGAs, 2019**

Industry	Melb's North	Banyule	Darebin	Hume	Mitchell	Moreland	Nillumbik	Whittlesea
Agriculture, Forestry and Fishing	0.6	0.1	0.2	0.5	4.5	0.1	1.1	1.1
Mining	0.2	0.1	0.3	0.1	1.3	0.0	0.0	0.2
Manufacturing	12.7	6.0	10.2	19.2	5.1	9.9	3.4	13.3
Electricity, Gas, Water and Waste Services	0.9	0.3	0.5	1.5	0.8	0.4	0.5	1.3
Construction	11.2	8.3	7.7	12.8	14.5	9.5	16.1	13.0
Wholesale Trade	3.8	1.9	4.5	4.1	1.4	3.7	1.4	5.0
Retail Trade	10.4	9.7	13.0	7.8	11.5	10.9	10.6	12.9
Accommodation and Food Services	5.7	5.3	6.5	4.7	8.6	6.8	8.2	5.2
Transport, Postal and Warehousing	9.4	2.0	3.7	21.1	4.1	4.0	2.4	5.2
Information Media and Telecommunications	0.8	0.7	1.2	0.6	0.3	1.3	0.8	0.7
Financial and Insurance Services	1.1	1.2	1.7	0.7	1.0	1.1	1.4	1.3
Rental, Hiring and Real Estate Services	1.1	1.2	1.5	1.0	1.1	1.1	1.5	1.1
Professional, Scientific and Technical Services	4.1	6.3	5.8	2.0	3.3	5.7	7.9	3.2
Administrative and Support Services	3.0	2.8	3.1	3.2	2.7	2.6	3.2	3.0
Public Administration and Safety	5.1	5.3	5.8	4.9	12.9	5.4	4.1	3.4
Education and Training	9.1	10.1	13.7	5.4	10.1	10.3	13.5	9.2
Health Care and Social Assistance	14.3	32.5	13.5	5.8	11.8	18.5	13.3	15.3
Arts and Recreation Services	1.6	1.7	2.0	0.9	1.8	2.5	4.4	1.3
Other Services	4.6	4.6	5.3	3.5	3.3	6.4	6.4	4.3

Source: NIEIR.

**Table 1.11 Rate of growth of employment by industry, 2009-2019 – Melbourne's North LGAs (per cent a year)**

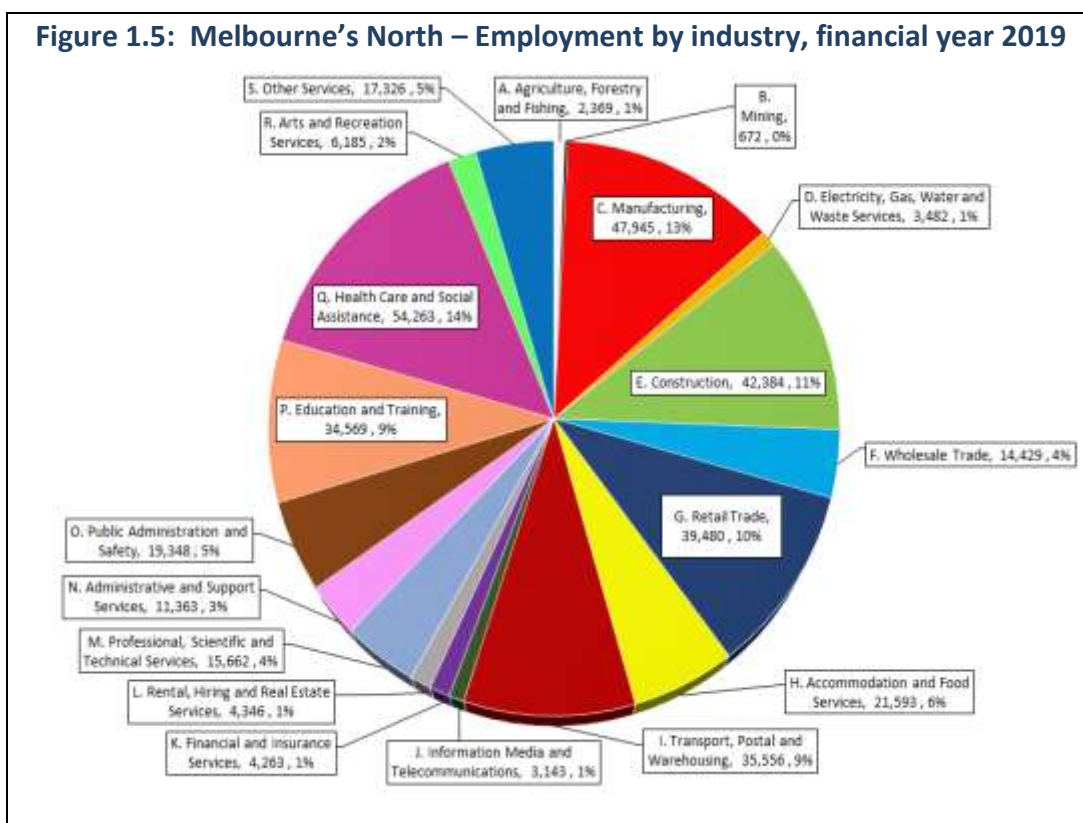
Industry	Melb's North	Banyule	Darebin	Hume	Mitchell	Moreland	Nillumbik	Whittlesea
Agriculture	0.2	-	-	2.9	-0.5	-	-0.9	0.8
Mining	-1.0	-	-	-	-	-	-	-
Manufacture	0.2	-2.5	-1.8	1.1	-2.0	-2.6	-2.3	0.6
Construction	3.9	0.2	-0.2	5.1	8.4	1.1	1.7	4.0
Logistics	3.4	-2.5	-1.0	2.0	1.1	-1.9	-2.6	4.0
Distribution	2.5	0.0	1.2	4.2	0.5	1.7	-0.7	5.5
Visitor services	2.6	1.1	2.6	3.8	1.8	4.2	1.9	5.2
Office services	3.0	1.1	2.4	3.9	1.0	2.8	0.8	5.2
Money services	2.5	-1.8	2.0	1.8	1.8	-0.9	-0.6	5.9
Area services	4.7	2.2	3.9	5.3	1.9	4.5	1.8	6.1
<b>TOTAL</b>	<b>2.9</b>	<b>0.9</b>	<b>1.5</b>	<b>3.3</b>	<b>1.7</b>	<b>2.0</b>	<b>0.8</b>	<b>4.4</b>

Source: NIEIR.

- The relative contribution of visitor services to total employment was highest in Nillumbik, reflecting local demand but also the lack of employment in the main export-oriented industries in this largely residential area. Conversely, visitor services made relatively small contributions to total employment in Hume and Whittlesea, largely as an effect of the prominence of manufacturing and logistics. Significantly, the rate of growth of visitor service employment was highest in these two LGAs, where it was responding to the growth of local demand.

- Finally, as already noted, though they serve local demand, the area services include some large individual employers, particularly hospitals but also schools. These accounted for the somewhat patchy distribution of the area services across the LGAs. The rate of growth of employment in these services was once again highest in Hume and Whittlesea as managements sought to catch up with demand from rapid population growth.

Figure 1.5 gives share of employment in Melbourne's North by ANZSIC industry division.



## Hours worked by industry

A century ago it could safely be assumed that most jobs were full-time, sometimes with overtime. Since then the proportion of employees who work less than full time has risen, resulting in an average paid working week, across Australia, of 32 hours in 2019. The average for Melbourne's North, whether on a place-of-work or residential basis, was slightly less at 31 hours (Tables 1.16 and 1.17). Average weekly hours worked varied by industry from 36 in agriculture to 26 in visitor services, with construction and logistics somewhat above average and distribution and area services somewhat below.

Office services had a slightly ambiguous status, since cross-border commuters worked longer hours than people who worked within the region. This is a large industry and maybe the more centralised parts of the industry worked longer hours, or maybe commuters to the central region worked longer hours in all parts of the industry.

Measured by hours worked rather than number of employees, area services was still the largest industry in Melbourne's North on a place-of-work basis, followed by distribution and manufacturing, with construction in fourth place. On a residential basis, the largest industry became the office-based services (which was also the largest industry on this basis Australia-wide), followed by area services, distribution and construction. Shifting from an employment basis to an hours-worked basis changes the size-ranking of industries, but not very much.



## Employment in Melbourne's North compared to other regions

Table 1.12 compares the contribution of each of the 10 major industry groups to total hours worked in Melbourne's North with their contribution in Australia as a whole and also in a number of the regions used in the *State of the Regions* reports. Table 1.13 provides the rate of growth of hours worked over the decade to 2019.

Comparing Melbourne's North with the Australian total, it is obvious that the region has very little employment in mining. It lacks mineral deposits and, unlike Perth, has not captured mining-industry support and administration. This has been a handicap since, by a combination of export opportunities and Commonwealth government support,

mining has been a high-growth industry. Though the growth of mining has, on balance, disadvantaged Melbourne's North (largely due to the contraction of manufacturing brought about by the over-valuation of the Australian dollar during the mining boom) some businesses in the region have benefited from sales to the mining industry.

Even with food and beverage manufacture included, agriculture, like mining, is less prominent in Melbourne's North than in the country as a whole, reflecting the urban nature of the region. However, employment has been growing at a little over 2 per cent a year, reflecting growth in food and beverage manufacturing.

**Table 1.12 Hours worked, by industry – Melbourne's North and selected comparison regions, 2019**  
(as a percentage of total hours worked)

Industry	Melbourne						Sydney		Australia
	Melb's N	Outer N	Inner N	Outer SE	Outer W	Central	Mid W	Outer SW	
Agriculture and food	3.4	4.2	2.2	4.1	4.1	1.1	3.1	2.3	5.2
Mining	0.1	0.1	0.1	0.1	0.1	0.6	0.2	0.1	2.3
Non-food manufacture	10.5	13.2	7.8	14.8	9.4	2.0	14.7	13.2	5.9
Logistics	9.1	11.9	5.3	9.3	12.0	4.1	11.3	9.1	5.7
Office services	12.1	10.3	16.2	10.3	8.9	40.9	9.2	12.3	20.4
Money services	2.4	2.1	3.0	3.3	2.4	13.6	3.2	3.1	5.7
Visitor services	7.6	6.3	9.7	6.3	6.2	9.3	6.9	7.9	8.8
Distribution	19.7	19.6	18.9	21.6	26.3	8.8	22.0	19.9	15.7
Construction	12.1	13.2	9.3	13.3	13.2	7.0	11.3	12.1	10.7
Area services	22.9	19.1	27.5	16.9	17.5	12.5	17.9	19.9	19.6

Source: NIEIR.

**Table 1.13 Rate of growth of hours worked, by industry – Melbourne's North and selected comparison regions, 2009-19 (per cent a year)**

Industry	Melbourne						Sydney		Australia
	Melb's N	Outer N	Inner N	Outer SE	Outer W	Central	Mid W	Outer SW	
Agriculture and food	2.1	2.7	-0.7	1.7	2.9	1.1	-1.2	-0.5	-0.4
Mining	-	-	-	-	-	2.6	-	-	3.8
Non-food manufacture	-0.7	-1.0	-3.0	-0.2	-1.8	2.4	-2.3	0.5	-2.0
Logistics	1.3	1.6	-0.6	1.2	3.3	0.1	-0.2	3.3	0.0
Office services	2.8	3.6	2.5	3.8	4.3	3.8	1.0	3.6	2.0
Money services	1.4	2.1	0.5	2.2	2.4	1.9	1.9	2.7	0.9
Visitor services	3.2	3.3	2.5	3.9	4.1	3.0	1.6	3.7	1.8
Distribution	2.7	4.3	1.5	3.1	3.7	2.5	0.7	2.9	0.7
Construction	3.1	3.9	1.4	5.1	3.2	5.4	2.2	5.7	1.8
Area services	4.0	5.6	3.8	5.2	6.1	4.0	2.9	3.5	3.3
<b>TOTAL</b>	<b>2.5</b>	<b>3.0</b>	<b>1.6</b>	<b>2.9</b>	<b>3.3</b>	<b>3.0</b>	<b>0.7</b>	<b>3.0</b>	<b>1.4</b>

Source: NIEIR.

Thanks to its flat terrain and transport connections, Melbourne's North was established as a manufacturing region in the 1850s and this continues. In Australia as a whole manufacturing employment declined in the decade to 2019. There has been a long-run trend to reductions of employment in manufacturing, for several reasons.

- Automation.
- Sub-contracting to specialist service providers mainly in the office-based services.
- Failure to increase overseas exports to compensate for the loss of domestic markets to overseas competitors.

Poor international competitiveness was a particular problem during the mining boom the years 2009 to 2016, marked as they were by a high exchange rate which the Commonwealth declined to mitigate. The result of these factors was that hours worked in manufacturing nationally declined by 2 per cent a year in during the decade to 2019. However, they held steady in Melbourne's North. Growth in food and beverage manufacturing offset decline in motor vehicle manufacture.

The same terrain and locational advantages which support manufacturing also support logistics. Across Australia employment in this group of industries has been steady, though incomes have been rising. Logistics employment in Melbourne's North has been increasing.

In 2019 money services and centralised office services together accounted for 14 per cent of hours worked in Melbourne's North. The proportion in Australia as a whole was 26 per cent and the proportion in the Melbourne Central region was 55 per cent – the centralised office services employ representatives in the suburbs but reserve much of their employment for the city centre. However, the balance is gradually changing and the rate of growth of employment in these industries in Melbourne's North has been above national average.

Given that much of Melbourne's North relies on commuting for income, one would expect that the services which serve local residential demand would be more prominent in the industry structure than they are in Australia as a whole. This is in fact the case for all four local-demand industries: construction, distribution, area services and visitor services. In 2019 the difference in significance was not very large for construction (which serves industry and infrastructure demands as well as residential demand) or visitor services (Melbourne's North is not a major tourist destination) but was marked for area services and distribution. The reasons for this will become apparent in the discussion of the distribution of employment by industry within the region. Employment growth in each of the local demand industries was more rapid in Melbourne's North than in Australia as a whole and contributed strongly to the overall differential between growth in Melbourne's North and in the country

as a whole – 2.5 per cent a year compared to the national average of 1.4 per cent.

The table also allows comparison between Melbourne's North and selected urban regions. First, it can be seen that industry structure in Melbourne's North as a whole is an average of Melbourne Inner North and Melbourne Outer North. (The Inner North includes the Inner West, but this does not seriously affect the result. However, the employment numbers for Melbourne's North are based on the number of jobs whereas those for the comparison regions, including the Inner and Outer North, are based on hours worked, which results in minor differences.) Agriculture, manufacturing, logistics and construction are all relatively important in the Outer North while the area services, centralised and Visitor services are all relatively important in the Inner North. In all industries the rate of growth of employment has been higher in the Outer North than in the Inner, reflecting the migration of industry to new greenfield sites and the expansion of the local-demand services as they follow population growth.

Second, the table allows comparison with other parts of the Melbourne metropolitan area. Not all regions are listed in the table – it can be assumed that the non-listed inner regions are not too different from the Inner North and that the distribution of employment in the non-listed outer regions (the East and South) is similar to the listed regions, but that their growth rates are slower due to lack of land for greenfields expansion, both residential and industrial.

In 2019 the contribution of manufacturing to regional employment in the Outer North was a little less than in the Outer South East but well above that in the Outer West. This reflected recent differentials in employment growth rates. Significantly, though the contribution of manufacturing to total employment was much lower in the Central region, the rate of growth of hours worked in manufacturing was significantly higher in Central Melbourne than in the suburbs. This presumably reflected the transfer of head-office and knowledge-economy functions within manufacturing industry to the city centre.

Logistics, in 2019, was responsible for 12 per cent of hours worked in both the Outer North and the Outer West, well ahead of the Outer South East. However, the rate of growth of employment in logistics was appreciably higher in the Outer West, suggesting that this region has been taking advantage of its relative proximity to the Port of Melbourne as well as to Melbourne Airport, which after all is just across its boundary.

It is to be expected that employment growth in local-demand services, including the suburban branches of the centralised services, will reflect population growth. This was broadly the case in the Outer Melbourne regions, with the following provisos.

- Growth in employment in distribution was around a percentage point slower than the rate of population growth. This was true nationally and is generally put down to the digital disruption of retailing.
- Growth in visitor and centralised office services was at around the population growth rate in outer Melbourne as well as nationally.
- Growth in money services was way below the population growth rate, reflecting the low national rate as these services automate. (Strangely, though automation reduces costs it seems to increase the revenue of the finance sector by raising the number of charge points.)
- Growth in area services was generally two percentage points above the population growth rate, as it was nationally.

In all industries employment growth was relatively anaemic in the Outer East, probably to a lack of suitable sites for industry development. In this respect, it is interesting to compare Outer Melbourne to Outer Sydney. Because of Sydney's constricted site, it has only three outer regions more or less comparable with Melbourne Outer North. In 2019 the industry structure of employment in these regions was very similar to Outer Melbourne, with manufacturing and logistics strongly represented and broadly similar representation of the service industries – perhaps a little bit more representation of the area services. Between the three regions the rate of population growth from 2009 to 2019 ranged from 1.6 per cent a year to 3.1 per cent, generally less than the outer Melbourne range of from 2.8 to 4.1 per cent, basically due to restricted land availability.

Though the aggregate patterns were similar to outer Melbourne, the pattern of growth rates differed.

- Though money services were a minor employer, in Outer Sydney employment in these services grew faster than the population growth rate. This contrasted with their slow growth in Outer Melbourne and might possibly be an offshoot of strong growth in money services in Central Sydney.
- In relation to population growth, in Outer Sydney increases in area service employment were more restrained than in Outer Melbourne.
- In each of distribution, visitor services and centralised office services employment growth was at least a percentage point ahead of the population growth rate in Outer South West Sydney, but was below the population growth in Mid-West and Outer West Sydney, as it was in all five Outer Melbourne regions.

Taking all industries together, in Sydney Outer West the rate of job growth was a little under the rate of population growth, not too different from outer Melbourne. However, in Outer South West Sydney the rate of job growth

considerably exceeded the rate of population growth while in the Mid West it fell way short – 0.7 per cent a year as against population growth of 1.7 per cent.

Why did Sydney Mid-West do so badly and Sydney Outer South West so (relatively) well? One may make the following tentative suggestions.

- There was strong population growth in the peri-metropolitan region adjoining Sydney Outer South West. Had the boundary been drawn a little further out the excess of job growth over population growth may well have disappeared.
- Sydney Mid-West had no greenfields sites for the development of manufacturing and logistics while the Outer South West had such sites. This points to the importance of land availability and price as inputs to economic growth.
- In a metropolitan area sharply divided into rich and poor suburbs, parts of Sydney Mid-West were reckoned as poor, with consequent problems in attracting job-generating investment.

Sydney Mid-West (broadly Canterbury through Bankstown and Auburn to Fairfield) accordingly became slow-growing commuter suburbs, too far from the city centre to gentrify (on the lines of Sydney's Inner West and Melbourne's Inner North) but with too little local employment to maintain high labour force participation. The lesson for Melbourne's North is the importance of maintaining the supply of reasonably-priced sites for industry development. Unfortunately this is likely to be difficult given the current Reserve Bank policy of very low interest rates, which is having the effect of raising land prices for essentially speculative reasons.

### *Commuting in Melbourne's North*

The focus of this report is on demands for skills as generated by industry and production in Melbourne's North. We have already noted that area-service businesses are linked to the resident population as the primary source of demand for their services. There is also an important link between producers and residents through employment relationships, which can be viewed from an employer's point of view (nearby residents are a primary source of employees) or from a resident's point of view (nearby employers are a primary source of employment).

Though the primary link between workplaces and residences is by commuting, not all employed people are commuters. At the 2016 Census a little under 5 per cent of the Australian population worked at home. In Melbourne's North the proportion of residents who worked at home varied from 2.7 per cent in Hume and Whittlesea to 6 per cent in Nillumbik. The proportion of jobs in each LGA taken by people who worked at home ranged from 2 per cent in Hume through 4 per cent in Whittlesea, 7 per cent in the inner suburbs and also in Mitchell, to 15 per cent in

Nillumbik. In the 20<sup>th</sup> Century working at home was associated with small businesses like farms or shops as well as branches of large businesses (for example, there was a time when bank branches included accommodation for the manager). Historically, the proportion of people who live on the job has declined, for several reasons including the following.

- Larger businesses have expanded at the expense of small shops and workshops.
- Both town planning legislation and developer practice have favoured the separation of workplaces and accommodation.
- Tax legislation favouring home ownership has discouraged employers from providing accommodation on the job.

It is not at all surprising that the proportion of jobs taken by people who work at home should be very small in Hume, given that business premises in the outer suburbs have been built on the assumption that they will be staffed by commuters. However, even under the strictest town-planning regulations, home-based employment is still possible for some kinds of small-scale business (for example, maintenance electricians, clothing-trade outworkers) and for unobtrusive office-type activities. Improvements in telecommunications encouraged this latter group, even before lockdowns enforced it, and the relatively high proportion of home-workers recorded pre-COVID in Nillumbik probably reflects this trend. As noted above, the office-based services are notorious for their tendency to concentrate in city centres and it remains to be seen whether they will drift to the suburbs or continue to centralise.

Though some people worked at home, in 2016 the vast majority of the employed residents of Melbourne's North commuted to work, a few on foot, some of them (particularly in the inner suburbs) by bicycle, a larger proportion by public transport (a quarter in the inner suburbs, around 10 per cent in the outer ring and 5 per cent in Mitchell) and the majority by car (55 per cent in the inner suburbs and three-quarters in the outer suburbs and Mitchell). Commuting incurs cash costs and takes time. The significance of the time element varies from person to person and from time to time: driving may be a pleasure or may be a chore, train riding may be a bore or may be good reading-time, there are people who are 'short of time' because of pressing commitments such as child care and people who have time to spare, at least some of the time. However, as a rule of thumb an employer can expect to recruit workers easily from within a time-distance of up to half an hour and with gradually increasing difficulty as that distance increases.

Few people take LGA boundaries into consideration when deciding where to live or work, so it can be taken for granted that commuters will cross LGA boundaries with gay abandon. However, given that the population-at-work

is distributed differently from the residential population, there is a preponderant direction across many of the boundaries. In particular, as shown in Tables 1.1 and 1.2, the number of jobs located in Central Melbourne is significantly greater than the number of working residents, while the reverse applies in both the inner and outer suburbs. The general direction of commuting is accordingly inwards.

Table 1.14 confirms this general proposition for Melbourne's North. In 2019 the region provided enough jobs to employ 70 per cent of its resident workers. This does not mean that 70 per cent of all resident workers worked in the region: some of the region's jobs were taken by residents of other regions, particularly those to the west and east. Work at Melbourne Airport is within an easy half-hour's drive for residents of Essendon and Brimbank and work at the Austin Hospital is similarly accessible from Doncaster. There are also contra-peak commuters who, for example, live in the Central region but commute to La Trobe University. The same is true, a fortiori, for each LGA. This said:

- employment within Melbourne's North in logistics, manufacturing and agriculture matched the number of resident workers in these industries;
- in 2019 metropolitan employment in two industries, money services and mining, was very strongly concentrated in the Central Melbourne and jobs in Melbourne's North numbered but 30 per cent of the residents working in these two industries. In Melbourne, employment in mining is largely of a head-office, administrative nature;
- office services were a little more decentralised into Melbourne's North than money services and mining; and
- the local demand services cater to both business and residential demand. Strong business demand draws employment in these industries towards the central region, more strongly for the visitor services than for the others. This results in net commuting from Melbourne's North to the central region even among employees in local demand services.

These factors are also at work at the LGA level. Nillumbik, with its low level of employment in the export-oriented industries, depends heavily on commuting for employment, while at the opposite extreme Hume, with its substantial employment in industries catering to demand from outside the region, has attracted local-demand employment to serve these industries as well as resident demand and in 2019 experienced net inbound commuting. The pattern of commuter flows at any time represents the balance between local jobs and residents in each industry and, as will be discussed below, when both grow at the same time the balance can easily change.

Net commuter flows out of (and a few into) the LGAs of Melbourne's North in 2019 are shown in Table 1.15.

- As already noted, jobs in manufacturing and logistics in Melbourne's North balanced against residents working in these industries, with small net flows into Hume and outwards from five of the other LGAs.
- The centralised services (money and office) accounted for half the net outflow of commuters from the region, with net outflows from all seven LGAs.
- The various area services accounted for the other half of the net outbound flow from the region, but with differences between LGAs. In Hume there was an inflow and in Banyule the outflow was small. In Darebin and Moreland the net outflow of area service workers fell a little short of the outflow of centralised service workers. By contrast, the outflow of area service workers from Nillumbik and Whittlesea was not far short of double the outflow of centralised service workers and from Mitchell it

was very much larger. This reflects the role of the inner suburbs in supplying centralised service workers to the metropolitan centre, leaving inner suburban area-service jobs to be supplied from the outer and peripheral suburbs.

Harkening back to Table 1.6, it will be recalled that, measured by its contribution to GRP, in 2019 the largest of NIEIR's 10 industry groups in Melbourne's North was the area services, followed by office services, logistics and distribution, with construction and manufacturing quite low on the list. When measured by employment, on a place-of-work basis the area services were still top of the list, followed by distribution and manufacturing, with the office-based services in fourth place. This revision of order follows from the high levels of value added per person employed in logistics and office-based services.

Moving to a residential basis, commuting alters the employment pecking order. The largest industry among Melbourne's North residents was still the area services, but the office-based services rose to second place, followed by distribution and construction with manufacturing reduced from third to fifth place.

**Table 1.14 Jobs in the same LGA as a percentage of resident workers by industry – Melbourne's North, 2019**

Industry	Melb's North	Banyule	Darebin	Hume	Mitchell	Moreland	Nillumbik	Whittlesea
Agriculture	84	–	–	125	88	–	–	136
Mining	29	–	–	–	–	–	–	–
Manufacture	75	63	106	184	29	69	20	68
Logistics	62	29	80	246	24	43	15	58
Office services	42	39	48	75	68	23	28	42
Money services	30	26	35	47	36	18	23	28
Visitor services	73	70	63	91	89	51	79	59
Distribution	76	74	94	106	57	60	49	63
Construction	67	69	87	122	46	65	46	67
Area services	76	115	69	83	76	64	47	78
<b>TOTAL</b>	<b>67</b>	<b>69</b>	<b>68</b>	<b>117</b>	<b>58</b>	<b>48</b>	<b>41</b>	<b>62</b>

Source: NIEIR. A dash indicates less than 250 residents working in the industry.

**Table 1.15 Net commuter flows by industry, 2019 – Melbourne's North LGAs ('000 per day)**

Industry	Melb's North	Banyule	Darebin	Hume	Mitchell	Moreland	Nillumbik	Whittlesea
Agriculture	0	0	0	0	0	0	0	0
Mining	-1	0	0	0	0	0	0	0
Manufacture	-1	-2	0	11	-2	-2	-2	-5
Logistics	0	-3	-1	12	-1	-3	-2	-3
Office services	-62	-10	-12	-3	-1	-21	-5	-10
Money services	-21	-3	-4	-3	-1	-5	-2	-4
Visitor services	-17	-2	-4	-1	0	-6	-1	-4
Distribution	-22	-3	-1	2	-2	-6	-3	-9
Construction	-12	-2	-1	3	-2	-3	-3	-5
Area services	-25	3	-6	-3	-1	-8	-5	-5
<b>TOTAL</b>	<b>-161</b>	<b>-22</b>	<b>-28</b>	<b>18</b>	<b>-9</b>	<b>-53</b>	<b>-22</b>	<b>-44</b>

Source: NIEIR. Estimates rounded to the nearest thousand.



**Table 1.16 Journey to work: Percentage by mode, Melbourne's North LGAs (Census 2016)**

LGA	Total ('000)	Motor vehicle (%)	Train (%)	Bus/Tram (%)	Bicycle (%)	Walk (%)	Work at home (%)	Other (%)
Banyule	46.8	73.7	18.2	2.4	1.3	2.6	1.3	0.5
Darebin	57.1	61.0	19.9	9.3	5.5	2.6	1.1	0.6
Hume	64.8	85.2	11.0	1.5	0.1	0.8	0.7	0.7
Mitchell	12.4	89.5	5.3	0.2	0.2	3.3	1.2	0.5
Moreland	66.0	57.8	17.3	13.6	6.6	2.8	1.1	0.8
Nillumbik	24.4	84.0	11.4	1.0	0.5	1.1	1.6	0.4
Whittlesea	71.0	84.7	11.4	1.7	0.2	0.8	0.7	0.5
<b>Melbourne's North</b>	<b>342.7</b>	<b>74.3</b>	<b>14.6</b>	<b>5.2</b>	<b>2.5</b>	<b>1.9</b>	<b>1.0</b>	<b>0.5</b>

Notes: Excludes workers who did not provide sufficient information, also excludes workers who reported commutes of over 60 km.  
Train includes car + train and bus + train.

Source: Census 2016.

**Table 1.17 Journey to work: Average distance by mode (kms), Melbourne's North LGAs**

LGA	Total ('000)	Motor vehicle (kms)	Train (kms)	Bus/Tram (kms)	Bicycle (kms)
Banyule	14.0	13.9	17.0	10.1	10.7
Darebin	11.1	11.9	12.1	8.2	7.3
Hume	19.0	18.1	28.6	11.8	11.2
Mitchell	29.8	29.2	53.1	23.8	8.6
Moreland	10.5	11.7	12.1	6.9	6.5
Nillumbik	20.1	19.4	27.7	18.2	14.1
Whittlesea	19.5	18.5	28.5	13.9	13.1
<b>Melbourne's North</b>	<b>15.9</b>	<b>16.4</b>	<b>19.4</b>	<b>8.4</b>	<b>7.4</b>

Notes: Excludes workers who did not provide sufficient information, also excludes workers who reported commutes of over 60 km.  
Train includes car + train and bus + train.

Source: Census 2016.

In 2016, in all LGAs in Melbourne's North, the private car (mostly as driver) was the dominant means of transport for the journey to work. This dominance was least in the inner ring of suburbs (58 per cent of journeys to work by residents of Moreland rising to 74 per cent in Banyule), close to 85 per cent for residents of Hume-Whittlesea-Nillumbik and 90 per cent for residents of Mitchell. The main alternative to the car was train travel (sometimes accessed by bus or car). Trains carried 17-20 per cent of work journeys originating in the inner ring, 11 per cent of those originating in the outer ring, and 5 per cent in Mitchell. Tram and bus in their own right (as distinct from means of accessing railway stations) were significant only in Moreland and Darebin – the two LGAs with tram services. Active transport (cycle and walking) accounted for 9 per cent of journeys to work originating in Moreland grading down to 1 per cent in Whittlesea, then rising again to 5 per cent in Mitchell – which, with its walkable towns, had the highest percentage of walked work journeys.

The average distance travelled to work was 11 km for the residents of Moreland and Darebin, 14 km in Banyule, around 20 km in Hume, Whittlesea and Nillumbik and 30 km in Mitchell. The increase in travel distance with residential distance from the Melbourne City centre was particularly strong for train travel (average 12 km for residents of Moreland and Darebin rising to 53 km for

journeys originating in Mitchell). This was not in any way surprising since trains are mainly used for city centre travel. However, the same pattern occurred in car travel (average of 12 km in Moreland and Darebin rising to 39 km in Mitchell). Cycling, admittedly a minority means of transport, exhibited a different pattern. Work journeys by bicycle averaged 7 km in Moreland and Darebin and 9 km in Mitchell but in the intermediate suburbs were fewer but longer. In these suburbs cycling to work seems to have been confined to a small minority of enthusiasts who made quite long journeys – up to an average of 14 km for Nillumbik residents.

### Local income

A further, very useful, measure of industry significance is local income generated, which comprises wages and salaries broadly defined to include such items as employer superannuation contributions plus the 'mixed incomes' of working proprietors – the gross profits of small business, most of which are labour returns though they also include a depreciation element and a profit element (which may be a loss). The profit/loss/depreciation element can be quite significant for small businesses operating in some industries, for example farming, but is minor in industries where small businesses concentrate on supplying skilled



labour. Looking at the concept from a different direction, local income is essentially GRP less corporate gross profits. In 2019 roughly three-quarters of the GRP generated in Melbourne's North was paid out in local income, with the remaining quarter retained by business as corporate gross profit. Local income is closely related to the popular conception of earned income, but is not so closely related to disposable income. To calculate disposable income from local income, one must first add in property income of various kinds, then subtract income tax and other contractual payments like mortgage interest.

Local income is a useful concept for two reasons.

- It comprises income earned directly from economic activity by local people. The other component of GRP, corporate gross profits, is split several ways – some is reinvested in the business, some goes to governments in taxation and some is paid out to shareholders, many of whom are overseas and most of which are financial institutions like superannuation funds. The ultimate recipients are the owners of financial assets, who rarely live in the region where the profits were generated. Though residents of Melbourne's North receive income sourced from corporate profits, the economic well-being of those who are in the workforce is closely tied to local income.
- Because it is generated primarily from local area tax data, rather than imputed from national profit and loss accounts, local income is more accurately estimated at the regional level than GRP.

Tables 1.16 and 1.17 provide estimates of local income per hour worked in Melbourne's North by industry. In 2019, on both a place-of-work and residential basis, income generated per hour was highest in the office-based services, followed by logistics, money services and area services. It was below average in construction and manufacturing, and well below average in distribution and visitor services.

When industry significance is assessed by local income, in 2019 the largest industry in Melbourne's North by place-of-work was area services, which was responsible for 26 per cent of local incomes generated in the region. This was followed by office services (18 per cent) and distribution, logistics, construction and manufacturing, all within a

percentage point of 12 per cent. High average incomes per hour raised the rank of office services and logistics while low incomes per hour reduced the rank of distribution and manufacturing. Switching to a residential basis, office services was the largest source of local income (28.7 per cent) closely followed by area services, then distribution (11 per cent) and logistics, manufacturing and money services. Visitor services, which were responsible for 10 per cent of resident employment, generated but 5 per cent of resident local income.

Comparing Table 1.18 and Table 1.19, average local income per hour worked was slightly higher for residents than for those who worked in the region, meaning that residents who commuted to work outside the region were paid more per hour than those who worked locally. One is tempted to argue that this compensated for the costs of longer-distance commuting, but it was more likely an industry-mix effect, due to the out-commuters concentrating in high-income industries such as the centralised services. When local income per hour was compared by industry for local workers and residents, the balance was not always in favour of the out-commuters – for example, it was estimated that office service work in Melbourne's North yielded \$69 an hour, ahead of the \$66 an hour received by residents (including out-commuters) who worked in the industry. There are hints at the 2-digit ANZSIC level that Melbourne's North was supplying relatively low-income office workers to the CBD, particularly in public administration.

Tables 1.16 and 1.17 also allow comparison between local income per hour in Melbourne's North and the Australian average for each industry. Whether on a place-of-work or residential basis, in Melbourne's North average incomes per hour were a little under the Australian average in the export-oriented and centralised service industries, but close to national average in the area-service industries. Industry mix effects ensured that average incomes per hour in Melbourne's North were very close to the all-Australia average.

Over the decade to 2019, in Melbourne's North the rate of growth of income per hour worked was highest for area services, followed by manufacturing, visitor services, logistics and office services. These were also the top four for rates of growth of income per hour on a residential basis.

**Table 1.18 Measures of industry significance 2019 and growth 2009-2019 – Melbourne’s North (place-of-work basis) and Australia**

Industry	Jobs (%)	Average hours per week	Hours (%)	\$/hour	Income (%)	Rate of growth. (\$/hr %pa)	Australia (\$/hour)	Australia r.g. (\$/hr %pa)
Agriculture	0.6	36.0	0.7	45	0.7	-0.1	48	2.2
Mining	0.1	-	0.1	-	0.1	-	60	-1.0
Manufacture	12.7	32.3	13.2	39	11.1	1.1	43	0.6
Logistics	8.5	33.1	9.1	61	12.0	0.9	66	1.3
Office services	11.9	31.5	12.1	69	17.9	0.8	70	1.2
Money services	2.3	32.1	2.4	56	2.9	0.6	62	1.0
Visitor services	9.1	25.7	7.6	29	4.8	1.0	29	1.8
Distribution	19.9	30.9	19.7	30	12.9	-0.7	32	0.6
Construction	11.3	33.8	12.3	44	11.7	0.2	44	0.2
Area services	23.5	30.2	22.9	52	25.9	1.4	52	1.4
<b>TOTAL</b>	<b>100.0</b>	<b>31.1</b>	<b>100.0</b>	<b>46</b>	<b>100.0</b>	<b>1.1</b>	<b>46</b>	<b>1.1</b>

Source: NIEIR.

**Table 1.19 Measures of industry significance 2019 and growth 2009-2019 – Melbourne’s North (residential basis) and Australia**

Industry	Workers (%)	Average hours per week	Hours (%)	\$/hour	Income (%)	Rate of growth. (\$/hr %pa)	Australia (\$/hour)	Australia r.g. (\$/hr %pa)
Agriculture	0.5	35.9	0.5	42	0.5	-0.9	48	2.2
Mining	0.2	-	0.2	-	0.3	-	60	-1.0
Manufacture	9.1	32.0	9.3	38	7.4	0.9	43	0.6
Logistics	6.0	32.6	6.3	62	8.1	1.4	66	1.3
Office services	20.0	32.6	20.9	66	28.7	0.9	70	1.2
Money services	5.5	31.8	5.6	57	6.7	0.8	62	1.0
Visitor services	9.5	26.3	8.1	30	5.0	1.1	29	1.8
Distribution	18.0	30.7	17.7	30	11.0	-0.8	32	0.6
Construction	10.1	33.5	10.9	43	9.8	0.1	44	0.2
Area services	21.2	30.0	20.4	53	22.6	1.1	52	1.4
<b>TOTAL</b>	<b>100.0</b>	<b>31.1</b>	<b>100.0</b>	<b>48</b>	<b>100.0</b>	<b>0.8</b>	<b>46</b>	<b>1.1</b>

Source: NIEIR.

Over the same period, the overall rate of growth of income per hour in Melbourne’s North on a place-of-work basis (1.1 per cent) equalled the national rate, though the rate for residents was less, at 0.8 per cent a year. This again was largely a matter of industry mix. On the positive side, the lack of exposure of Melbourne’s North to the mining industry, though it was a drag on the level of income per hour, at least meant that the region was unaffected by the national decline in income per hour in that industry. The performance of Melbourne’s North was better than national average in manufacturing but worse in logistics, the centralised services, distribution and even in visitor services. (In both Australia as a whole and in Melbourne’s North local income per hour worked in visitor services was growing from a low base, with the rate of growth in Melbourne’s North below national average for the industry.)

In 2019, on a place-of-work basis, local income per hour worked ranged from 5 per cent below national average in Whittlesea to 10 per cent above in Banyule. In no less than three of the seven LGAs (Hume, Mitchell and Nillumbik) it was very close national average, in Darebin it was a little above and in Moreland a little below. Most of this variation was due to industry mix effects, with the high figure for Banyule due largely to the presence of the Austin Hospital. By industry:

- Local income per hour worked in manufacturing was 7 per cent below national average in Hume and Mitchell, 10 per cent below in Moreland and a little further below in Darebin and Whittlesea. It was lowest in Banyule and Nillumbik, where manufacturing consisted mainly of small bakeries and small workshops, but even so was no more than 14 per cent below national average.

- The range in logistics was rather wider, from 12 per cent below national average to 7 per cent above. Significantly, the lowest level was in Hume, the LGA with the major concentration of logistics activity, while the highest level was in Banyule. It is possible that logistics industry locations with a high proportion of materials handling employ a higher proportion of low-pay staff.
- In office services, local income per hour worked was close to national average in five of the seven LGAs, but a little below national average in Moreland and 10 per cent below in Whittlesea. The low level in Whittlesea might be due to industry-mix effects within the office services, though at the 2-digit ANZSIC level the structure of the office services group of industries in Whittlesea was very similar to Melbourne's North as a whole, with a little more weight to the public utilities and a little less to defence and public administration.
- Local income per hour worked in money management was just below national average in Nillumbik and ranged down to 16 per cent below in Whittlesea and 23 per cent below in Mitchell. Relatively low-income activities in real estate and property appear to have been prominent in Mitchell while relatively high-income financial advisory services seem to have raised the average in Nillumbik.
- In visitor services, six of the LGAs reported average local incomes per hour worked within \$2 of the national (and regional) average of \$29 an hour. The exception was Mitchell, at a low \$26 an hour. Low-patronage cafes are a notorious type of disguised unemployment, and were possibly more common in the small towns of northern Mitchell than in the region as a whole.
- In six of the seven regions, income generated per hour worked in distribution was in the \$29-31 range, a little below the national average of \$32 an hour. The exception was again Mitchell, this time well above at \$37 an hour. This appears to have

been associated with a recent influx of non-store retailing into the LGA.

- Local income per hour worked in construction was within \$1 of the national (and regional) average of \$44 an hour except in Nillumbik and Banyule, where it was a little higher.
- Both nationally and regionally local income generated in area services averaged \$52 an hour. As \$57 an hour it was significantly greater in Banyule and was also above average in Hume but was \$4 a week below national average in Nillumbik and a dollar or two in the other four LGAs. These differences can be put down to within-industry mix. High local income in the area services in Banyule was associated with high employment in hospital services and in Hume with high police employment while the lower average income in Nillumbik was associated with a high proportion of employment in schools.

Commuting redistributes local income from the places where it is earned to the places where people live. The result, at least in 2019, was an increase in inequality of income between the LGAs of Melbourne's North. By place-of-work, average income per hour ranged from \$5 per hour above national average in the highest-income LGA down to \$2 an hour below in the lowest-income LGA. On a residential basis this was stretched to between \$9 an hour above national average down to \$4 an hour below (Table 1.22). The ranking of the seven LGAs also changed, with Nillumbik, Moreland and Whittlesea rising in rank and Banyule, Darebin, Mitchell and Hume falling (Table 1.22). Thanks to commuting, the average local income of Nillumbik residents was \$9 greater, per hour worked, than the average for people who worked in the municipality, while in Hume the average local income per hour worked of residents was \$4 an hour less than that of people who worked there. As already noted, the average income earned by residents, per hour worked, was slightly greater than the average received by workers employed within the region.

**Table 1.20 Local income per hour worked, place-of-work basis, 2019 – Melbourne's North LGAs (dollars)**

Industry	Melb's North	Banyule	Darebin	Hume	Mitchell	Moreland	Nillumbik	Whittlesea
Agriculture	45	–	–	45	40	–	–	44
Mining	57	–	–	–	–	–	–	–
Manufacture	39	37	38	40	40	39	36	38
Logistics	61	71	70	58	59	66	68	65
Office services	69	71	69	71	70	66	70	63
Money services	56	58	57	58	48	54	61	52
Visitor services	29	31	30	28	26	31	31	28
Distribution	30	30	30	31	37	30	31	29
Construction	44	45	45	43	43	43	47	45
Area services	52	57	51	54	50	50	48	50
<b>TOTAL</b>	<b>46</b>	<b>51</b>	<b>48</b>	<b>46</b>	<b>45</b>	<b>45</b>	<b>46</b>	<b>44</b>

Source: NIEIR. Dashes indicate less than \$200,000 local income generated.

**Table 1.21 Local income per hour worked, residential basis, 2019 – Melbourne’s North LGAs (dollars)**

Industry	Melb’s North	Banyule	Darebin	Hume	Mitchell	Moreland	Nillumbik	Whittlesea
Agriculture	42	–	–	41	37	–	–	41
Mining	55	59	–	–	–	–	–	–
Manufacture	38	43	38	36	41	42	44	34
Logistics	62	72	64	55	57	62	77	58
Office services	66	67	64	61	63	68	74	63
Money services	57	61	60	54	49	57	70	49
Visitor services	30	31	30	28	27	30	34	28
Distribution	30	31	30	28	35	31	33	28
Construction	43	48	45	39	40	45	46	42
Area services	53	57	53	51	53	53	56	50
<b>TOTAL</b>	<b>48</b>	<b>54</b>	<b>50</b>	<b>42</b>	<b>45</b>	<b>51</b>	<b>55</b>	<b>43</b>

Source: NIEIR. Dashes indicate less than \$200,000 local income generated.

#### Comparing industry earnings by LGA:

- thanks largely to commuter incomes, Nillumbik residents earned the highest or second-highest incomes per hour in all industries except construction, and the highest overall;
- Banyule residents earned the highest or second-highest incomes per hour in all industries except distribution and office services;
- compared to industry average, Moreland residents earned relatively high incomes in office services but relatively low in money services, with middle-level incomes in the other industries. The large number of office-service commuters to central Melbourne considerably raised average incomes in the LGA above the average yielded by local employment. This was the case even though, by office-service industry standards, Moreland residents were not generally high-fliers;
- the average hourly earnings of Darebin residents were middle-ranked in all industries;
- by industry standards, incomes in distribution were high in Mitchell, middling in area services and manufacturing and low otherwise;
- Whittlesea residents received bottom or second-bottom average earnings in all industries except logistics, money services and construction, in which they received middle-rank incomes; and
- Hume residents received bottom or second-bottom earnings per hour in all industries. Average resident earned income was below the average for employment located in the LGA, indicating that, on average, the more skilled jobs were taken by in-commuters.

These relativities accord with perceived socio-economic and skill relativities between the residents of the seven LGAs.

**Table 1.22 Melbourne’s North LGAs ranked by average local income per hour worked, with difference between place-of-work and usual residence estimates, 2019**

Rank	By place-of-work	By usual home address	Difference (\$/hour)
1	Banyule	Nillumbik	+9
2	Darebin	Banyule	+3
3	Nillumbik	Moreland	+6
4	Mitchell	Darebin	+2
5	Hume	Mitchell	-1
6	Moreland	Whittlesea	-1
7	Whittlesea	Hume	-4

Source: NIEIR

**Table 1.23 Melbourne's North – Industry employment by ANZSIC industry division (number)**

Industry code	Industry name	1994	2007	2015	2016	2017	2018	2019
A	Agriculture, Forestry and Fishing	1,892	1,850	2,414	2,668	2,446	2,297	2,369
B	Mining	385	451	685	505	606	700	672
C	Manufacturing	58,323	51,032	42,105	41,173	44,700	46,335	47,945
D	Electricity, Gas, Water and Waste Services	1,415	1,632	2,929	3,097	3,230	3,294	3,482
E	Construction	14,777	29,667	35,867	37,978	39,239	41,066	42,384
F	Wholesale Trade	14,259	15,299	13,458	13,151	14,836	14,530	14,429
G	Retail Trade	27,339	32,509	36,783	37,742	38,992	39,956	39,480
H	Accommodation and Food Services	8,638	14,542	20,995	22,069	21,855	21,826	21,593
I	Transport, Postal and Warehousing	18,850	23,895	29,570	30,841	33,457	34,950	35,556
J	Information Media and Telecommunications	2,621	2,583	2,967	2,835	2,694	2,773	3,143
K	Financial and Insurance Services	3,897	3,635	3,911	3,975	4,311	4,266	4,263
L	Rental, Hiring and Real Estate Services	2,056	3,294	4,353	4,449	4,622	4,241	4,346
M	Professional, Scientific and Technical Services	7,059	9,717	13,221	13,771	14,595	15,116	15,662
N	Administrative and Support Services	3,954	7,321	10,297	10,777	10,759	10,471	11,363
O	Public Administration and Safety	12,881	13,904	17,267	17,872	19,004	19,285	19,348
P	Education and Training	18,453	25,146	33,531	35,240	32,519	33,606	34,569
Q	Health Care and Social Assistance	24,594	32,042	45,525	48,099	50,985	51,897	54,263
R	Arts and Recreation Services	2,018	3,310	5,313	5,241	4,803	5,576	6,185
S	Other Services	10,778	11,355	13,292	13,874	15,564	17,310	17,326
	<b>Total</b>	<b>234,188</b>	<b>283,184</b>	<b>334,481</b>	<b>345,356</b>	<b>359,217</b>	<b>369,497</b>	<b>378,378</b>

**Table 1.24 Melbourne's North – Resident employment by ANZSIC industry division (number)**

Industry code	Industry name	1994	2007	2015	2016	2017	2018	2019
A	Agriculture, Forestry and Fishing	1,913	1,936	2,490	2,698	2,496	2,318	2,430
B	Mining	452	904	1,316	1,085	1,101	1,445	1,458
C	Manufacturing	56,117	48,772	41,374	40,816	45,981	46,899	48,960
D	Electricity, Gas, Water and Waste Services	2,746	2,857	4,955	5,285	5,371	5,412	6,102
E	Construction	16,097	34,917	42,703	46,604	48,875	51,928	54,281
F	Wholesale Trade	16,168	17,745	16,131	15,742	17,748	17,188	17,167
G	Retail Trade	32,309	40,670	46,755	48,243	50,656	52,765	52,346
H	Accommodation and Food Services	11,578	21,464	29,703	31,174	31,435	31,750	31,887
I	Transport, Postal and Warehousing	19,214	24,273	28,443	30,189	33,366	35,918	36,894
J	Information Media and Telecommunications	8,366	9,195	11,527	10,578	9,961	10,300	12,125
K	Financial and Insurance Services	13,919	15,977	18,661	18,912	20,815	20,684	21,028
L	Rental, Hiring and Real Estate Services	2,708	4,583	6,572	6,806	7,397	6,581	6,818
M	Professional, Scientific and Technical Services	15,648	25,515	36,092	37,467	39,122	42,229	44,866
N	Administrative and Support Services	6,547	13,277	16,629	17,163	17,378	17,010	18,978
O	Public Administration and Safety	18,980	23,109	29,275	30,069	32,246	33,151	33,053
P	Education and Training	20,358	30,797	43,482	45,865	43,015	44,293	45,216
Q	Health Care and Social Assistance	29,001	40,167	57,487	60,599	65,243	67,195	70,061
R	Arts and Recreation Services	3,703	6,212	10,127	10,047	9,076	10,127	11,552
S	Other Services	13,868	15,340	17,533	18,249	20,635	23,238	23,645
	<b>Total</b>	<b>289,693</b>	<b>377,711</b>	<b>461,255</b>	<b>477,591</b>	<b>501,916</b>	<b>520,432</b>	<b>538,867</b>

**Table 1.25 Melbourne's North – Value added by ANZSIC industry division (\$ million)**

Industry code	Industry name	1994	2007	2015	2016	2017	2018	2019
A	Agriculture, Forestry and Fishing	108	174	281	255	233	222	202
B	Mining	101	56	83	67	83	115	93
C	Manufacturing	4,046	4,706	4,564	4,487	4,444	4,589	4,637
D	Electricity, Gas, Water and Waste Services	434	549	742	782	813	840	910
E	Construction	1,268	2,833	3,981	4,232	4,327	4,483	4,671
F	Wholesale Trade	916	1,718	2,065	2,171	2,330	2,310	2,252
G	Retail Trade	868	1,568	2,121	2,199	2,245	2,377	2,343
H	Accommodation and Food Services	362	694	838	873	877	874	888
I	Transport, Postal and Warehousing	1,562	3,555	4,130	4,359	4,656	4,868	4,763
J	Information Media and Telecommunications	149	276	377	386	372	387	465
K	Financial and Insurance Services	696	1,106	1,333	1,389	1,490	1,513	1,534
L	Rental, Hiring and Real Estate Services	591	757	884	943	1,069	939	879
M	Professional, Scientific and Technical Services	462	934	1,349	1,461	1,591	1,668	1,683
N	Administrative and Support Services	577	911	1,132	1,211	1,324	1,399	1,511
O	Public Administration and Safety	1,802	1,795	2,238	2,304	2,382	2,455	2,396
P	Education and Training	1,776	2,269	2,682	2,668	2,676	2,731	2,843
Q	Health Care and Social Assistance	1,411	2,330	3,512	3,631	3,910	4,201	4,532
R	Arts and Recreation Services	124	206	264	277	272	307	318
S	Other Services	472	793	856	886	951	1,047	1,098
	<b>Total</b>	<b>17,726</b>	<b>27,229</b>	<b>33,433</b>	<b>34,580</b>	<b>36,047</b>	<b>37,326</b>	<b>38,020</b>

**Table 1.26 Melbourne's North – Sales by ANZSIC industry division (\$ million)**

Industry code	Industry name	1994	2007	2015	2016	2017	2018	2019
A	Agriculture, Forestry and Fishing	221	378	686	656	602	575	543
B	Mining	247	86	74	86	153	224	186
C	Manufacturing	12,375	14,155	15,014	14,941	14,705	15,181	15,447
D	Electricity, Gas, Water and Waste Services	778	1,473	1,609	1,999	2,148	2,258	2,487
E	Construction	3,306	8,931	11,767	13,170	13,908	14,512	16,258
F	Wholesale Trade	2,372	4,299	4,796	4,735	4,881	4,844	4,779
G	Retail Trade	1,540	2,812	3,547	3,753	3,786	4,029	4,022
H	Accommodation and Food Services	790	1,480	1,866	1,965	2,032	2,065	2,106
I	Transport, Postal and Warehousing	3,526	10,105	9,858	10,267	11,001	11,685	11,633
J	Information Media and Telecommunications	409	599	869	902	908	963	1,185
K	Financial and Insurance Services	1,170	1,703	2,011	2,078	2,225	2,285	2,327
L	Rental, Hiring and Real Estate Services	3,547	5,283	4,978	5,329	6,122	5,449	5,092
M	Professional, Scientific and Technical Services	817	1,970	3,008	3,038	3,203	3,372	3,395
N	Administrative and Support Services	1,077	1,791	2,288	2,183	2,338	2,423	2,571
O	Public Administration and Safety	4,753	3,221	3,657	3,640	3,864	4,030	3,958
P	Education and Training	2,022	3,062	3,623	3,782	3,870	3,954	4,106
Q	Health Care and Social Assistance	1,909	3,042	4,854	5,236	5,688	6,068	6,584
R	Arts and Recreation Services	381	633	817	890	861	966	1,009
S	Other Services	1,145	1,748	1,748	1,834	1,897	2,071	2,155
	<b>Total</b>	<b>42,385</b>	<b>66,770</b>	<b>77,071</b>	<b>80,482</b>	<b>84,191</b>	<b>86,953</b>	<b>89,844</b>



## 1.5.5 Unemployment by region

Table 1.27 shows the unemployment rate by LGA region for Melbourne's North for 1994, 2007 and for the five years from 2015 to 2019. In 2019, just prior to the pandemic, the total unemployment rate for Melbourne's North was 5.3 per cent, which is one of the strongest employment years shown in the table. In contrast, both 2015 and 2017 had higher average annual unemployment rates of 7.2 and 7.0 per cent respectively.

For each LGA within Melbourne's North, the unemployment rate continued to improve in the two years leading up to the pandemic. In recent years, both Nillumbik and Banyule have had exceptional low unemployment rates for the region with rates of 1.9 per cent and 3.3 per cent respectively during 2019.

The Hume region has had the highest rate of unemployment out of the seven LGA's over the time period shown in Table 1.27. This includes the five years from 2015 to 2019, where the average annual rate of unemployment was 9.2 per cent per annum.

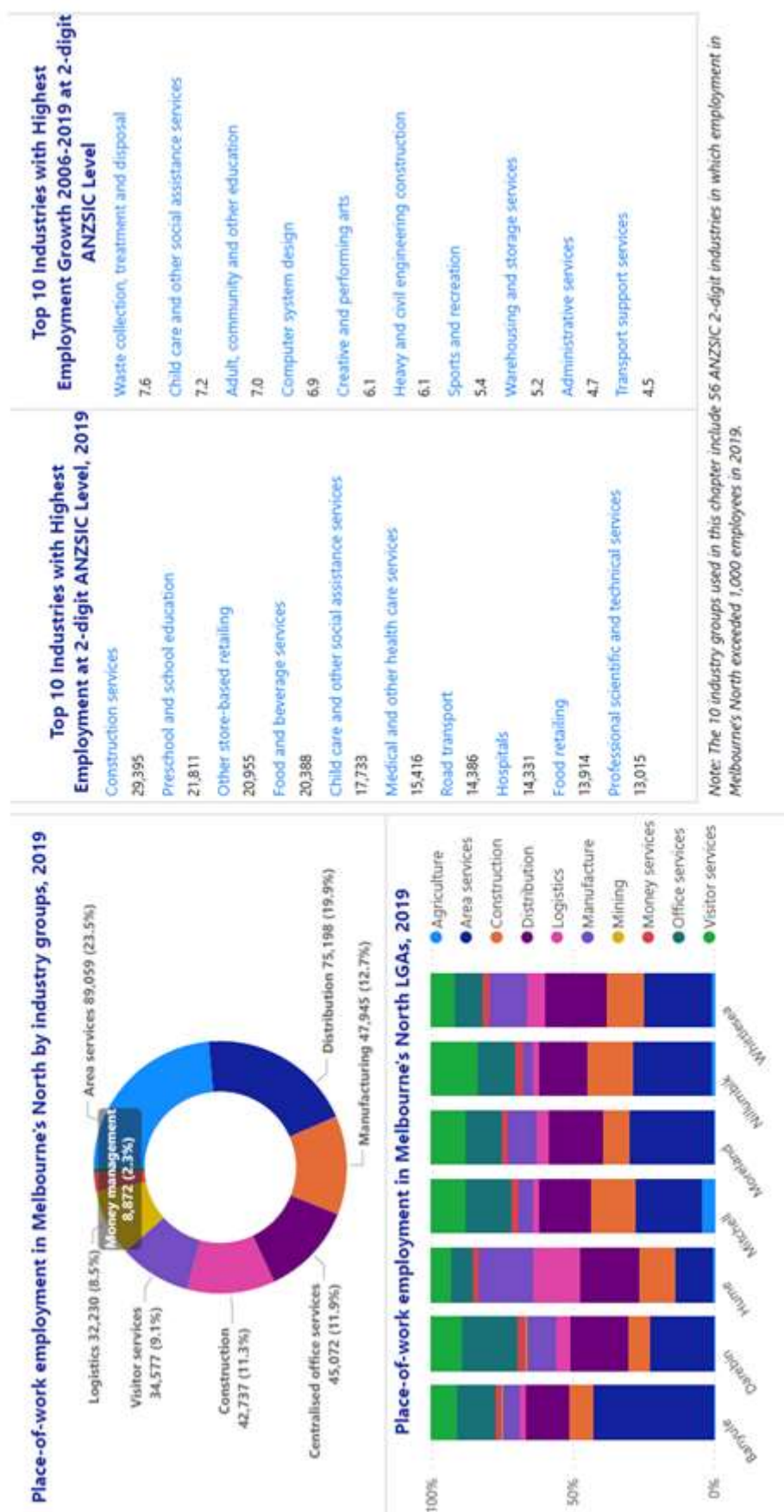
The inner regions of Darebin, Moreland, and the outer region of Whittlesea seem to track more closely to the average level of unemployment within Melbourne's North.

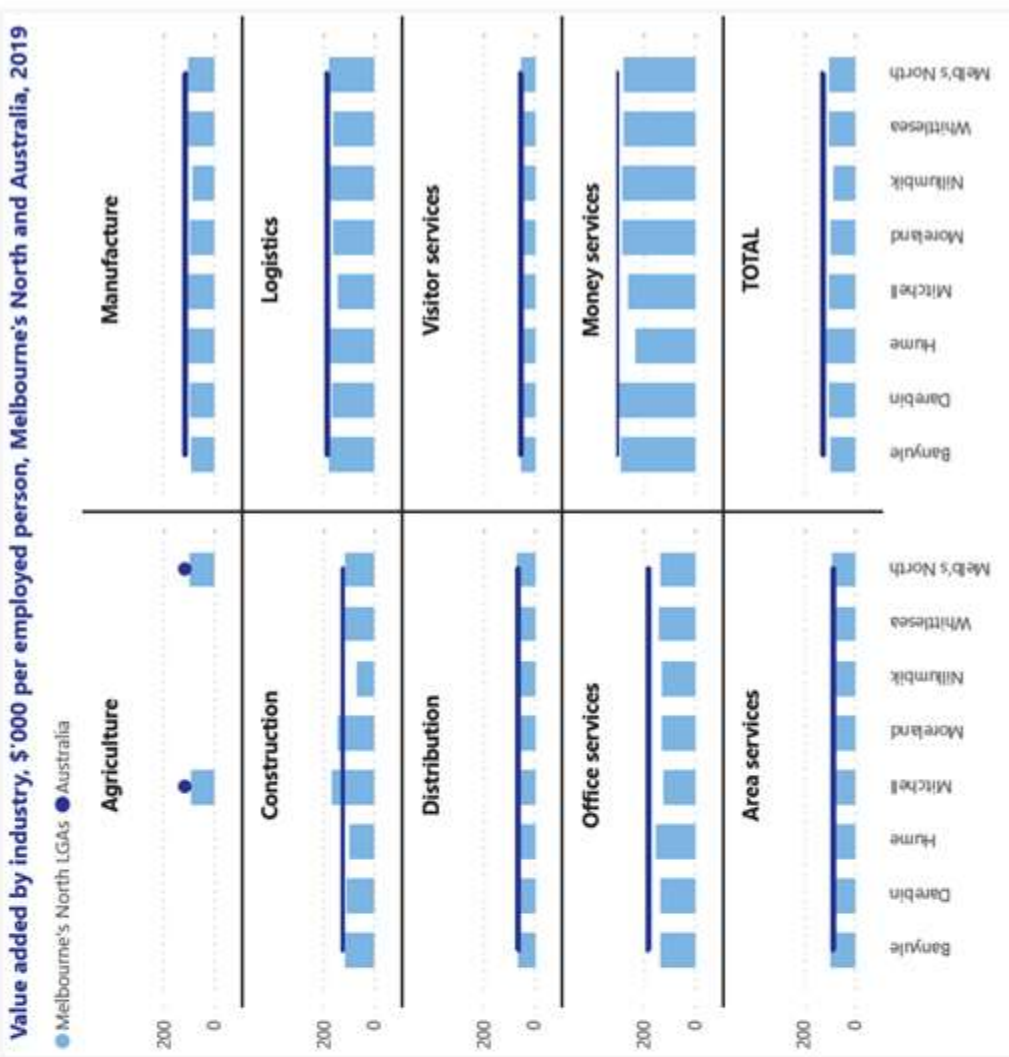
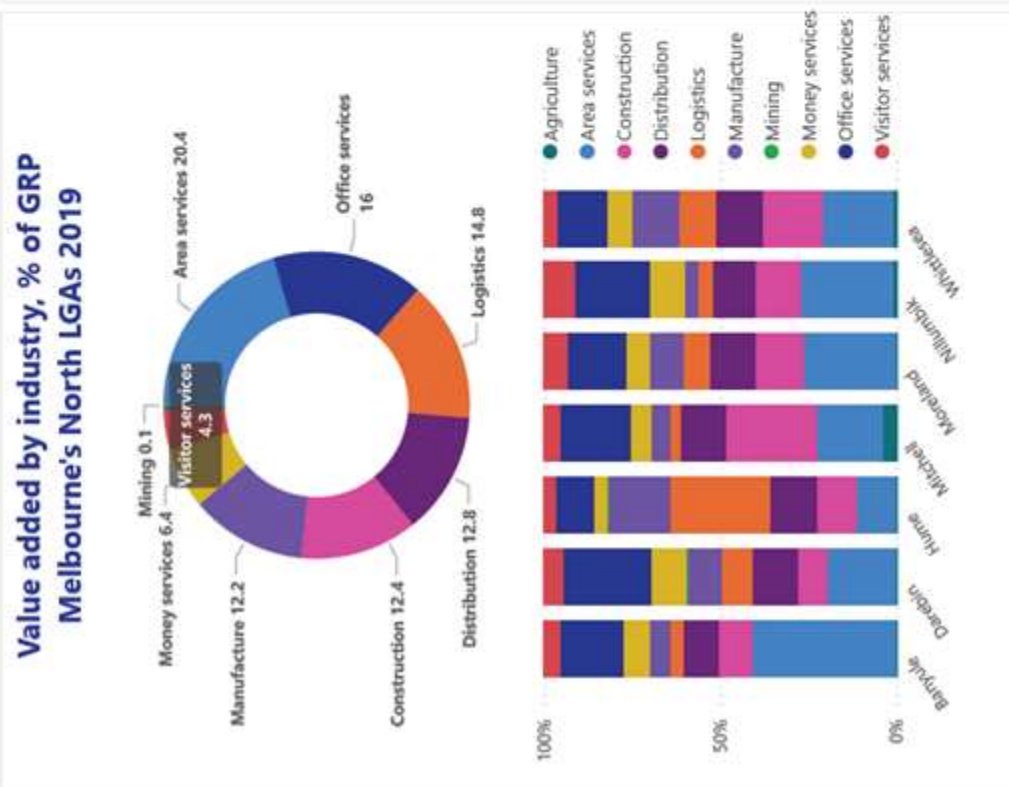
Table 1.27 Unemployment rate by region (per cent)							
	1994	2007	2015	2016	2017	2018	2019
Banyule (C)	3.4	4.4	5.0	3.8	4.6	3.5	3.3
Darebin (C)	5.4	6.7	7.6	6.1	6.7	5.7	5.2
Hume (C)	9.0	6.9	9.1	9.3	10.5	9.2	8.0
Mitchell (S)	5.5	6.6	7.7	5.9	5.9	4.4	3.9
Moreland (C)	5.6	6.1	7.2	6.3	6.6	6.0	5.5
Nillumbik (S)	1.7	2.4	2.9	2.1	2.7	2.1	1.9
Whittlesea (C)	4.8	6.5	7.9	6.2	7.5	5.7	5.2
<b>Melbourne's North</b>	<b>5.4</b>	<b>5.9</b>	<b>7.2</b>	<b>6.1</b>	<b>7.0</b>	<b>5.8</b>	<b>5.3</b>

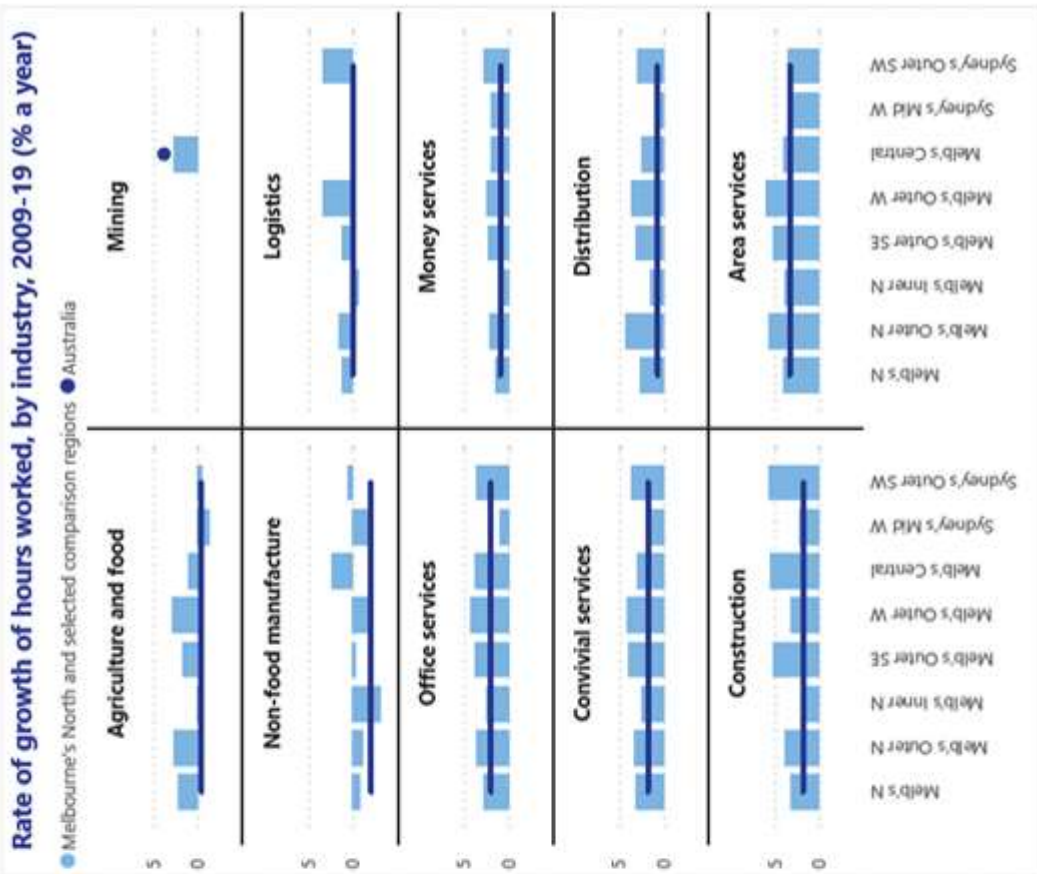
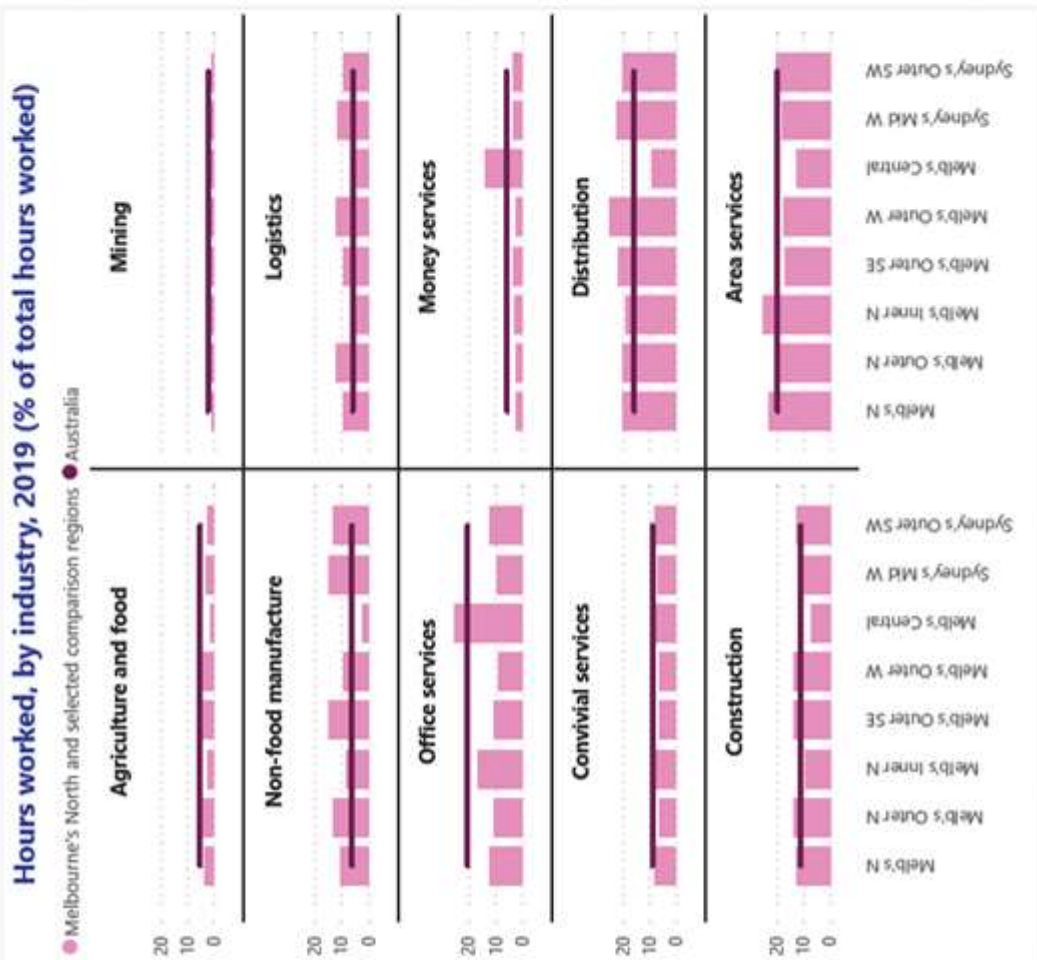
*Note:* Estimates are based on the unsmoothed series of unemployment and labour force.

*Source:* Small Area Labour Market, National Skills Commission.

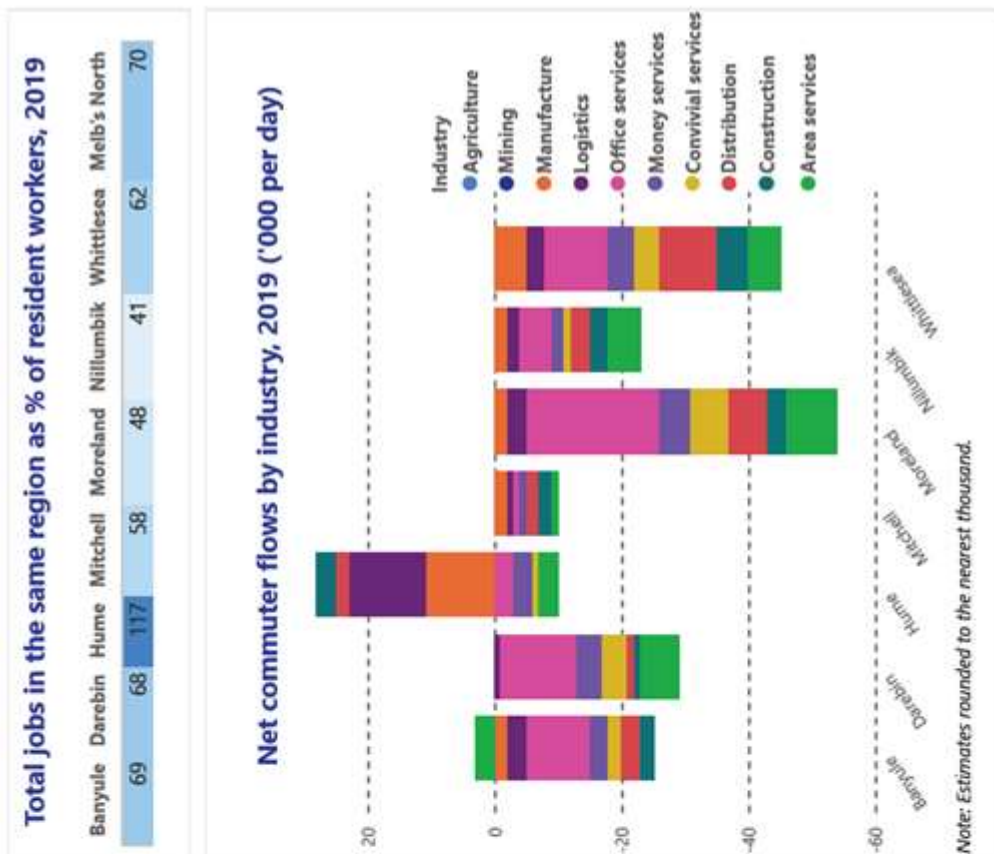
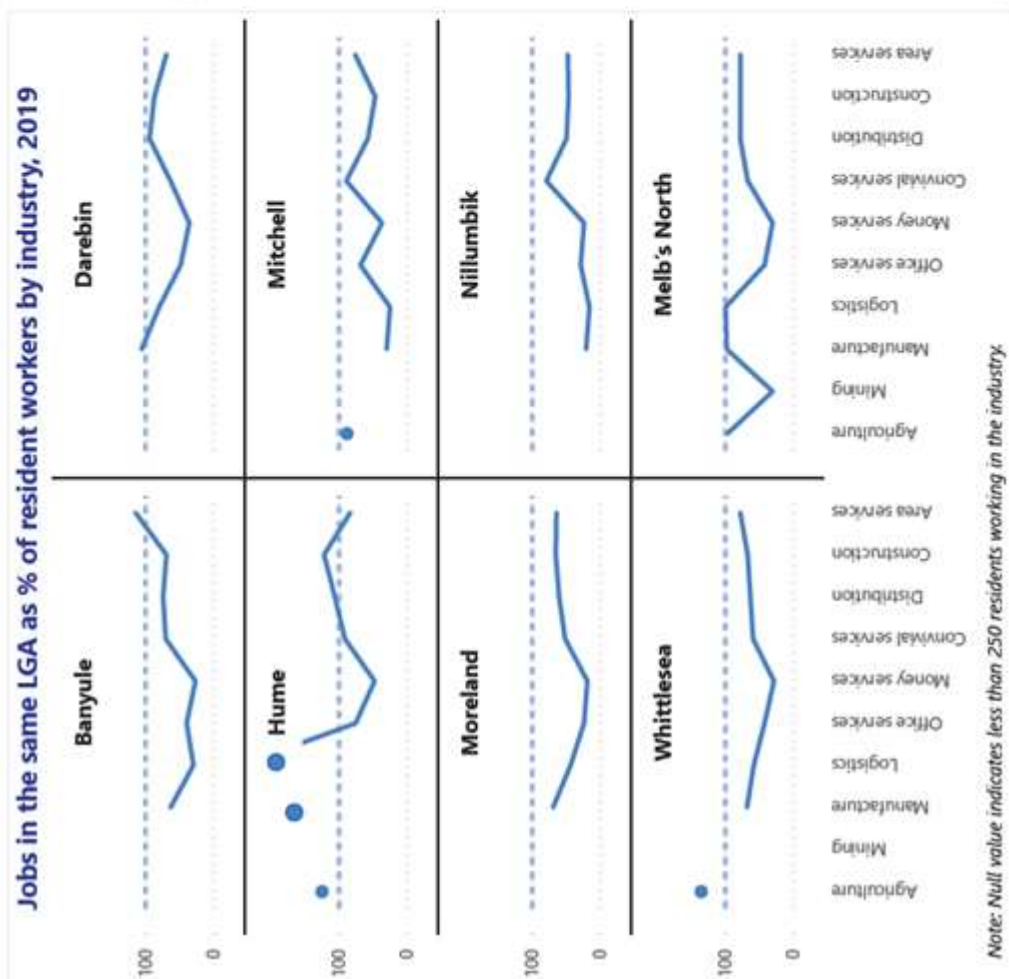
## 1.6 Melbourne's North: Employment by industry dashboards





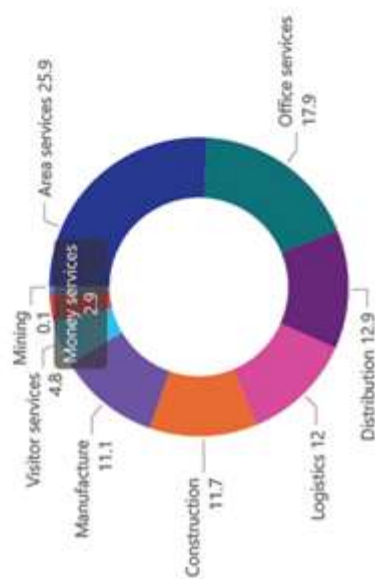




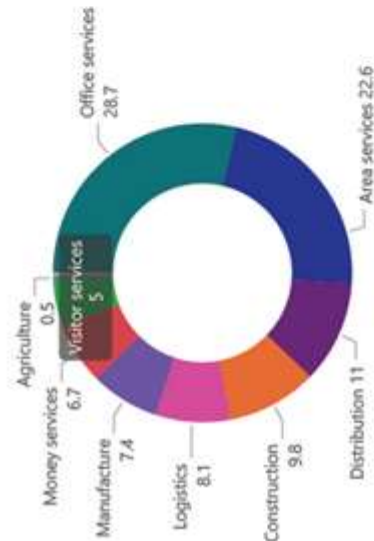


## Income generated by industry (%), 2019

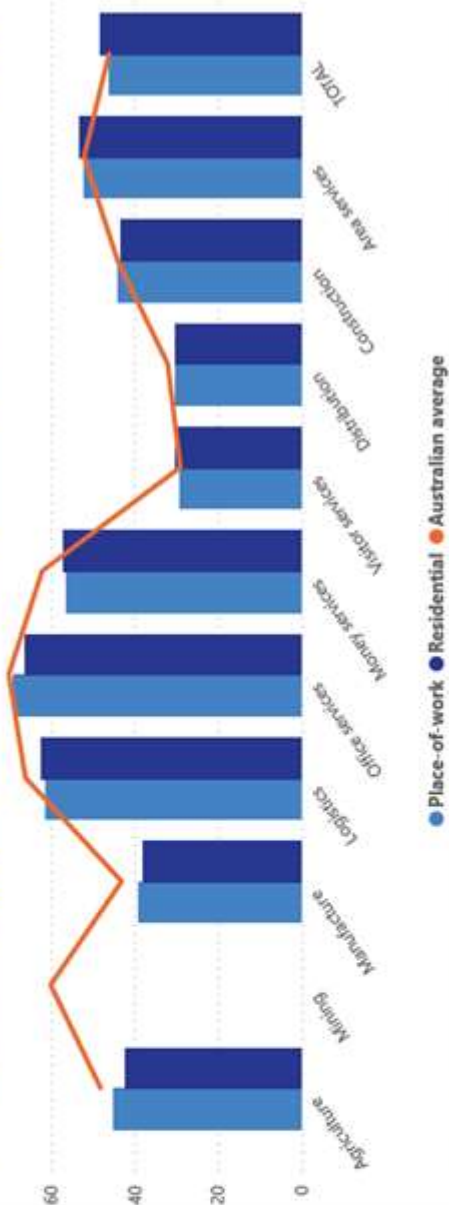
### Place-of-work basis



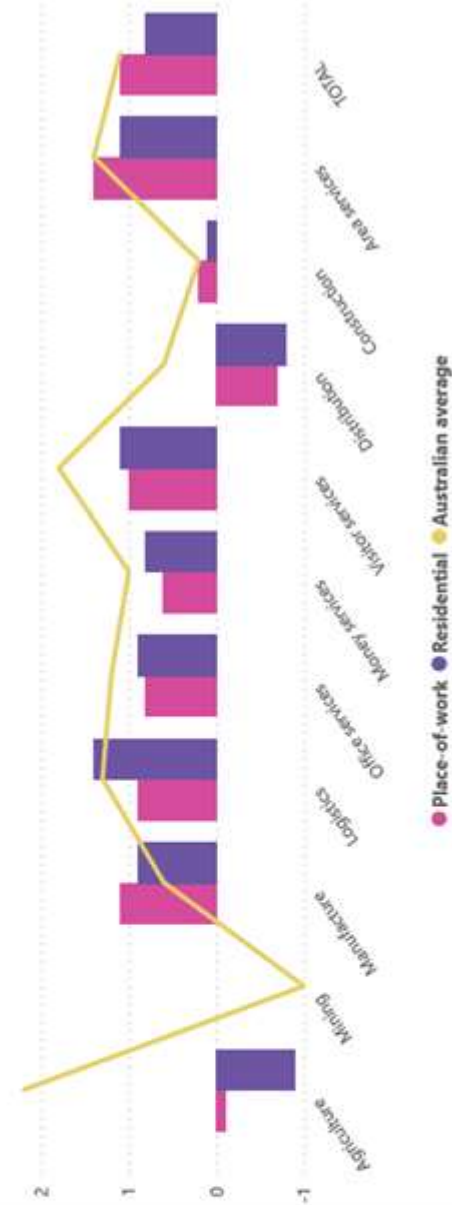
### Residential basis



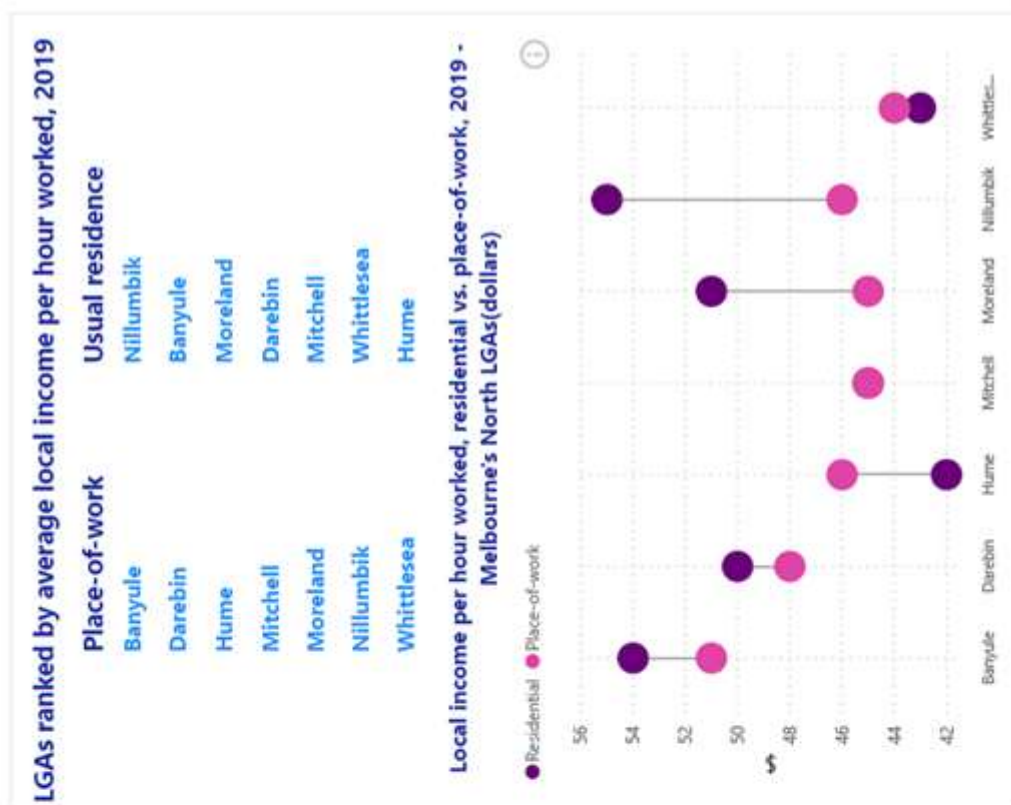
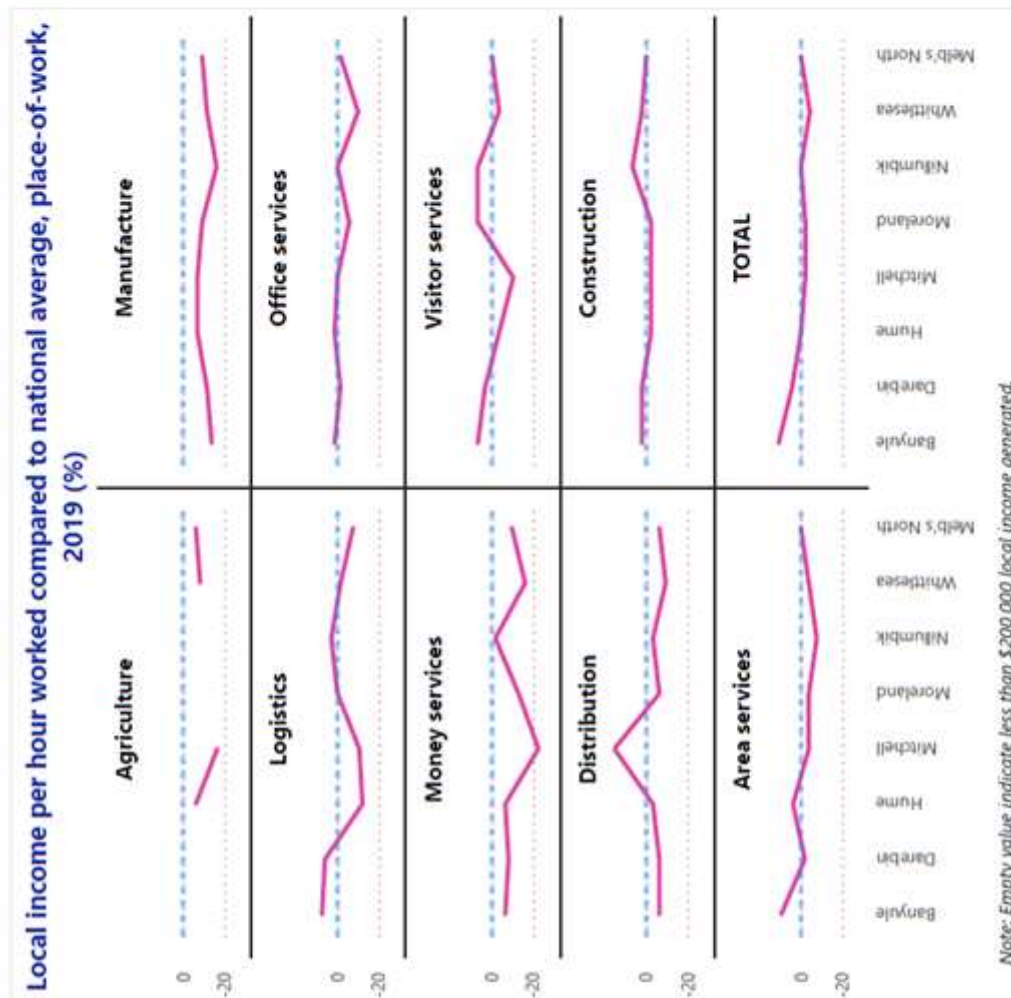
## Average local income per hour worked (\$/hour), Melbourne's North and Australia, 2019



## Rate of growth of income per hour (\$/hr %pa), Melbourne's North and Australia, 2009-2019







## 2. Melbourne's North: Impact and recovery from the COVID pandemic

### 2.1 Key findings

- Melbourne's North unemployment rate of 5.5 per cent is higher than Greater Melbourne (5.2 per cent), Victoria (4.9 per cent) and Australia (5.1 per cent) as of the June 2021 quarter.
- The LGAs most severely affected by higher unemployment are Hume City Council and City of Whittlesea.
- Melbourne's North GRP average quarterly rate of growth of 2.3 per cent over the 2021 financial year has been slightly greater than Greater Melbourne (1.8 per cent), Victoria (2.0 per cent) and Australia (2.0 per cent).
- The LGAs most severely affected by slower recovery in average quarterly GRP growth are the inner regions of Banyule City Council (1.3 per cent) Moreland City Council (1.1 per cent) and Darebin City Council (1.1 per cent).

### 2.2 Introduction

Chapter 1 presented data on trends in Melbourne's North before business-as-usual was interrupted by the COVID-19 pandemic in the first quarter of calendar 2020. This chapter reviews Melbourne's North's economy over the past two years with a particular focus on the impact and recovery from the COVID-19 pandemic. Tables of economic indicators are summarised in four sections:

- Section 2.3 Compares the economic performance of Melbourne's North to other broad regions within Greater Melbourne, as well as Victorian state and Australian national economies.
- Section 2.4 The seven Local Government Areas within Melbourne's North.
- Section 2.5 The total Melbourne's North economy summarised by ANZSIC industry.
- Section 2.6 Unemployment rates for Melbourne's North, Greater Melbourne, Victorian state and Australian national economies

Key economic indicators summarised include:

- headline GRP;
- value added;
- sales;

- place-of-work employment;
- resident employment; and
- unemployment rates.

The December quarter of 2019 was the last quarter that was unaffected by COVID-19 with relatively strong growth in employment and output leading up to Christmas. The first quarter of 2020 was generally weaker for the Australian economy as the nation was impacted by a severe bushfire season.

For most regions, the largest impact on economic output and employment occurred during the second quarter of 2020. This was the first quarter where the full impact of the COVID-19 pandemic and associated travel and activity restrictions came into place to limit the spread of the virus. There were also requirements on which businesses could remain open, and working from home requirements for non-essential workers.

Subsequent lockdowns have dampened growth, but by most indicators, the economy has been recovering from the initial dip during the June quarter of 2020 as business and workers have adjusted to COVID-19 conditions. As of the June quarter in 2021, employment levels in most of Greater Melbourne and sub-regions remain near or below pre-pandemic levels while employment in Regional Victoria has exceeded pre-pandemic levels.

While outside the scope of this section, the third quarter of 2021 is expected to remain weaker, especially in Victoria and New South Wales due to the impact of lengthy lockdowns to suppress from the Delta variant. However, many indicators point toward a tightening labour market.

### 2.3 Key economic indicators by region

The following tables contain the key economic indicators for each sub-region within Greater Melbourne including Melbourne's North. These regions are compared against the Victorian state and Australian national economies.

- Many regions economies are now close to pre-pandemic levels
- Employment and GRP has been slower to recover in Victoria than the National economy.
- Regional Victoria has experienced the strongest recovery since the economic contraction of the second quarter of 2020. Within Greater Melbourne,

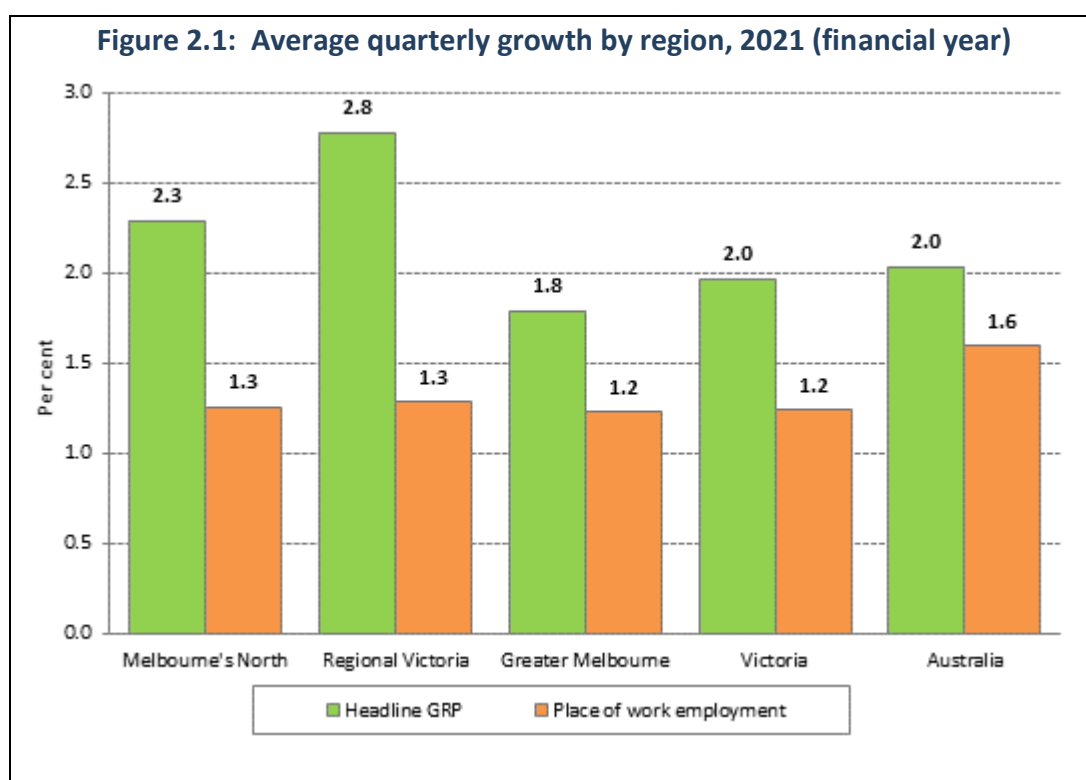
the Western and Northern regions of have recovered the quickest with average quarterly GRP growth of 2.4 and 2.3 per cent of 2021 respectively.

- Economic activity in Central Melbourne remains below 2019 levels as of June quarter 2021. Melbourne's East recovery also remains slow.
- Employment in Melbourne's North region remains below 2019 levels, while GRP levels in the June quarter 2021 are slightly above 2019 levels.

Figure 2.1 shows the average quarterly growth in GRP and place-of-work employment for Melbourne's North compared to other regions from the September quarter in 2020 to the June quarter in 2021. This period summarises the change in these two key economy indicators since the

initial sharp decline in economic activity brought on by COVID-19 during the June quarter of 2020.

In an economic crisis, employment is usually slower to return than output, which is reflected in each region. Melbourne's North has grown at an average of 2.3 per cent per quarter over the 2021 financial year (Headline GRP), while employment growth has lagged behind at 1.3 per cent per quarter. Overall growth in Greater Melbourne has been pulled down by lockdowns and restrictions that have prevented activity returning to the city centre, while outer Melbourne regions and Regional Victoria have generally experienced a faster return in economic activity.



Region	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Central	31,540	31,721	31,823	30,080	30,152	31,155	31,408	31,674
Northern	13,031	13,173	13,018	12,026	12,322	12,774	13,031	13,163
Southern	24,351	24,407	24,211	21,997	22,384	23,196	23,606	23,806
Eastern	17,856	17,863	17,750	16,283	16,417	17,012	17,250	17,344
Western	12,025	12,177	12,143	11,051	11,240	11,613	11,933	12,148
<b>Greater Melbourne</b>	<b>98,804</b>	<b>99,340</b>	<b>98,944</b>	<b>91,437</b>	<b>92,514</b>	<b>95,751</b>	<b>97,228</b>	<b>98,136</b>
<b>Regional Victoria</b>	<b>21,552</b>	<b>21,569</b>	<b>21,455</b>	<b>19,728</b>	<b>20,180</b>	<b>21,222</b>	<b>21,672</b>	<b>22,005</b>
<b>Victoria</b>	<b>120,356</b>	<b>120,909</b>	<b>120,399</b>	<b>111,165</b>	<b>112,693</b>	<b>116,973</b>	<b>118,901</b>	<b>120,141</b>
<b>Australia</b>	<b>506,320</b>	<b>507,783</b>	<b>505,508</b>	<b>473,611</b>	<b>487,623</b>	<b>500,946</b>	<b>508,310</b>	<b>513,297</b>

Table 2.2 Place-of-work employment by region (number)								
Region	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Central	734,523	743,380	749,026	714,396	715,914	735,426	749,675	756,848
Northern	386,337	390,219	390,183	373,277	369,546	378,343	387,675	392,214
Southern	719,786	725,232	723,140	681,971	679,323	693,535	707,638	711,691
Eastern	530,619	532,721	531,183	506,332	499,386	510,351	519,404	523,016
Western	347,278	350,193	349,416	330,634	329,110	336,911	347,275	352,221
Greater Melbourne	2,718,544	2,741,745	2,742,947	2,606,609	2,593,278	2,654,566	2,711,667	2,735,991
Regional Victoria	668,189	669,628	667,086	640,393	634,479	652,032	666,183	673,624
Victoria	3,386,733	3,411,373	3,410,033	3,247,003	3,227,757	3,306,598	3,377,850	3,409,615
Australia	12,915,019	12,942,751	12,987,099	12,310,900	12,555,775	12,816,104	12,971,189	13,115,654

Table 2.3 Resident employment by region (number)								
Region	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Central	159,214	161,240	162,096	155,519	154,642	159,111	162,140	164,326
Northern	549,215	554,460	554,357	528,834	523,619	536,467	548,822	554,149
Southern	863,251	871,638	870,751	829,506	820,585	840,095	861,306	867,970
Eastern	604,591	607,442	605,314	576,061	569,774	583,180	592,193	595,964
Western	491,926	497,862	497,501	473,464	468,502	480,831	497,133	505,724
Greater Melbourne	2,668,197	2,692,641	2,690,018	2,563,384	2,537,122	2,599,684	2,661,594	2,688,133
Regional Victoria	744,475	748,173	746,915	713,379	707,988	727,487	743,147	749,305
Victoria	3,412,672	3,440,814	3,436,934	3,276,763	3,245,109	3,327,171	3,404,741	3,437,438
Australia	12,915,087	12,942,822	12,987,172	12,310,994	12,555,852	12,816,183	12,971,270	13,115,736

Table 2.4 Sales by region (\$ million)								
Region	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Central	65,459	66,032	66,470	62,296	62,643	64,948	65,402	66,142
Northern	23,926	24,279	24,001	21,780	22,656	23,770	24,352	24,687
Southern	45,305	45,352	45,003	39,957	40,804	42,490	43,390	43,842
Eastern	32,133	32,136	31,995	28,796	29,016	30,248	30,790	31,001
Western	21,934	22,290	22,351	19,928	20,401	21,204	21,919	22,504
Greater Melbourne	188,757	190,089	189,820	172,757	175,521	182,659	185,853	188,175
Regional Victoria	38,848	38,963	38,959	35,424	36,363	38,694	39,812	40,743
Victoria	227,605	229,052	228,779	208,181	211,884	221,354	225,665	228,918
Australia	936,259	940,751	936,121	863,502	896,384	929,114	950,012	962,557

Table 2.5 Value added by region (\$ million)								
Region	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Central	29,881	30,047	30,136	28,390	28,559	29,551	29,848	30,131
Northern	10,206	10,322	10,179	9,283	9,561	10,004	10,251	10,381
Southern	19,273	19,308	19,162	17,186	17,573	18,357	18,751	18,945
Eastern	14,474	14,455	14,374	13,040	13,151	13,741	13,980	14,096
Western	9,369	9,471	9,442	8,477	8,636	9,008	9,314	9,507
Greater Melbourne	83,204	83,604	83,293	76,376	77,480	80,661	82,143	83,061
Regional Victoria	17,197	17,188	17,137	15,670	16,097	17,096	17,478	17,744
Victoria	100,400	100,791	100,430	92,046	93,577	97,757	99,621	100,805
Australia	428,271	429,270	427,701	398,274	411,833	424,756	431,463	436,153

## 2.4 Key economic indicators by Local Government Area

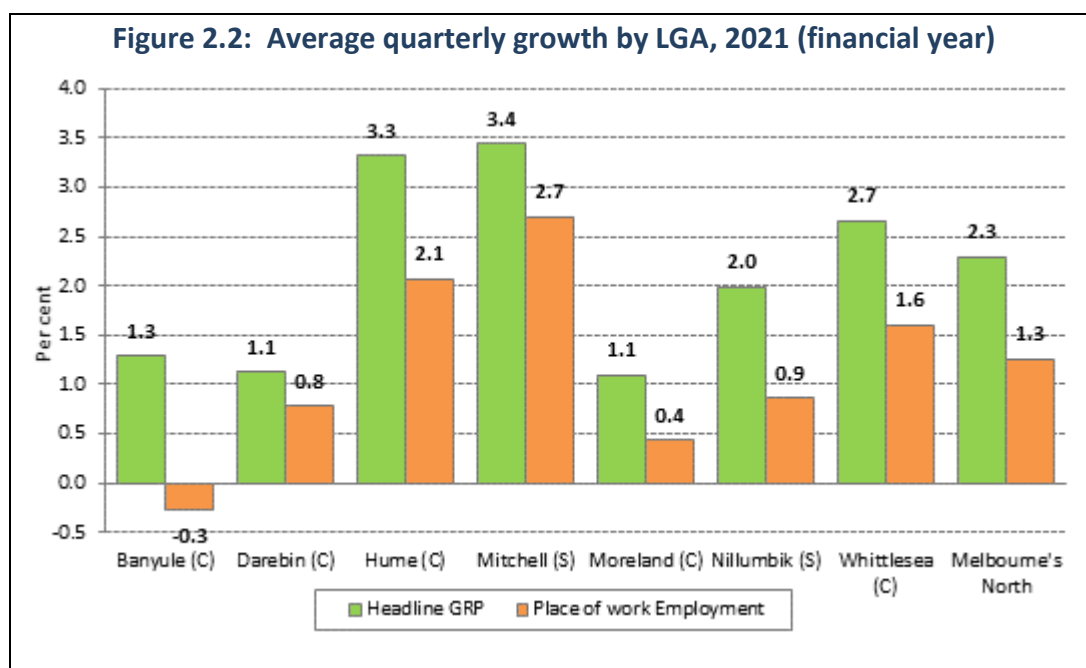
The following tables summarise key economic indicators for each of the seven LGAs that make up Melbourne's North region.

- Melbourne's North GRP has been growing at an average rate of 2.3 per cent per quarter over the 2021 financial year.
- The outer LGAs of Hume City Council, Whittlesea City Council and Mitchell Shire have recovered the fastest from the initial impacts of the COVID-19 pandemic. Quarterly GRP for each of these regions in June 2021 now exceeds GRP levels from the end of 2019.
- Recovery in GRP within the inner LGAs of Banyule, Moreland and Darebin remains slower with each of these regions still below 2019 levels. Economic activity has also been slower to return in Nillumbik Shire.

- All LGAs within Melbourne's North suffered a loss in employment during the second quarter of 2020. However, most regions employment levels have continued to recover into 2021 on both industry and resident basis. The inner LGAs (below pre-pandemic) employment has been slower to recover than the outer LGAs (above pre-pandemic).

Figure 2.2 shows the average quarterly growth in value added and place-of-work employment from the September quarter 2020 to the June quarter 2021. The rate of growth gives an indication about the pace in which in LGA has recovered since the initiation sharp decline in activity during the June 2021 quarter.

Economic growth in the City of Whittlesea and Hume City Council has been faster than other regions partially due to growth in Construction, Health care and Logistics industries. At the same time, employment growth has been relatively slower to return.



LGA name	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Banyule (C)	1,562	1,573	1,576	1,481	1,505	1,551	1,558	1,558
Darebin (C)	1,983	1,987	1,973	1,844	1,832	1,886	1,912	1,928
Hume (C)	4,488	4,592	4,476	4,046	4,234	4,432	4,554	4,608
Mitchell (S)	433	436	437	412	418	435	457	472
Moreland (C)	1,689	1,676	1,655	1,550	1,549	1,605	1,614	1,619
Nillumbik (S)	497	497	487	438	449	463	469	473
Whittlesea (C)	2,379	2,412	2,413	2,255	2,334	2,402	2,466	2,505
<b>Total</b>	<b>13,031</b>	<b>13,173</b>	<b>13,018</b>	<b>12,026</b>	<b>12,322</b>	<b>12,774</b>	<b>13,031</b>	<b>13,163</b>

Table 2.7 Place-of-work employment by LGA (number)								
LGA name	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Banyule (C)	49,417	50,297	50,674	49,183	47,740	48,497	48,804	48,616
Darebin (C)	59,164	59,539	59,501	57,060	56,286	57,558	58,413	58,834
Hume (C)	128,325	129,525	129,610	123,026	123,143	125,970	130,647	133,467
Mitchell (S)	12,729	12,922	13,003	12,468	12,545	13,018	13,609	13,863
Moreland (C)	47,831	48,051	47,858	46,612	45,587	46,780	47,193	47,395
Nillumbik (S)	15,791	15,772	15,455	14,312	14,253	14,557	14,726	14,811
Whittlesea (C)	73,080	74,113	74,082	70,616	69,992	71,963	74,285	75,228
<b>Total</b>	<b>386,337</b>	<b>390,219</b>	<b>390,183</b>	<b>373,277</b>	<b>369,546</b>	<b>378,343</b>	<b>387,675</b>	<b>392,214</b>

Table 2.8 Resident employment by LGA (number)								
LGA name	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Banyule (C)	70,893	71,270	71,004	67,495	66,641	68,125	68,876	69,306
Darebin (C)	88,662	89,488	89,455	85,338	84,450	86,475	86,017	86,768
Hume (C)	108,134	109,259	109,314	104,351	103,429	106,067	111,939	113,403
Mitchell (S)	22,496	22,873	23,043	22,148	22,079	22,744	23,878	24,154
Moreland (C)	103,986	105,130	105,265	100,653	99,837	102,422	103,080	104,081
Nillumbik (S)	38,452	38,631	38,492	36,605	36,136	36,935	37,455	37,663
Whittlesea (C)	116,593	117,810	117,784	112,244	111,046	113,698	117,577	118,774
<b>Total</b>	<b>549,215</b>	<b>554,460</b>	<b>554,357</b>	<b>528,834</b>	<b>523,619</b>	<b>536,467</b>	<b>548,822</b>	<b>554,149</b>

Table 2.9 Value added by LGA (\$ million)								
LGA name	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Banyule (C)	1,191	1,200	1,204	1,123	1,143	1,189	1,197	1,199
Darebin (C)	1,522	1,519	1,507	1,392	1,383	1,440	1,467	1,483
Hume (C)	3,890	3,981	3,866	3,454	3,637	3,831	3,949	4,001
Mitchell (S)	313	316	317	298	302	317	335	346
Moreland (C)	1,179	1,167	1,149	1,056	1,055	1,108	1,117	1,125
Nillumbik (S)	325	324	317	275	282	296	300	303
Whittlesea (C)	1,787	1,815	1,820	1,685	1,758	1,825	1,887	1,924
<b>Total</b>	<b>10,206</b>	<b>10,322</b>	<b>10,179</b>	<b>9,283</b>	<b>9,561</b>	<b>10,004</b>	<b>10,251</b>	<b>10,381</b>

Table 2.10 Sales by LGA (\$ million)								
LGA name	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Banyule (C)	2,469	2,486	2,496	2,293	2,343	2,426	2,451	2,459
Darebin (C)	3,292	3,281	3,267	2,993	2,986	3,099	3,152	3,192
Hume (C)	9,910	10,246	10,010	8,994	9,605	10,209	10,488	10,610
Mitchell (S)	730	734	735	672	678	711	757	793
Moreland (C)	2,646	2,595	2,556	2,338	2,356	2,475	2,501	2,516
Nillumbik (S)	710	708	693	594	611	640	654	667
Whittlesea (C)	4,168	4,228	4,244	3,895	4,076	4,210	4,348	4,449
<b>Total</b>	<b>23,926</b>	<b>24,279</b>	<b>24,001</b>	<b>21,780</b>	<b>22,656</b>	<b>23,770</b>	<b>24,352</b>	<b>24,687</b>



## 2.5 Key economic indicators by industry for Melbourne's North

The following tables summarise Melbourne's North economy by industry over the past two years. The most important industries within Melbourne's North in terms of both high economic output and employment are:

- Health Care and Social Assistance;
- Manufacturing;
- Construction; and
- Transport, Postal and Warehousing.

Industries that are reliant on the international travel have suffered the worst from the initial impact of the COVID-19 pandemic with both Transport, Postal and Warehousing and Accommodation and Food Services both suffered significant drops. The latter was also impacted by limitations placed upon dining in restaurants. Both of these industries continued to be hampered by restrictions and reluctance to travel. The main drag in the Transport industry continues to be related to air transport with travel through Melbourne Airport remaining limited. Other forms

of passenger transport have also suffered as a result of restrictions on movement. This has also impacted the service industries that rely on passengers moving through the airport. While freight and postal have been areas of growth as domestic shipping demand has increased. The strong increase in freight and postal has offset falls related to airport travel. This is also partly reflected in increasing output through Wholesale Trade.

Employment in Manufacturing continues to be low with employment in Whittlesea continuing to fall over the 2021 financial year, but employment rising within Hume.

Many industries are now returning to near pre-pandemic levels of employment and economic output. Employment growth over the past year has been the fastest in:

- Retail Trade;
- Transport, Postal and Warehousing;
- Financial and Insurance Services;
- Public Administration and Safety; and
- Education and Training

Agriculture has also seen a significant bump in employment in the June quarter 2021, but only employs a small number of workers.

**Table 2.11 Melbourne's North – Place-of-work employment by industry (number)**

Industry code	Industry name	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
A	Agriculture, Forestry and Fishing	2,315	2,277	2,218	2,338	2,157	2,280	2,486	2,944
B	Mining	520	458	363	244	273	279	288	288
C	Manufacturing	49,264	49,513	49,690	51,020	46,520	46,797	47,228	47,260
D	Electricity, Gas, Water and Waste Services	3,645	3,575	3,496	3,713	3,217	3,239	3,299	3,412
E	Construction	43,316	44,602	45,040	43,946	43,247	44,059	45,013	45,337
F	Wholesale Trade	15,569	15,853	16,030	16,622	15,225	15,517	15,867	16,227
G	Retail Trade	39,651	40,050	40,238	37,840	38,529	39,582	41,205	42,426
H	Accommodation and Food Services	21,838	21,637	21,284	16,436	19,750	19,862	19,865	19,938
I	Transport, Postal and Warehousing	35,738	35,899	35,812	31,168	33,953	34,503	35,655	36,803
J	Information Media and Telecommunications	3,209	3,140	3,070	2,469	2,768	2,798	2,944	3,035
K	Financial and Insurance Services	4,375	4,465	4,442	4,544	4,260	4,444	4,607	4,599
L	Rental, Hiring and Real Estate Services	4,271	4,290	4,077	3,869	3,675	3,766	3,831	3,755
M	Professional, Scientific and Technical Services	15,620	15,668	15,674	14,564	14,694	15,136	15,543	15,573
N	Administrative and Support Services	11,918	11,776	11,512	9,678	9,995	10,175	10,369	10,581
O	Public Administration and Safety	19,320	19,440	19,451	19,533	18,853	19,678	20,628	20,922
P	Education and Training	35,614	36,216	36,887	33,231	34,770	35,950	37,156	37,932
Q	Health Care and Social Assistance	57,128	58,886	59,328	62,657	57,326	59,024	59,824	59,079
R	Arts and Recreation Services	6,639	6,400	5,916	4,285	5,512	5,581	5,683	5,949
S	Other Services	16,389	16,072	15,655	15,120	14,821	15,675	16,184	16,155
	<b>Total</b>	<b>386,337</b>	<b>390,219</b>	<b>390,183</b>	<b>373,277</b>	<b>369,546</b>	<b>378,343</b>	<b>387,675</b>	<b>392,214</b>

**Table 2.12 Melbourne's North – Resident employment by industry (number)**

Industry code	Industry name	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
A	Agriculture, Forestry and Fishing	2,170	2,047	1,911	1,901	1,866	2,090	2,451	3,173
B	Mining	1,078	896	689	458	515	504	522	592
C	Manufacturing	49,520	49,661	49,466	50,407	45,011	44,477	44,180	43,667
D	Electricity, Gas, Water and Waste Services	6,176	5,913	5,452	5,855	4,439	4,171	4,204	4,260
E	Construction	55,668	56,940	57,363	55,685	54,421	55,312	55,959	56,076
F	Wholesale Trade	17,771	18,106	18,469	19,471	17,946	18,135	18,431	18,734
G	Retail Trade	50,679	50,165	49,729	46,720	47,489	49,273	51,839	53,819
H	Accommodation and Food Services	32,232	32,328	32,152	24,984	30,828	32,260	32,462	31,890
I	Transport, Postal and Warehousing	35,835	35,843	35,985	32,668	34,663	35,086	36,231	37,262
J	Information Media and Telecommunications	12,414	12,095	11,931	9,598	10,939	11,053	11,489	12,076
K	Financial and Insurance Services	21,406	22,170	22,244	23,438	21,594	22,553	23,187	23,124
L	Rental, Hiring and Real Estate Services	7,343	7,453	6,984	6,246	5,808	5,631	5,562	5,411
M	Professional, Scientific and Technical Services	45,120	45,525	46,035	43,769	43,381	44,866	46,300	46,628
N	Administrative and Support Services	20,903	20,438	19,643	16,201	16,407	16,595	16,786	17,030
O	Public Administration and Safety	33,026	33,217	33,503	32,866	33,886	35,779	37,632	38,112
P	Education and Training	47,916	49,602	51,277	45,531	48,324	49,615	51,176	52,498
Q	Health Care and Social Assistance	76,044	79,052	79,889	84,425	76,683	78,427	78,839	77,679
R	Arts and Recreation Services	11,183	10,731	9,921	7,592	8,851	8,825	9,020	9,512
S	Other Services	22,732	22,277	21,711	21,018	20,567	21,816	22,551	22,607
	<b>Total</b>	<b>549,215</b>	<b>554,460</b>	<b>554,357</b>	<b>528,834</b>	<b>523,619</b>	<b>536,467</b>	<b>548,822</b>	<b>554,149</b>

**Table 2.13 Melbourne's North – Value added by industry (\$ million)**

Industry code	Industry name	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
A	Agriculture, Forestry and Fishing	55	52	52	48	52	68	72	83
B	Mining	17	13	8	4	4	2	2	2
C	Manufacturing	1,232	1,216	1,225	1,127	1,129	1,145	1,179	1,192
D	Electricity, Gas, Water and Waste Services	250	256	257	244	309	304	303	305
E	Construction	1,137	1,159	1,180	1,089	1,106	1,090	1,118	1,144
F	Wholesale Trade	701	708	734	729	726	744	762	768
G	Retail Trade	617	629	642	610	622	653	659	666
H	Accommodation and Food Services	226	229	208	122	158	182	196	209
I	Transport, Postal and Warehousing	1,527	1,606	1,468	1,199	1,333	1,447	1,497	1,509
J	Information Media and Telecommunications	123	122	120	107	114	122	120	124
K	Financial and Insurance Services	366	364	360	376	363	370	380	380
L	Rental, Hiring and Real Estate Services	209	211	200	165	174	192	203	205
M	Professional, Scientific and Technical Services	425	423	422	388	394	414	425	419
N	Administrative and Support Services	408	399	377	302	299	329	338	356
O	Public Administration and Safety	615	627	643	660	654	671	680	684
P	Education and Training	713	716	721	705	716	730	746	753
Q	Health Care and Social Assistance	1,221	1,236	1,233	1,117	1,123	1,226	1,234	1,247
R	Arts and Recreation Services	95	91	81	64	66	74	79	80
S	Other Services	268	264	248	226	219	240	258	256
	<b>Total</b>	<b>10,206</b>	<b>10,322</b>	<b>10,179</b>	<b>9,283</b>	<b>9,561</b>	<b>10,004</b>	<b>10,251</b>	<b>10,381</b>

**Table 2.14 Melbourne's North – Sales by industry (\$ million)**

Industry code	Industry name	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
A	Agriculture, Forestry and Fishing	136	130	129	118	129	169	177	204
B	Mining	41	30	17	8	7	6	5	5
C	Manufacturing	4,003	3,937	3,957	3,637	3,659	3,733	3,860	3,910
D	Electricity, Gas, Water and Waste Services	661	675	672	638	808	799	798	800
E	Construction	3,891	3,961	4,124	3,770	3,763	3,703	3,724	3,826
F	Wholesale Trade	1,271	1,285	1,339	1,339	1,343	1,385	1,412	1,422
G	Retail Trade	1,054	1,077	1,089	1,024	1,037	1,079	1,089	1,102
H	Accommodation and Food Services	569	578	526	309	399	459	494	527
I	Transport, Postal and Warehousing	3,946	4,245	3,923	3,314	3,841	4,264	4,394	4,414
J	Information Media and Telecommunications	305	304	304	274	299	323	322	334
K	Financial and Insurance Services	594	596	593	625	601	615	631	632
L	Rental, Hiring and Real Estate Services	1,174	1,165	1,108	911	959	1,058	1,122	1,132
M	Professional, Scientific and Technical Services	853	849	840	768	773	806	828	816
N	Administrative and Support Services	693	679	649	523	521	576	592	622
O	Public Administration and Safety	1,045	1,064	1,090	1,121	1,104	1,128	1,144	1,150
P	Education and Training	1,023	1,028	1,036	1,025	1,033	1,058	1,083	1,095
Q	Health Care and Social Assistance	1,790	1,817	1,811	1,650	1,659	1,808	1,820	1,838
R	Arts and Recreation Services	299	286	255	206	217	246	264	270
S	Other Services	579	573	540	521	502	553	593	587
	<b>Total</b>	<b>23,926</b>	<b>24,279</b>	<b>24,001</b>	<b>21,780</b>	<b>22,656</b>	<b>23,770</b>	<b>24,352</b>	<b>24,687</b>

## 2.6 Unemployment by region

This section summarises unemployment for Melbourne's North over the most recent quarters for each of the seven LGAs within the region. Melbourne's North is compared against National, State and Greater Melbourne labour markets.

In the two years prior to the pandemic (2018 and 2019) the average quarterly unemployment rate for Melbourne's North was around 5.3 per cent compared to 5.0 per cent across Greater Melbourne. Since March 2020, the gap between Melbourne's North and Greater Melbourne has worsened. The average quarterly unemployment rate has worsened to 7.6 per cent in Melbourne's North across March 2020 to June 2021 compared to an average of 6.6 per cent across Greater Melbourne. National and Victorian State unemployment rates have both averaged around 6.2 per cent across March 2020 to June 2021 quarters.

The worst impacted regions for unemployment in the initial stages of the pandemic include Hume, where the unemployment rate reached 14.5 per cent in the September 2020 quarter, while Moreland, Whittlesea and Darebin have all reached unemployment rates during the pandemic that have exceeded 8.0 per cent. Banyule and Nillumbik have maintained relatively low levels of unemployment throughout the pandemic with some increases during the worse periods.

The unemployment rate across all regions appears to have improved going into the June 2021 quarter. Melbourne's North unemployment rate reduced to 5.5 per cent. Greater Melbourne's unemployment rate fell to 5.2 per cent. Despite lengthy lockdowns during the September quarter of 2021, the labour market across Greater Melbourne has remained tight with the unemployment rate falling even further. The average unemployment rate for Greater Melbourne across July to September 2021 months is around 4.7 per cent.<sup>1</sup>

<sup>1</sup> Labour Force, Australia, Detailed, ABS, September 2021.

**Table 2.15 Unemployment rate by region (per cent)**

LGA name	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Banyule (C)	3.0	3.2	3.8	4.4	5.7	6.0	5.4	3.5
Darebin (C)	4.9	4.8	5.9	7.0	7.9	8.1	7.8	5.8
Hume (C)	8.0	8.7	9.9	12.4	14.5	13.3	13.2	7.3
Mitchell (S)	3.8	5.2	5.2	3.7	6.5	6.1	7.5	4.5
Moreland (C)	5.4	4.8	5.7	8.4	8.5	7.9	7.8	5.6
Nillumbik (S)	1.7	1.8	2.3	3.1	4.2	4.1	3.6	2.3
Whittlesea (C)	4.6	5.3	6.2	6.4	8.8	9.7	9.1	6.1
<b>Melbourne's North</b>	<b>5.0</b>	<b>5.3</b>	<b>6.2</b>	<b>7.5</b>	<b>8.9</b>	<b>8.8</b>	<b>8.6</b>	<b>5.5</b>
<b>Greater Melbourne</b>	<b>5.1</b>	<b>4.7</b>	<b>6.0</b>	<b>7.2</b>	<b>7.2</b>	<b>7.2</b>	<b>6.9</b>	<b>5.2</b>
<b>Victoria</b>	<b>4.8</b>	<b>4.5</b>	<b>5.7</b>	<b>6.6</b>	<b>6.8</b>	<b>6.6</b>	<b>6.5</b>	<b>4.9</b>
<b>Australia</b>	<b>5.2</b>	<b>4.9</b>	<b>5.6</b>	<b>6.9</b>	<b>7.0</b>	<b>6.4</b>	<b>6.4</b>	<b>5.1</b>

Note: Estimates are based on the unsmoothed series of unemployment and labour force.

Source: Small Area Labour Market, National Skills Commission.

## 2.7 Business counts Melbourne's North and Melbourne Northern-Western Region

The following tables show business counts by industry sector. Tables 2.16 and 2.18 provide data for Melbourne's North. Tables 2.17 and 2.19 provide data for Melbourne's Northern and Western Regions combined.

For Melbourne's North, the highest number of businesses in 2020 were in the Construction (17,917 businesses); Transport, Postal and Warehousing (13,238 businesses); Professional, Scientific and Technical Services (9,610 businesses) and Rental, Hiring and Real Estate Services (7,360 businesses) sectors. For Melbourne's North, the fastest growth in business registration in 2020 occurred in the Transport, Postal and Warehousing (1,209 new businesses); Construction (521 new businesses, down from 910 new businesses in the previous year) and Professional, Scientific and Technical Services (397 new businesses, down from 622 new businesses in 2018).

In 2021 there were 444 companies in Melbourne's North engaged in Food Product and Beverage Manufacturing, up from 421 companies in 2020.

For Melbourne's Northern and Western Regions combined, the highest number of businesses in 2020 were in the Construction (31,292 businesses); Transport, Postal and Warehousing (28,914 businesses); Professional, Scientific and Technical Services (17,878 businesses) and Rental, Hiring and Real Estate Services (14,329 businesses) sectors. For Melbourne's Northern and Western Regions combined, the fastest growth in business registration in 2020 occurred in the Transport, Postal and Warehousing (2,952 new businesses); Construction (1,069 new businesses, down from 1,648 new businesses in the previous year); Professional, Scientific and Technical Services (890 new businesses) and Administration and Support Services (783 new businesses) sectors.

The total number of manufacturing businesses since 2019 has remained stable. The total number of businesses in Melbourne's North has increased from 67,173 registered businesses in 2015 to 87,068 in 2020. For the combined Northern and Western Regions the increase was from 120,653 registered businesses in 2015 to 164,618 businesses in 2020.

The total increase in the number of registered businesses in the combined region in 2020 was 8,351 compared to 2018 when 12,277 new business were registered.

### Economic Recovery Initiative

Darebin has launched a Love Local Card program. Special pre-paid cards to the value of \$30 and \$50 are being provided to eligible community members including jobseekers and ratepayers. Over 400 independent businesses have signed up to the program from the categories of retail, health, beauty, fitness hospitality and tourism. Eligible businesses have been determined based on those that have been most impacted by COVID-19 pandemic. This initiative is part of Darebin Council's ongoing commitment to support the community, the economy and local jobs.

**Table 2.16 Number of businesses by industry division – Melbourne's North**

	2015	2016	2017	2018	2019	2020
Agriculture, Forestry and Fishing	1,157	1,082	1,038	1,036	1,033	1,044
Mining	36	33	39	36	43	38
Manufacturing	3,587	3,648	3,696	3,785	3,853	3,850
Electricity, Gas, Water and Waste Services	227	221	246	256	278	281
Construction	14,263	14,843	15,577	16,486	17,396	17,917
Wholesale Trade	2,886	2,962	3,043	3,040	3,088	3,157
Retail Trade	4,614	4,584	4,590	4,690	4,800	4,938
Accommodation and Food Services	2,620	2,755	2,869	3,109	3,245	3,282
Transport, Postal and Warehousing	6,917	7,396	8,678	10,782	12,029	13,238
Information Media and Telecommunications	588	628	652	713	795	805
Financial and Insurance Services	4,605	4,817	5,064	5,251	5,403	5,572
Rental, Hiring and Real Estate Services	6,368	6,563	6,743	7,076	7,284	7,360
Professional, Scientific and Technical Services	7,504	7,818	8,174	8,796	9,213	9,610
Administrative and Support Services	2,728	2,911	3,097	3,488	3,860	4,061
Public Administration and Safety	316	311	350	405	407	420
Education and Training	915	953	1,036	1,128	1,163	1,233
Health Care and Social Assistance	3,703	3,925	4,096	4,370	4,695	4,973
Arts and Recreation Services	980	1,002	1,051	1,143	1,198	1,312
Other Services	3,159	3,259	3,458	3,641	3,832	3,977
<b>Total</b>	<b>67,173</b>	<b>69,711</b>	<b>73,497</b>	<b>79,231</b>	<b>83,615</b>	<b>87,068</b>

**Table 2.17 Number of businesses by industry division – Melbourne's North and Melbourne's West**

	2015	2016	2017	2018	2019	2020
Agriculture, Forestry and Fishing	1,876	1,745	1,683	1,660	1,641	1,619
Mining	58	58	68	65	80	82
Manufacturing	5,857	5,991	6,056	6,215	6,335	6,345
Electricity, Gas, Water and Waste Services	412	419	461	484	530	545
Construction	24,358	25,594	26,952	28,575	30,223	31,292
Wholesale Trade	5,169	5,343	5,444	5,522	5,678	5,759
Retail Trade	8,367	8,390	8,450	8,723	8,970	9,274
Accommodation and Food Services	5,032	5,318	5,580	6,019	6,243	6,442
Transport, Postal and Warehousing	13,718	14,877	17,821	22,883	25,962	28,914
Information Media and Telecommunications	1,016	1,076	1,144	1,250	1,408	1,430
Financial and Insurance Services	8,223	8,733	9,277	9,731	10,145	10,458
Rental, Hiring and Real Estate Services	11,622	12,103	12,540	13,267	13,875	14,329
Professional, Scientific and Technical Services	13,623	14,242	14,868	16,085	16,988	17,878
Administrative and Support Services	5,091	5,436	5,837	6,655	7,448	8,231
Public Administration and Safety	581	575	657	737	804	830
Education and Training	1,677	1,790	1,935	2,103	2,215	2,332
Health Care and Social Assistance	6,632	7,116	7,533	8,031	8,609	9,195
Arts and Recreation Services	1,670	1,704	1,803	1,967	2,065	2,214
Other Services	5,671	5,901	6,245	6,659	7,048	7,449
<b>Total</b>	<b>120,653</b>	<b>126,411</b>	<b>134,354</b>	<b>146,631</b>	<b>156,267</b>	<b>164,618</b>

**Table 2.18 Net change in number of businesses by industry division – Melbourne's North**

	2016	2017	2018	2019	2020
Agriculture, Forestry and Fishing	-75	-44	-2	-3	11
Mining	-3	6	-3	7	-5
Manufacturing	61	48	89	68	-3
Electricity, Gas, Water and Waste Services	-6	25	10	22	3
Construction	580	734	909	910	521
Wholesale Trade	76	81	-3	48	69
Retail Trade	-30	6	100	110	138
Accommodation and Food Services	135	114	240	136	37
Transport, Postal and Warehousing	479	1,282	2,104	1,247	1,209
Information Media and Telecommunications	40	24	61	82	10
Financial and Insurance Services	212	247	187	152	169
Rental, Hiring and Real Estate Services	195	180	333	208	76
Professional, Scientific and Technical Services	314	356	622	417	397
Administrative and Support Services	183	186	391	372	201
Public Administration and Safety	-5	39	55	2	13
Education and Training	38	83	92	35	70
Health Care and Social Assistance	222	171	274	325	278
Arts and Recreation Services	22	49	92	55	114
Other Services	100	199	183	191	145
<b>Total</b>	<b>2,538</b>	<b>3,786</b>	<b>5,734</b>	<b>4,384</b>	<b>3,453</b>

Note: Data is the net change in the number of businesses over the financial year. This includes both new business entries and business exits.

**Table 2.19 Net change in number of businesses by industry division – Melbourne's North and Melbourne's West**

	2016	2017	2018	2019	2020
Agriculture, Forestry and Fishing	-131	-62	-23	-19	-22
Mining	-	10	-3	15	2
Manufacturing	134	65	159	120	10
Electricity, Gas, Water and Waste Services	7	42	23	46	15
Construction	1,236	1,358	1,623	1,648	1,069
Wholesale Trade	174	101	78	156	81
Retail Trade	23	60	273	247	304
Accommodation and Food Services	286	262	439	224	199
Transport, Postal and Warehousing	1,159	2,944	5,062	3,079	2,952
Information Media and Telecommunications	60	68	106	158	22
Financial and Insurance Services	510	544	454	414	313
Rental, Hiring and Real Estate Services	481	437	727	608	454
Professional, Scientific and Technical Services	619	626	1,217	903	890
Administrative and Support Services	345	401	818	793	783
Public Administration and Safety	-6	82	80	67	26
Education and Training	113	145	168	112	117
Health Care and Social Assistance	484	417	498	578	586
Arts and Recreation Services	34	99	164	98	149
Other Services	230	344	414	389	401
<b>Total</b>	<b>5,758</b>	<b>7,943</b>	<b>12,277</b>	<b>9,636</b>	<b>8,351</b>

Note: Data is the net change in the number of businesses over the financial year. This includes both new business entries and business exits.



## 2.8 Place-of-work employment by industry subdivision for Melbourne's North

This section compares place-of-work employment between the December quarter 2019 (the latest quarter unaffected by COVID19) and the June quarter 2021 on an industry subdivision basis for Melbourne's North. Further discussion for recent economic indicators for key industries within Melbourne's North can be found in Chapter 4.

Table 2.20 compares the two selected quarters for each of the 86 industry subdivisions across Melbourne's North. Place-of-work employment is summarised next to the absolute per cent difference between these quarters, and the implied rank for each industry. Under this basis, the first ranked industry has experienced the strongest per cent change in place-of-work employment from the December quarter 2019 to the June quarter 2021, conversely the 86<sup>th</sup> ranked industry has experienced the worst place-of-work employment growth over this time period.

The top 15 and bottom 15 industries have been summarised in Figures 2.3 and 2.4. Industries that have fewer than 500 employees have been excluded from these charts. Note that these only compare two points in time pre- and post-COVID. Health Care industries, for example, have been growing very strongly over the past five years and while it is not represented in Figure 2.3, the sector has been maintaining high levels of employment throughout the pandemic.

Many of the industries that have had the best employment gains are related to the shift to online and digital, including the online retail, transport and working from home:

- Non-store Retailing and Retail Commission Based Buying (driven by internet retailing);
- Gas Supply;
- Warehousing and Storage Services;
- Motor Vehicle and Motor Vehicle Parts Wholesaling;
- Transport Support Services;
- Rail Transport; and
- Postal and Courier Pick-up and Delivery Services.

While many of the industries that have had the worst employment outcomes continue to be hampered by border and activity restrictions, or in the absence of restrictions, reluctance to return to pre-pandemic activities:

- Food and Beverage Services;
- Accommodation;
- Creative and Performing Arts Activities; and
- Air and Space Transport.

While long running declines in employment for particular manufacturing sub-industries divisions have continued through the pandemic affected quarters, including:

- Transport Equipment Manufacturing;
- Textile, Leather, Clothing and Footwear Manufacturing; and
- Primary Metal and Metal Product Manufacturing.



**Table 2.20 Place-of-work employment for Melbourne's North by industry subdivision**

ANZSIC Code (division)	ANZSIC Industry (division)	ANZSIC Code (sub-division)	ANZSIC Industry (sub-division)	2019.4	2021.2	Per cent difference	Rank
A	Agriculture, Forestry and Fishing	1	Agriculture	2,057	2,767	34	6
		2	Aquaculture	0	0	0	42
		3	Forestry and Logging	41	39	-5	54
		4	Fishing, Hunting and Trapping	5	3	-52	85
		5	Agriculture, Forestry and Fishing Support Services	173	136	-22	77
B	Mining	6	Coal Mining	7	9	27	9
		7	Oil and Gas Extraction	24	16	-34	81
		8	Metal Ore Mining	92	92	0	41
		9	Non-Metallic Mineral Mining and Quarrying	265	135	-49	84
		10	Exploration and Other Mining Support Services	71	37	-48	83
C	Manufacturing	11	Food Product Manufacturing	9,546	9,104	-5	53
		12	Beverage and Tobacco Product Manufacturing	362	331	-9	62
		13	Textile, Leather, Clothing and Footwear Manufacturing	3,254	2,688	-17	74
		14	Wood Product Manufacturing	2,061	1,984	-4	51
		15	Pulp, Paper and Converted Paper Product Manufacturing	3,102	4,126	33	8
		16	Printing (including the Reproduction of Recorded Media)	2,584	2,597	1	38
		17	Petroleum and Coal Product Manufacturing	56	25	-56	86
		18	Basic Chemical and Chemical Product Manufacturing	3,071	3,529	15	16
		19	Polymer Product and Rubber Product Manufacturing	3,854	3,370	-13	70
		20	Non-Metallic Mineral Product Manufacturing	1,766	1,888	7	25
		21	Primary Metal and Metal Product Manufacturing	2,596	1,943	-25	79
		22	Fabricated Metal Product Manufacturing	3,339	3,238	-3	48
		23	Transport Equipment Manufacturing	5,541	5,065	-9	61
		24	Machinery and Equipment Manufacturing	3,734	3,689	-1	45
		25	Furniture and Other Manufacturing	4,649	3,683	-21	76
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	1,138	876	-23	78
		27	Gas Supply	341	591	73	1
		28	Water Supply, Sewerage and Drainage Services	473	497	5	27
		29	Waste Collection, Treatment and Disposal Services	1,622	1,448	-11	65

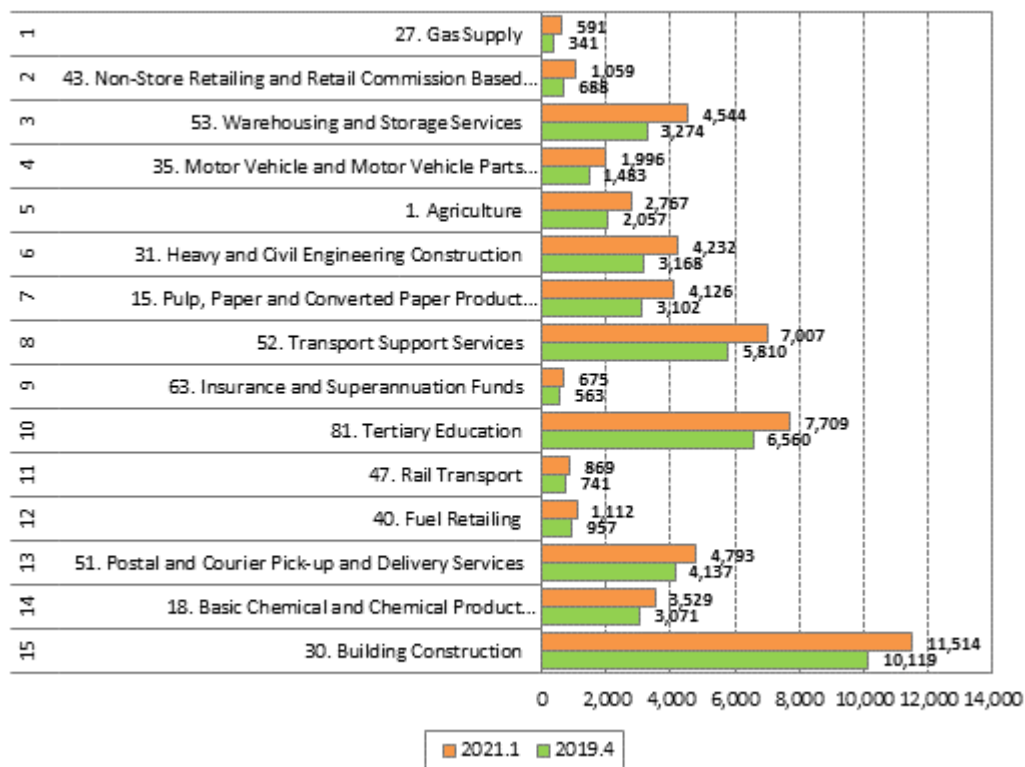
**Table 2.20 Place-of-work employment for Melbourne's North by industry subdivision (continued)**

ANZSIC Code (division)	ANZSIC Industry (division)	ANZSIC Code (sub-division)	ANZSIC Industry (sub-division)	2019.4	2021.2	Per cent difference	Rank
E	Construction	30	Building Construction	10,119	11,514	14	18
		31	Heavy and Civil Engineering Construction	3,168	4,232	34	7
		32	Construction Services	31,314	29,591	-6	55
F	Wholesale Trade	33	Basic Material Wholesaling	2,442	2,468	1	37
		34	Machinery and Equipment Wholesaling	2,816	2,658	-6	56
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	1,483	1,996	35	5
		36	Grocery, Liquor and Tobacco Product Wholesaling	3,965	3,973	0	39
		37	Other Goods Wholesaling	4,997	4,959	-1	44
		38	Commission-Based Wholesaling	150	172	15	17
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	3,087	3,232	5	28
		40	Fuel Retailing	957	1,112	16	14
		41	Food Retailing	13,667	14,675	7	23
		42	Other Store-Based Retailing	21,652	22,349	3	32
		43	Non-Store Retailing and Retail Commission Based Buying	688	1,059	54	2
H	Accommodation and Food Services	44	Accommodation	1,092	996	-9	63
		45	Food and Beverage Services	20,544	18,942	-8	60
I	Transport, Postal and Warehousing	46	Road Transport	13,987	13,476	-4	50
		47	Rail Transport	741	869	17	13
		48	Water Transport	112	98	-12	69
		49	Air and Space Transport	7,514	5,560	-26	80
		50	Other Transport	325	457	41	3
		51	Postal and Courier Pick-up and Delivery Services	4,137	4,793	16	15
		52	Transport Support Services	5,810	7,007	21	10
		53	Warehousing and Storage Services	3,274	4,544	39	4
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	366	326	-11	64
		55	Motion Picture and Sound Recording Activities	848	756	-11	67
		56	Broadcasting (except Internet)	110	102	-7	59
		57	Internet Publishing and Broadcasting	15	10	-37	82
		58	Telecommunications Services	1,250	1,251	0	40
		59	Internet Service Providers, Web Search Portals and Data Processing Services	140	149	6	26
		60	Library and Other Information Services	412	441	7	24

**Table 2.20 Place-of-work employment for Melbourne's North by industry subdivision (continued)**

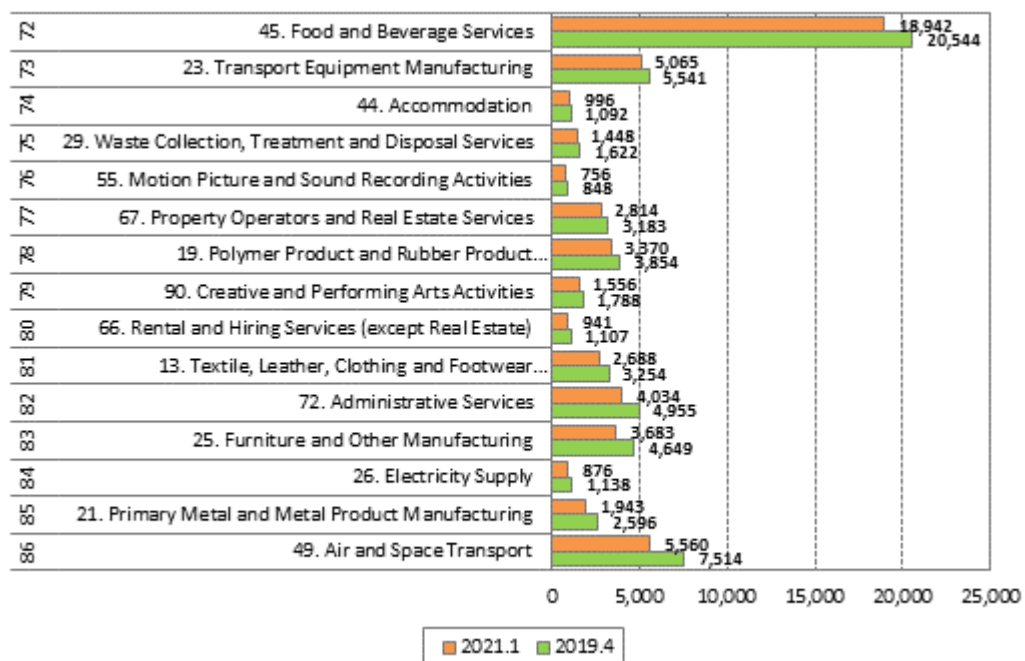
ANZSIC Code (division)	ANZSIC Industry (division)	ANZSIC Code (sub-division)	ANZSIC Industry (sub-division)	2019.4	2021.2	Per cent difference	Rank
K	Financial and Insurance Services	62	Finance	2,531	2,558	1	36
		63	Insurance and Superannuation Funds	563	675	20	11
		64	Auxiliary Finance and Insurance Services	1,372	1,366	0	43
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	1,107	941	-15	73
		67	Property Operators and Real Estate Services	3,183	2,814	-12	68
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	13,000	12,676	-2	46
		70	Computer System Design and Related Services	2,669	2,897	9	22
N	Administrative and Support Services	72	Administrative Services	4,955	4,034	-19	75
		73	Building Cleaning, Pest Control and Other Support Services	6,822	6,547	-4	52
O	Public Administration and Safety	75	Public Administration	10,902	12,116	11	20
		76	Defence	1,752	1,787	2	35
		77	Public Order, Safety and Regulatory Services	6,786	7,018	3	30
P	Education and Training	80	Preschool and School Education	23,525	24,298	3	31
		81	Tertiary Education	6,560	7,709	18	12
		82	Adult, Community and Other Education	6,131	5,924	-3	49
Q	Health Care and Social Assistance	84	Hospitals	17,064	17,475	2	33
		85	Medical and Other Health Care Services	16,952	17,334	2	34
		86	Residential Care Services	6,818	7,422	9	21
		87	Social Assistance Services	18,052	16,848	-7	58
R	Arts and Recreation Services	89	Heritage Activities	310	270	-13	71
		90	Creative and Performing Arts Activities	1,788	1,556	-13	72
		91	Sports and Recreation Activities	3,885	3,651	-6	57
		92	Gambling Activities	417	472	13	19
S	Other Services	94	Repair and Maintenance	8,686	8,990	3	29
		95	Personal and Other Services	7,035	6,853	-3	47
		96	Private Households Employing Staff and Undifferentiated Goods-	351	313	-11	66

**Figure 2.3: Top 15 fastest growing industries 2019.4 to 2021.2 – Melbourne's North**



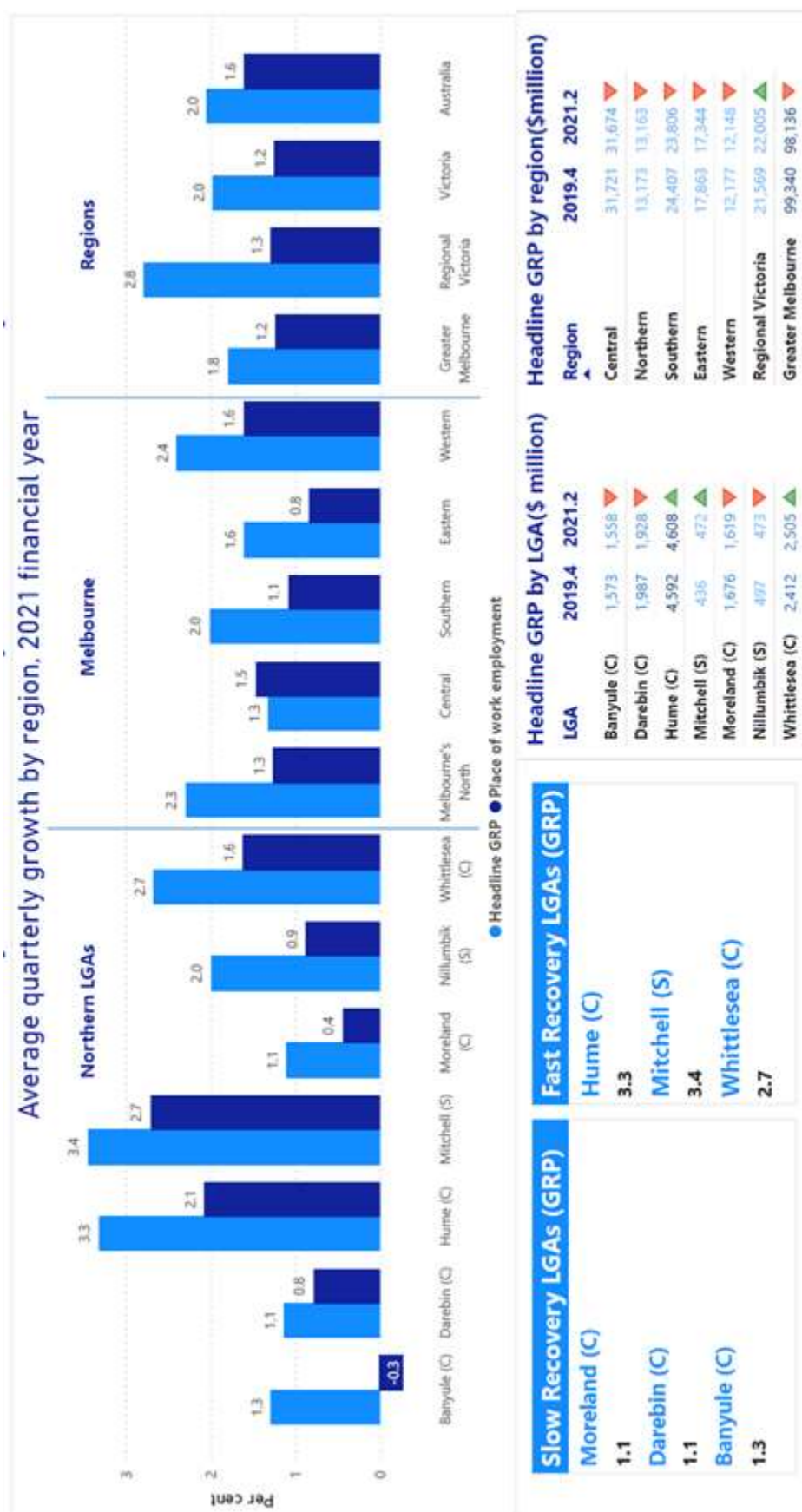
**Note:** Industries that had fewer than 500 employees were excluded from this figure. Fastest growing is assessed by comparing the per cent difference in place-of-work employment from December quarter 2019 and June quarter 2021.

**Figure 2.4: Bottom 15 fastest growing industries (slowest) 2019.4 to 2021.2 – Melbourne's North**



**Note:** Industries that had fewer than 500 employees were excluded from this figure. Fastest growing is assessed by comparing the per cent difference in place of work employment from December quarter 2019 and June quarter 2021.

## 2.9 Melbourne's North: Impact and recovery from COVID dashboards





## Melbourne's North: COVID Impact on Employment and Unemployment

Most regions employment levels have continued to recover into 2021 but remain below pre-pandemic levels.

### Place of work employment

LGA Name	2019.4	2020.2	Diff Pre-COVID	2021.2	Diff Pre-COVID
Banyule (C)	50,297	49,183	-1,114	48,616	-1,681
Darebin (C)	59,539	57,060	-2,478	58,834	-704
Hume (C)	129,525	123,026	-6,499	133,467	3,942
Mitchell (S)	12,922	12,468	-454	13,863	941
Moreland (C)	48,051	46,612	-1,439	47,395	-656
Nilumbik (S)	15,772	14,312	-1,460	14,811	-961
Whittlesea (C)	74,113	70,616	-3,498	75,228	1,115

### Resident employment

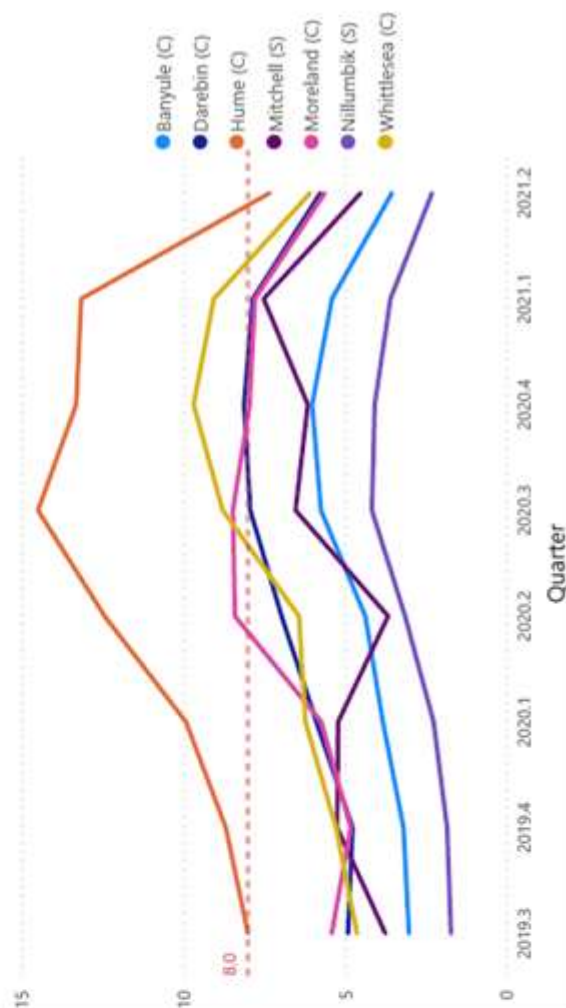
LGA Name	2019.4	2020.2	Diff Pre-COVID	2021.2	Diff Pre-COVID
Banyule (C)	71,270	67,495	-3,775	69,306	-1,963
Darebin (C)	89,488	85,338	-4,150	86,768	-2,721
Hume (C)	109,259	104,351	-4,908	113,463	4,145
Mitchell (S)	22,873	22,148	-725	24,154	1,282
Moreland (C)	105,130	100,653	-4,477	104,081	-1,049
Nilumbik (S)	38,631	36,605	-2,025	37,663	-968
Whittlesea (C)	117,810	112,244	-5,566	118,774	964



### Average Quarterly Unemployment Rate

<b>Melbourne's North</b>		
5.3	7.6	5.5
2018-2019	2020.1-2021.2	2021.2
<b>Greater Melbourne</b>		
5.0	6.5	5.2
2018-2019	2020.1-2021.2	2021.2

### Unemployment rate by LGA



## Melbourne's North: Impact from COVID by Industry

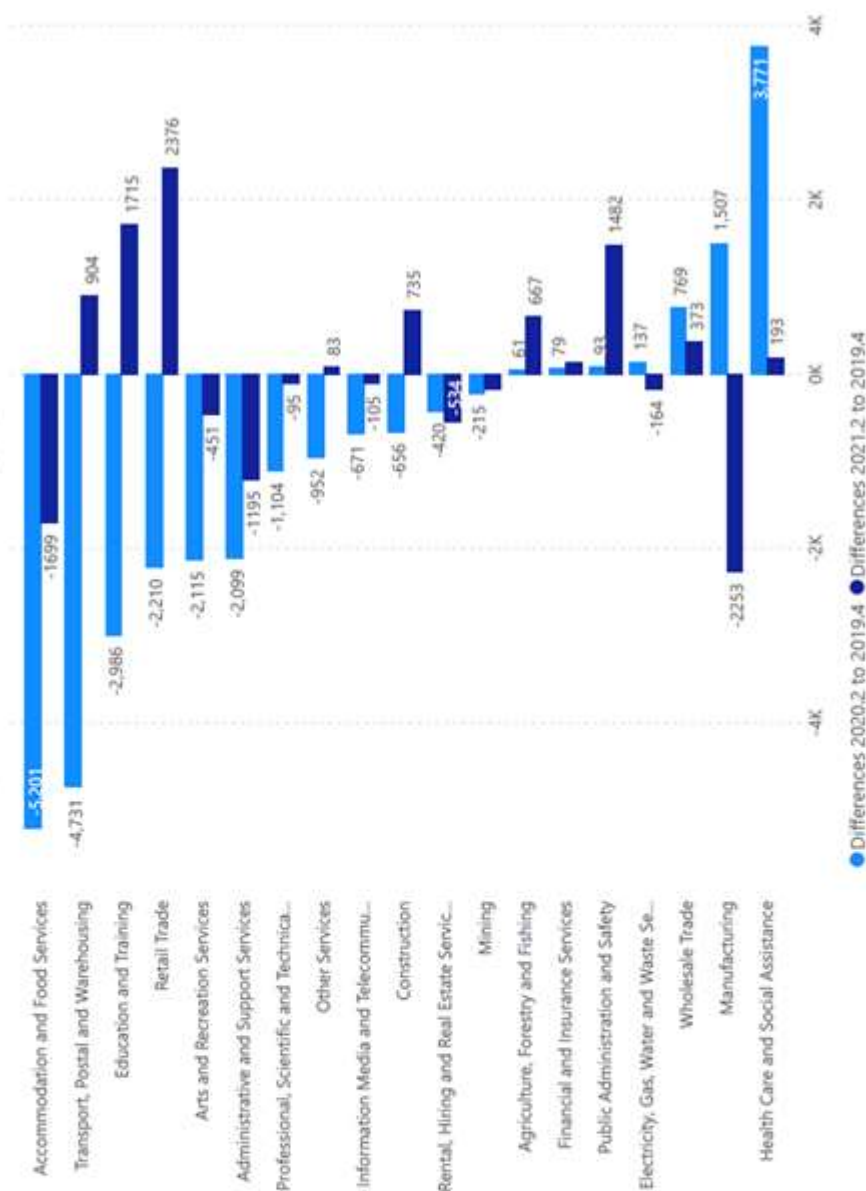
### Melbourne's North Important Industries

<b>Health Care and Social Assistance</b>	
31.17%	23.69%
% Place of work Employm...	% Value Added
<b>Manufacturing</b>	
26.21%	23.32%
% Place of work Employm...	% Value Added
<b>Construction</b>	
23.61%	22.21%
% Place of work Employm...	% Value Added
<b>Transport, Postal and Warehousing</b>	
19.00%	30.79%
% Place of work Employm...	% Value Added

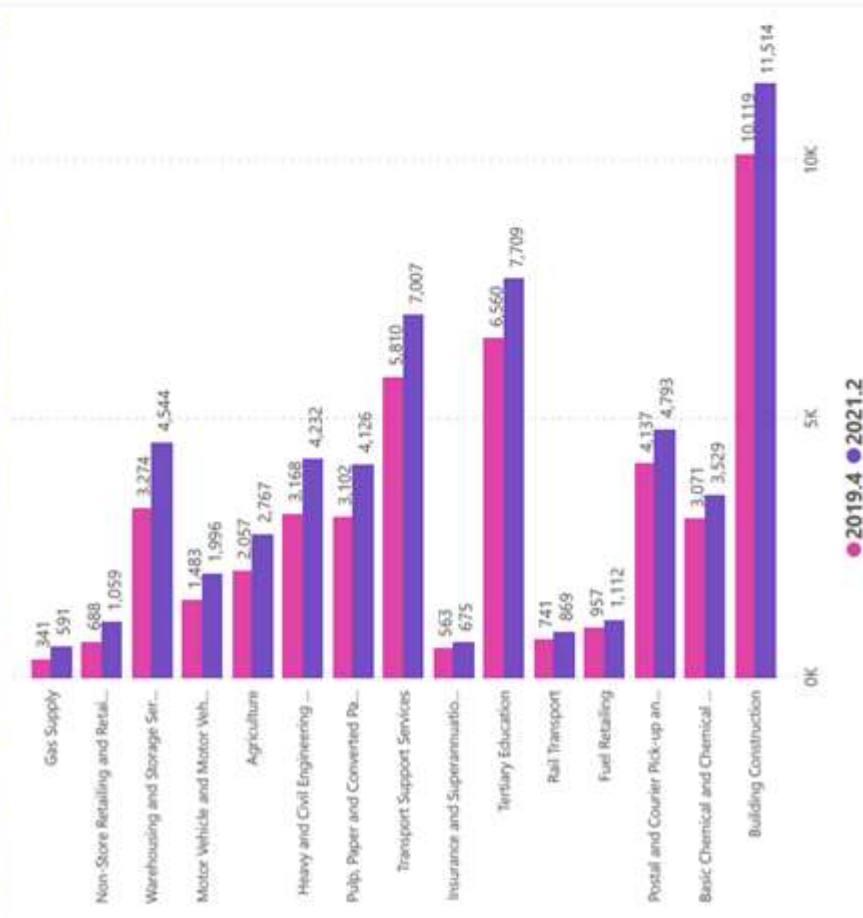
### Industries Suffered Most

<b>Accommodation and Food Services</b>	
-5,201	
Change of Place of work Employment 2020.2	
<b>Transport, Postal and Warehousing</b>	
-4,731	
Change of Place of work Employment 2020.2	
<b>Education and Training</b>	
-2,986	
Change of Place of work Employment 2020.2	

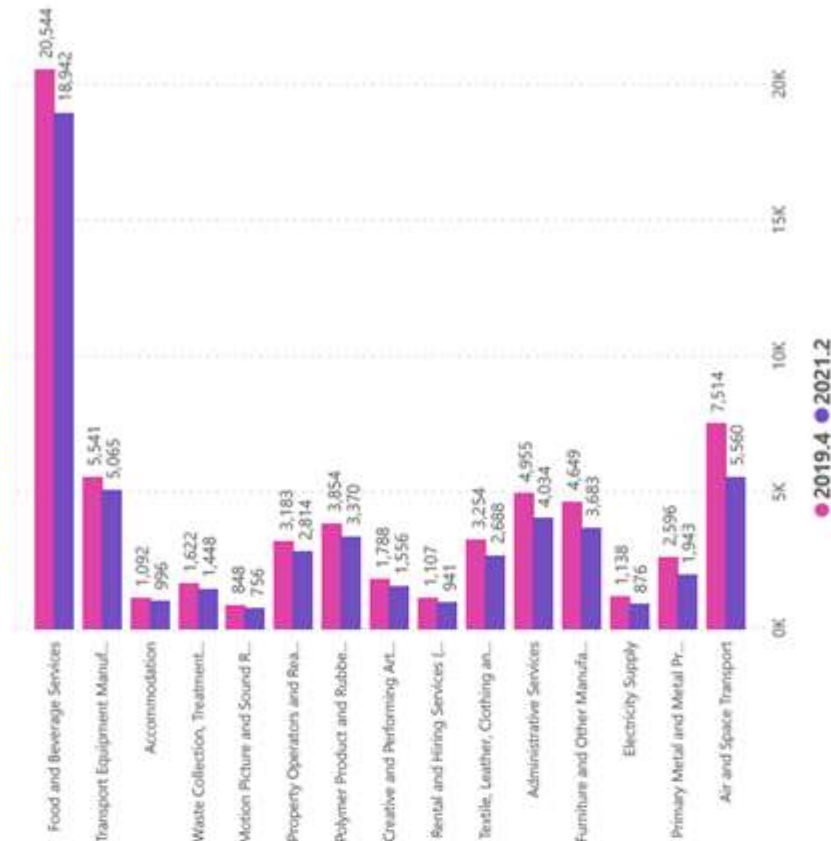
### Change in Place of work Employment



**Top 15 fastest growing industries 2019.4 to 2021.2 - Melbourne's North**



**Bottom 15 fastest growing industries (slowest) 2019.4 to 2021.2 - Melbourne's North**



Note: Industries that had fewer than 500 employees were excluded from these figures. Fastest growing is assessed by comparing the per cent difference in place of work employment from December quarter 2019 and June quarter 2021.





### 3. Jobs, occupations and industry employment in Melbourne's North and Australia

#### 3.1 Key findings

- Commonwealth Government figures for the August 2021 quarter give the median age for Australia's 13 million workers at 39 years with about 20 per cent of the current workforce aged over 55 years old.
- The national figures show that of the 19 ANZSIC industry divisions the Health Care and Social Assistance sector is now by far the largest employer nationally with around 1,677,000 employees. This is followed by the Retail sector that has 1,233,000 employees, the Construction sector with 1,196,000 employees, Professional, Scientific and Technical Services with 1,099,000 employees and Educational and Training with 1,070,000 employees. These five industry sectors employ around half of Australia's workforce.
- Historical analysis shows that the most rapid growth in employed persons from 2006 to 2016 in Melbourne's North was in the community and personal services (5.7 per cent a year), followed by the professions (3.4 per cent) and managers (2.9 per cent). The number of sales workers increased at 2.6 per cent a year, the same as for employed persons as a whole. Labourers followed at 2.2 per cent, then technicians and trades workers (2.0 per cent), machinery operators and drivers (1.8 per cent) and finally clerical and administrative workers (1.5 per cent).
- Victoria has been losing population during the pandemic as more residents emigrate interstate and overseas than have arrived. This is partly due to temporary migrants returning to their home country, e.g. international students. States such as Queensland have benefitted from this exodus, as people looked to avoid lengthy Victorian lockdowns.
- The fastest growth in online job advertisements by occupation for Melbourne over the 2016 to 2021 financial years showed that the most in demand occupation over recent years were ICT Professionals. Average monthly advertisements for ICT Professionals have been growing at 20 additional advertisements per month over the previous five years. The next most significant group were health, social welfare and caregiving. These include the following occupations:
  - Medical practitioners and nurses;
  - Carers and aides;
  - Health diagnostic and therapy professionals; and
  - Legal, social and welfare professionals.
- Online advertisements in the period also show that while there appears to be a decline in lower-skilled work, job listings for these occupations are more likely to be advertised outside of the internet (word of mouth, local newspapers, etc.). Professionals remain in strong demand, while other Business-related occupations have become increasingly advertised since the start of the pandemic.
- Occupations that have large workforces and have undergone high employment growth over the past five years and have a high number of jobs advertised and have a higher than expected number of online job ads per employed person are:
  - ICT Professionals; and
  - General-Inquiry clerks, Call Centre Workers and Receptionists.
- The next tier in demand include:
  - Corporate Managers;
  - Medical Practitioners and Nurses ;
  - Carers and Aides ;
  - Other Clerical and Administrative Workers;
  - Legal, Social and Welfare Professionals;
  - Business, Finance and Human Resource Professionals;
  - Hospitality Workers; and
  - Numerical Clerks.
- Melbourne's North continues to lag Greater Melbourne employment patterns in terms of the share of locally available jobs in Professional, Scientific and Technical Services and Computer Systems Design and Related Services. The positive side of this story is that the residents of Melbourne's North can provide the skills and knowledge required in both hi-tech and hi-income employment for future growth in Melbourne's North industries. Better ways of connecting highly skilled locals to local jobs should be investigated.

- In 2020, the share of hi-tech jobs of all jobs in Greater Melbourne was 10.6 per cent, this compares to 7.4 per cent in Melbourne's North and 7 per cent in Melbourne's North and West combined. In 2020, the share of hi-income jobs of all jobs in Greater Melbourne was 14.1 per cent, this compares to 6.7 per cent in Melbourne's North and 7 per cent in Melbourne's North and West combined.

## 3.2 Occupations in Melbourne's North

For purposes of economic analysis it is necessary to group both employers and employees into industries. The workforce is very diverse as to age, gender and skills. People have innate characteristics, they have social and linguistic skills learnt in early childhood, and they continually acquire, and lose, skills through life. In addition to the fundamental social skills learnt in childhood, people gain work-related skills through both formal education and experience. Many of these skills are specific to particular jobs: the contacts required to operate in a business, the idiosyncrasies of particular items of equipment. At the other extreme, other skills such as basic literacy and numeracy are required in nearly all jobs. In-between lie the skills which are specific to particular industries or groups of industries, and which are portable within these industries.

The typical industry has a hierarchy of skills, usually aligned with pay rates and formal qualifications. The Australian and New Zealand Standard Classification of Occupations (ANZSCO) recognises a hierarchy of five levels of skill, which it organises into eight occupational groups:

1. Managers, at skill levels 1 or 2;
2. Professionals, at skill level 1; and
3. Technicians and trades workers, at skill level 2 or 3.

Then three groups of workers which may be at skill levels 2, 3, 4 or 5:

4. Community and personal service;
5. Clerical and administration; and
6. Sales.

The final two groups comprise:

7. Machinery operators and drivers, at skill level 4 or 5; and
8. Labourers, at skill level 5.

It is notable that, even at the 1-digit level, the ANZSCO classification deviates from a strict skill hierarchy to accommodate a range of more-or-less industry-specific skills. At the more detailed levels of the classification many skills are closely identified with particular industries.

To take an example, a person who, at the most detailed level of classification is a nursing clinical director, at the 4-digit level is classified as a health or welfare service manager, at the 3-digit level as an education health or welfare service manager, at the 2-digit level as a specialist manager and at the 1-digit level as a manager. A second example can be taken from skill level 3. A person who, at the most detailed level of classification, is a landscape gardener, at the 4-digit level is a gardener, at the 3-digit level is a horticultural trades worker, at the 2-digit level is a skilled agricultural and horticultural trades worker, and at the 1-digit level is a technician or trades worker. Finally, a confectionary maker is a food and drink factory worker at the 4-digit level, a food process worker at the 3-digit level, a factory process worker at the 2-digit level and a labourer at the 1-digit level.

These sequences illustrate several features of the classification.

- The most detailed level of the classification is likely to be relevant when an employer is looking to fill a specific position.
- Slightly less detail, such as given at the 4 and 3-digit levels, is likely to be relevant when educational institutions are drawing up courses.
- At the 4, 3 and 2-digit levels, skills are grouped according to perceived similarities between industries. This implies that cross-classification of the workforce by the 2-digit ANZSCO and 2-digit ANZSIC classifications will in many cases yield good estimates of the 3-digit ANZSCO classification.

The following discussion on the relationship between industry employment and occupational employment is accordingly conducted in terms of 2-digit ANZSIC industries and 2-digit ANZSCO occupations. It is specific to Melbourne's North and is based on Census data – as previously remarked, alternative sample surveys which allow cross-classification of industry and occupation are generally not statistically significant at the regional level. The discussion is therefore confined to 2016 data, with comparisons to 2006. In later chapters of this report the data are projected to current and future years on the basis of the relationships between industries and occupations revealed at the censuses.



Table 3.1 List of 1-digit and 2-digit ANZSIC industries	
1-Digit industries	2-digit industries
Agriculture, Forestry and Fishing	Agriculture
	Aquaculture
	Forestry and Logging
	Fishing, Hunting and Trapping
	Agriculture, Forestry and Fishing Support Services
Mining	Coal Mining
	Oil and Gas Extraction
	Metal Ore Mining
	Non-Metallic Mineral Mining and Quarrying
	Exploration and Other Mining Support Services
Manufacturing	Food Product Manufacturing
	Beverage and Tobacco Product Manufacturing
	Textile, Leather, Clothing and Footwear Manufacturing
	Wood Product Manufacturing
	Pulp, Paper and Converted Paper Product Manufacturing
	Printing (including the Reproduction of Recorded Media)
	Petroleum and Coal Product Manufacturing
	Basic Chemical and Chemical Product Manufacturing
	Polymer Product and Rubber Product Manufacturing
	Non-Metallic Mineral Product Manufacturing
	Primary Metal and Metal Product Manufacturing
	Fabricated Metal Product Manufacturing
	Transport Equipment Manufacturing
	Machinery and Equipment Manufacturing
	Furniture and Other Manufacturing
Electricity, Gas, Water and Waste Services	Electricity Supply
	Gas Supply
	Water Supply, Sewerage and Drainage Services
	Waste Collection, Treatment and Disposal Services
Construction	Building Construction
	Heavy and Civil Engineering Construction
	Construction Services
Wholesale Trade	Basic Material Wholesaling
	Machinery and Equipment Wholesaling
	Motor Vehicle and Motor Vehicle Parts Wholesaling
	Grocery, Liquor and Tobacco Product Wholesaling
	Other Goods Wholesaling
	Commission-Based Wholesaling
Retail Trade	Motor Vehicle and Motor Vehicle Parts Retailing
	Fuel Retailing
	Food Retailing
	Other Store-Based Retailing
	Non-Store Retailing and Retail Commission Based Buying
Accommodation and Food Services	Accommodation
	Food and Beverage Services
Transport, Postal and Warehousing	Road Transport
	Rail Transport
	Water Transport
	Air and Space Transport
	Other Transport
	Postal and Courier Pick-up and Delivery Services
	Transport Support Services
	Warehousing and Storage Services

Table 3.1 List of 1-digit and 2-digit ANZSIC industries (continued)	
1-Digit industries	2-Digit industries
Information Media and Telecommunications	Publishing (except Internet and Music Publishing)
	Motion Picture and Sound Recording Activities
	Broadcasting (except Internet)
	Internet Publishing and Broadcasting
	Telecommunications Services
	Internet Service Providers, Web Search Portals and Data Processing Services
	Library and Other Information Services
Financial and Insurance Services	Finance
	Insurance and Superannuation Funds
	Auxiliary Finance and Insurance Services
	Rental and Hiring Services (except Real Estate)
	Property Operators and Real Estate Services
Professional, Scientific and Technical Services	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)
	Computer System Design and Related Services
Administrative and Support Services	Administrative Services
	Building Cleaning, Pest Control and Other Support Services
Public Administration and Safety	Public Administration
	Defence
	Public Order, Safety and Regulatory Services
Education and Training	Preschool and School Education
	Tertiary Education
	Adult, Community and Other Education
Health Care and Social Assistance	Hospitals
	Medical and Other Health Care Services
	Residential Care Services
	Social Assistance Services
Arts and Recreation Services	Heritage Activities
	Creative and Performing Arts Activities
	Sports and Recreation Activities
	Gambling Activities
Other Services	Repair and Maintenance
	Personal and Other Services
	Private Households Employing Staff and Undifferentiated Goods

The discussion omits ANZSIC 2-digit industries which had less than a thousand employed people in Melbourne's North: there are 86 ANZSIC 2-digit industries, of which 30 are not discussed since they are not strongly represented in the region. The omitted industries include all mining, the specialised agricultural industries, a swag of small media and information industries and a few others. There are 43 ANZSCO 2-digit occupations, all of which were represented in Melbourne's North at both the 2006 and 2016 Censuses.

When groups of employed people are grouped together, it is often difficult to find an appropriate collective noun. This was a problem with some of the industry groups and is even worse with occupations. For example, what are officially described as automotive and engineering trades extend well beyond work on motor vehicles to include fitters and turners, locksmiths, farriers and aircraft maintainers. In the tables we plump for the simple but probably misleading word mechanic to describe this group.

In Chapter 1, Table 1.5, the 56 ANZSIC industries which generated more than a thousand jobs in Melbourne's North were listed on a place-of-work basis. In Table 3.2 attention switches to the employed residents of Melbourne's North, classified by the 2-digit ANZSIC industry in which they worked in 2006 and 2016. Table 3.3 identifies the three occupations most prominent in each industry in 2006 and 2016.

At this double 2-digit level, some industries are heavily dependent on a single occupation. In 2016 70 per cent of workers in the creative arts were creative arts professionals and 66 per cent of workers in public order (basically police and prisons) were, by occupation, protective service workers. Other industries with more than half their workforce drawn from a single 2-digit occupation included schools (education professions), hospitals (health professions), social assistance (carers), building cleaning (cleaners), repair services (mechanics),

road transport (drivers), other store-based retail (sales assistants), real estate (sales representatives) and finance (numerical clerks). The occupational structure in most of these industries was stable, as seen by comparing the prominence of the dominant occupation in 2006 and 2016. However, in social assistance the prominence of carers

increased, as did the prominence of drivers in road transport, while in finance the proportion of numerical clerks fell (possibly due to automation). The proportion of education professionals in schools also fell as more aides were employed.

**Table 3.2** Employed residents of Melbourne's North by industry in 2006 and 2016 (ANZSIC 2-digit industry classification) – thousands, with rate of growth

Industry	Persons		Rate of growth
	2006 ('000)	2016 ('000)	2006-16 (% p.a.)
Agriculture	1.3	1.7	3.1
<b>Manufactures</b>			
Food	4.8	6.4	2.7
TCF	3.5	1.4	-9.1
Wood products	1.2	0.9	-3.8
Pulp, paper	2.1	1.6	-3.2
Printing	1.7	1.7	-0.5
Basic chemicals	1.3	1.5	1.4
Polymers	3.5	2.0	-5.5
Ceramics	3.5	2.0	-2.4
Primary metals	2.0	1.2	-5.1
Fabricated metals	2.7	2.0	-3.3
Transport equipment	7.7	4.6	-5.3
Machines	3.4	2.0	-5.6
Other manufacture	2.5	2.0	-2.5
<b>Logistics</b>			
Basic wholesale	2.1	1.6	-2.8
Machinery wholesale	2.7	1.8	-4.3
Motor vehicle wholesale	1.1	1.1	-0.2
Grocery wholesale	2.0	2.5	1.9
Other wholesale	3.7	2.5	-3.6
Air transport	4.7	5.7	1.8
Transport support	2.9	4.9	5.0
<b>Money management</b>			
Finance	1.9	2.1	0.5
Auxiliary finance	0.8	1.1	2.9
Rental and hiring	0.8	1.1	-0.9
Real estate	1.7	2.9	5.1
<b>Centralised office services</b>			
Electricity supply	0.5	0.8	3.5
Telecommunications	0.7	0.8	2.0
Professional services	7.1	10.1	3.6
Computer services	1.0	2.0	6.7
Admin services	2.4	3.9	5.0
Public administration	7.0	8.8	2.3
Defence	1.5	1.9	2.2
Tertiary education	5.0	5.7	1.2
<b>Construction</b>			
Buildings	4.0	5.9	3.7
Heavy and civil	1.2	2.0	5.2
Construction services	8.4	14.3	5.3

**Table 3.2** Employed residents of Melbourne's North by industry in 2006 and 2016 (ANZSIC 2-digit industry classification) – thousands, with rate of growth (continued)

Industry	Persons		Rate of growth
	2006 ('000)	2016 ('000)	2006-16 (% p.a.)
<b>Distribution</b>			
Waste management	0.5	1.1	9.3
Motor vehicle retail	1.9	2.4	2.1
Food retail	9.8	11.6	1.7
Other store retail	13.4	16.2	1.8
Road transport	6.4	7.7	1.8
Posts and parcels	1.6	2.7	4.7
Building cleaning	2.4	4.3	5.6
Repairs	4.4	5.5	2.1
<b>Visitor services</b>			
Accommodation	0.8	1.1	2.6
Food services	10.5	17.8	2.7
Creative arts	0.5	1.2	8.1
Sport and recreation	1.5	2.6	5.2
Personal services	4.1	5.7	3.1
<b>Area services</b>			
Public order	3.2	5.1	4.7
Schools	13.7	20.4	4.0
Adult education	2.0	3.2	4.5
Hospitals	8.8	12.2	3.3
Medical services	7.4	11.6	4.6
Residential care	3.6	6.2	5.5
Social assistance	5.5	10.3	6.4
<b>TOTAL</b>	<b>217</b>	<b>285</b>	<b>2.8</b>

*Note:* Table excludes industries with less than 800 resident employees in Melbourne's North in both years.

*Source:* ABS Censuses 2006 and 2016.

At the other extreme, in a number of industries there was no dominant occupation. Industries where the largest occupational group contributed less than 20 per cent of total employment included three manufacturing industries (non-metal products, transport equipment, other machines and equipment), all the wholesale industries, transport support (mainly the operation of intermodal facilities), public administration, heavy and civil construction and accommodation. Though the exact list of multi-occupation industries was very much the product of the way in which occupations were classified, it remained that the multi-occupation industries tended to require a greater variety of skills than the industries with dominant occupations.

It was also noticeable (Table 3.3) that certain occupations were prominent in a wide range of industries. This was particularly true of the managerial occupations. The occupation 'specialist manager' was among the three largest occupation groups in nearly half of the industries, with retail managers prominent in eight more. Both types of manager required considerable industry-specific skills in addition to their more general managerial skills, the difference between them being that specialist managers were classified to the top skill level and retail (and

hospitality) managers to the second level. In most industries the proportion of management personnel increased between 2006 and 2016. Other widespread occupations included the various sales occupations (which had a range of skill levels within each 2-digit classification), factory process workers and the business professions (involved in accounting, HR, marketing and the like).

**Table 3.3** Employed residents of Melbourne's North by industry (ANZSIC 2-digit, 2016) with the percentage of industry employees in the three most prominent ANZSCO 2-digit occupations in each industry, 2006 and 2016

Industry	Persons 2016 ('000)	Occupation 1 (%)			Occupation 2 (%)			Occupation 3 (%)		
			2006	2016		2006	2016		2006	2016
Agriculture	1.7	Farm manager	44	29	Farm worker	22	24	Factory process	7	8
<b>Manufactures</b>										
Food	6.4	Factory process	37	37	Food trades	11	9	Sales assistant	10	9
TCF	1.4	Plant operator	31	26	Specialist manager	12	15	Other trades	9	11
Wood products	0.9	Other trades	30	31	Specialist manager	10	10	Construction trades	10	7
Paper	1.6	Plant operator	22	26	Other trades	13	12	other manager	10	12
Printing	1.7	Other trades	33	31	Specialist manager	10	12	Scientist	7	8
Basic chemicals	1.5	Specialist manager	17	22	Scientist	9	15	Factory process	7	9
Polymers	2.0	Plant operator	27	20	Specialist manager	13	13	Factory process	10	8
Non-metal products	2.0	Construction trades	13	18	Plant operator	13	13	Specialist manager	13	12
Primary metals	1.2	Mechanic	28	31	Plant operator	15	12	Specialist manager	10	13
Fabricated metals	2.0	Mechanic	25	23	Plant operator	14	13	Specialist manager	10	13
Transport equipment	4.6	Mechanic	20	18	Factory process	21	14	Scientist	9	14
Machines	2.0	Mechanic	16	15	Specialist manager	12	14	Factory process	12	8
Other manufacture	2.0	Other trades	34	40	Specialist manager	10	10	Factory process	9	7
<b>Logistics</b>										
Basic wholesale	1.6	specialist manager	12	14	Sales assistant	7	16	Sales rep	11	7
Machinery wholesale	1.8	specialist manager	15	16	Business profession	9	14	ICT profession	10	3
Motor vehicle wholesale	1.1	Sales assistant	16	14	specialist manager	10	13	Store person	9	12
Grocery wholesale	2.5	Factory process	15	11	specialist manager	9	18	Sales rep	12	7
Other wholesale	2.5	specialist manager	15	15	Sales assistant	5	12	Sales rep	12	7
Air transport	5.7	Personal service	26	24	Mobile plant op	12	14	Sales support	12	13
Transport support	4.9	Other clerk	23	17	Driver	13	12	Scientist	13	10

**Table 3.3** Employed residents of Melbourne's North by industry (ANZSIC 2-digit, 2016) with the percentage of industry employees in the three most prominent ANZSCO 2-digit occupations in each industry, 2006 and 2016 (continued)

Industry	Persons 2016 (‘000)	Occupation 1 (%)			Occupation 2 (%)			Occupation 3 (%)		
			2006	2016		2006	2016		2006	2016
Money management										
Finance	2.1	Number clerk	61	56	Business profession	11	13	Retail manager	12	9
Auxiliary finance	1.1	Business profession	49	57	Number clerk	10	9	General clerk	6	7
Rental and hiring	1.1	Sales assistant	36	24	Retail manager	17	17	Cleaner	6	8
Real estate	2.9	Sales rep	53	53	Receptionist	10	7	Business profession	15	3
Centralised office services										
Electricity supply	0.8	Electro trades	21	31	Receptionist	26	12	Engineer technician	6	8
Telecommunications	0.8	Electro trades	27	22	Sales assistant	8	14	Specialist manager	8	10
Professional services	10.1	Scientist	17	20	Business profession	19	19	Number clerk	7	9
Computer services	2.0	ICT profession	47	45	Specialist manager	10	12	ICT technician	7	12
Admin services	3.9	Business profession	17	11	Personal services	10	12	General clerk	6	7
Public administration	8.8	Carer, aide	13	13	Other clerk	13	9	Scientist	7	7
Defence	1.9	Protective service	22	28	Specialist manager	22	21	Electro technician	6	9
Tertiary education	5.7	Education profession	42	37	Specialist manager	6	9	Business profession	6	8
Construction										
Buildings	5.9	Construction trades	25	26	Specialist manager	23	22	Construction labourer	11	10
Heavy and civil	2.0	Construction labourer	19	18	Specialist manager	9	10	Mobile plant operator	10	9
Construction services	14.3	Construction trades	37	35	Electro trades	17	15	Construction labourer	9	10
Distribution										
Waste management	1.1	Driver	38	31	Labourer	9	5	Specialist manager	7	6
Motor vehicle retail	2.4	Sales assistant	27	31	Mechanic	17	16	Retail manager	13	9
Food retail	11.6	Sales assistant	36	40	Sales support	19	17	Retail manager	11	11
Other store retail	16.2	Sales assistant	50	51	Retail manager	15	12	Sales support	5	5
Road transport	7.7	Driver	51	59	Retail manager	6	4	Other clerk	6	5
Posts and parcels	2.7	Clerical support	49	45	Driver	8	15	Sales assistant	10	8
Building cleaning	4.3	Cleaner	57	53	Gardening trades	12	10	Garden worker	5	4
Repairs	5.5	Mechanic	58	54	Electro trades	7	7	Number clerk	4	4

**Table 3.3** Employed residents of Melbourne's North by industry (ANZSIC 2-digit, 2016) with the percentage of industry employees in the three most prominent ANZSCO 2-digit occupations in each industry, 2006 and 2016 (continued)

Industry	Persons 2016 (‘000)	Occupation 1 (%)			Occupation 2 (%)			Occupation 3 (%)		
			2006	2016		2006	2016		2006	2016
Visitor services										
Accommodation	1.1	Cleaner	20	17	Hospitality worker	14	16	Retail manager	14	16
Food services	17.8	Hospitality worker	24	24	Food assistant	21	20	Sales assistant	15	16
Creative arts	1.2	Arts profession	68	70	Scientist	6	8	Business profession	3	4
Sport and recreation	2.6	Personal service	40	42	Retail manager	9	11	Gardening trades	7	4
Personal services	5.7	Other technician	27	27	Personal service	16	24	Cleaner	10	8
Area services										
Public order	5.1	Protective services	69	66	Scientist	5	4	Specialist manager	4	3
Schools	20.4	Education profession	67	62	Carer, aide	13	18	Specialist manager	5	4
Adult education	3.2	Education profession	50	41	Personal service	21	26	Carer, aide	4	3
Hospitals	12.2	Health profession	59	60	Carer, aide	6	6	Receptionist	4	4
Medical services	11.6	Health profession	38	36	Receptionist	17	16	Health support	7	9
Residential care	6.2	Carer, aide	37	48	Health profession	22	16	Health support	9	10
Social assistance	10.3	Carer, aide	50	57	Social profession	10	9	Health support	9	7

*Note:* Table excludes industries with less than 750 resident employees in Melbourne's North in both years.

*Source:* ABS Censuses 2006 and 2016.

Table 3.4 switches attention from the ANZSIC 2-digit industries to the 43 ANZSCO 2-digit occupations, as grouped by the ABS, partly by the level of skill as assessed by the statistical agencies (presumably through focus groups) and partly thematically, such as the traditional white-collar, blue-collar distinction. In 2016 all 2-digit occupations were represented among employed persons in Melbourne's North, but in varying numbers. The least numerous were farmers and farm managers, followed by garden, farm and forestry workers, while the most numerous were sales assistants followed by specialist managers and education professionals. Obviously these numbers depend on how occupations are split up, but in broad terms:

- around 20 per cent were in the professionals with a further 8.1 per cent as machinery operators or drivers;
- around 12 per cent were in each of the trades, the community and personal services and the clerical and administrative occupations; and

- around 10 per cent were managers with a further 10 per cent sales workers and a final 10 per cent labourers.

The most rapid growth in employed persons from 2006 to 2016 was in the community and personal services (5.7 per cent a year), followed by the professions (3.4 per cent) and managers (2.9 per cent). The number of sales workers increased at 2.6 per cent a year, the same as for employed persons as a whole. Labourers followed at 2.2 per cent, then technicians and trades workers (2.0 per cent), machinery operators and drivers (1.8 per cent) and finally clerical and administrative workers (1.5 per cent). These trends were partly due to the continuing gentrification of the inner north, but also reflected automation, with clerical jobs the most easily machine-replaced. Fortunately, given the increase in women's workforce participation, on balance employment growth was more rapid in the traditionally female occupations.



**Table 3.4 Occupations in Melbourne's North: Employed persons and growth 2006-16, per cent of employed persons by occupation, percentage of employed persons in each occupation working in the top three industries for that occupation, and percentage of the 86 industries with more than 50 employed persons in each occupation (occupational dispersion)**

Occupation (skill level in brackets)	Workers			Growth 2006-16 (% p.a.)	Three top industries (%)	Occupational dispersion (%)
	2006 ('000)	2016 ('000)	2016 (%)			
<b>Managers</b>						
CEO, general manager (1)	2.0	2.8	1.0	3.6	14	19
Farmer (1)	0.7	0.6	0.2	-0.8	87	1
Specialist manager (1)	12.7	17.2	5.9	3.1	16	62
Retail manager (2)	8.6	11.2	3.8	2.6	51	41
<b>Professionals</b>						
Arts, media (1)	1.3	2.1	0.7	4.8	55	5
Business, HR, marketing (1)	6.7	9.4	3.2	3.4	34	42
Science, design, engineering, transport (1)	6.1	8.4	2.8	3.2	40	29
Education (1)	13.0	17.1	5.8	2.8	94	7
Health (1)	10.3	9.0	5.1	3.8	84	14
ICT (1)	2.0	2.3	0.8	1.5	48	7
Legal, social, welfare (1)	2.6	4.3	1.5	4.9	53	13
<b>Technicians and trades workers</b>						
Engineering, ICT, science technician (2)	1.3	2.1	0.7	4.8	33	21
Mechanic (automotive, engineering) (3)	10.0	9.0	3.1	-0.7	49	26
Construction trades (3)	5.3	8.2	2.8	4.5	81	9
Electrotechnology, telecommunications (3)	3.6	4.7	1.6	2.9	59	14
Food trades (2,3)	3.0	4.5	1.5	4.1	79	8
Skilled with animals, horticulture (garden skills) (3)	1.7	2.2	0.8	2.5	46	10
Other technicians and trades (3)	5.7	5.8	2.0	0.3	48	22
<b>Community and personal services workers</b>						
Health and welfare support (2)	2.3	3.8	1.3	5.2	64	12
Carers and aides (4)	8.6	16.4	5.6	6.7	76	14
Hospitality worker (4,5)	3.1	5.3	1.8	5.7	87	6
Protective service worker (2,3,4,5)	3.0	4.5	1.5	4.4	89	5
Sports and personal services worker (3,4)	3.8	6.0	2.1	4.7	63	10
<b>Clerical and administrative workers</b>						
Office manager, program administrator (2)	3.8	5.4	1.8	3.7	22	30
Personal assistant, secretary (3)	2.6	1.8	0.6	-3.8	24	13
General clerical worker (4)	5.9	6.5	2.2	0.9	19	37
Receptionist, inquiry clerk (4)	4.7	6.4	2.2	3.2	43	28
Numerical clerk (4)	6.6	7.6	2.6	1.5	33	41
Clerical and office support worker (5)	2.1	2.2	0.8	0.7	65	9
Other clerical and administrative workers (3,4)	5.5	6.4	2.2	1.4	33	29
<b>Sales workers</b>						
Sales representatives and agents (3,4)	4.1	4.5	1.5	0.8	46	16
Sales assistant, salesperson (5)	15.9	21.5	7.3	3.1	74	26
Sales support worker (5)	4.3	5.4	1.8	2.4	65	12
<b>Machinery operators and drivers</b>						
Plant/machine operator (stationary) (4)	6.4	4.5	1.5	-3.4	26	22
Plant operator (mobile) (4)	3.2	4.3	1.5	3.1	34	29
Driver (road or rail) (4)	6.7	9.8	3.3	4.0	56	23
Store person (4)	3.8	5.3	1.8	3.4	35	24

**Table 3.4 Occupations in Melbourne's North: Employed persons and growth 2006-16, per cent of employed persons by occupation, percentage of employed persons in each occupation working in the top three industries for that occupation, and percentage of the 86 industries with more than 50 employed persons in each occupation (occupational dispersion)**

Occupation (skill level in brackets)	Workers			Growth 2006-16 (% p.a.)	Three top industries (%)	Occupational dispersion (%)
	2006 ('000)	2016 ('000)	2016 (%)			
<b>Labourers</b>						
Cleaners and launderers (5)	4.1	5.5	1.9	3.0	53	16
Construction labourer (4,5)	1.9	3.4	1.1	5.7	72	3
Factory process worker (4,5)	8.3	8.0	2.7	-0.4	40	33
Garden, farm, forestry worker (5)	0.7	1.0	0.4	3.9	59	6
Food preparation assistant (5)	3.2	5.0	1.7	4.6	83	5
Other labourer (5)	4.1	5.1	1.7	2.0	38	23
<b>TOTAL</b>	<b>219</b>	<b>288</b>	<b>100</b>	<b>2.6</b>	<b>53</b>	

**Notes:** Three top industries: percentage of resident workers working in the three 2-digit ANZSIC industries with the largest number of resident employees in the occupation. Concentration % = percentage of the 86 2-digit ANZSIC industries which employ more than 50 workers in the occupation.

**Source:** ABS Census 2006, 2016 and NIEIR.

At the 2-digit level the most rapidly growing occupation was carers and aides (6.7 per cent a year), followed by hospitality workers, construction labourers, health and welfare support workers and food preparation assistants. Apart from health and welfare support workers, these occupations were at skill levels 4 or 5, and their growth may reflect employer efforts to down-skill the workforce (even the health and welfare support workers may reflect down-skilling from the professional level). Other rapidly-growing occupations (in the 4.0-4.9 per cent a year range) included several occupations at skill levels 1 or 2: arts professionals (who, according to the creative arts roundtable were taking refuge in Melbourne's North from high rents in the inner southern suburbs), legal and social welfare professionals and engineering, ICT and science technicians. At various skill levels, the construction trades, food trades, protective services and sports and services workers rounded off the list of high-growth occupations. At the other end of the scale, the most rapidly declining 2-digit occupations were personal assistants and secretaries (-3.8 per cent a year, presumably displaced by IT) and stationary plant operators (-3.4 per cent, due to automation and the relative decline of the industries in which they were employed). Other declining occupations included farmers (due to urbanisation but also to the advance of industrialised farming) and mechanics (probably due to changes in automotive repair practices, with an increase in the scrap-and-replace approach).

As noted in the discussion of Table 3.3, some industries are heavily dependent on the inputs of particular occupations while others have no dominant occupational group. These relationships are summarised from an occupational point of view in column six of Table 3.4 and in more detail in Table 3.5. The proportion of workers in each occupation employed in the top three industries for that occupation can be taken as an indicator of the extent to which employment opportunities in the occupation depend on

the fortunes of particular 2-digit industries. By this measure, the 2-digit occupations most dependent on particular industries were, in 2016, the education professions, protective service workers, farmers, hospitality workers, food preparation assistants and construction trades workers. In all of these occupations the top three industries accounted for more than 80 per cent of employed persons. At the opposite end of the spectrum, in 2016 CEOs and general managers, specialist managers, general clerical workers and office managers were all widely distributed across industries, with the top three employing less than a quarter of all members of the occupation. Once again, these numbers reflect definitions – for example, it would be quite easy to split specialist managers into industry-related groups. Even so, as a generalisation, it would seem that clerks, managers, business and scientific professions, machinery operators and labourers have employment opportunities in a broader range of industries than specialised professions like education and health, the specialised trades (particularly those relating to food and construction) and the various community and personal service occupations.

Finally, Table 3.5 records that some occupations are heavily dependent on a single 2-digit ANZSIC industry. Thus farmers are predominantly engaged in agriculture and hospitality workers in food services. The industries which are important for particular employment groups are also worth noting, for example the importance of hospital and medical services for the employment of receptionists, the importance of professional services for the employment of personal assistants, the importance of the building cleaning industry for the employment of gardeners and the importance of air transport for the employment of personal service workers. Needless to say, the way these associations are reported depends on the way the classifications are designed.

**Table 3.5 Employed residents of Melbourne's North: The percentage employed in the three largest employer industries for each occupation, 2016**

Occupation	Industry	%	Industry	%	Industry	%
<b>Manager</b>						
CEO	Construction service	5	Professional service	5	Other store retail	4
Farmer	Agriculture	82	Food products	3	Beverage products	2
Specialist manager	Building construction	7	Schools	5	Construction service	4
Retail manager	Food services	22	Other store retail	18	Food retail	11
<b>Professionals</b>						
Arts, media	Creative arts	39	Movies	10	Publishing	6
Business profession	Professional service	21	Auxiliary finance	7	Public administration	6
Scientist	Professional service	24	Air transport	8	Public administration	8
Education	Schools	74	Tertiary education	12	Adult education	8
Health	Hospitals	49	Medical services	28	Residential care	7
ICT	Computer services	38	Professional services	5	Tertiary education	5
Legal, social, welfare	Social assistance	23	Professional services	15	Medical services	15
<b>Technician, trades</b>						
Technician	Professional service	12	Building construction	11	Medical services	10
Mechanic	Repair, maintenance	34	Transport equipment	9	Air transport	6
Construction trades	Construction service	61	Building construction	18	Non-metal products	2
Electrotechnical	Construction service	46	Repair, maintenance	8	Electricity supply	5
Food trades	Food services	52	Food products	15	Food retail	12
Garden skills	Building cleaning	19	Construction services	16	Professional services	11
Other trades	Personal services	26	Other manufactures	13	Printing	9
<b>Community service</b>						
Health, welfare support	Medical services	28	Social assistance	19	Residential care	17
Carer, aide	Social assistance	36	Schools	22	Residential care	18
Hospitality worker	Food services	81	Accommodation	4	Food products	2
Protective service	Police, prisons	74	Defence	12	Transport support	3
Sport, personal service	Personal services	23	Air transport	22	Sport, recreation	18
<b>Clerical, administrative</b>						
Office manager	Medical services	10	Public administration	6	Tertiary education	6
PA, secretary	Professional services	11	Schools	7	Admin services	6
General clerk	Public administration	7	Schools	6	Hospitals	6
Receptionist	Medical services	28	Hospitals	8	Public administration	7
Numerical clerk	Finance	15	Professional services	12	Construction services	7
Clerical support	Posts	53	Road transport	6	Medical services	6
Other clerical workers	Public administration	13	Transport support	13	Professional services	7
<b>Sales workers</b>						
Sales representative	Real estate	34	Other store retail	7	Grocery wholesaling	5
Sales assistant	Other store retail	39	Food retail	22	Food services	13
Sales support	Food retail	37	Other store retail	15	Air transport	13
<b>Machinery operators</b>						
Plant operator (stationary)	Polymer products	9	Paper products	9	Textile products	8
Mobile plant operator	Air transport	18	Construction services	9	Transport services	7
Driver	Road transport	46	Transport support	6	Posts	4
Store person	Warehousing	15	Other store retail	12	Food retail	8
<b>Labourers</b>						
Cleaner	Building cleaning	40	Personal services	8	Residential care	5
Construction labourer	Construction services	43	Building construction	18	Civil construction	11
Factory process worker	Food products	29	Transport equipment	8	Grocery wholesale	3
Garden worker	Agriculture	39	Building cleaning	15	Construction services	5
Food prep assistant	Food services	72	Residential care	8	Food Products	3
Other labourer	Food retail	24	Public administration	8	Other store retail	6

Source: ABS Census 2016.

This next section reviews the findings of previous research and their contribution to understanding in the development of this report.

**Note:** See Appendix B which shows the distribution of occupations at the 3-digit level. This appendix provides a context to the occupation projections in Section 3.

### 3.3 National trends in employment

Commonwealth Government figures for the August 2021 quarter give the median age for Australia's 13 million workers at 39 years with about 20 per cent of the current workforce aged over 55 years old. The share of employment for male workers was 52.5 per cent with 68.9 per cent of the workforce, both male and female, in fulltime employment. Average fulltime hours worked was 38 hours.

#### *COVID-19 impact on national employment*

One of the early impacts of the COVID-19 pandemic between March and May 2020, was that Australia wide employment fell by 6.6 per cent (856,900 employment positions) with hours worked falling by around 9 per cent. By May 2020 the unemployment rate had risen to 7 per cent even though a large number of people had decided to leave the workforce.

Commonwealth Government figures show that 663,900 people departed the labour force between March and May 2020, the participation rate dropping from 65.9 per cent in March 2020, to 62.6 per cent in May 2020. Female workers experienced the greatest decline in the participation rate of 3.7 per cent.

The impact on employment fell particularly hard on service industries, during the same period the number of workers in the services industries in part time employment fell by 13 per cent or 535,600 jobs, as fulltime employment fell by 3.6 per cent or 321,300. Female workers were again the most heavily impacted experiencing a fall of 7.7 per cent in employment over the period. Job Keeper was particularly important over this period in sustaining employment and contributing to household expenditures in the local economy. Melbourne, including Melbourne's North were among the worst COVID impacted cities and regions in Australia at the time.

Employment opportunities for young people, male and female, were negatively impacted by the pandemic to such an extent that the loss of jobs for this cohort accounted for 38.4 per cent of the total contraction of employment in the first 3 months of the pandemic from March 2020. The fall in young people employment in that period was estimated at 17 per cent or some 330,000 jobs with the employment rate for young workers peaking at 16.4 per

cent in July 2020, doing so as the participation rate fell sharply. The situation has improved, it remains patchy, with the participation rate for this cohort rising to 69.4 per cent by July 2021 and the unemployment rate falling to 10.2 per cent. Young people have been particularly impacted by COVID because of their traditionally high levels of employment in the Hospitality and Retail Trade and reliance on part-time employment, making them particularly vulnerable over the period.

Since May 2020, employment has rebounded with the Commonwealth Government reporting an increase in employment (number of jobs) in the period to July 2021 of 8.4 per cent or more than a million jobs with both full-time and part-time employment recovering to above pre-pandemic levels.

As discussed, female employees were the most impacted by the early stages of the pandemic, the Commonwealth Government reported that female employment, by July 2021, had also recovered to levels higher than their pre-pandemic level.

Nationally the unemployment rate had fallen to 4.6 per cent by July 2021, the participation rate also rising to 66 per cent.

Victoria, following NSW, has the second largest number of jobs of any state or territory. The majority of those jobs are in Melbourne, with one in four workers in Victoria employed in just two industry sectors, Health Care and Social Assistance and Retail Trade. One third of Victoria's workforce is in part-time employment. The COVID pandemic had a significant impact on employment in Victoria, one aspect of this was a decline in the participation rate from 66.3 per cent in March 2020 to 62.8 per cent by September 2020 with employment peaking at 7.3 per cent in the following month. Following this period and by July 2021, employment in Victoria had rebounded to levels above its pre-pandemic level and as the participation rate increased to 66.5 per cent.

Subsequently, the most recent lockdowns in Melbourne and Sydney have resulted in a decline in the numbers of hours worked. The economic consequences of the pandemic for Melbourne's North, including employment, are described in the following section.

Table 3.6 shows the National Skills Commissions projections for industry employment for the State of Victoria, Greater Melbourne and the rest of Victoria to 2025. The Commission's forecasts show that for Greater Melbourne the sectors with the highest employment growth to 2025 (percentage growth) are:

- Electricity, Gas, Water and Waste Services;
- Construction;
- Accommodation and Food Services;
- Transport, Postal and Warehousing;
- Financial and Insurance Services;

- Rental, Hiring and Real Estate Services;
- Professional, Scientific and Technical Services;
- Education and Training;
- Health Care and Social Assistance; and
- Arts and Recreation Services.

**Table 3.6 2020 Regional projections by industry – Five years to November 2025**

	Employment level – November 2020 ('000)	Projected employment level – November 2025 ('000)	Projected employment growth – five years to November 2025	
			('000)	(%)
<b>Agriculture, Forestry and Fishing</b>				
Victoria	73.2	70.5	-2.7	-3.6
Greater Melbourne	15.0	15.0	0.0	0.0
Rest of Victoria	65.0	62.4	-2.7	-4.1
<b>Mining</b>				
Victoria	8.5	8.6	0.1	0.9
Greater Melbourne	4.6	4.6	0.0	0.4
Rest of Victoria	5.0	5.1	0.1	1.1
<b>Manufacturing</b>				
Victoria	262.1	262.6	0.4	0.2
Greater Melbourne	218.4	216.4	-2.0	-0.9
Rest of Victoria	63.7	66.2	2.4	3.8
<b>Electricity, Gas, Water and Waste Services</b>				
Victoria	37.2	40.7	3.4	9.2
Greater Melbourne	34.1	37.3	3.2	9.4
Rest of Victoria	10.1	10.3	0.2	2.1
<b>Construction</b>				
Victoria	313.1	340.7	27.6	8.8
Greater Melbourne	240.5	262.0	21.5	9.0
Rest of Victoria	74.9	80.9	6.1	8.1
<b>Wholesale Trade</b>				
Victoria	114.3	117.7	3.4	3.0
Greater Melbourne	94.4	97.6	3.1	3.3
Rest of Victoria	17.8	18.0	0.2	1.4
<b>Retail Trade</b>				
Victoria	357.4	375.9	18.6	5.2
Greater Melbourne	271.1	287.2	16.1	5.9
Rest of Victoria	77.2	79.7	2.4	3.2
<b>Accommodation and Food Services</b>				
Victoria	175.8	221.2	45.4	25.8
Greater Melbourne	148.8	187.8	39.1	26.3
Rest of Victoria	41.6	48.0	6.4	15.3
<b>Transport, Postal and Warehousing</b>				
Victoria	180.7	201.8	21.1	11.7
Greater Melbourne	149.8	168.9	19.1	12.8
Rest of Victoria	29.2	31.2	2.0	6.9
<b>Information Media and Telecommunications</b>				
Victoria	60.1	57.7	-2.4	-3.9
Greater Melbourne	54.4	52.8	-1.6	-2.9
Rest of Victoria	5.6	4.8	-0.8	-13.5

**Table 3.6 2020 Regional projections by industry – Five years to November 2025 (continued)**

	Employment level – November 2020 ('000)	Projected employment level – November 2025 ('000)	Projected employment growth – five years to November 2025	
			('000)	(%)
<b>Financial and Insurance Services</b>				
Victoria	143.3	154.3	11.0	7.7
Greater Melbourne	124.5	135.6	11.0	8.8
Rest of Victoria	11.5	11.5	0.0	0.0
<b>Rental, Hiring and Real Estate Services</b>				
Victoria	47.7	53.1	5.5	11.5
Greater Melbourne	42.1	46.9	4.7	11.2
Rest of Victoria	8.2	9.0	0.7	9.1
<b>Professional, Scientific and Technical Services</b>				
Victoria	339.3	385.9	46.6	13.7
Greater Melbourne	297.3	339.3	42.0	14.1
Rest of Victoria	35.5	40.2	4.7	13.1
<b>Administrative and Support Services</b>				
Victoria	112.1	118.4	6.3	5.7
Greater Melbourne	92.6	96.6	4.0	4.3
Rest of Victoria	20.6	22.9	2.4	11.5
<b>Public Administration and Safety</b>				
Victoria	190.4	197.7	7.3	3.8
Greater Melbourne	135.6	140.7	5.1	3.8
Rest of Victoria	43.9	46.1	2.2	5.0
<b>Education and Training</b>				
Victoria	305.9	344.0	38.0	12.4
Greater Melbourne	230.9	264.0	33.1	14.3
Rest of Victoria	62.9	67.9	4.9	7.9
<b>Health Care and Social Assistance</b>				
Victoria	468.5	535.3	66.8	14.3
Greater Melbourne	354.9	407.0	52.2	14.7
Rest of Victoria	115.1	129.7	14.6	12.7
<b>Arts and Recreation Services</b>				
Victoria	61.8	68.5	6.7	10.8
Greater Melbourne	57.0	62.9	5.9	10.3
Rest of Victoria	12.0	12.8	0.8	6.5
<b>Other Services</b>				
Victoria	107.5	108.0	0.5	0.5
Greater Melbourne	85.9	86.4	0.6	0.6
Rest of Victoria	25.6	25.6	0.0	-0.1
<b>Total industry</b>				
Victoria	3,369.4	3,673.2	303.8	9.0
Greater Melbourne	2,651.9	2,909.0	257.1	9.7
Rest of Victoria	725.6	772.3	46.7	6.4

Note: Data for Australia are ABS seasonally adjusted.

Source: National Skills Commission Projections.



### 3.4 National trends in occupations

Nationally the top 10 occupations as at the August 2021 quarter were:

1. Sales Assistants;
2. General Clerks;
3. Registered Nurses;
4. Aged and Disability Carers;
5. Retail Managers;
6. Accountants;
7. Truck Drivers;
8. Commercial Cleaners;
9. Receptionists; and
10. Checkout Operators and Office Cashiers.

The national figures show that of the 19 ANZSIC industry divisions the Health Care and Social Assistance sector is now by far the largest employer nationally with around 1,677,000 employees. This is followed by the Retail sector that has 1,233,000 employees, the Construction sector with 1,196,000 employees, Professional, Scientific and Technical Services with 1,099,000 employees and Educational and Training with 1,070,000 employees. These five industry sectors employ around half of Australia's workforce.

Over the last five-year period the industries that added the largest share of total new jobs were Health Care and Social Assistance (20 per cent of all newly added jobs in the period), Professional and Scientific Services (18 per cent), and Construction (14 per cent) and Public Administration and Safety (8 per cent).

The top employing occupations nationally by five largest employing sectors in 2021 are:

1. Health Care and Social Assistance – Registered Nurses/Aged and Disability Carers/Receptionists;
2. Retail Trade – General Sales Assistants/Retail Managers/Checkout Operators and Office Cashiers;
3. Construction – Carpenters and Joiners/Electricians/Construction Managers;
4. Professional, Scientific and Technical Services – Accountants/Software and Applications Programmers/Solicitors; and
5. Education and Training – Primary School Teachers/Secondary School Teachers/Education Aides.

The top employing occupations by other sectors:

1. Manufacturing – Structural Steel and Welding Trades Workers/Production Managers/Packers;
2. Financial and Insurance Services – Bank Workers/Financial Investment Advisers and Managers/Financial Brokers;
3. Wholesale Trade – Store Persons/Importer, Exporters and Wholesalers/Purchasing and Supply Logistics Clerks;
4. Mining – Drillers, Miners and Shot Firers;
5. Agriculture, Forestry and Fishing – Livestock Farmers/Crop Farmers/Mixed Crop and Livestock Farmers;
6. Accommodation and Food Services – Waiters/Kitchenhands Bar Attendants and Baristas;
7. Arts and Recreation Services – Sports Coaches, Instructors and Officials/Fitness Instructors/Amusement, Fitness and Sports Centre Managers;
8. Transport, Postal and Warehousing – Truck Drivers/Automobile Drivers/Storepersons;
9. Electricity, Gas, Water and Waste Services – Truck Drivers/Electricians/Electrical Engineers;
10. Administrative and Support Services – Commercial Cleaners/Gardeners/Domestic Cleaners;
11. Public Administration and Safety – General Clerks/Police/Security Officers and Guards;
12. Information, Media and Telecommunications – Telecommunications Trade Workers/Film, Television and Stage Directors/Journalists and Other Writers; and
13. Rental, Hiring and Real Estate Agents – Real Estate Sales Agents/General Clerks/Other Hospitality, Retail and Service Managers.

Table 3.6 gives the National Skills Commission's projections for employment by the 19 ANZSIC industry divisions.

#### 3.4.1 National trends in employment by occupations: Commonwealth Government's employer survey and projections by NIEIR for Melbourne's North

The Commonwealth Government's employer survey for August 2020, in part shaped by COVID-19, covers those sectors likely to be experiences high levels of demand at that time. These sectors were Health Care and Social Assistance, Transport, Postal and Warehousing, Manufacturing, Retail Trade and Wholesale Trade.

Top occupations in demand nation-wide were as follows:

1. Truck drivers;
2. Child carers;
3. Managers;
4. Retail sales assistants;
5. Registered nurses;
6. Box and container packers;
7. Metal fabricators and welders;
8. Receptionists;
9. Metal fitters and machinists;
10. Sales representatives; and
11. Storepersons.

Top skills in demand were as follows.

### ***Technical***

1. Operating vehicles, mechanised devices or equipment.
2. Assisting and caring for others.
3. Controlling machines and processes.
4. Customer and personal service.
5. Performing general physical activities.

### ***Employability***

1. Interacting with computers.
2. Reliability.
3. Social and people skills.
4. Work ethic and motivation.
5. Teamwork.
6. Communication.
7. Customer service.

### ***Occupations difficult to recruit for***

1. Truck drivers.
2. Child carers.
3. Motor mechanics.
4. Retail sales assistants.
5. Metal fabricators and welders.
6. Bus and coach drivers.
7. Cabinet makers.



Table 3.7 gives NIEIR's projections for occupations to 2026 for Melbourne's North total region and three sub-regions (multiple LGAs) of the inner north, north east, and outer north. This table has been designed for education providers as it shows regional demand for workers at a scale larger than the single LGA.

Higher growth occupations in the region for a whole include Managers, Business Analysts, ICT Workers, Legal Professionals, Various Health Worker Categories, Animal related services and Sales Support Workers.

Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total				
Occupation	Employment level – 2021 ('000)	Projected employment level – 2026 ('000)	Projected employment growth – five years to 2026	
			('000)	(%)
MELBOURNE'S NORTH				
MANAGERS	43.5	46.1	2.5	1.1
Chief Executives, General Managers and Legislators	3.2	3.4	0.2	1.1
Farmers and Farm Managers	0.9	0.9	0.0	0.8
Advertising, Public Relations and Sales Managers	3.6	3.9	0.3	1.4
Business Administration Managers	3.8	4.3	0.5	2.5
Construction, Distribution and Production Managers	11.5	11.1	-0.4	-0.7
Education, Health and Welfare Services Managers	2.8	3.2	0.4	2.4
ICT Managers	0.6	0.8	0.2	4.5
Miscellaneous Specialist Managers	2.4	2.9	0.5	3.8
Accommodation and Hospitality Managers	2.0	2.3	0.3	2.8
Retail Managers	8.0	8.3	0.2	0.6
Miscellaneous Hospitality, Retail and Service Managers	4.6	5.1	0.4	1.8
PROFESSIONALS	87.2	101.2	14.0	3.0
Arts Professionals	2.1	2.4	0.2	2.0
Media Professionals	1.6	1.8	0.2	2.1
Accountants, Auditors and Company Secretaries	4.3	4.8	0.5	2.3
Financial Brokers and Dealers, and Investment Advisers	1.4	1.6	0.2	2.1
Human Resource and Training Professionals	1.9	2.3	0.5	4.4
Information and Organisation Professionals	3.7	4.7	1.0	4.8
Sales, Marketing and Public Relations Professionals	3.2	3.4	0.2	1.2
Air and Marine Transport Professionals	1.6	2.5	0.8	8.8
Architects, Designers, Planners and Surveyors	4.6	5.0	0.4	1.9
Engineering Professionals	4.4	4.4	0.1	0.3
Natural and Physical Science Professionals	3.5	4.3	0.8	4.1
School Teachers	15.8	16.7	0.9	1.1
Tertiary Education Teachers	3.2	3.6	0.5	2.8
Miscellaneous Education Professionals	2.9	3.2	0.3	1.8
Health Diagnostic and Promotion Professionals	3.3	3.8	0.5	2.6
Health Therapy Professionals	4.1	4.9	0.8	3.6
Medical Practitioners	3.6	4.5	0.9	4.8
Midwifery and Nursing Professionals	12.0	15.1	3.1	4.7
Business and Systems Analysts, and Programmers	2.3	2.9	0.6	4.7
Database and Systems Administrators, and ICT Security Specialists	0.7	0.9	0.2	4.4
ICT Network and Support Professionals	0.9	1.1	0.2	4.4
Legal Professionals	1.0	1.3	0.3	6.2
Social and Welfare Professionals	5.1	6.0	0.9	3.2

**Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total (continued)**

Occupation	Employment level – 2021 (‘000)	Projected employment level – 2026 (‘000)	Projected employment growth – five years to 2026	
			(‘000)	(%)
MELBOURNE’S NORTH (continued)				
TECHNICIANS AND TRADES WORKERS	59.2	59.4	0.2	0.1
Agricultural, Medical and Science Technicians	2.3	2.6	0.3	2.7
Building and Engineering Technicians	3.7	3.8	0.1	0.4
ICT and Telecommunications Technicians	1.4	1.7	0.3	3.3
Automotive Electricians and Mechanics	3.4	3.4	-0.1	-0.3
Fabrication Engineering Trades Workers	2.1	2.0	-0.1	-0.5
Mechanical Engineering Trades Workers	4.0	4.3	0.3	1.6
Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	2.0	1.9	-0.1	-0.7
Bricklayers, and Carpenters and Joiners	7.0	6.2	-0.8	-2.4
Floor Finishers and Painting Trades Workers	2.1	1.9	-0.2	-1.9
Glaziers, Plasterers and Tilers	2.2	2.0	-0.2	-2.0
Plumbers	3.7	3.5	-0.2	-1.3
Electricians	5.2	4.9	-0.3	-1.2
Electronics and Telecommunications Trades Workers	1.9	2.0	0.1	0.8
Food Trades Workers	5.5	6.1	0.6	2.1
Animal Attendants and Trainers, and Shearers	1.0	1.3	0.3	4.5
Horticultural Trades Workers	3.3	3.7	0.4	2.4
Hairdressers	1.8	2.2	0.4	3.8
Printing Trades Workers	1.4	1.2	-0.2	-3.0
Textile, Clothing and Footwear Trades Workers	0.7	0.6	-0.1	-4.1
Wood Trades Workers	2.5	2.1	-0.4	-3.7
Miscellaneous Technicians and Trades Workers	1.9	2.1	0.2	2.2
COMMUNITY AND PERSONAL SERVICE WORKERS	44.9	52.3	7.4	3.1
Health and Welfare Support Workers	4.7	5.4	0.7	2.9
Child Carers	5.8	6.7	0.9	2.9
Education Aides	4.1	4.4	0.3	1.5
Personal Carers and Assistants	10.9	12.5	1.6	2.8
Hospitality Workers	6.0	6.9	0.9	2.8
Defence Force Members, Fire Fighters and Police	3.1	3.6	0.6	3.6
Prison and Security Officers	3.1	3.4	0.3	1.8
Personal Service and Travel Workers	4.0	5.6	1.5	6.7
Sports and Fitness Workers	3.2	3.7	0.5	2.9

**Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total (continued)**

Occupation	Employment level – 2021 (‘000)	Projected employment level – 2026 (‘000)	Projected employment growth – five years to 2026	
			(‘000)	(%)
MELBOURNE’S NORTH (continued)				
CLERICAL AND ADMINISTRATIVE WORKERS	45.7	50.2	4.4	1.9
Contract, Program and Project Administrators	2.0	2.3	0.3	3.0
Office and Practice Managers	4.5	4.8	0.3	1.2
Personal Assistants and Secretaries	1.7	1.8	0.2	2.1
General Clerks	6.8	7.3	0.5	1.5
Keyboard Operators	1.5	1.7	0.2	2.4
Call or Contact Centre Information Clerks	2.6	3.0	0.4	2.8
Receptionists	5.1	5.7	0.6	2.4
Accounting Clerks and Bookkeepers	7.9	8.3	0.4	0.9
Financial and Insurance Clerks	1.7	1.7	0.1	0.9
Clerical and Office Support Workers	3.1	3.8	0.7	3.9
Logistics Clerks	6.2	6.4	0.2	0.7
Miscellaneous Clerical and Administrative Workers	2.7	3.3	0.6	3.9
SALES WORKERS	32.6	34.2	1.7	1.0
Insurance Agents and Sales Representatives	2.9	2.9	0.0	-0.2
Real Estate Sales Agents	1.7	2.0	0.2	2.3
Sales Assistants and Salespersons	22.0	22.6	0.6	0.5
Checkout Operators and Office Cashiers	3.9	4.2	0.2	1.1
Miscellaneous Sales Support Workers	2.0	2.6	0.7	5.9
MACHINERY OPERATORS AND DRIVERS	34.7	36.6	1.9	1.1
Machine Operators	4.1	3.5	-0.5	-2.8
Stationary Plant Operators	1.4	1.4	0.0	0.6
Mobile Plant Operators	5.5	6.1	0.7	2.3
Automobile, Bus and Rail Drivers	5.7	6.4	0.7	2.3
Delivery Drivers	3.4	3.7	0.3	1.8
Truck Drivers	6.1	6.8	0.7	2.3
Storepersons	8.5	8.5	0.0	0.0
LABOURERS	34.2	35.8	1.6	0.9
Cleaners and Laundry Workers	6.1	6.9	0.8	2.5
Construction and Mining Labourers	5.9	5.5	-0.4	-1.4
Food Process Workers	2.4	2.5	0.1	0.6
Packers and Product Assemblers	3.9	3.7	-0.2	-0.9
Miscellaneous Factory Process Workers	1.6	1.5	-0.1	-1.6
Farm, Forestry and Garden Workers	1.1	1.2	0.1	1.8
Food Preparation Assistants	6.2	7.1	0.9	2.7
Freight Handlers and Shelf Fillers	2.7	3.0	0.3	1.9
Miscellaneous Labourers	4.2	4.4	0.2	0.9
MELBOURNE’S NORTH –ALL OCCUPATIONS	381.9	415.7	33.7	1.7

**Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total (continued)**

Occupation	Employment level – 2021 (‘000)	Projected employment level – 2026 (‘000)	Projected employment growth – five years to 2026	
			(‘000)	(%)
INNER NORTH – DAREBIN (C) AND MORELAND (C)				
<b>MANAGERS</b>	12.2	12.7	0.5	0.7
Chief Executives, General Managers and Legislators	1.0	1.0	0.0	0.0
Farmers and Farm Managers	0.0	0.1	0.0	12.8
Advertising, Public Relations and Sales Managers	1.1	1.1	0.1	1.0
Business Administration Managers	1.1	1.2	0.1	2.3
Construction, Distribution and Production Managers	2.7	2.5	-0.1	-1.2
Education, Health and Welfare Services Managers	1.1	1.1	0.0	0.7
ICT Managers	0.2	0.3	0.0	3.3
Miscellaneous Specialist Managers	0.5	0.5	0.1	2.7
Accommodation and Hospitality Managers	0.8	0.9	0.1	3.2
Retail Managers	2.6	2.6	0.0	0.4
Miscellaneous Hospitality, Retail and Service Managers	1.3	1.4	0.1	1.3
<b>PROFESSIONALS</b>	27.8	30.2	2.4	1.6
Arts Professionals	1.3	1.4	0.0	0.3
Media Professionals	1.1	1.2	0.1	2.0
Accountants, Auditors and Company Secretaries	1.2	1.4	0.1	2.0
Financial Brokers and Dealers, and Investment Advisers	0.5	0.5	0.0	1.1
Human Resource and Training Professionals	0.6	0.6	0.1	2.1
Information and Organisation Professionals	1.4	1.6	0.3	3.7
Sales, Marketing and Public Relations Professionals	1.1	1.2	0.1	0.9
Air and Marine Transport Professionals	0.0	0.0	0.0	0.0
Architects, Designers, Planners and Surveyors	2.1	2.2	0.1	1.2
Engineering Professionals	0.7	0.7	0.0	0.4
Natural and Physical Science Professionals	1.3	1.6	0.3	4.1
School Teachers	4.3	4.1	-0.2	-0.9
Tertiary Education Teachers	1.9	2.1	0.2	2.2
Miscellaneous Education Professionals	1.3	1.2	-0.1	-0.9
Health Diagnostic and Promotion Professionals	0.9	0.9	0.1	1.3
Health Therapy Professionals	1.5	1.6	0.1	1.6
Medical Practitioners	0.6	0.7	0.1	3.7
Midwifery and Nursing Professionals	2.0	2.4	0.5	4.2
Business and Systems Analysts, and Programmers	0.9	1.1	0.2	3.7
Database and Systems Administrators, and ICT Security Specialists	0.2	0.3	0.0	3.1
ICT Network and Support Professionals	0.3	0.4	0.1	3.1
Legal Professionals	0.4	0.5	0.1	4.7
Social and Welfare Professionals	2.3	2.4	0.1	1.3



**Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total (continued)**

Occupation	Employment level – 2021 (‘000)	Projected employment level – 2026 (‘000)	Projected employment growth – five years to 2026	
			(‘000)	(%)
INNER NORTH – DAREBIN (C) AND MORELAND (C) (continued)				
TECHNICIANS AND TRADES WORKERS	15.4	15.4	0.0	0.0
Agricultural, Medical and Science Technicians	0.5	0.6	0.1	2.1
Building and Engineering Technicians	0.9	0.9	0.0	1.0
ICT and Telecommunications Technicians	0.5	0.5	0.1	2.5
Automotive Electricians and Mechanics	0.9	0.8	-0.1	-2.5
Fabrication Engineering Trades Workers	0.3	0.3	0.0	0.0
Mechanical Engineering Trades Workers	0.6	0.5	-0.1	-2.8
Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0.4	0.4	0.0	-1.8
Bricklayers, and Carpenters and Joiners	2.0	1.9	-0.1	-1.1
Floor Finishers and Painting Trades Workers	0.6	0.6	0.0	-0.1
Glaziers, Plasterers and Tilers	0.7	0.7	0.0	-0.8
Plumbers	0.8	0.8	0.0	-0.1
Electricians	1.0	1.1	0.0	0.5
Electronics and Telecommunications Trades Workers	0.4	0.4	0.0	-0.4
Food Trades Workers	2.1	2.3	0.2	2.2
Animal Attendants and Trainers, and Shearers	0.2	0.2	0.0	1.7
Horticultural Trades Workers	0.9	1.1	0.1	2.7
Hairdressers	0.6	0.6	0.0	1.2
Printing Trades Workers	0.4	0.4	-0.1	-2.9
Textile, Clothing and Footwear Trades Workers	0.3	0.2	-0.1	-4.4
Wood Trades Workers	0.6	0.5	-0.1	-3.3
Miscellaneous Technicians and Trades Workers	0.6	0.6	0.0	0.3
COMMUNITY AND PERSONAL SERVICE WORKERS	14.1	15.1	1.0	1.4
Health and Welfare Support Workers	1.8	1.9	0.1	1.1
Child Carers	1.8	1.8	0.0	-0.2
Education Aides	1.0	1.0	0.0	-0.5
Personal Carers and Assistants	4.5	4.7	0.3	1.3
Hospitality Workers	2.0	2.4	0.4	3.5
Defence Force Members, Fire Fighters and Police	0.8	0.9	0.1	3.1
Prison and Security Officers	0.5	0.5	0.1	3.1
Personal Service and Travel Workers	0.8	0.8	0.0	0.5
Sports and Fitness Workers	0.9	1.0	0.1	1.0

**Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total (continued)**

Occupation	Employment level – 2021 (‘000)	Projected employment level – 2026 (‘000)	Projected employment growth – five years to 2026	
			(‘000)	(%)
INNER NORTH – DAREBIN (C) AND MORELAND (C) (continued)				
CLERICAL AND ADMINISTRATIVE WORKERS	11.5	12.4	0.9	1.5
Contract, Program and Project Administrators	0.7	0.8	0.1	3.4
Office and Practice Managers	1.2	1.3	0.1	0.9
Personal Assistants and Secretaries	0.4	0.5	0.1	2.2
General Clerks	1.9	2.0	0.1	1.2
Keyboard Operators	0.3	0.4	0.0	1.7
Call or Contact Centre Information Clerks	0.7	0.8	0.1	2.9
Receptionists	1.4	1.5	0.1	1.4
Accounting Clerks and Bookkeepers	2.0	2.1	0.0	0.4
Financial and Insurance Clerks	0.5	0.6	0.0	1.3
Clerical and Office Support Workers	0.6	0.7	0.1	4.5
Logistics Clerks	1.0	1.0	0.0	-0.3
Miscellaneous Clerical and Administrative Workers	0.7	0.8	0.1	3.4
SALES WORKERS	9.2	9.4	0.2	0.4
Insurance Agents and Sales Representatives	0.8	0.8	0.0	-0.3
Real Estate Sales Agents	0.7	0.7	0.1	1.8
Sales Assistants and Salespersons	6.4	6.4	0.1	0.3
Checkout Operators and Office Cashiers	1.1	1.1	0.0	0.8
Miscellaneous Sales Support Workers	0.3	0.3	0.0	1.4
MACHINERY OPERATORS AND DRIVERS	6.9	6.9	0.0	0.1
Machine Operators	1.0	0.8	-0.2	-4.2
Stationary Plant Operators	0.2	0.2	0.0	-1.9
Mobile Plant Operators	0.5	0.5	0.0	-1.0
Automobile, Bus and Rail Drivers	1.8	2.1	0.2	2.5
Delivery Drivers	0.9	1.0	0.1	1.7
Truck Drivers	0.7	0.8	0.1	2.4
Storepersons	1.8	1.7	-0.1	-1.3
LABOURERS	7.5	7.9	0.5	1.2
Cleaners and Laundry Workers	1.6	1.8	0.2	2.2
Construction and Mining Labourers	1.2	1.1	0.0	-0.5
Food Process Workers	0.4	0.5	0.0	0.9
Packers and Product Assemblers	0.8	0.7	0.0	-1.1
Miscellaneous Factory Process Workers	0.3	0.3	0.0	-2.4
Farm, Forestry and Garden Workers	0.1	0.2	0.0	5.4
Food Preparation Assistants	1.5	1.8	0.3	3.1
Freight Handlers and Shelf Fillers	0.5	0.5	0.0	0.8
Miscellaneous Labourers	1.0	1.1	0.0	0.9
INNER NORTH – ALL OCCUPATIONS	104.5	110.0	5.5	1.0

**Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total (continued)**

Occupation	Employment level – 2021 (‘000)	Projected employment level – 2026 (‘000)	Projected employment growth – five years to 2026	
			(‘000)	(%)
NORTH EAST – BANYULE (C) AND NILLUMBIK (S)				
MANAGERS	6.4	6.9	0.5	1.5
Chief Executives, General Managers and Legislators	0.5	0.6	0.1	2.0
Farmers and Farm Managers	0.1	0.1	0.0	-1.6
Advertising, Public Relations and Sales Managers	0.5	0.6	0.1	2.5
Business Administration Managers	0.5	0.6	0.1	3.4
Construction, Distribution and Production Managers	1.3	1.2	-0.1	-1.3
Education, Health and Welfare Services Managers	0.6	0.7	0.1	2.2
ICT Managers	0.1	0.1	0.0	4.6
Miscellaneous Specialist Managers	0.4	0.5	0.1	4.7
Accommodation and Hospitality Managers	0.4	0.4	0.1	2.5
Retail Managers	1.4	1.5	0.1	1.1
Miscellaneous Hospitality, Retail and Service Managers	0.7	0.7	0.0	1.4
PROFESSIONALS	22.1	25.5	3.5	3.0
Arts Professionals	0.5	0.5	0.0	1.6
Media Professionals	0.3	0.3	0.0	1.1
Accountants, Auditors and Company Secretaries	0.9	1.0	0.1	1.4
Financial Brokers and Dealers, and Investment Advisers	0.4	0.4	0.0	-0.4
Human Resource and Training Professionals	0.3	0.4	0.1	3.7
Information and Organisation Professionals	0.8	0.9	0.2	3.7
Sales, Marketing and Public Relations Professionals	0.5	0.6	0.0	1.8
Air and Marine Transport Professionals	0.0	0.0	0.0	0.0
Architects, Designers, Planners and Surveyors	0.9	1.0	0.1	1.3
Engineering Professionals	0.6	0.6	0.0	0.5
Natural and Physical Science Professionals	1.2	1.4	0.2	3.5
School Teachers	3.7	3.6	-0.1	-0.5
Tertiary Education Teachers	0.3	0.3	0.0	2.7
Miscellaneous Education Professionals	0.6	0.7	0.0	1.4
Health Diagnostic and Promotion Professionals	0.9	1.1	0.2	4.1
Health Therapy Professionals	1.2	1.5	0.2	3.4
Medical Practitioners	1.6	2.0	0.4	4.9
Midwifery and Nursing Professionals	5.2	6.8	1.6	5.4
Business and Systems Analysts, and Programmers	0.4	0.5	0.1	3.9
Database and Systems Administrators, and ICT Security Specialists	0.1	0.2	0.0	4.1
ICT Network and Support Professionals	0.1	0.2	0.0	3.5
Legal Professionals	0.3	0.3	0.0	2.7
Social and Welfare Professionals	1.1	1.3	0.2	2.6

**Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total (continued)**

Occupation	Employment level – 2021 (‘000)	Projected employment level – 2026 (‘000)	Projected employment growth – five years to 2026	
			(‘000)	(%)
NORTH EAST – BANYULE (C) AND NILLUMBIK (S) (continued)				
TECHNICIANS AND TRADES WORKERS	9.0	8.9	-0.1	-0.2
Agricultural, Medical and Science Technicians	0.7	0.9	0.1	3.7
Building and Engineering Technicians	0.5	0.5	0.0	-0.8
ICT and Telecommunications Technicians	0.2	0.3	0.0	3.2
Automotive Electricians and Mechanics	0.4	0.4	0.0	-2.0
Fabrication Engineering Trades Workers	0.2	0.2	0.0	-1.1
Mechanical Engineering Trades Workers	0.3	0.2	0.0	-3.2
Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0.2	0.1	0.0	-1.3
Bricklayers, and Carpenters and Joiners	1.1	0.9	-0.2	-3.7
Floor Finishers and Painting Trades Workers	0.3	0.3	0.0	-3.2
Glaziers, Plasterers and Tilers	0.3	0.2	-0.1	-4.8
Plumbers	0.7	0.6	0.0	-1.1
Electricians	0.8	0.7	-0.1	-2.9
Electronics and Telecommunications Trades Workers	0.3	0.3	0.0	0.3
Food Trades Workers	0.8	0.9	0.1	2.7
Animal Attendants and Trainers, and Shearers	0.2	0.2	0.0	2.3
Horticultural Trades Workers	0.7	0.8	0.1	3.0
Hairdressers	0.4	0.5	0.1	3.8
Printing Trades Workers	0.2	0.2	0.0	-2.5
Textile, Clothing and Footwear Trades Workers	0.1	0.0	0.0	-7.0
Wood Trades Workers	0.2	0.2	0.0	-1.0
Miscellaneous Technicians and Trades Workers	0.3	0.3	0.0	0.8
COMMUNITY AND PERSONAL SERVICE WORKERS	8.5	9.7	1.2	2.6
Health and Welfare Support Workers	1.0	1.2	0.2	3.2
Child Carers	1.0	1.1	0.1	2.1
Education Aides	0.7	0.7	0.0	-0.4
Personal Carers and Assistants	2.4	2.7	0.3	2.8
Hospitality Workers	1.2	1.4	0.2	2.6
Defence Force Members, Fire Fighters and Police	0.5	0.6	0.1	4.0
Prison and Security Officers	0.3	0.3	0.1	4.5
Personal Service and Travel Workers	0.5	0.6	0.0	1.3
Sports and Fitness Workers	1.0	1.2	0.2	3.5

**Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total (continued)**

Occupation	Employment level – 2021 (‘000)	Projected employment level – 2026 (‘000)	Projected employment growth – five years to 2026	
			(‘000)	(%)
NORTH EAST – BANYULE (C) AND NILLUMBIK (S) (continued)				
CLERICAL AND ADMINISTRATIVE WORKERS	7.2	7.8	0.7	1.8
Contract, Program and Project Administrators	0.3	0.3	0.0	3.1
Office and Practice Managers	0.9	1.0	0.1	1.2
Personal Assistants and Secretaries	0.4	0.5	0.0	1.9
General Clerks	1.2	1.3	0.1	2.1
Keyboard Operators	0.3	0.3	0.0	2.4
Call or Contact Centre Information Clerks	0.3	0.3	0.0	2.7
Receptionists	1.2	1.4	0.2	2.9
Accounting Clerks and Bookkeepers	1.3	1.3	0.1	1.0
Financial and Insurance Clerks	0.2	0.2	0.0	0.7
Clerical and Office Support Workers	0.4	0.4	0.0	0.4
Logistics Clerks	0.3	0.3	0.0	0.0
Miscellaneous Clerical and Administrative Workers	0.3	0.4	0.1	3.1
SALES WORKERS	4.3	4.6	0.3	1.3
Insurance Agents and Sales Representatives	0.2	0.3	0.0	1.0
Real Estate Sales Agents	0.3	0.3	0.0	-0.1
Sales Assistants and Salespersons	3.2	3.4	0.2	1.3
Checkout Operators and Office Cashiers	0.5	0.6	0.1	2.0
Miscellaneous Sales Support Workers	0.1	0.1	0.0	1.5
MACHINERY OPERATORS AND DRIVERS	1.9	1.9	0.0	-0.2
Machine Operators	0.3	0.3	0.0	-0.4
Stationary Plant Operators	0.1	0.1	0.0	-0.5
Mobile Plant Operators	0.1	0.2	0.0	3.5
Automobile, Bus and Rail Drivers	0.4	0.4	-0.1	-3.2
Delivery Drivers	0.3	0.3	0.0	0.1
Truck Drivers	0.2	0.2	0.0	1.2
Storepersons	0.4	0.4	0.0	0.6
LABOURERS	3.6	3.9	0.3	1.5
Cleaners and Laundry Workers	0.8	0.9	0.1	2.6
Construction and Mining Labourers	0.5	0.5	0.0	-1.8
Food Process Workers	0.0	0.1	0.0	3.2
Packers and Product Assemblers	0.2	0.2	0.0	0.9
Miscellaneous Factory Process Workers	0.1	0.1	0.0	0.2
Farm, Forestry and Garden Workers	0.1	0.1	0.0	2.2
Food Preparation Assistants	0.9	1.1	0.1	2.8
Freight Handlers and Shelf Fillers	0.3	0.3	0.0	2.0
Miscellaneous Labourers	0.6	0.6	0.0	0.4
NORTH EAST – ALL OCCUPATIONS	63.0	69.2	6.2	1.9

**Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total (continued)**

Occupation	Employment level – 2021 (‘000)	Projected employment level – 2026 (‘000)	Projected employment growth – five years to 2026	
			(‘000)	(%)
OUTER NORTH – HUME (C), MITCHELL (S) AND WHITTLESEA (C)				
MANAGERS	24.9	26.4	1.6	1.2
Chief Executives, General Managers and Legislators	1.7	1.8	0.1	1.4
Farmers and Farm Managers	0.8	0.8	0.0	0.4
Advertising, Public Relations and Sales Managers	2.1	2.2	0.1	1.4
Business Administration Managers	2.2	2.5	0.3	2.4
Construction, Distribution and Production Managers	7.6	7.4	-0.2	-0.5
Education, Health and Welfare Services Managers	1.1	1.4	0.3	4.2
ICT Managers	0.3	0.4	0.1	5.2
Miscellaneous Specialist Managers	1.6	1.9	0.3	3.9
Accommodation and Hospitality Managers	0.8	0.9	0.1	2.5
Retail Managers	4.1	4.2	0.1	0.5
Miscellaneous Hospitality, Retail and Service Managers	2.6	2.9	0.3	2.2
PROFESSIONALS	37.3	45.5	8.2	4.0
Arts Professionals	0.3	0.5	0.2	8.2
Media Professionals	0.2	0.3	0.1	3.9
Accountants, Auditors and Company Secretaries	2.1	2.4	0.3	2.9
Financial Brokers and Dealers, and Investment Advisers	0.6	0.7	0.1	4.2
Human Resource and Training Professionals	1.0	1.3	0.3	5.9
Information and Organisation Professionals	1.6	2.1	0.6	6.3
Sales, Marketing and Public Relations Professionals	1.5	1.6	0.1	1.2
Air and Marine Transport Professionals	1.6	2.5	0.8	8.8
Architects, Designers, Planners and Surveyors	1.5	1.8	0.3	3.1
Engineering Professionals	3.1	3.1	0.0	0.2
Natural and Physical Science Professionals	1.0	1.3	0.3	4.6
School Teachers	7.8	9.0	1.2	2.9
Tertiary Education Teachers	1.0	1.2	0.2	3.8
Miscellaneous Education Professionals	1.0	1.3	0.3	4.9
Health Diagnostic and Promotion Professionals	1.5	1.7	0.2	2.5
Health Therapy Professionals	1.4	1.9	0.5	5.7
Medical Practitioners	1.3	1.7	0.4	5.1
Midwifery and Nursing Professionals	4.8	5.9	1.1	4.2
Business and Systems Analysts, and Programmers	1.0	1.3	0.3	5.9
Database and Systems Administrators, and ICT Security Specialists	0.3	0.4	0.1	5.4
ICT Network and Support Professionals	0.5	0.6	0.1	5.6
Legal Professionals	0.3	0.5	0.2	10.7
Social and Welfare Professionals	1.7	2.3	0.6	5.8



**Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total (continued)**

Occupation	Employment level – 2021 (‘000)	Projected employment level – 2026 (‘000)	Projected employment growth – five years to 2026	
			(‘000)	(%)
OUTER NORTH – HUME (C), MITCHELL (S) AND WHITTLESEA (C) (continued)				
TECHNICIANS AND TRADES WORKERS	34.9	35.2	0.3	0.2
Agricultural, Medical and Science Technicians	1.0	1.2	0.1	2.3
Building and Engineering Technicians	2.3	2.4	0.1	0.5
ICT and Telecommunications Technicians	0.8	0.9	0.2	3.9
Automotive Electricians and Mechanics	2.1	2.2	0.1	0.9
Fabrication Engineering Trades Workers	1.6	1.5	0.0	-0.5
Mechanical Engineering Trades Workers	3.1	3.5	0.5	2.8
Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	1.4	1.3	0.0	-0.2
Bricklayers, and Carpenters and Joiners	3.9	3.4	-0.5	-2.8
Floor Finishers and Painting Trades Workers	1.2	1.0	-0.1	-2.6
Glaziers, Plasterers and Tilers	1.2	1.1	-0.1	-2.1
Plumbers	2.2	2.0	-0.2	-1.8
Electricians	3.4	3.1	-0.2	-1.4
Electronics and Telecommunications Trades Workers	1.2	1.3	0.1	1.2
Food Trades Workers	2.6	2.8	0.2	1.8
Animal Attendants and Trainers, and Shearers	0.6	0.9	0.2	5.8
Horticultural Trades Workers	1.7	1.9	0.2	2.0
Hairdressers	0.8	1.1	0.3	5.6
Printing Trades Workers	0.7	0.6	-0.1	-3.2
Textile, Clothing and Footwear Trades Workers	0.4	0.3	-0.1	-3.4
Wood Trades Workers	1.7	1.4	-0.3	-4.2
Miscellaneous Technicians and Trades Workers	1.0	1.2	0.2	3.6
COMMUNITY AND PERSONAL SERVICE WORKERS	22.3	27.5	5.2	4.3
Health and Welfare Support Workers	1.9	2.3	0.4	4.3
Child Carers	3.1	3.9	0.8	4.8
Education Aides	2.4	2.7	0.3	2.8
Personal Carers and Assistants	4.1	5.1	1.0	4.4
Hospitality Workers	2.8	3.1	0.3	2.4
Defence Force Members, Fire Fighters and Police	1.8	2.1	0.4	3.7
Prison and Security Officers	2.4	2.6	0.2	1.2
Personal Service and Travel Workers	2.7	4.2	1.5	9.2
Sports and Fitness Workers	1.2	1.5	0.3	3.8

**Table 3.7 Melbourne's North occupation projections to 2026 (place-of-work basis) – by LGA and Total (continued)**

Occupation	Employment level – 2021 (‘000)	Projected employment level – 2026 (‘000)	Projected employment growth – five years to 2026	
			(‘000)	(%)
OUTER NORTH – HUME (C), MITCHELL (S) AND WHITTLESEA (C) (continued)				
CLERICAL AND ADMINISTRATIVE WORKERS	27.0	29.9	2.9	2.0
Contract, Program and Project Administrators	1.0	1.2	0.1	2.7
Office and Practice Managers	2.4	2.6	0.2	1.3
Personal Assistants and Secretaries	0.8	0.9	0.1	2.2
General Clerks	3.7	4.0	0.3	1.5
Keyboard Operators	0.9	1.0	0.1	2.7
Call or Contact Centre Information Clerks	1.6	1.8	0.2	2.7
Receptionists	2.5	2.8	0.4	2.7
Accounting Clerks and Bookkeepers	4.6	4.9	0.3	1.2
Financial and Insurance Clerks	0.9	0.9	0.0	0.7
Clerical and Office Support Workers	2.1	2.6	0.5	4.5
Logistics Clerks	4.8	5.0	0.2	1.0
Miscellaneous Clerical and Administrative Workers	1.7	2.1	0.4	4.3
SALES WORKERS	19.1	20.2	1.2	1.2
Insurance Agents and Sales Representatives	1.9	1.8	0.0	-0.3
Real Estate Sales Agents	0.8	0.9	0.2	3.7
Sales Assistants and Salespersons	12.5	12.8	0.3	0.5
Checkout Operators and Office Cashiers	2.3	2.4	0.1	1.0
Miscellaneous Sales Support Workers	1.6	2.3	0.6	6.7
MACHINERY OPERATORS AND DRIVERS	25.9	27.7	1.9	1.4
Machine Operators	2.8	2.4	-0.3	-2.7
Stationary Plant Operators	1.1	1.1	0.1	1.2
Mobile Plant Operators	4.8	5.5	0.7	2.6
Automobile, Bus and Rail Drivers	3.5	4.0	0.5	2.8
Delivery Drivers	2.2	2.5	0.2	2.1
Truck Drivers	5.2	5.8	0.6	2.4
Storepersons	6.3	6.4	0.1	0.4
LABOURERS	23.1	24.0	0.9	0.7
Cleaners and Laundry Workers	3.7	4.2	0.5	2.5
Construction and Mining Labourers	4.2	3.8	-0.3	-1.7
Food Process Workers	1.9	2.0	0.1	0.5
Packers and Product Assemblers	3.0	2.8	-0.1	-1.0
Miscellaneous Factory Process Workers	1.2	1.1	-0.1	-1.5
Farm, Forestry and Garden Workers	0.8	0.9	0.0	1.0
Food Preparation Assistants	3.7	4.2	0.5	2.5
Freight Handlers and Shelf Fillers	1.9	2.1	0.2	2.1
Miscellaneous Labourers	2.6	2.7	0.1	1.0
OUTER NORTH – ALL OCCUPATIONS	214.4	236.4	22.0	2.0

**Notes:** As the data on which these projections are based have been separately seasonally adjusted and trended for each occupation, employment levels do not always sum exactly to totals. The code "nfd" stands for "not further defined". Some occupations fall within more than one skill level.

**Source:** NIEIR.

The National Skills Commission has listed the occupations in Victoria where there is a shortage of qualified/trained people. These occupations are shown in Table 3.8 and all indicators suggest that there is strong future demand for these workers. Regional shortages are shown separately.

<b>Table 3.8 Victorian occupations in shortage with strong future demand</b>			
<b>ANZSCO</b>	<b>Occupation</b>	<b>ANZSCO</b>	<b>Occupation</b>
<b>Melbourne</b>			
132111	Corporate Services Manager	261313	Software Engineer
135112	ICT Project Manager	262112	ICT Security Specialist
139914	Quality Assurance Manager	272311	Clinical Psychologist
221111	Accountant (General)	272312	Educational Psychologist
221112	Management Accountant	272313	Organisational Psychologist
221113	Taxation Accountant	322211	Sheet Metal Trades Worker
221213	External Auditor	322311	Metal Fabricator
221214	Internal Auditor	322312	Pressure Welder
232212	Surveyor	322313	Welder (First Class)
233211	Civil Engineer	323111	Aircraft Maintenance Engineer (Avionics)
233212	Geotechnical Engineer	323112	Aircraft Maintenance Engineer (Mechanical)
233213	Quantity Surveyor	323113	Aircraft Maintenance Engineer (Structures)
233214	Structural Engineer	323313	Locksmith
233215	Transport Engineer	341111	Electrician (General)
233311	Electrical Engineer	341112	Electrician (Special Class)
233512	Mechanical Engineer	351211	Butcher or Smallgoods Maker
233611	Mining Engineer (excluding Petroleum)	351311	Chef
233612	Petroleum Engineer	351411	Cook
234111	Agricultural Consultant	361211	Shearer
234112	Agricultural Scientist	362212	Arborist
234711	Veterinarian	362213	Landscape Gardener
251214	Sonographer	411411	Enrolled Nurse
252712	Speech Pathologist	421111	Child Care Worker
261211	Multimedia Specialist	423111	Aged or Disabled Carer
261312	Developer Programmer	721111	Agricultural and Horticultural Mobile Plant Operator
<b>Rest of Victoria</b>			
232611	Urban and Regional Planner	251513	Retail Pharmacist
251411	Optometrist	351111	Baker
251412	Orthoptist	351112	Pastry Cook
251511	Hospital Pharmacist		

Source: National Skills Commission.

### 3.4.2 Occupations in demand – Linkedin global job adds analysis

LinkedIn make the following points about trends in occupational demand, tech talent remains in short supply, particularly as COVID has driven a faster rate of digital transformation around the world, while employees working in service roles are leaving their jobs 'in droves'. Nurses are in great demand, particularly because of the high burnout rate due to COVID as nurses choose to move to other occupations.

Jobs with the most demand overall (roles with the greatest number of LinkedIn job posts in Q3 2021):

1. Software Engineer;
2. Salesperson;
3. JavaScript Developer;
4. Registered Nurse;
5. Project Manager;
6. DevOps Engineer;

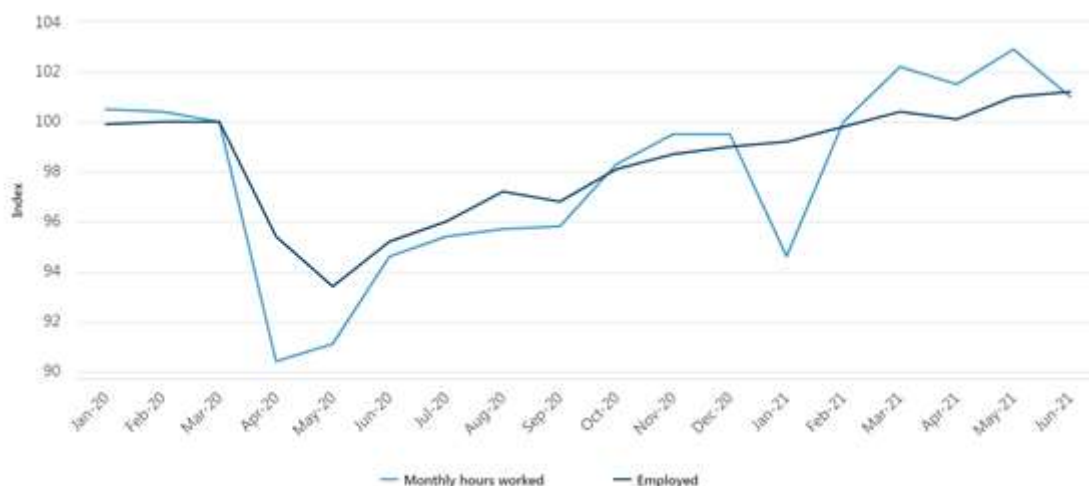
7. Full Stack Engineer;
8. Java Software Engineer;
9. Retail Salesperson; and
10. Product Manager.

Jobs with the fastest-growing demand Q3 2021 (roles with the greatest increase in LinkedIn job posts from Q2 to Q3):

1. Technology Specialist +171 per cent;
2. Automation Test Analyst +166 per cent;
3. Development Team Lead +160 per cent;
4. Customer Service Assistant +151 per cent;
5. Service Representative +147 per cent;
6. Design Consultant +134 per cent;
7. Personal Shopper +111 per cent;
8. Communications Manager +96 per cent;
9. Finance Consultant +91 per cent; and
10. Cake Decorator +83 per cent.

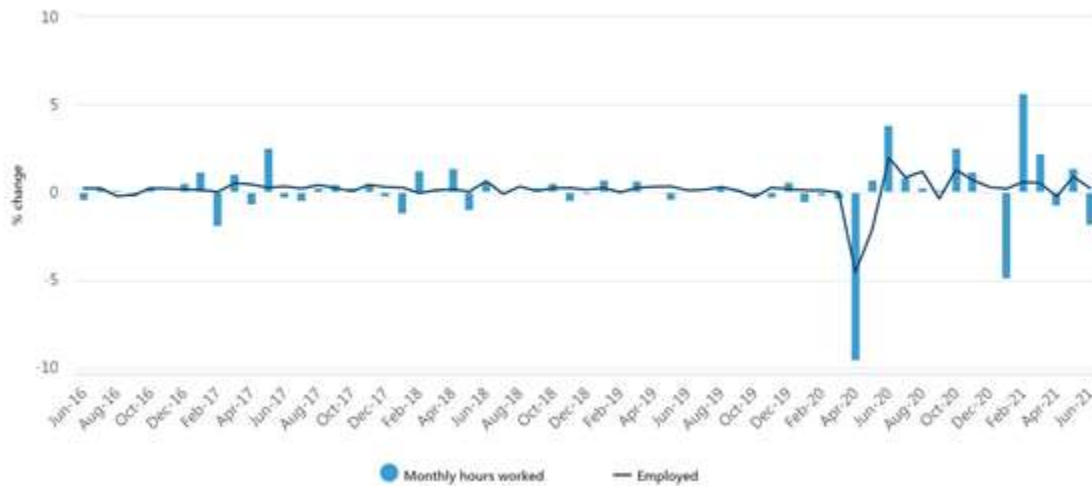
#### Hours worked and labour statistics

**Figure 3.1: Hours worked and employment index, seasonally adjusted  
(March 2020 = 100.0)**



Source: Labour Force, Australia Tables 1 and 19.  
Australian Bureau of Statistics, Insights into hours worked, June 2021 15/07/21.

**Figure 3.2: Monthly change in employment and hours worked, seasonally adjusted**



Source: Labour Force, Australia Tables 1 and 19.  
Australian Bureau of Statistics, Insights into hours worked, June 2021 15/07/21.

Figures 3.1 and 3.2 show hours worked and employment and fluctuations during the COVID period.

Labour statistics internationally classify someone who is working one hour per week as employed. The purpose of this measure is to include all those people in the economy who are involved in production activities within the economy.

The Australian Bureau of Statistics (ABS) makes the following point:

*“No single labour market measure can answer every question, which is why the ABS releases such a broad range of information throughout the year. In combination these provide a greater understanding of Australia’s labour market.”*

Pre-COVID headline numbers show that 87 per cent of Australia’s workforce would normally work for 20 hours or more. People in the workforce who work one hour per week represent 0.1 per cent of the workforce, that is, an estimated 14,500 workers. People working less than seven hours per week accounted for 2.8 per cent of the working population.

### 3.5 Job advertisements

This section analyses job advertisements within the Greater Melbourne region since 2010, with a particular focus on the most recent few years. Melbourne’s North is contextualised by highlighting the advertised occupations that are most important to the current mix of occupations employed by local industry. However, the overall Melbourne market will still remain important as many of the most highly advertised occupations are important for resident employment in Melbourne’s North.

The Internet Vacancy Index (IVI) collects together job listing information from three online job listings service providers about the occupations advertised each month. This data is collated into broad regions that best fit the regional categories of the online job listings service providers. The Melbourne region is summarised as a single online job market, which includes Melbourne’s North. Most jobs that are advertised within the Melbourne region are generally accessible by those that live more broadly

within the Greater Melbourne region. The regions used by the IVI are shown in Figure 3.3 for the Victorian state area. The occupations for the IVI are summarised into 48 categories which is the equivalent of between 2 and 3-digit ANZSCO occupational coding.

The Internet Vacancy Index only summarises the job listings that have been listed online, and will not include other methods of job advertisement. Although many newspaper listings are cross listed with corresponding job websites. The composition of job listings by occupation seems to align broadly with employment by occupation within each region. The IVI index is also highly correlated with economic growth which means that it is a good indicator for current and short-term future demand for employment by occupation.

The other main limitation of the IVI is that it does cover advertisements that are advertising for multiple positions. This means that it may understate the level of jobs advertised for less specialised occupations, such as in retail

and hospitality, which often recruit for multiple openings in a single listing.

The total index of monthly online job advertisements is shown in Figure 3.4 for each of the Victorian regions. Each region has been converted to an index, with the 2019 financial year set to 100. The figure therefore shows the change in the level of monthly job advertisements compared to the average monthly job advertisements over 2019 within each respective region.

The early years of the 2010 decade saw the economy recovery following on from the Global Financial Crisis (GFC) that occurred the later years of the 2000's decade. Total online job advertisements, particularly within the Melbourne region, were relatively strong during this time of recovery. While online job advertisements in regional Victoria were also strong, but generally below 2019 levels in contrast to Melbourne.

Total monthly online job advertisements softened into the 2013 financial year before continuing on an upwards trend for each year leading up until the start of the COVID-19 pandemic. The upwards trend in online job advertisements was similar for all Victorian sub-regions.

In response to the great uncertainty surrounding the initial stages of the COVID-19 pandemic, job advertisements plummeted from March 2020 and reached a low point in June 2020. Average monthly job advertisements reached a

low of 43 per cent of the of pre-COVID levels during 2019 within the Melbourne region. While other Victorian regions fared slightly better with Geelong & Surf Coast falling to 50 per cent, Ballarat & Central Highlands falling to 51 per cent and Bendigo & High Country reaching a low of 62 per cent. More rural and remote regions tended to be more resilient to change in online job advertisements with Wimmera & Western and Gippsland falling to lows in June 2020 of 62 per cent and 71 per cent of 2019 levels.

However, despite further lockdowns online job advertisements have been growing substantially since the middle of 2020. This can be seen in Figure 3.5, which shows the most recent two years with six time periods impacted by lockdowns highlighted. The Melbourne region has been growing at an average rate of 7.2 per cent per month from June 2020 to October 2021. As of March 2021, and continuing through to October 2021, the amount of online job advertising is at its highest rate for all Victorian sub-regions in the time period covered (2010 to 2021).

Online job advertisements in Melbourne are now 27 per cent higher than pre-COVID levels. While the demand for workers is even more acute outside of Melbourne city with online job advertisements 50 to 80 per cent higher than pre-COVID levels, depending on the region.

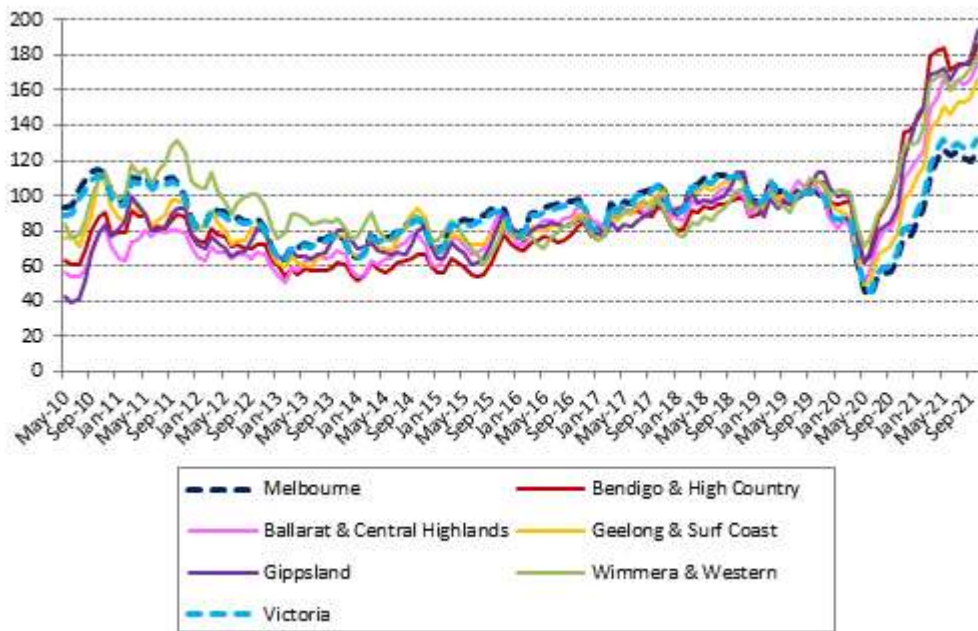
**Figure 3.3: Regions covered by the Internet Vacancy Index (Victoria)**



Source: Internet Vacancy Index, Australian Government's Labour Information Portal.

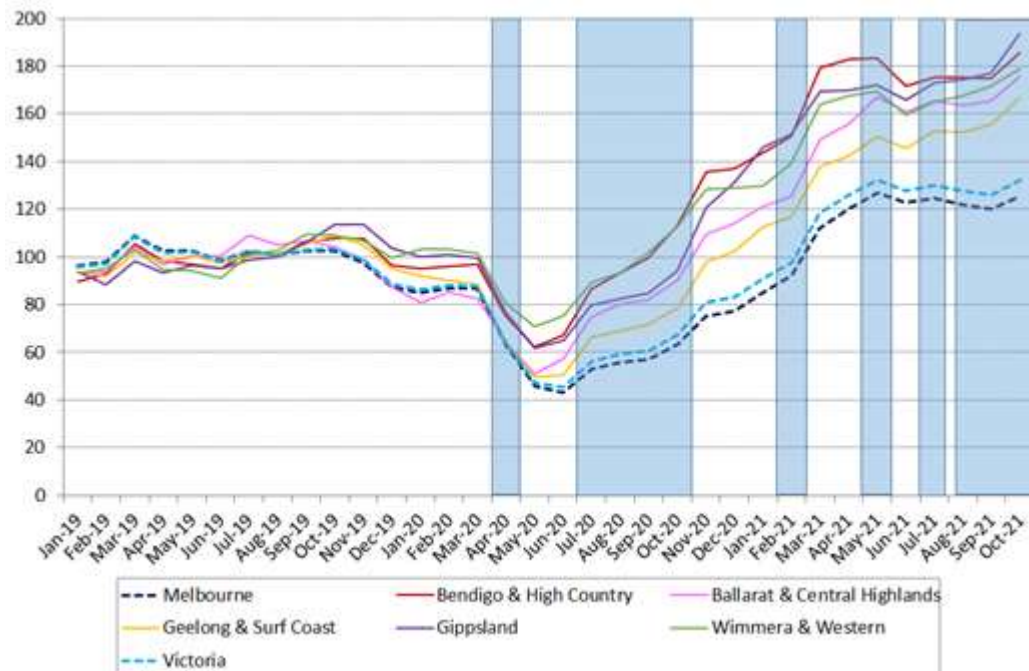


**Figure 3.4: Online job advertisement by Internet Vacancy Index region (calendar 2019 = 100)**



Source: Internet Vacancy Index, Australian Government's Labour Information Portal.

**Figure 3.5: Online job advertisement by Internet Vacancy Index region and Victorian lockdowns (calendar 2019 = 100)**



Note: Highlighted sections of the chart corresponds to periods of lockdowns imposed by the Victorian Government to control the spread of COVID-19. Lockdowns have included restrictions on movement and reasons to leave home.

Source: Internet Vacancy Index, Australian Government's Labour Information Portal.

Table 3.9 compares the IVI index against other employment indicators, which all point towards a tightening labour market leading into 2021. The unemployment rate in Greater Melbourne is around 5.2 per cent as of the September 2021 quarter. This is the lowest rate since the March 2020 quarter prior to the pandemic. This is down from a high of 7.2 per cent during the latter half of 2020 and early 2021. Other regions, including Melbourne's North show a similar trend in unemployment.

The employment market is also tighter because of population decline, meaning that there are less people available to fill vacancies.

Since the December 2021 quarter population, the Victorian population has been contracting (Victorian change in population has been negative for three consecutive quarters).

- The rate of natural increase, or births, has been lower on average than previous years.
- More Victorian residents are leaving the state to go overseas than international residents entering the state. This could be partly due to temporary migrants returning to their home country, e.g. international students.

- More Victorian residents are moving interstate than moving into Victoria. States such as Queensland have benefitted from this exodus, as people are looking to avoid lengthy Victorian lockdowns.

If the Victorian population had continued to grow over 2020 and 2021 at the same average quarterly rate as 2016 to 2019, then there would be an additional 200,000 people living in Victoria as of the June quarter 2021. This includes population decline, and people that would have moved into the state had COVID-19 not occurred. This loss of population translates to a loss of labour force of around 132,000 (assuming a participation rate of 66 per cent).

While Table 3.9 gives an indication of reasons why online job advertisements have been increasing, and workers are in high demand, the increase in online job advertisement may also be the result of businesses having to become more online and digital in response to the pandemic. This means that there may be some substitution of traditional job advertisements toward online.

Year/Quarter	Internet Vacancy Index		Unemployment rate	Victoria – Population change			
	Melbourne	Victoria	Greater Melbourne	Natural increase	Net overseas migration	Net interstate migration	Total change in population
2016.3	39,516	44,361	5.6	9,652	14,492	5,179	34,545
2016.4	37,379	42,425	5.7	9,347	24,517	3,155	37,019
2017.1	35,398	40,254	5.9	9,564	19,105	6,003	34,672
2017.2	38,883	44,112	6.6	10,692	31,795	5,234	47,721
2017.3	42,188	47,654	6.2	9,395	15,826	3,801	29,022
2017.4	40,962	46,582	6.3	8,304	24,565	2,930	35,799
2018.1	39,629	45,013	5.5	10,309	14,946	4,421	29,676
2018.2	44,360	50,093	5.9	10,665	30,962	3,947	45,574
2018.3	45,716	51,712	5.2	9,851	16,495	3,018	29,364
2018.4	43,451	49,493	4.8	8,695	25,574	2,599	36,868
2019.1	41,502	47,202	4.2	9,563	16,506	3,645	29,714
2019.2	41,516	47,289	5.1	10,210	30,510	3,518	44,238
2019.3	41,816	47,969	4.9	8,719	12,886	2,436	24,041
2019.4	39,340	45,568	5.1	8,178	25,930	2,030	36,138
2020.1	35,383	41,021	4.7	8,835	15,737	2,665	27,237
2020.2	20,712	24,532	6.0	9,166	21,407	590	31,163
2020.3	22,676	27,608	7.2	7,959	-2,475	-3,042	2,442
2020.4	29,518	36,243	7.2	6,165	-21,093	-3,749	-18,677
2021.1	39,534	48,088	7.2	7,804	-19,309	-6,536	-18,041
2021.2	50,578	60,397	6.9	6,893	-10,607	-4,864	-8,578
2021.3	50,178	60,155	5.2				

Source: Internet Vacancy Index, Australian Government's Labour Information Portal, ABS Population and ABS Labour Force.

Table 3.10 compares industry employment by occupation across Melbourne's North and Greater Melbourne regions. The IVI index does not directly measure job advertisements within Melbourne's North, but it is included within the broadly Melbourne job market. Melbourne's North has a relatively low level of industry employment compared to the share of Melbourne's North labour force living within the region when compared to the Greater Melbourne region. Melbourne's North had 14.6 per cent of the jobs available across the Greater Melbourne region over the 2020 financial year. The share of employment varies by occupation. The occupations that have a greater than average share (greater than 14.6 per cent) are comparatively strong occupations for the region.

The occupations within Melbourne's North that have higher than average shares of all jobs across Greater Melbourne include the following, all with over 20 per cent share of all jobs:

- Farmers and Farm Managers (29.0 per cent);
- Mobile Plant Operators (24.1 per cent);
- Automotive and Engineering Trades Workers (22.5 per cent);
- Carers and Aides (21.9 per cent);
- Factory Process Workers (21.0 per cent);
- Drivers and Storepersons (20.9 per cent);
- Hairdressers, Printing, Clothing and Wood Trades Workers (20.8 per cent); and
- Farm, Forestry and Garden Workers (20.6 per cent).

<b>IVI code</b>	<b>IVI occupation</b>	<b>Melbourne's North (no.)</b>	<b>Greater Melbourne (no.)</b>	<b>Melbourne's North share of Greater Melbourne (%)</b>
11	Chief Executives, Managing Directors & Legislators	3,017	28,531	10.6
12	Farmers and Farm Managers	865	2,979	29.0
1A	Corporate Managers	7,154	90,650	7.9
1B	Construction, Production and Distribution Managers	11,090	63,932	17.3
1C	Health, Education, ICT and Other Managers	6,067	52,553	11.5
14	Hospitality, Retail and Service Managers	14,138	93,030	15.2
21	Arts and Media Professionals	3,365	28,245	11.9
2A	Business, Finance and Human Resource Professionals	7,460	105,138	7.1
2B	Information Professionals	3,185	58,375	5.5
2C	Sales, Marketing & Public Relations Professionals	3,176	46,276	6.9
2D	Transport and Design Professionals, and Architects	6,176	44,345	13.9
2E	Engineers	4,238	36,440	11.6
2F	Science Professionals and Veterinarians	3,414	25,869	13.2
24	Education Professionals	21,675	120,850	17.9
2G	Health Diagnostic and Therapy Professionals	6,323	38,920	16.2
2H	Medical Practitioners and Nurses	15,786	98,520	16.0
26	ICT Professionals	3,673	101,793	3.6
27	Legal, Social and Welfare Professionals	6,124	52,348	11.7
31	Engineering, ICT and Science Technicians	6,774	55,655	12.2
32	Automotive and Engineering Trades Workers	11,695	52,041	22.5
33	Construction Trades Workers	16,277	87,971	18.5
34	Electrotechnology and Telecommunications Trades Workers	6,788	37,422	18.1
35	Food Trades Workers	5,336	37,122	14.4
36	Skilled Animal and Horticultural Workers	4,079	25,606	15.9
3A	Hairdressers, Printing, Clothing and Wood Trades Workers	6,747	32,511	20.8
3B	Jewellers, Arts and Other Trades Workers	1,705	13,326	12.8
41	Health and Welfare Support Workers	4,810	26,433	18.2
42	Carers and Aides	20,763	94,894	21.9
43	Hospitality Workers	5,991	49,363	12.1
44	Protective Service Workers	6,266	32,207	19.5

**Table 3.10 Employment by Internet Vacancy Index occupation (2020 financial year) – continued**

IVI code	IVI occupation	Melbourne's North (no.)	Greater Melbourne (no.)	Melbourne's North share of Greater Melbourne (%)
45	Sports, Travel and Personal Service Workers	8,033	42,050	19.1
5A	Office Managers, Administrators and Secretaries	8,405	76,991	10.9
5B	General-Inquiry Clerks, Call Centre Workers, and Receptionists	16,681	128,430	13.0
55	Numerical Clerks	9,475	82,999	11.4
56	Clerical and Office Support Workers	2,940	19,000	15.5
59	Other Clerical and Administrative Workers	8,858	60,392	14.7
61	Sales Representatives and Agents	5,008	46,925	10.7
62	Sales Assistants and Salespersons	21,716	139,042	15.6
63	Sales Support Workers	7,766	48,392	16.0
71	Machine and Stationary Plant Operators	5,436	27,291	19.9
72	Mobile Plant Operators	5,958	24,760	24.1
7A	Drivers and Storepersons	21,910	104,613	20.9
81	Cleaners and Laundry Workers	6,760	41,288	16.4
82	Construction and Mining Labourers	6,679	33,781	19.8
83	Factory Process Workers	8,938	42,601	21.0
84	Farm, Forestry and Garden Workers	1,423	6,916	20.6
85	Food Preparation Assistants	5,789	31,465	18.4
89	Other Labourers	7,216	39,013	18.5
	<b>Total</b>	<b>383,148</b>	<b>2,629,296</b>	<b>14.6</b>

Source: NIEIR.

### 3.5.1 Online job advertisements by occupation

The average number of monthly job advertisements by occupation are summarised in the following three charts where each occupation within the Melbourne region has been ranked from the greatest to least number of average monthly online job advertisements. This is one potential indication of demand for occupations from employers within the Melbourne and Melbourne's North regions. Figure 3.6 to 3.8 contain average monthly job listings for all occupations within the Melbourne region from the 2019 to 2021 financial years. The composition of occupations remains similar throughout the previous three financial years, pre- and post-pandemic, with ICT, administrative and business professional occupations near the top of most in demand occupations for each year. Health related occupations and automotive trades also remain in demand within Melbourne, which are more relevant for industry employment in Melbourne's North.

The top 10 most in demand occupations, as advertised online, are summarised in Table 3.11. These are the top 10 occupations that are most relevant to Melbourne's North. As such, in demand occupations that have higher concentrations outside of Melbourne's North have been excluded from the table. For example, the most in demand professions of ICT Professionals, and Business, Finance and Human Resource Professionals currently have a relatively

small industry workforce within Melbourne's North. Of the occupations that are relevant to Melbourne's North, these cover Health, Automotive Trades, Food Trades, Drivers and Storepersons, and Managers.

The fastest growth in online job advertisements by occupation for Melbourne over the 2016 to 2021 financial years is shown in Figure 3.9. By far, the most in demand occupation over recent years are ICT Professionals. Average monthly advertisements for ICT Professionals have been growing at 20 additional advertisements per month over the previous five years.

The second through to fifth fastest growing advertised occupations relate to health, social welfare and caregiving. These include:

- Medical practitioners and nurses;
- Carers and aides;
- Health diagnostic and therapy professionals; and
- Legal, social and welfare professionals.

The other fastest growing occupations over the past 12 months out of the top 10 are:

- General-Inquiry clerks, call centre workers and receptionists;
- Engineers;
- Automotive and engineering trades workers;
- Hospitality workers; and
- Other clerical and administrative workers.

Advertising for most of the occupational groups have grown over the past five years, however a few of the occupations have declined, on average, over the past five years. Three occupations in particular have shown notable declines in online advertising. These occupations can partly be explained by lockdowns with these occupations relating to Tourism and Personal Services, which have all be restricted at various points through 2020 and 2021:

- Hairdressing, Printing, Clothing and Wood Trades Workers;
- Sports, Travel and Personal Service Workers; and
- Sales Representatives and Agents.

While there appears to be some decline in lower-skilled work, job listings for these occupations are more likely to advertise outside of the internet (word of mouth, local newspapers, etc.).

Figure 3.10 shows the most advertised occupations over March 2020 to September 2021 (average monthly

advertisements). This shows which positions are in demand as Melbourne recovers from the pandemic. ICT Professionals remain in strong demand, while other Business-related occupations have become increasingly advertised since the start of the pandemic.

These include the following (all within top 10 out of 48):

- General-Inquiry Clerks, Call Centre Workers, and Receptionists;
- Sales Assistants and Salespersons;
- Corporate Managers;
- Business, Finance and Human Resource Professionals;
- Numerical Clerks; and
- Construction, Production, and Distribution Workers.

**Table 3.11 Top 10 average monthly job advertisements, Melbourne region**

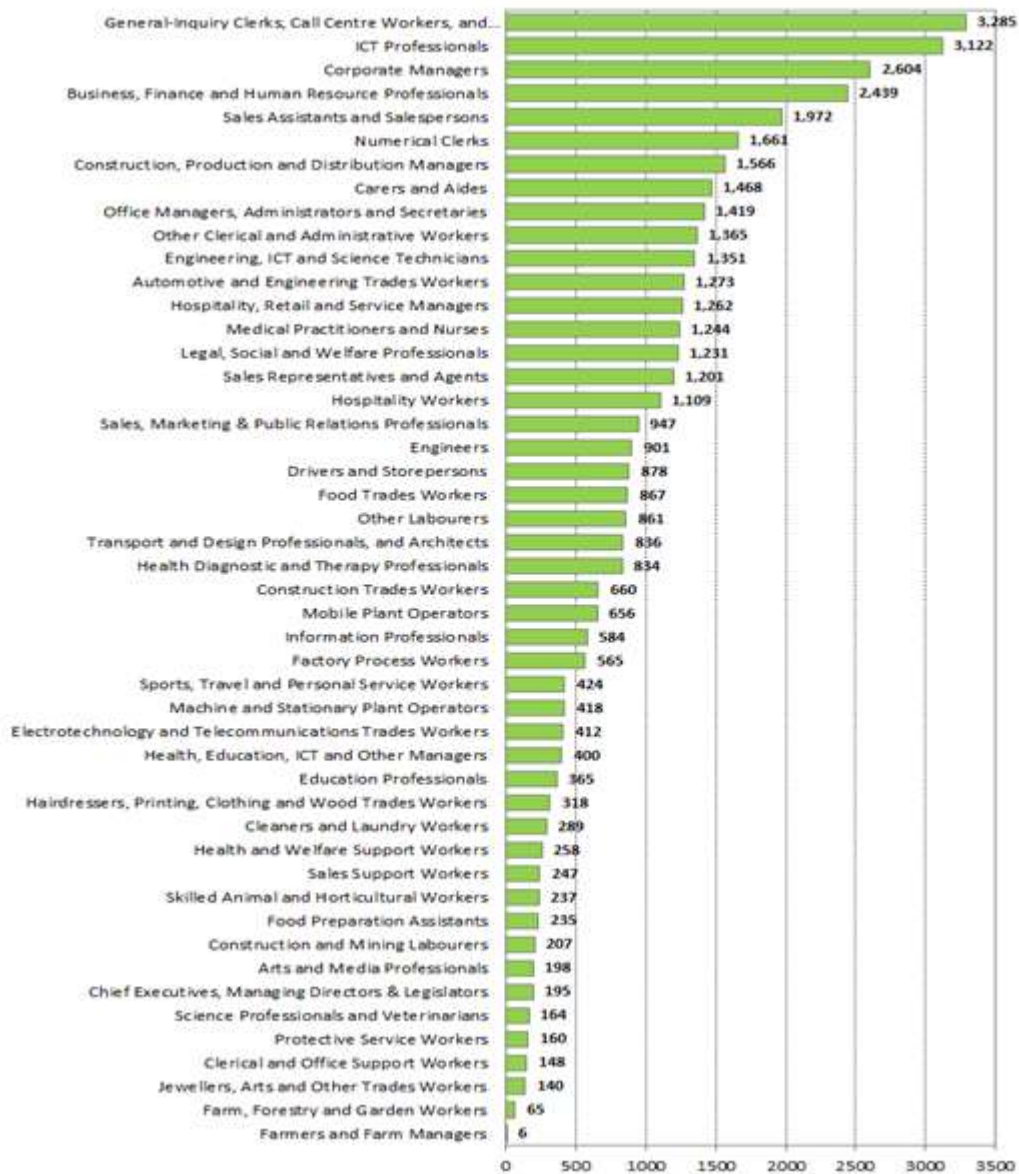
IVI code	IVI occupation	Average monthly advertisements	Rank in all occupations (out of 48)	Melbourne's North share of occupation employment (per cent)
62	Sales Assistants and Salespersons	1585	5	15.6
2H	Medical Practitioners and Nurses	1517	6	16.0
42	Carers and Aides	1482	7	21.9
2G	Health Diagnostic and Therapy Professionals	1063	10	16.2
32	Automotive and Engineering Trades Workers	1024	11	22.5
59	Other Clerical and Administrative Workers	1014	12	14.7
1B	Construction, Production and Distribution Managers	943	14	17.3
35	Food Trades Workers	909	16	14.4
7A	Drivers and Storepersons	892	17	20.9
14	Hospitality, Retail and Service Managers	889	18	15.2

*Note:* Excludes occupations where Melbourne's North has a low share of Greater Melbourne occupations.

*Source:* Internet Vacancy Index, Australian Government's Labour Information Portal.



**Figure 3.6: Melbourne, average monthly job listings by occupation, 2019 financial year**

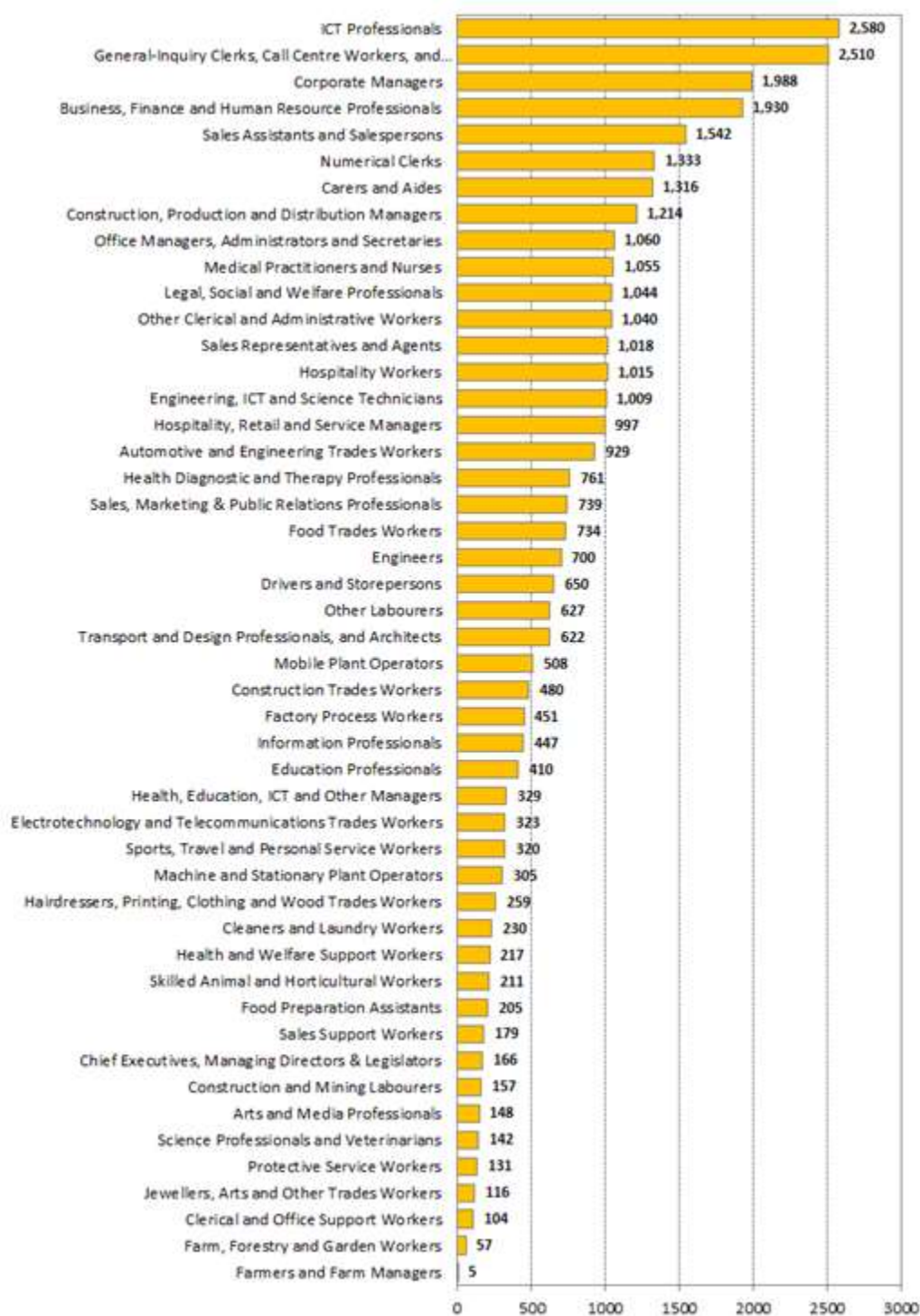


**Note:** The monthly job listings data is presented as a 3-month rolling average.

**Source:** Internet Vacancy Index, Australian Government's Labour Information Portal.



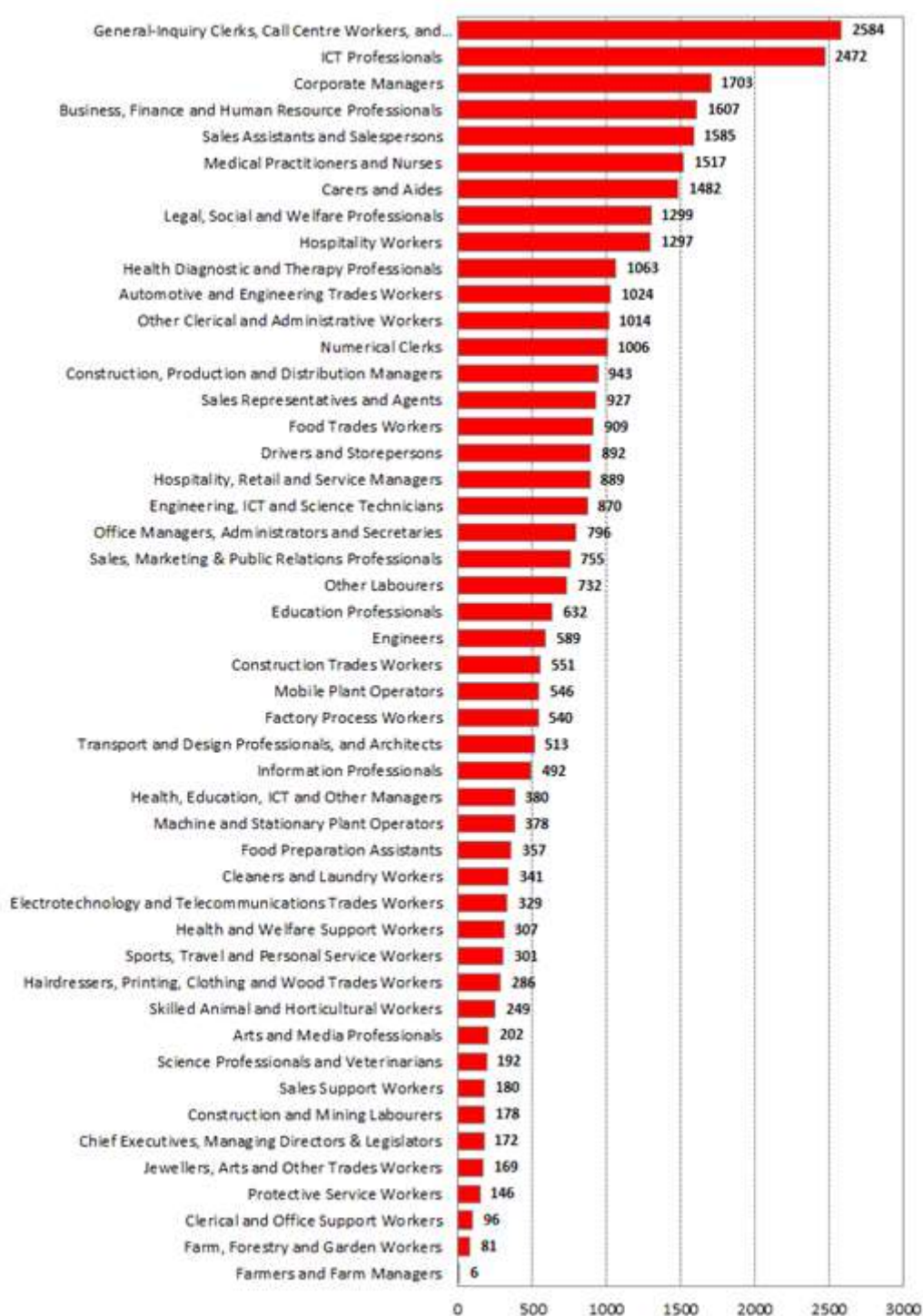
**Figure 3.7: Melbourne, average monthly job listings by occupation, 2020 financial year**



**Note:** The monthly job listings data is presented as a 3-month rolling average.

**Source:** Internet Vacancy Index, Australian Government's Labour Information Portal.

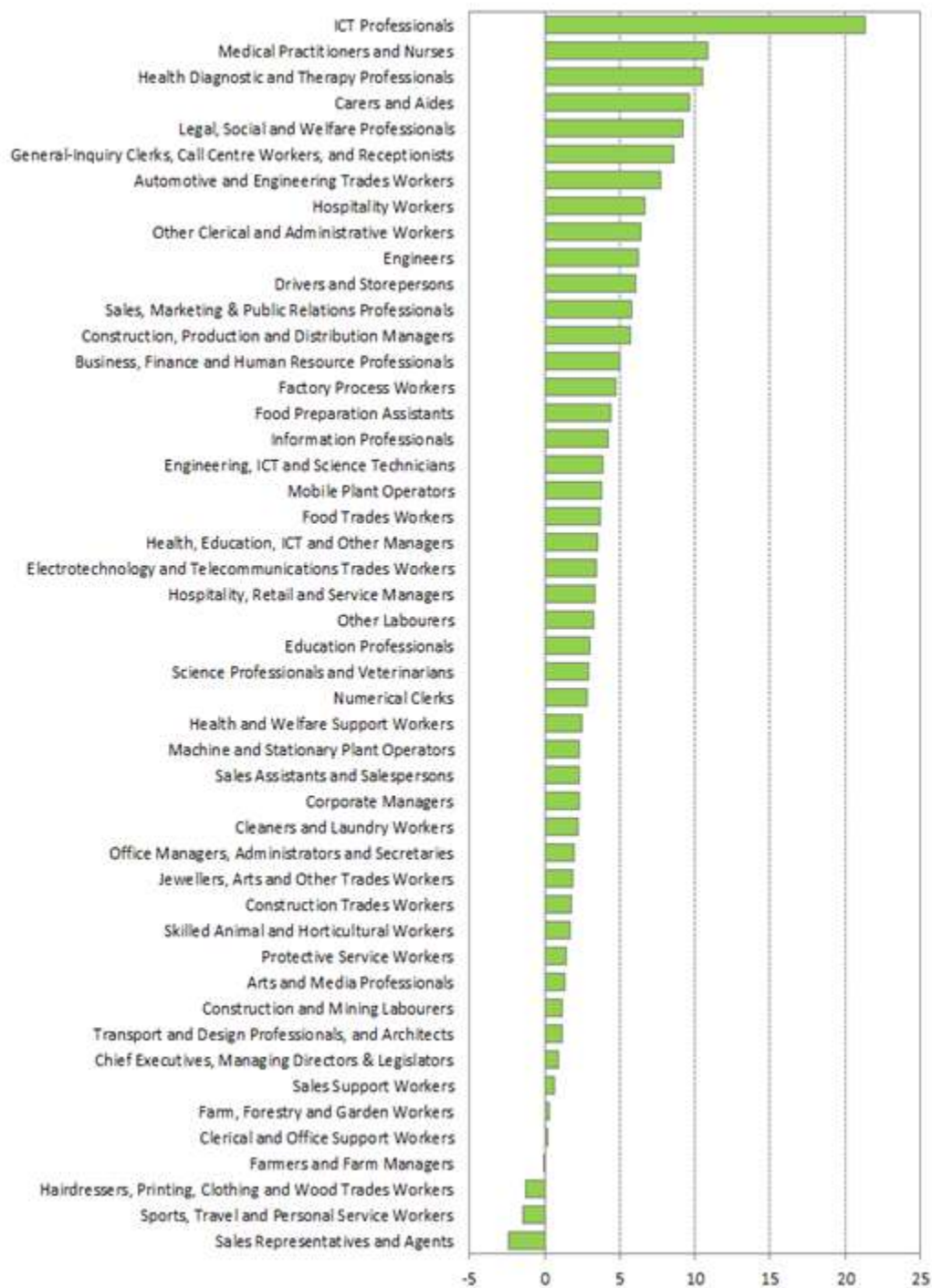
**Figure 3.8: Melbourne, average monthly job listings by occupation, 2021 financial year**



**Note:** The monthly job listings data is presented as a 3-month rolling average.

**Source:** Internet Vacancy Index, Australian Government's Labour Information Portal.

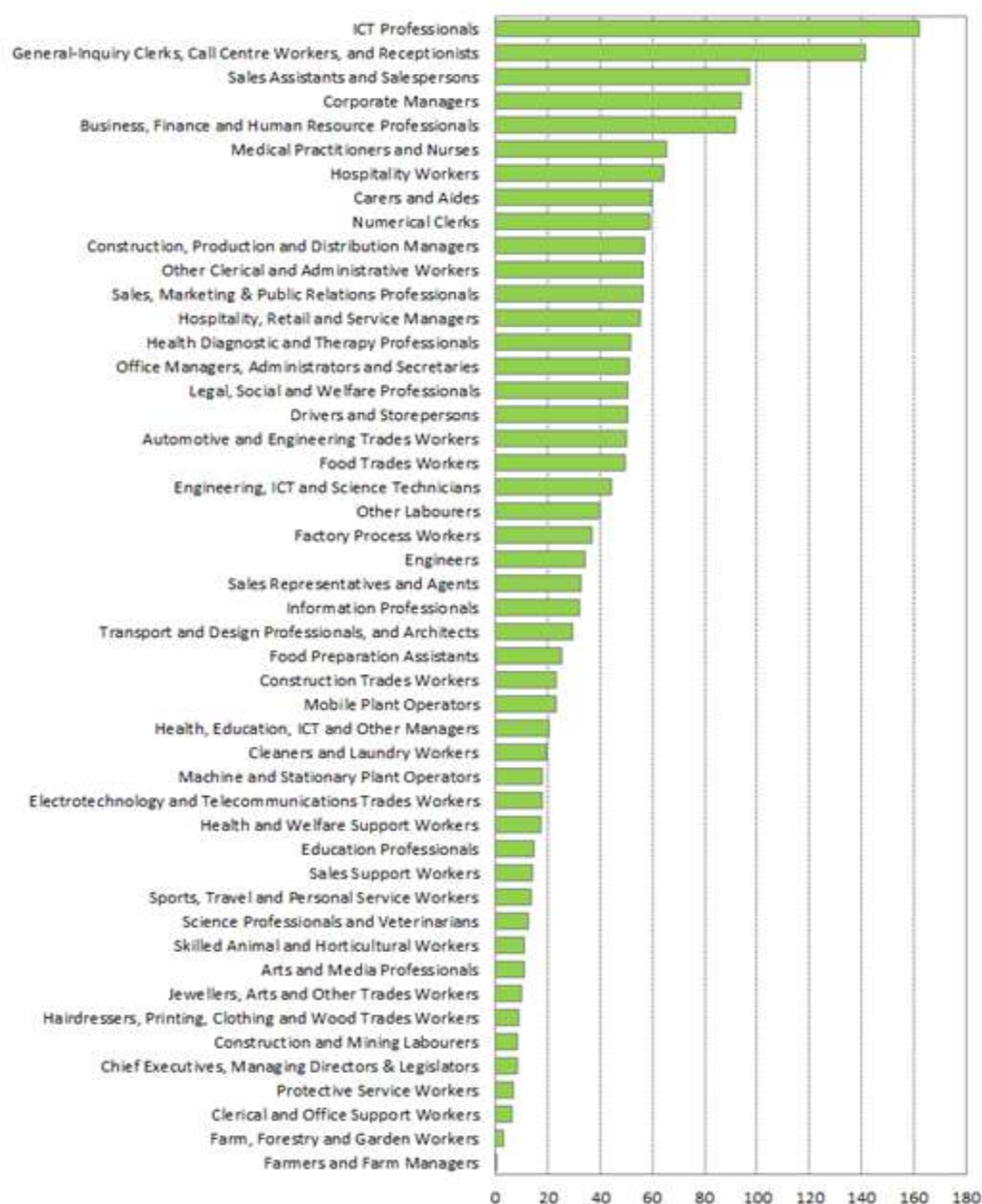
**Figure 3.9: Melbourne, fastest growing advertised occupations, 2016 to 2021  
(average advertisements per month)**



**Note:** These numbers compare the growth in the number of average monthly job listings per annum.

**Source:** Internet Vacancy Index, Australian Government's Labour Information Portal.

**Figure 3.10: Melbourne, average monthly job advertisements by occupation, March 2020 to September 2021 (number)**



**Note:** These numbers compare the growth in the number of average monthly job listings each month.

**Source:** Internet Vacancy Index, Australian Government's Labour Information Portal.

### 3.5.2 Employment by occupation

The following two charts show the corresponding total employment by occupation for each of the 48 categories that are featured in the Internet Vacancy Index for the Melbourne Region. In terms of total employment, the occupations with the highest number of employed persons within the region are:

- Sales Assistants and Salespersons;
- General-Inquiry Clerks, Call Centre Workers, and Receptionists;
- Education Professionals;
- Business, Finance and Human Resource Professionals;
- Drivers and Storepersons; and
- ICT Professionals.

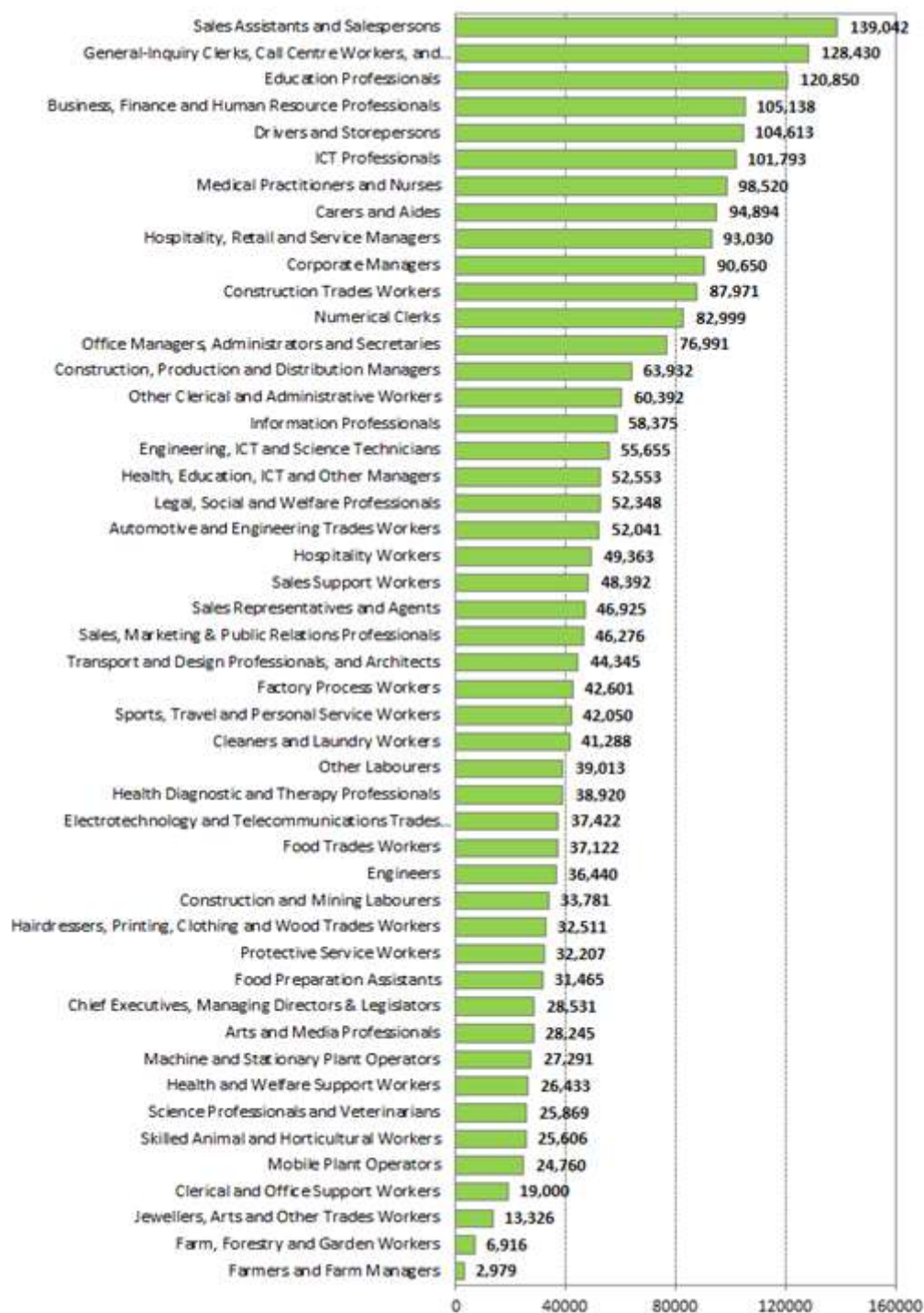


Each of these occupations have over 100,000 employed each on average during the 2020 financial year.

Figure 3.12 shows the occupations that have gained the most workers per annum over the past five years. These occupations cover Business, IT, Health and Logistics industries.

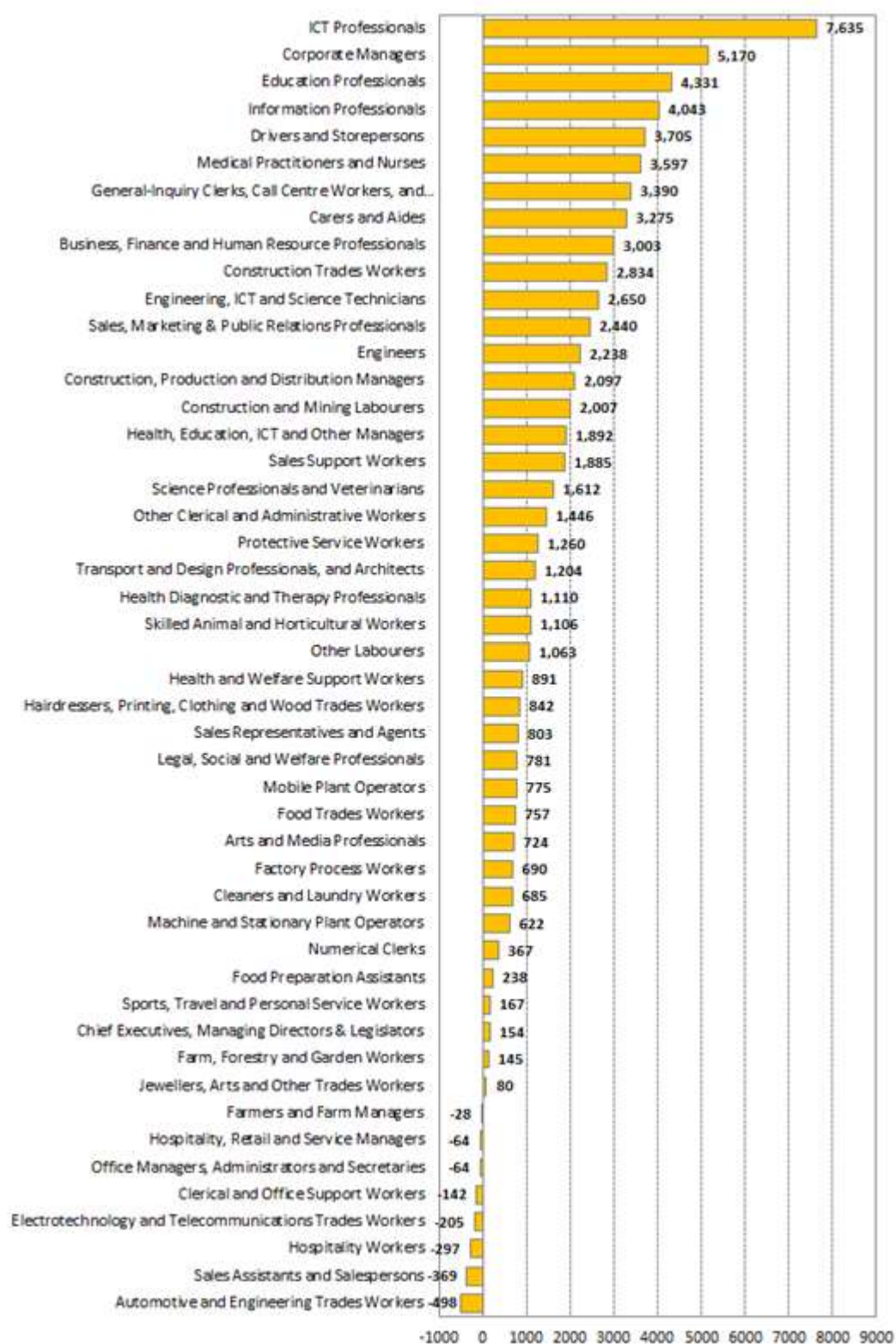
There are occupations that have large established workforces with strong employment growth over the past five years, such as Education Professionals. However, Education Professionals are largely not represented in the Internet Vacancy Index – which may imply that these jobs are increasingly important for the region, but are advertised through alternative methods.

**Figure 3.11: Melbourne, employment by occupation, 2020**



Source: NIEIR.

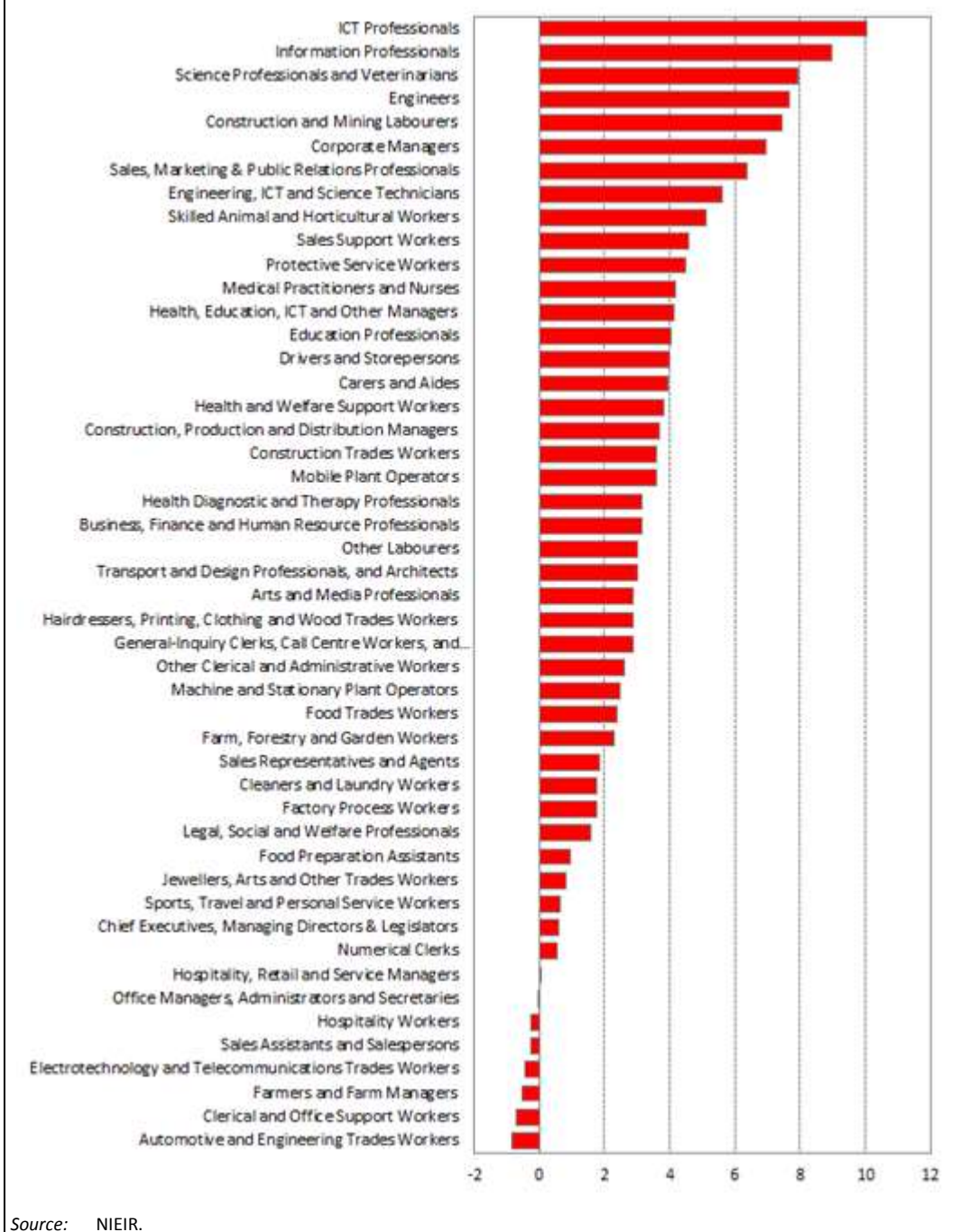
**Figure 3.12: Melbourne, fastest growing occupations, 2016 to 2020  
(number per annum)**



Source: NIEIR.



**Figure 3.13: Melbourne, fastest growing occupations, 2016 to 2020  
(per cent per annum)**



### 3.5.3 Supply and demand for workers by occupation

The following two charts compare online job advertisements to the size of the workforce for each occupation within the Melbourne region. Forty-eight different occupation groups are displayed on the charts (a hybrid classification between 2 and 3-digit ANZCO occupations).

Figure 3.14 contains a scatter plot that summarises this data with the expected (or average) job advertisements per employed person shown in the red line. This chart compares 2021 financial year IVI data to 2020 occupation data. If an occupation is above the red line, there is above average demand for this occupation within the region as implied by online job advertisements. Conversely, an occupation that falls below the red line has less demand for new workers than what would be expected from the size of employment for the occupation.

There are a number of reasons why occupations may have high demand for new workers including:

1. there is a shortfall of available skilled workers for these jobs;
2. replacement workers for a large work force; and/or
3. the occupation has a high churn rate of employees.

Typically, the larger the occupational workforce, the greater the number of online job advertisements used to recruit workers. The large occupational workforces that also have above average job advertisements include (top-right of Figure 3.14):

- ICT Professionals;
- General-Inquiry Clerks, Call Centre Workers, and Receptionists; and
- Corporate Managers.

There are also a number of other occupations that have strong demand, as measured by the IVI. The second chart in Figure 3.15 is another way of looking at the same set of data shown in Figure 3.14. This shows the percentage difference from the expected relationship (red line) between job advertisements and number within the occupation. Notable occupations identified in Figure 3.15 include (in order):

- Health Diagnostic and Therapy Professionals;
- Hospitality Workers;
- Legal Social and Welfare Professionals;
- Food Trades Workers;
- ICT Professionals;
- Mobile Plant Operators; and
- Sales Representatives and Agents;

If this analysis were performed on 2020 occupational job advertisements, ICT Professionals would be at the top of the list. But over the past year, Health Diagnostic and Therapy Professionals have become increasingly important, and occupations that are related to industries that are reopening have a relative high number of advertisements (Hospitality and Food Trades).

### 3.5.4 Summary

Table 3.12 summarises all of the indicators that have been reviewed within this section and identifies the occupations that have been within the top 25 per cent within each of the respective categories. Out of the 48 occupational categories, a total of 25 of these occupations were in the top 25 per cent in at least one of the demand measures. That means a total of 23 occupations were outside of the top 25 per cent in all categories. These indicators summarise the employed occupations in 2020, advertised

occupations in 2021 and growth in advertisements and occupations over the previous five years.

One important limitation of this analysis is that the job vacancies are not a complete measure of advertised demand for workers, but only represent the jobs that have been listed online through major online job sites. Therefore, occupational categories that rely upon conventional methods of advertisement (sign in the window, word of mouth etc.) will not be as represented in the Internet Vacancy Index as they should be if it were a complete measure of job vacancies. It is also possible that some occupations will advertise through alternative online methods outside of the big job websites, and will not cross-advertise with the big job websites.

In addition, this section only describes correlations between two variables when in reality there are many determinants of employment and demand for skilled workers. Just because there is a strong demand for occupations as measured by online job vacancies does not mean that there is conclusively high demand for the occupation (the same contrasting argument applies to a lack of demand).

The table below has been ordered with the occupations that have the greatest number of occurrences in the Top 25 per cent listed higher up in the table. There are two occupational groups that are in the Top 25 per cent of each category. These occupations have large workforces, have undergone high employment growth over the past five years and have a high number of jobs advertised. The occupations also have a higher than expected number of online job ads per employed person. These are:

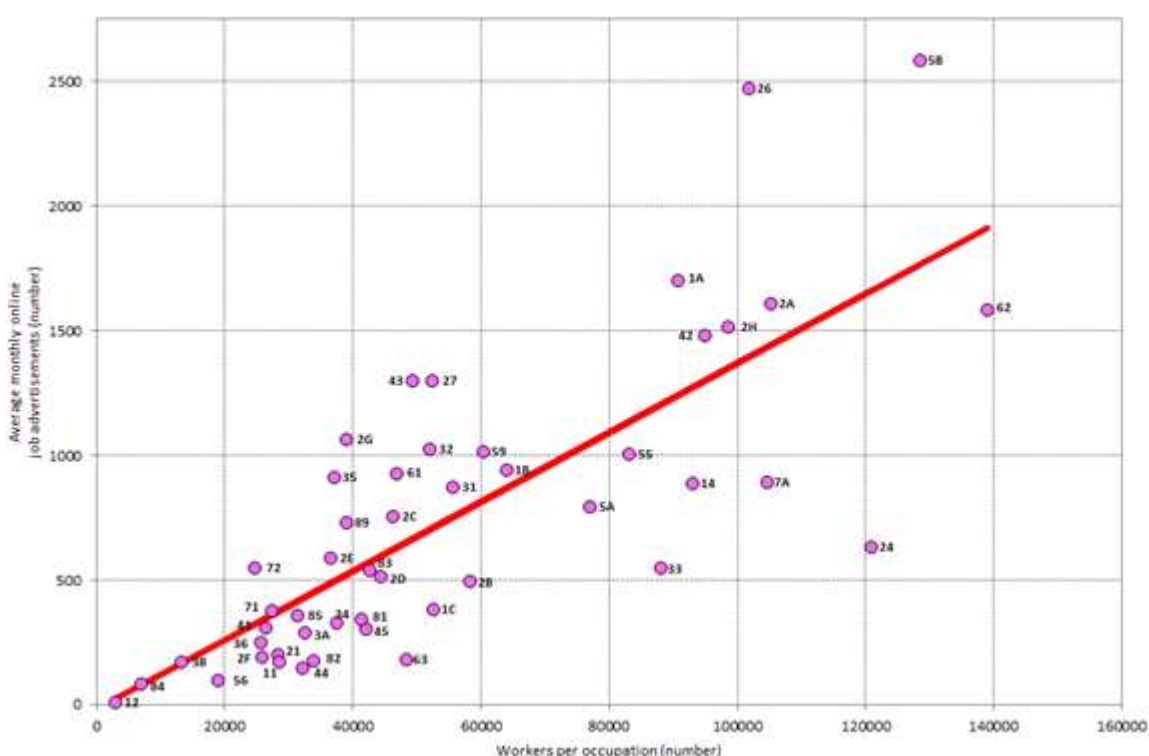
- ICT Professionals; and
- General-Inquiry clerks, call centre workers and receptionists.

Other Occupations that appear often throughout the figures in this section include:

- Corporate Managers;
- Medical Practitioners and Nurses;
- Carers and Aides;
- Other Clerical and Administrative Workers;
- Legal, Social and Welfare Professionals;
- Business, Finance & Human Resource Professionals;
- Hospitality Workers; and
- Numerical Clerks.

Table 3.12 also marks which occupations are comparatively important within Melbourne's North compared to the Greater Melbourne region. This only marks which occupations are important now, rather than trying to be prescriptive about emerging occupations or which occupations should become more important in the future.

**Figure 3.14: Melbourne, online job advertisements (2021) compared to workers per occupation (2020)**

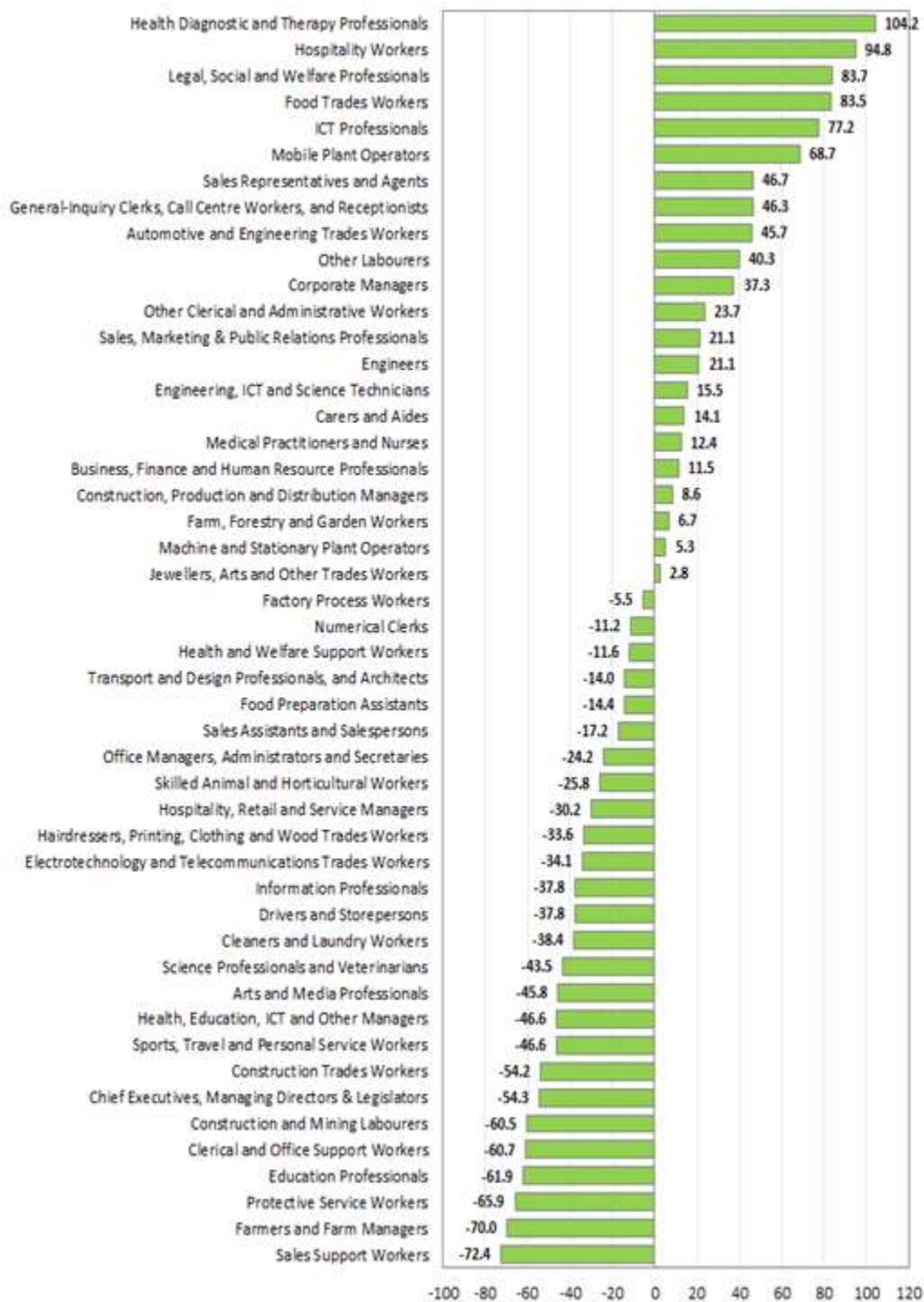


Legend:

Code	ANZSCO Occupation	Code	ANZSCO Occupation
11	Chief Executives, Managing Directors & Legislators	3A	Hairdressers, Printing, Clothing & Wood Trades Workers
12	Farmers and Farm Managers	3B	Jewellers, Arts and Other Trades Workers
14	Hospitality, Retail and Service Managers	41	Health and Welfare Support Workers
1A	Corporate Managers	42	Carers and Aides
1B	Construction, Production and Distribution Managers	43	Hospitality Workers
1C	Health, Education, ICT and Other Managers	44	Protective Service Workers
21	Arts and Media Professionals	45	Sports, Travel and Personal Service Workers
24	Education Professionals	55	Numerical Clerks
26	ICT Professionals	56	Clerical and Office Support Workers
27	Legal, Social and Welfare Professionals	59	Other Clerical and Administrative Workers
2A	Business, Finance and Human Resource Professionals	5A	Office Managers, Administrators and Secretaries
2B	Information Professionals	5B	General-Inquiry Clerks, Call Centre Workers, & Receptionists
2C	Sales, Marketing & Public Relations Professionals	61	Sales Representatives and Agents
2D	Transport and Design Professionals, and Architects	62	Sales Assistants and Salespersons
2E	Engineers	63	Sales Support Workers
2F	Science Professionals and Veterinarians	71	Machine and Stationary Plant Operators
2G	Health Diagnostic and Therapy Professionals	72	Mobile Plant Operators
2H	Medical Practitioners and Nurses	7A	Drivers and Storepersons
31	Engineering, ICT and Science Technicians	81	Cleaners and Laundry Workers
32	Automotive and Engineering Trades Workers	82	Construction and Mining Labourers
33	Construction Trades Workers	83	Factory Process Workers
34	Electrotechnology & Telecommunications Trades Workers	84	Farm, Forestry and Garden Workers
35	Food Trades Workers	85	Food Preparation Assistants
36	Skilled Animal and Horticultural Workers	89	Other Labourers

Source: Internet Vacancy Index, Australian Government's Labour Information Portal, NIEIR.

**Figure 3.15: Melbourne, online job advertisements compared to total employed in occupation**



Source: Internet Vacancy Index, Australian Government's Labour Information Portal and NIEIR.

**Table 3.12 Summary of relationship between online job vacancies and employment by occupation**

Internet Vacancy Index occupation	Total		Growth in number		Demand (job ads versus employed)	Key Melbourne's North occupation
	Employed – 2020	Online job advertisements – 2021	Employed – 2016 to 2020	Online job advertisements – 2016 to 2021		
<b>Main supporting Figure number</b>	<b>3.11</b>	<b>3.8</b>	<b>3.12</b>	<b>3.9</b>	<b>3.14</b>	
ICT Professionals						
General-Inquiry Clerks, Call Centre Workers, and Receptionists						
Corporate Managers						
Medical Practitioners and Nurses						
Carers and Aides						
Other Clerical and Administrative Workers						
Legal, Social and Welfare Professionals						
Business, Finance and Human Resource Professionals						
Hospitality Workers						
Numerical Clerks						
Sales Assistants and Salespersons						
Construction, Production and Distribution Managers						
Sales, Marketing & Public Relations Professionals						
Health Diagnostic and Therapy Professionals						
Automotive and Engineering Trades Workers						
Drivers and Storepersons						
Hospitality, Retail and Service Managers						
Education Professionals						
Engineers						
Construction Trades Workers						
Food Trades Workers						
Office Managers, Administrators and Secretaries						
Sales Representatives and Agents						
Mobile Plant Operators						
Other Labourers						

Note: **Green** = occupation is within the top 25 per cent (top 12) of the respective category.

### 3.6 Innovation measure: Hi-tech/hi-income employment in Melbourne's North compared in five industry sectors

This section describes how hi-tech and hi-income employment have changed for selected industry sub-sectors in two regions; Melbourne's North and the combined region of Melbourne's North and West, since the year 2000, and where significant synergies between

the two regions are increasingly important to both. These regions are compared to Melbourne as a whole, employment by industry is also given.

The research for this section of the report indicates that there is an excess in the workforce of hi-tech and hi-income residents in Melbourne's North and Melbourne's North and West combined regions, significant numbers of workers travel outside the two regions for employment. It is also evident that Melbourne's North continues to lag Greater Melbourne employment patterns in terms of the share of locally available jobs in Professional, Scientific and Technical Services and Computer Systems Design and Related Services. The positive side of this story is that the residents of Melbourne's North can provide the skills and



knowledge required in both hi-tech and hi-income employment for future growth in Melbourne's North industries. Better ways of connecting highly skilled locals to local jobs should be investigated.

Table 3.13 shows that, in 2020, there are significantly more residents in hi-tech/hi-income employment than there are these types of jobs in Melbourne's North. The local jobs deficit is greatest for hi-income jobs with 25,607 jobs in the region compared to 78,618 residents in Melbourne's North working in hi-income jobs. There were slightly fewer hi-tech jobs available in Melbourne's North in 2020 than there were in 2000, this is due to the wind-down and closure of the automotive manufacturing industry. The number of Melbourne's North residents working in hi-tech jobs, many in the CBD, has increased from 40,142 in 2000 to 58,805 in 2020, while the number of hi-income jobs located in Melbourne's North increased from 15,719 to 25,607 in the period.

Table 3.14 shows that for Melbourne's North and West combined, in 2020, there are significantly more residents

in hi-tech/hi-income employment than there are these types of jobs in the combined region. The local jobs deficit is greatest for hi-income jobs with 50,784 jobs in the region compared to 112,351 residents in the combined region working in hi-income jobs, mainly across Melbourne and many in the CBD. There were slightly more hi-tech jobs available in the combined region in 2020 than there were in 2000. The number of residents in the combined region working in hi-tech jobs, many in the CBD, has increased from 71,150 in 2000 to 112,351 in 2020, while the number of hi-income jobs located in the combined region increased from 28,015 to 50,784 in the period.

In 2020, the share of hi-tech jobs of all jobs in Greater Melbourne was 10.6 per cent, this compares to 7.4 per cent in Melbourne's North and 7 per cent in Melbourne's North and West combined. In 2020, the share of hi-income jobs of all jobs in Greater Melbourne was 14.1 per cent, this compares to 6.7 per cent in Melbourne's North and 7 per cent in Melbourne's North and West combined.

**Table 3.13 Hi-tech/Hi-income jobs in Melbourne's North**

	Place of Residence (UR) employment					Place-of-work (JTW) employment				
	2000	2005	2010	2015	2020	2000	2005	2010	2015	2020
Total jobs (no.)	322,878	355,687	411,070	461,255	545,828	256,281	271,131	304,248	334,481	383,148
Hi Tech (no.)	40,142	40,420	45,107	48,738	58,805	29,041	27,821	27,215	26,239	28,430
Hi Tech (%)	12.4	11.4	11.0	10.6	10.8	11.3	10.3	8.9	7.8	7.4
Hi Income (no.)	41,658	45,787	56,505	64,691	78,618	15,719	15,829	18,871	22,087	25,607
Hi Income (%)	12.9	12.9	13.7	14.0	14.4	6.1	5.8	6.2	6.6	6.7

**Table 3.14 Hi-tech/Hi-income jobs in Melbourne's North and Melbourne's West**

	Place of Residence (UR) employment					Place-of-work (JTW) employment				
	2000	2005	2010	2015	2020	2000	2005	2010	2015	2020
Total jobs (no.)	568,658	644,046	762,253	869,323	1,037,220	447,929	491,968	563,569	627,213	725,407
Hi Tech (no.)	71,150	74,203	84,121	91,654	112,351	49,245	48,586	49,120	48,158	51,070
Hi Tech (%)	12.5	11.5	11.0	10.5	10.8	11.0	9.9	8.7	7.7	7.0
Hi Income (no.)	73,807	82,957	105,889	124,445	156,391	28,015	29,356	35,475	42,079	50,784
Hi Income (%)	13.0	12.9	13.9	14.3	15.1	6.3	6.0	6.3	6.7	7.0

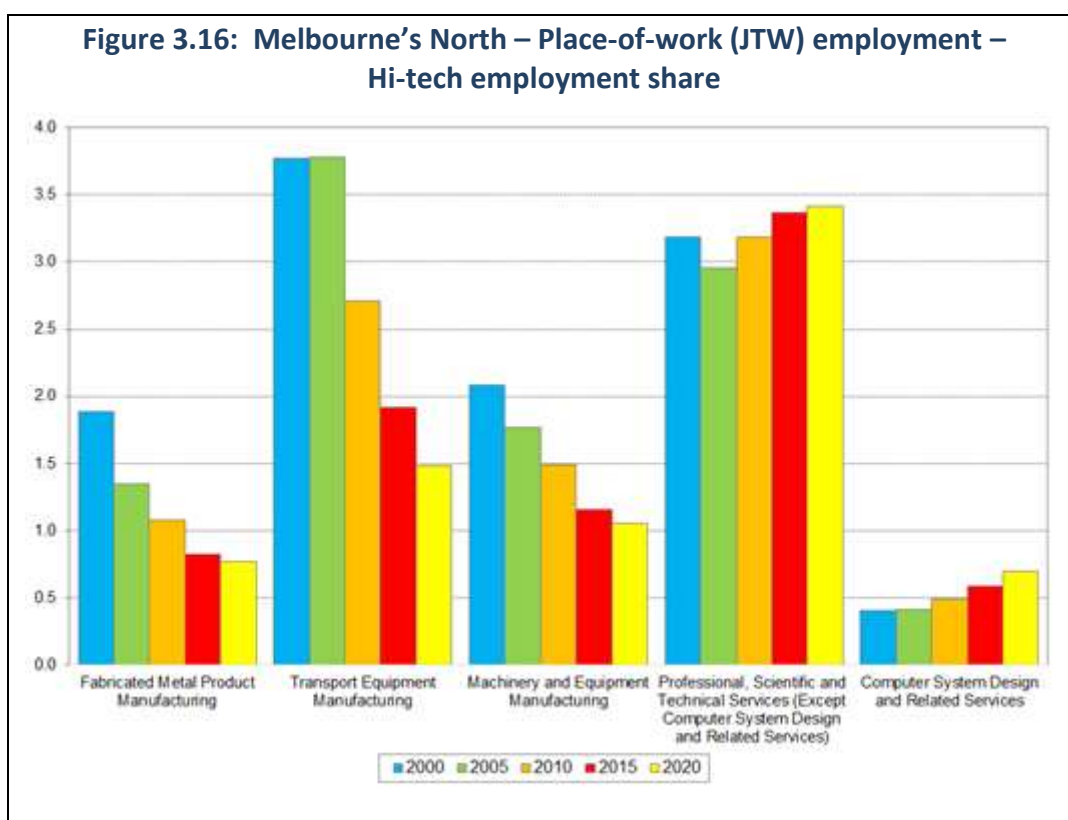
**Table 3.15 Hi-tech/Hi-income jobs in Greater Melbourne**

	Place of Residence (UR) employment					Place-of-work (JTW) employment				
	2000	2005	2010	2015	2020	2000	2005	2010	2015	2020
Total jobs (no.)	1,642,870	1,824,299	2,073,550	2,275,399	3,391,622	1,682,769	1,870,979	2,122,889	2,330,133	3,362,809
Hi Tech (no.)	224,750	238,977	264,846	280,255	353,445	229,668	244,555	270,815	286,404	356,852
Hi Tech (%)	13.7	13.1	12.8	12.3	10.4	13.6	13.1	12.8	12.3	10.6
Hi Income (no.)	254,920	281,514	338,441	375,545	470,952	258,546	286,517	344,799	382,628	474,833
Hi Income (%)	15.5	15.4	16.3	16.5	13.9	15.4	15.3	16.2	16.4	14.1

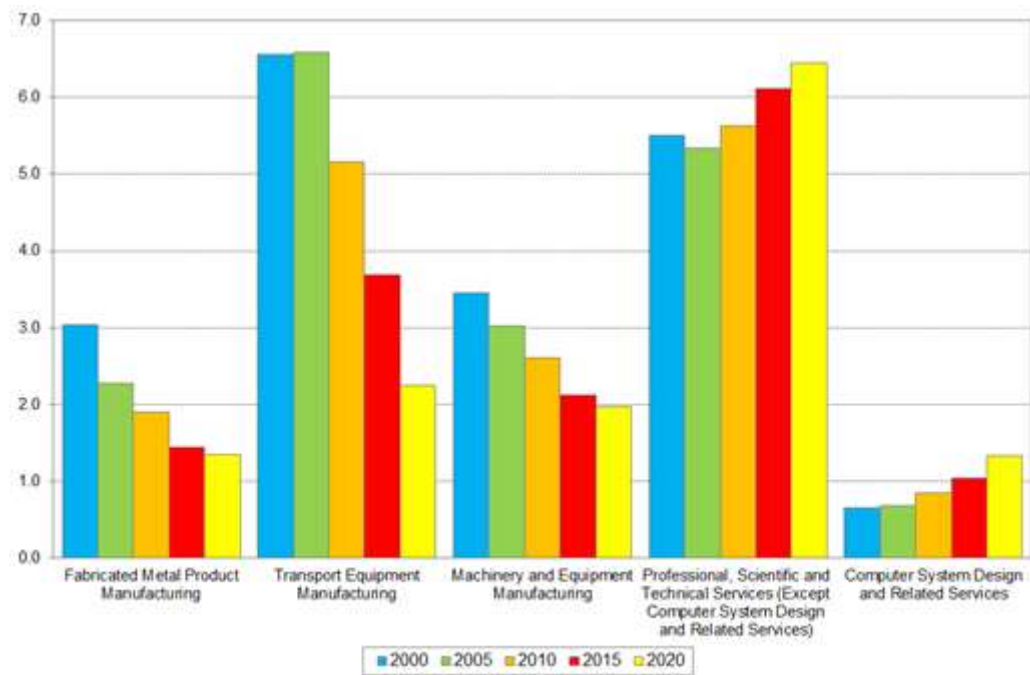


Figures 3.16 to 3.18 give the changes in hi-tech employment share 2000-2020 for five industries, Fabricated Metal Product Manufacturing, Transport Equipment Manufacturing, Machinery and Equipment Manufacturing, Professional, Scientific and Technical Services and Computer Systems Design and Related Services for Melbourne's North, Melbourne's North and West combined and for Greater Melbourne. The hi-tech employment share in the manufacturing sector has declined steadily since 2000 in both Melbourne's North and Melbourne's North and West combined region, where the manufacturing industry remains an important share of the regional economy. In contrast, in these two region types and for services, the hi-tech employment share has grown, all but slowly, and faster in the combined region.

For Greater Melbourne, Figure 3.18, the changes in hi tech employment share 2000-2020 for five industries, Fabricated Metal Product Manufacturing, Transport Equipment Manufacturing, Machinery and Equipment Manufacturing, Professional, Scientific and Technical Services and Computer Systems Design and Related Services differ in that the only sector to show growth in share of hi-tech employment in 2020 was Computer Systems Design and Related Services. This looks to be as a direct result of the impact of the COVID pandemic in creating demand for computer related services, while suppressing some parts of the Professional Services sector.



**Figure 3.17: Melbourne's North and Melbourne's West – Place-of-work (JTW) employment – Hi-tech employment share**



**Figure 3.18: Greater Melbourne – Place-of-work (JTW) employment – Hi-tech employment share**

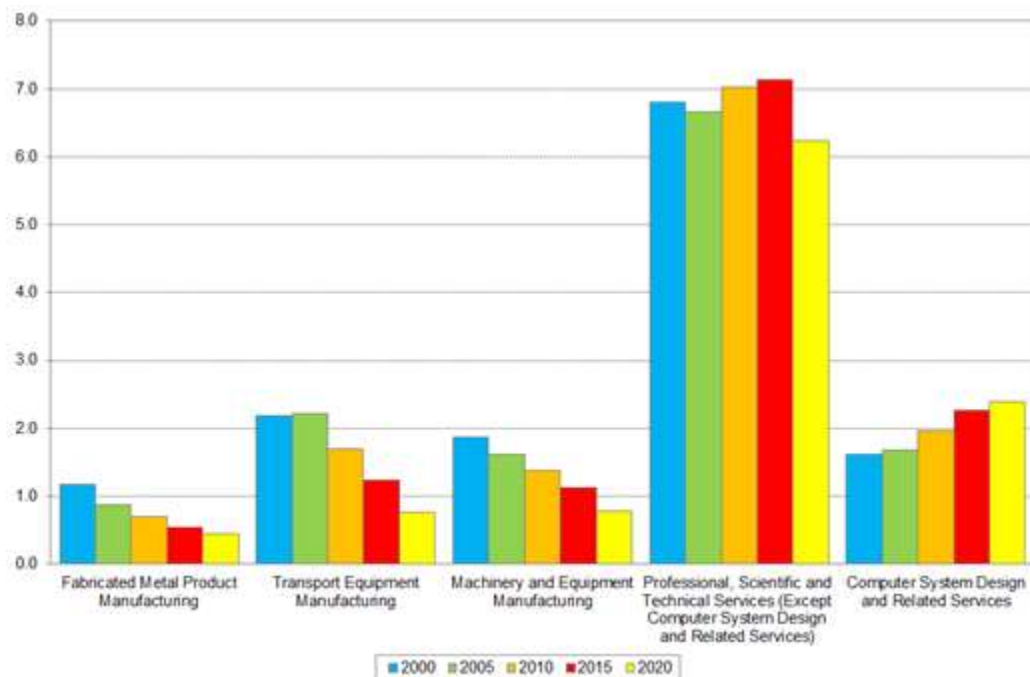


Table 3.16 gives the five selected industry sectors (2-digit ANZSIC) in Melbourne's North that are important in providing hi-tech employment. Sectors related to transport manufacturing have declined in the number of hi-tech jobs available to the region, while professional and computer related sectors have increased the number of hi-tech jobs in Melbourne's North. In 2020, Professional, Scientific and Technical Services and Computer System Design and Related Services, accounting for 15,780 jobs and a share of total employment in Melbourne's North of 4.1 per cent. Hi-tech employment in the Machinery and Equipment Manufacturing sector appears to have stabilised but still remains lower than it was in 2000.

Table 3.17 gives the industry sectors (2-digit ANZSIC) in Melbourne's North that are important in providing hi-income employment. In 2020, Professional, Scientific and Technical Services and Computer System Design and Related Services, accounted for 15,780 jobs and a share of total employment in Melbourne's North of 4.1 per cent. Administrative Services, also growing hi-income employment, provided 5,010 jobs or 1.3 per cent of total employment in Melbourne's North. Finance and Auxiliary Finance, Insurance and Superannuation Funds and Insurance Services accounted for 4,388 jobs or 1.2 per cent of total employment in Melbourne's North.

Table 3.18 gives the five selected industry sectors (2-digit ANZSIC) in Melbourne's North and West combined region that are important in providing hi-tech employment. Again the story is similar to Melbourne's North, sectors related to transport manufacturing have declined in the number of hi-tech jobs available to the region, while professional and computer related sectors have increased the number of hi-tech jobs in the combined region. In 2020, Professional, Scientific and Technical Services and Computer System Design and Related Services, accounting for 29,806 jobs and a share of total employment in Melbourne's North of 7.8 per cent. Hi-tech employment in the Machinery and Equipment Manufacturing sector appears to have stabilised but still remains lower than it was in 2000.

Table 3.19 gives the industry sectors (2-digit ANZSIC) in Melbourne's North and West combined region that are important in providing hi-income employment. In 2020, Professional, Scientific and Technical Services and Computer System Design and Related Services, accounted for 29,806 jobs and a share of total employment in the combined region of 10.7 per cent. Administrative Services, also growing hi-income employment, provided 11,275 jobs

or 4.1 per cent of total employment in the Melbourne's North and West combined region. Finance and Auxiliary Finance, Insurance and Superannuation Funds and Insurance Services accounted for 8,904 jobs or 3.2 per cent of total employment in the combined region.

Table 3.20 gives the five selected industry sectors (2-digit ANZSIC) in Greater Melbourne (all Melbourne LGAs) that are important in providing hi-tech employment. Patterns of change differ from the previous two regions, however the three manufacturing sub-sectors in Table 3.20 have all had declines in employment and consequently in hi-tech employment since 2000. The most jobs have been lost from Transport Equipment Manufacturing, while for Fabricated Metal Product Manufacturing, the number of jobs has increased since 2015. Job numbers in Machinery and Equipment Manufacturing appear to have stabilised.

In 2020, Professional, Scientific and Technical Services and Computer System Design and Related Services, accounted for 289,934 jobs and a share of total employment in Greater Melbourne of 8.6 per cent (4.1 per cent in Melbourne's North). Growth in both subsectors has been steady, near doubling employment in Professional, Scientific and Technical Services and near tripling employment in Computer System Design and Related Services since 2000.

Table 3.21 gives the industry sectors (2-digit ANZSIC) in Greater Melbourne (all Melbourne LGAs) that are important in providing hi-income employment. In 2020, Professional, Scientific and Technical Services (declining share in total employment) and Computer System Design and Related Services (growing share of total employment), accounted for 289,934 jobs and a combined share of total employment in Greater Melbourne of 8.6 per cent. Finance and Auxiliary Finance, Insurance and Superannuation Funds and Insurance Services accounted for 126,556 jobs or 3.8 per cent of total employment in Greater Melbourne. The expansion and development of Docklands in the Melbourne CBD has been important in retaining a significant Financial Services sector in Melbourne. Administrative Services, also growing the number of hi-income jobs, provided 52,283 jobs in 2020 and a 1.6 per cent share (declining) of total employment. In the last five years hi-income employment in Greater Melbourne has declined and in 2020 accounted for 14.1 per cent of total employment, this has occurred as property prices have continued to rise.

Table 3.16 Top Hi-tech industries – Place-of-work (JTW) employment: Melbourne's North					
	2000	2005	2010	2015	2020
<b>Hi-tech (number)</b>					
Fabricated Metal Product Manufacturing	4,831	3,654	3,274	2,750	2,934
Transport Equipment Manufacturing	9,661	10,247	8,236	6,405	5,680
Machinery and Equipment Manufacturing	5,343	4,786	4,532	3,864	4,037
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	8,167	8,022	9,682	11,274	13,098
Computer System Design and Related Services	1,038	1,112	1,491	1,947	2,682
<b>Total Hi-tech</b>	<b>29,041</b>	<b>27,821</b>	<b>27,215</b>	<b>26,239</b>	<b>28,430</b>
<b>Total JTW employment</b>	<b>256,281</b>	<b>271,131</b>	<b>304,248</b>	<b>334,481</b>	<b>383,148</b>
<b>Hi-tech (per cent share of total employment)</b>					
Fabricated Metal Product Manufacturing	1.9	1.3	1.1	0.8	0.8
Transport Equipment Manufacturing	3.8	3.8	2.7	1.9	1.5
Machinery and Equipment Manufacturing	2.1	1.8	1.5	1.2	1.1
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	3.2	3.0	3.2	3.4	3.4
Computer System Design and Related Services	0.4	0.4	0.5	0.6	0.7
<b>Total Hi-tech</b>	<b>11.3</b>	<b>10.3</b>	<b>8.9</b>	<b>7.8</b>	<b>7.4</b>

Table 3.17 Top Hi-income industries – Place-of-work (JTW) employment: Melbourne's North					
	2000	2005	2010	2015	2020
<b>Hi-income (number)</b>					
Coal Mining	0	0	2	29	8
Oil and Gas Extraction	3	6	33	26	30
Metal Ore Mining	51	54	77	98	82
Non-Metallic Mineral Mining and Quarrying	192	152	231	211	252
Exploration and Other Mining Support Services	150	132	251	321	58
Finance	2,507	2,263	2,363	2,329	2,413
Insurance and Superannuation Funds	415	397	459	454	578
Auxiliary Finance and Insurance Services	639	847	940	1,128	1,397
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	8,167	8,022	9,682	11,274	13,098
Computer System Design and Related Services	1,038	1,112	1,491	1,947	2,682
Administrative Services	2,556	2,844	3,342	4,270	5,010
<b>Total Hi-income</b>	<b>15,719</b>	<b>15,829</b>	<b>18,871</b>	<b>22,087</b>	<b>25,607</b>
<b>Total JTW employment</b>	<b>256,281</b>	<b>271,131</b>	<b>304,248</b>	<b>334,481</b>	<b>383,148</b>
<b>Hi-income (per cent share of total employment)</b>					
Coal Mining	0.0	0.0	0.0	0.0	0.0
Oil and Gas Extraction	0.0	0.0	0.0	0.0	0.0
Metal Ore Mining	0.0	0.0	0.0	0.0	0.0
Non-Metallic Mineral Mining and Quarrying	0.1	0.1	0.1	0.1	0.1
Exploration and Other Mining Support Services	0.1	0.0	0.1	0.1	0.0
Finance	1.0	0.8	0.8	0.7	0.6
Insurance and Superannuation Funds	0.2	0.1	0.2	0.1	0.2
Auxiliary Finance and Insurance Services	0.2	0.3	0.3	0.3	0.4
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	3.2	3.0	3.2	3.4	3.4
Computer System Design and Related Services	0.4	0.4	0.5	0.6	0.7
Administrative Services	1.0	1.0	1.1	1.3	1.3
<b>Total Hi-income</b>	<b>6.1</b>	<b>5.8</b>	<b>6.2</b>	<b>6.6</b>	<b>6.7</b>

Table 3.18 Top Hi-tech industries – Place-of-work (JTW) employment: Melbourne’s North and Melbourne’s West					
	2000	2005	2010	2015	2020
<b>Hi-tech (number)</b>					
Fabricated Metal Product Manufacturing	7,794	6,171	5,756	4,822	5,146
Transport Equipment Manufacturing	16,798	17,871	15,714	12,326	8,602
Machinery and Equipment Manufacturing	8,851	8,200	7,932	7,092	7,516
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	14,120	14,492	17,144	20,442	24,722
Computer System Design and Related Services	1,682	1,851	2,576	3,476	5,084
<b>Total Hi-tech</b>	<b>49,245</b>	<b>48,586</b>	<b>49,120</b>	<b>48,158</b>	<b>51,070</b>
<b>Total JTW employment</b>	<b>127,233</b>	<b>139,543</b>	<b>167,305</b>	<b>203,548</b>	<b>277,742</b>
<b>Hi-tech (per cent share of total employment)</b>					
Fabricated Metal Product Manufacturing	3.0	2.3	1.9	1.4	1.3
Transport Equipment Manufacturing	6.6	6.6	5.2	3.7	2.2
Machinery and Equipment Manufacturing	3.5	3.0	2.6	2.1	2.0
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	5.5	5.3	5.6	6.1	6.5
Computer System Design and Related Services	0.7	0.7	0.8	1.0	1.3
<b>Total Hi-tech</b>	<b>19.2</b>	<b>17.9</b>	<b>16.1</b>	<b>14.4</b>	<b>13.3</b>

Table 3.19 Top Hi-income industries – Place-of-work (JTW) employment: Melbourne’s North and Melbourne’s West					
	2000	2005	2010	2015	2020
<b>Hi-income (number)</b>					
Coal Mining	0	0	8	43	16
Oil and Gas Extraction	61	95	131	83	78
Metal Ore Mining	57	64	96	165	152
Non-Metallic Mineral Mining and Quarrying	330	290	421	454	448
Exploration and Other Mining Support Services	187	175	294	371	105
Finance	4,287	4,001	4,353	4,286	4,372
Insurance and Superannuation Funds	644	670	861	997	1,344
Auxiliary Finance and Insurance Services	1,033	1,444	1,738	2,408	3,188
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	14,120	14,492	17,144	20,442	24,722
Computer System Design and Related Services	1,682	1,851	2,576	3,476	5,084
Administrative Services	5,614	6,274	7,854	9,353	11,275
<b>Total Hi-income</b>	<b>28,015</b>	<b>29,356</b>	<b>35,475</b>	<b>42,079</b>	<b>50,784</b>
<b>Total JTW employment</b>	<b>127,233</b>	<b>139,543</b>	<b>167,305</b>	<b>203,548</b>	<b>277,742</b>
<b>Hi-income (per cent share of total employment)</b>					
Coal Mining	0.0	0.0	0.0	0.0	0.0
Oil and Gas Extraction	0.0	0.1	0.1	0.0	0.0
Metal Ore Mining	0.0	0.0	0.1	0.1	0.1
Non-Metallic Mineral Mining and Quarrying	0.3	0.2	0.3	0.2	0.2
Exploration and Other Mining Support Services	0.1	0.1	0.2	0.2	0.0
Finance	3.4	2.9	2.6	2.1	1.6
Insurance and Superannuation Funds	0.5	0.5	0.5	0.5	0.5
Auxiliary Finance and Insurance Services	0.8	1.0	1.0	1.2	1.1
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	11.1	10.4	10.2	10.0	8.9
Computer System Design and Related Services	1.3	1.3	1.5	1.7	1.8
Administrative Services	4.4	4.5	4.7	4.6	4.1
<b>Total Hi Income</b>	<b>22.0</b>	<b>21.0</b>	<b>21.2</b>	<b>20.7</b>	<b>18.3</b>

Table 3.20 Top Hi-tech industries – Place-of-work (JTW) employment: Greater Melbourne					
	2000	2005	2010	2015	2020
<b>Hi-tech (number)</b>					
Fabricated Metal Product Manufacturing	19,737	16,388	14,755	12,489	15,047
Transport Equipment Manufacturing	36,735	41,471	35,894	28,926	25,714
Machinery and Equipment Manufacturing	31,384	30,402	29,188	26,114	26,158
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	114,574	124,728	149,178	166,200	209,744
Computer System Design and Related Services	27,238	31,566	41,801	52,675	80,190
<b>Total Hi-tech</b>	<b>229,668</b>	<b>244,555</b>	<b>270,815</b>	<b>286,404</b>	<b>356,852</b>
<b>Total JTW employment</b>	<b>1,682,769</b>	<b>1,870,979</b>	<b>2,122,889</b>	<b>2,330,133</b>	<b>3,362,809</b>
<b>Hi-tech (per cent share of total employment)</b>					
Fabricated Metal Product Manufacturing	1.2	0.9	0.7	0.5	0.4
Transport Equipment Manufacturing	2.2	2.2	1.7	1.2	0.8
Machinery and Equipment Manufacturing	1.9	1.6	1.4	1.1	0.8
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	6.8	6.7	7.0	7.1	6.2
Computer System Design and Related Services	1.6	1.7	2.0	2.3	2.4
<b>Total Hi-tech</b>	<b>13.6</b>	<b>13.1</b>	<b>12.8</b>	<b>12.3</b>	<b>10.6</b>

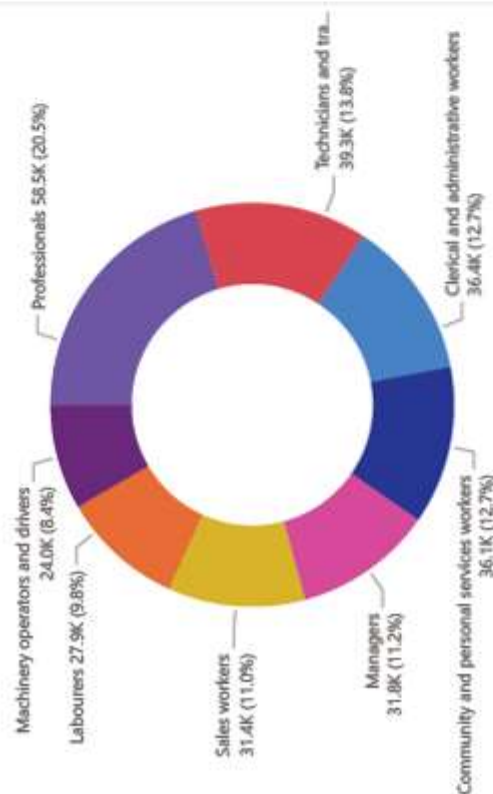
Table 3.21 Top Hi-income industries – Place-of-work (JTW) employment: Greater Melbourne					
	2000	2005	2010	2015	2020
<b>Hi-income (number)</b>					
Coal Mining	69	164	154	272	276
Oil and Gas Extraction	675	967	1,917	1,481	1,403
Metal Ore Mining	570	687	1,075	1,750	1,878
Non-Metallic Mineral Mining and Quarrying	944	825	1,055	1,007	974
Exploration and Other Mining Support Services	844	905	1,718	2,028	1,530
Finance	44,572	45,035	51,379	53,894	56,319
Insurance and Superannuation Funds	17,295	19,144	22,912	25,343	29,747
Auxiliary Finance and Insurance Services	16,812	23,744	28,681	30,649	40,490
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	114,574	124,728	149,178	166,200	209,744
Computer System Design and Related Services	27,238	31,566	41,801	52,675	80,190
Administrative Services	34,954	38,752	44,932	47,330	52,283
<b>Total Hi-income</b>	<b>258,546</b>	<b>286,517</b>	<b>344,799</b>	<b>382,628</b>	<b>474,833</b>
<b>Total JTW employment</b>	<b>1,682,769</b>	<b>1,870,979</b>	<b>2,122,889</b>	<b>2,330,133</b>	<b>3,362,809</b>
<b>Hi-income (per cent share of total employment)</b>					
Coal Mining	0.0	0.0	0.0	0.0	0.0
Oil and Gas Extraction	0.0	0.1	0.1	0.1	0.0
Metal Ore Mining	0.0	0.0	0.1	0.1	0.1
Non-Metallic Mineral Mining and Quarrying	0.1	0.0	0.0	0.0	0.0
Exploration and Other Mining Support Services	0.1	0.0	0.1	0.1	0.0
Finance	2.6	2.4	2.4	2.3	1.7
Insurance and Superannuation Funds	1.0	1.0	1.1	1.1	0.9
Auxiliary Finance and Insurance Services	1.0	1.3	1.4	1.3	1.2
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	6.8	6.7	7.0	7.1	6.2
Computer System Design and Related Services	1.6	1.7	2.0	2.3	2.4
Administrative Services	2.1	2.1	2.1	2.0	1.6
<b>Total Hi-income</b>	<b>15.4</b>	<b>15.3</b>	<b>16.2</b>	<b>16.4</b>	<b>14.1</b>



### 3.7 Melbourne's North – Occupations by 2-digit ANZSIC industry dashboards

Occupations in Melbourne's North by 2-digit ANZSIC industry		
Top 10 Industries, growth rate 2006-16		
Industry	Rate of Growth 2006-16 (% p.a.)	
<input type="checkbox"/> Distribution		
Waste management	9.30	
Building cleaning	5.60	
<input type="checkbox"/> Visitor services		
Creative arts	8.10	
Sport and recreation	5.20	
<input type="checkbox"/> Area services		
Social assistance	6.40	
Residential care	5.50	
<input type="checkbox"/> Construction		
Construction services	5.30	
Heavy and civil	5.20	
<input type="checkbox"/> Centralised office services		
Computer services	6.70	
<input type="checkbox"/> Money management		
Real estate	5.10	
Bottom 10 Industries, growth rate 2006-16		
Industry	Rate of Growth 2006-16 (% p.a.)	
<input type="checkbox"/> Manufactures		
TCF	-9.10	
Machines	-5.60	
Polymers	-5.50	
Transport equipment	-5.30	
Primary metals	-5.10	
Wood products	-3.80	
Fabricated metals	-3.30	
Pulp, paper	-3.20	
<input type="checkbox"/> Logistics		
Machinery wholesale	-4.30	
Other wholesale	-3.60	
<p>Note: Table excludes industries with less than 800 resident employees in Melbourne's North in both years.</p> <p>Source: ABS census 2006 and 2016.</p>		
Industries heavily dependent on single occupation		
Industry	Occupation	% (2016)
Creative arts	Arts profession	70
Public order	Protective services	66
Schools	Education profession	62
Hospitals	Health profession	60
Road transport	Driver	59
Auxiliary finance	Business profession	57
Social assistance	Carer, aide	57
Finance	Number clerk	56
Repairs	Mechanic	54
Building cleaning	Cleaner	53
Real estate	Sales rep	53
Industries without dominant occupations		
Industry	Occupation	% (2016)
Admin services	Business profession	11
Public administration	Carer, aide	13
Heavy and civil	Construction labourer	18
Grocery wholesale	Factory process	11
Machines	Mechanic	15
Transport support	Other clerk	17
Motor vehicle wholesale	Sales assistant	14
Basic wholesale	Specialist manager	14
Machinery wholesale	Specialist manager	16
Other wholesale	Specialist manager	15

### Occupations in Melbourne's North, 2016



### Top 5 2-digit Occupations in Melbourne's North, 2016 ('000)

Sales assistant, salesperson (5)

21.5

Specialist manager (1)

17.2

Education (1)

17.1

Carers and aides (4)

16.4

Retail manager (2)

11.2

### Top 5 Rapidly Growing Occupations

Occupation(skill level in brackets) Growth 2006-16(% p.a.)

Carers and aides (4) 6.70

Construction labourer (4.5) 5.70

Hospitality worker (4.5) 5.70

Health and welfare support (2) 5.20

Legal, social, welfare (1) 4.90

### Bottom 5 Rapidly Declining Occupations

Occupation(skill level in brackets) Growth 2006-16(% p.a.)

Personal assistant, secretary (3) -3.80

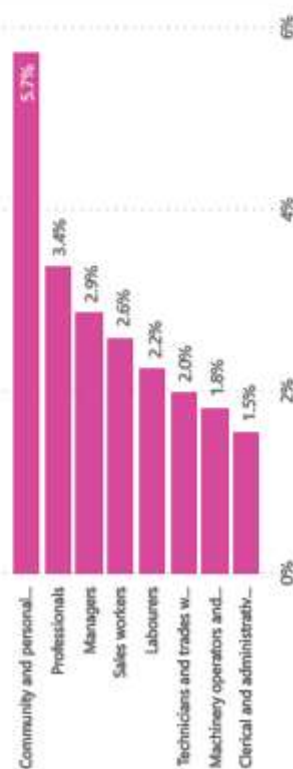
Plant/machine operator (stationary) (4) -3.40

Farmer (1) -0.80

Mechanic (automotive, engineering) (3) -0.70

Factory process worker (4.5) -0.40

### % Annual Growth (2006-16) by Occupation

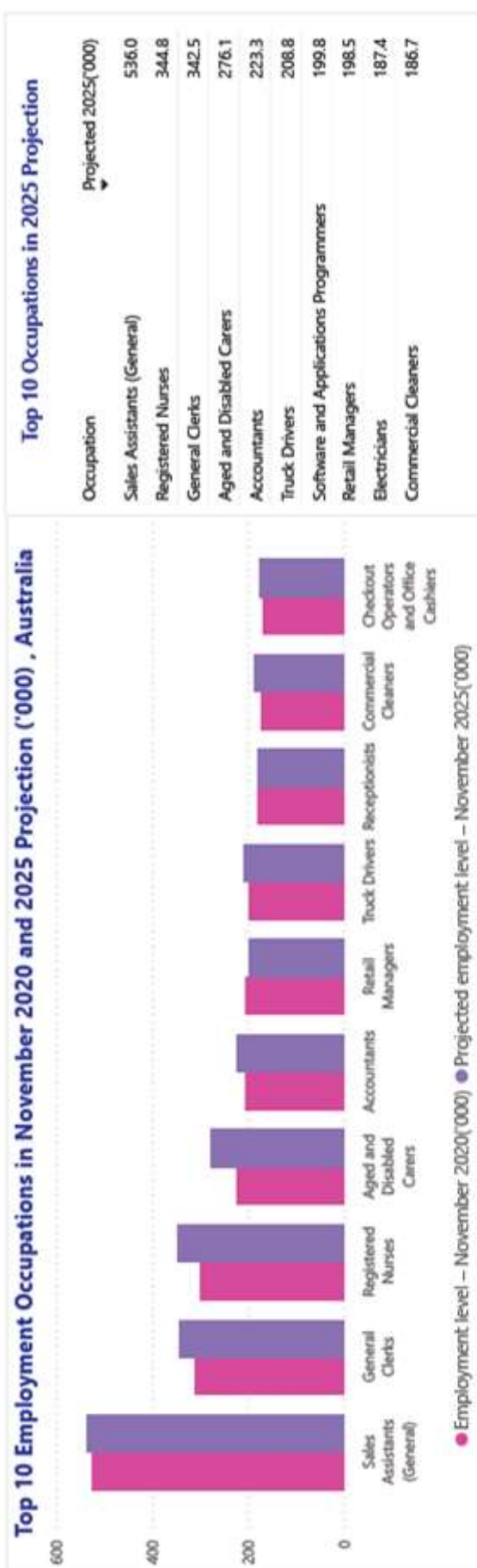


### Top 6 Occupations Most Dependent on Particular Industries, 2016

Occupation	Largest Industry	% Employed
Farmer	Agriculture	82
Hospitality worker	Food services	81
Education	Schools	74
Protective service	Police, prisons	74
Food prep assistant	Food services	72
Construction trades	Construction service	61

### Top 6 Occupations Least Dependent on Particular Industries, 2016

Occupation	Top 3 Industries (%)
CEO	14
Specialist manager	16
General clerk	19
Office manager	22
PA secretary	24
Plant operator (stationary)	26



**National Skills Commission's projections for occupation to 2025: Top 10 highest percentage growth**

Occupation group	Occupation	Employment growth (%)	Employment 2020('000)	Projected 2025('000)
Community and Personal Service Workers	Waiters	42.3	100.0	142.3
Managers	Cafe and Restaurant Managers	35.0	60.7	82.0
Professionals	ICT Support and Test Engineers	34.0	12.1	16.3
Professionals	Computer Network Professionals	30.4	49.1	64.0
Professionals	Software and Applications Programmers	30.0	153.7	199.8
Professionals	ICT Business and Systems Analysts	27.7	34.1	43.5
Professionals	Midwives	25.1	18.2	22.8
Professionals	Multimedia Specialists and Web Developers	25.0	21.7	27.1
Community and Personal Service Workers	Aged and Disabled Carers	24.7	221.4	276.1
Professionals	Welfare, Recreation and Community Arts Workers	23.1	36.1	44.4

## 4. Industry sector roundtables, findings and economic analysis including employment

### 4.1 The Food and Beverage Sector

The Food and Beverage industry is comprised of Food Manufacturing and Beverage Manufacturing with the former being the dominant industry. Food Manufacturing has been one of the fastest developing industries within Melbourne's North over the past five to ten years. The Food Manufacturing Industry has surpassed Transport Equipment Manufacturing as the largest manufacturing industry within Melbourne's North.

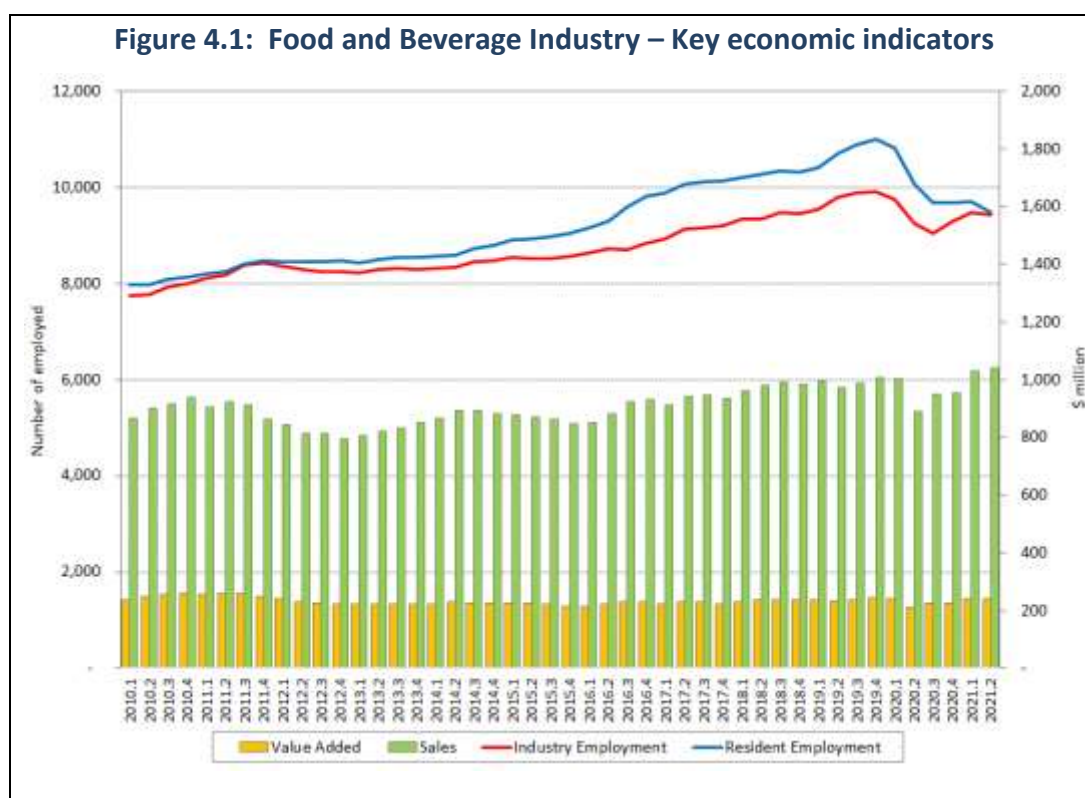
#### Key economic indicators

The Food and Beverage Industry had sales of \$3.96 billion as of 2019 with a value added component of \$953 million during 2019. The Food Manufacturing industry alone accounts for most of the economic activity with annual value added of \$891 million in 2019 compared to \$62 million in annual value added for Beverage and Tobacco Manufacturing. Combined, Food and Beverage Manufacturing industry makes up just under 20 per cent of

all manufacturing activity within Melbourne's North. Over 2014 to 2019 the industry grew by around 3.4 per cent per annum (Sales basis).

Food and Beverage Manufacturing businesses within the North employed 9,566 people during 2019, while there is a resident workforce of 10,439 people at the same time. Both the resident and industry workforces are relatively similar in size, which implies that most industry needs are met by local workers.

The Food and Beverage Manufacturing industry suffered a hit to activity with the COVID-19 pandemic with around 5 per cent of the workforce losing their jobs going into the second quarter of 2020. At the same time there were declines in value added and sales of around 13 per cent and 11 per cent from 2020.1 to 2020.2. Employment within the sector has been slow to return with levels still below pre-pandemic levels, while sales and value added are near pre-pandemic levels. Over the 2021 financial year parts of the industry continued to be hampered by lockdowns affecting customers in the Food Services industry, which flowed on to the Food Manufacturing sector.





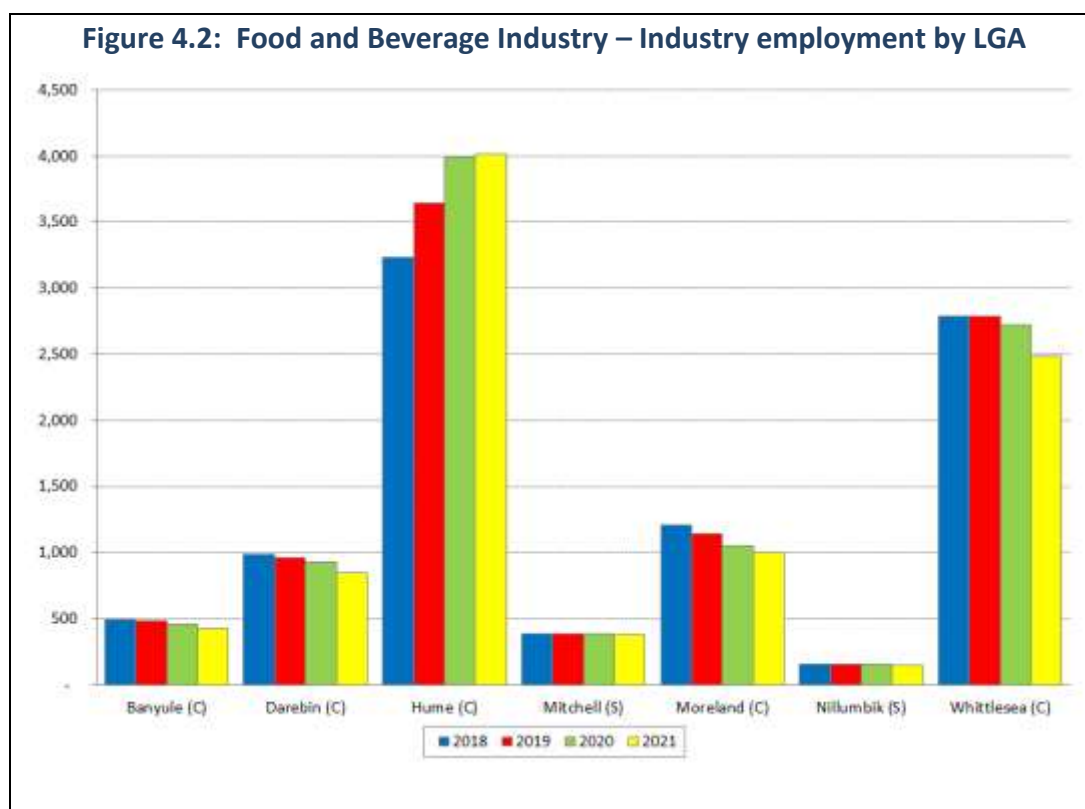
ANZSIC Code	ANZSIC Industry	2016	2017	2018	2019	2020	2021
11	Food Product Manufacturing	8,267	8,518	8,905	9,219	9,350	8,982
12	Beverage and Tobacco Product Manufacturing	343	380	352	348	349	332
	<b>Total</b>	<b>8,610</b>	<b>8,898</b>	<b>9,257</b>	<b>9,566</b>	<b>9,698</b>	<b>9,314</b>

### Employment by region

Figure 4.2 shows industry employment for each of the seven LGAs within Melbourne's North. The Food and Beverage Manufacturing industry is largely located within the newer industrial areas within the outer regions of Hume and Whittlesea, with around 2,500 to 4000 employed within each of these LGAs. Industry

employment seems to be shifting to Hume, away from Whittlesea, during the pandemic.

There are also a large number of workers within the inner regions of Darebin and Moreland with around 1,000 employed in each area.

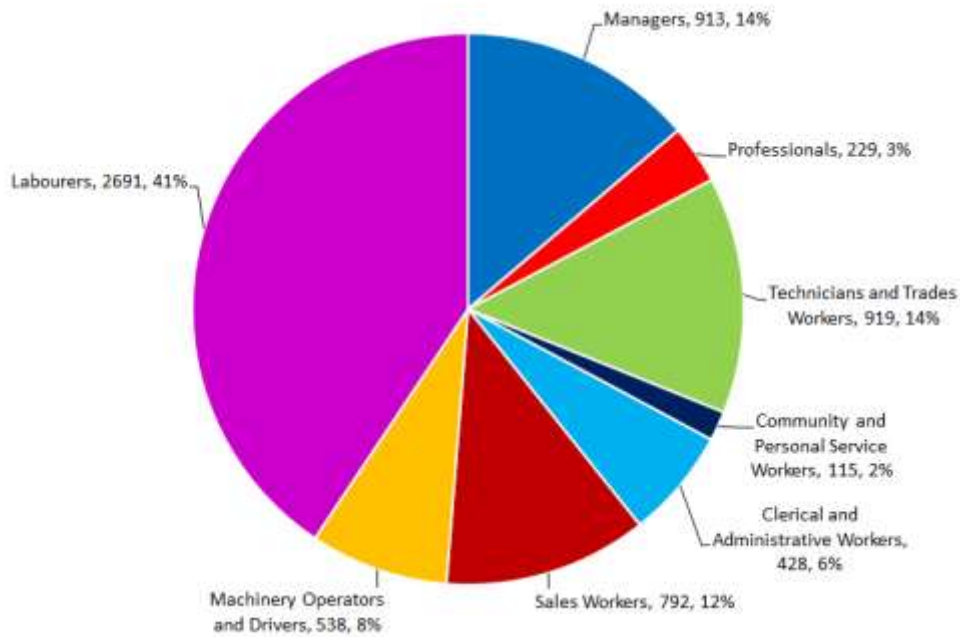


### Occupations

The workforce in Food and Beverage Manufacturing industry is largely made up of Labourers, as shown in Figure 4.3, where 41 per cent of this workforce fall within this category during 2016. Technician's and Trade Workers are the next highest category with 14 per cent of the workforce, while both Managers and Sales Workers make up 13 per cent of the workforce each.

The top 20 occupations at the sub-major group are shown in Figure 4.4, where the highest number of employees are working as factory process workers (a Labourer occupation). Foods Trades Workers, Sales Assistants and Specialist Managers also have a large number of workers, but each are significantly smaller than the top occupation.

**Figure 4.3: Food and Beverage Industry – Employment by occupation (ANZSCO major group), 2016**



**Figure 4.4: Food and Beverage Industry – Top 20 employment by occupation (ANZSCO sub-major group), 2016**



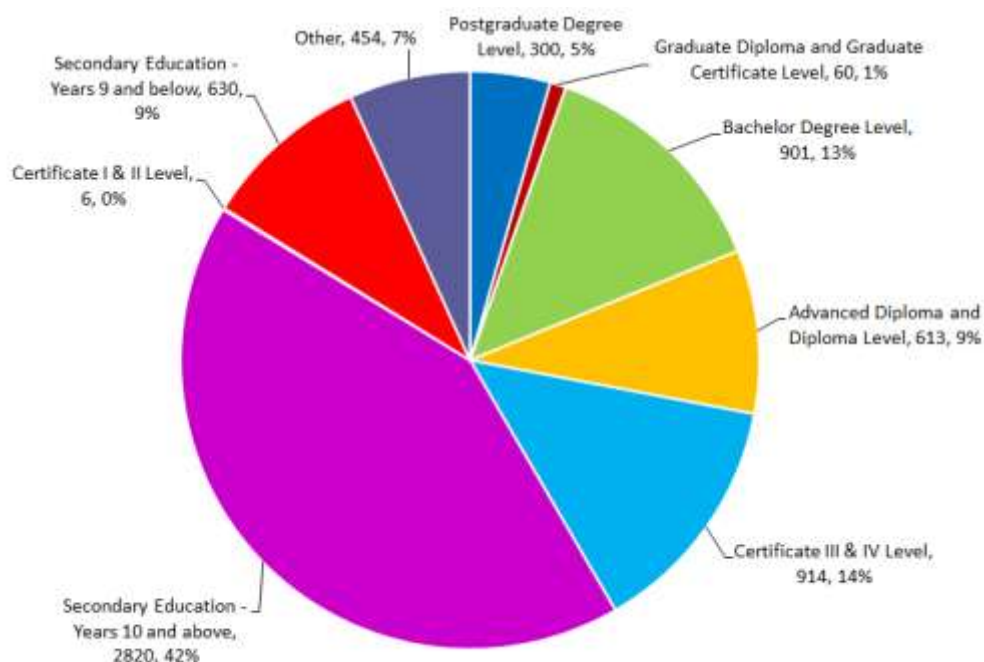


## Education and skill

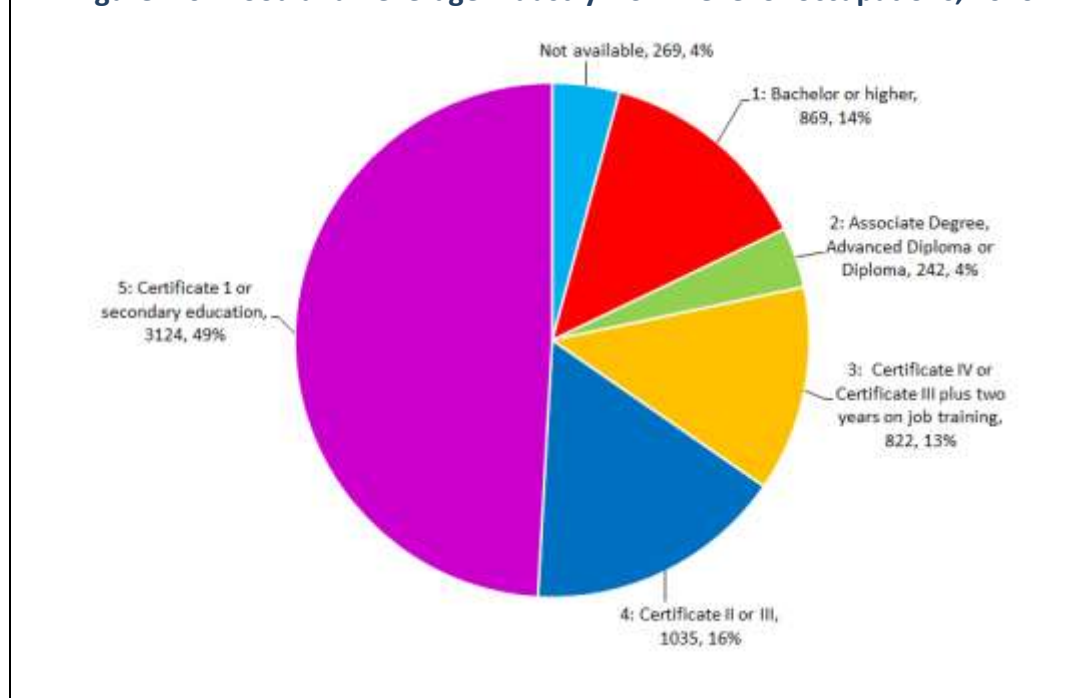
The education level of the workforce is summarised in Figure 4.5 as shown by the highest level of education attained. Overall, the largest segment of workers only have secondary level education without any further tertiary qualifications (51 per cent). While 19 per cent of the workforce have Bachelor Degrees or higher and 23 per cent of workers have vocational education at either a certificate or diploma level. The proportion of workers with tertiary qualifications at all levels is lower than the average across all industries within Melbourne's North.

The skill level required for the workforce is reflected in Figure 4.6, which shows the aggregate associated skill level of the occupations within the workforce. Overall, the level of skill required of the workforce reflects the proportion of training the workforce has received. The workforce tends to skew to lower skill occupations with around half the jobs only requiring secondary level education. The skill level is lower compared to manufacturing as a whole; and to all industries within Melbourne's North.

**Figure 4.5: Food and Beverage Industry – Highest level of education attained for those employed, 2016**



**Figure 4.6: Food and Beverage Industry – Skill level of occupations, 2016**



## Roundtable findings

### La Trobe University presentation: Northern Melbourne AgriFood Precinct

**Alison Angleton, Director of Strategic Partnerships and Research and Innovation Precinct**

The Northern Melbourne AgriFood Precinct is a new alliance between La Trobe University, RMIT University and CSIRO that will bring together significant research and innovation capacity to benefit industry. It will involve researchers and agrifood businesses, including food manufacturers and partners across the whole supply chain, to help businesses to innovate, diversify, upskill and expand.

The precinct will position Melbourne's north as a powerhouse for agriculture and food, with four key propositions:

- creating foods of the future;
- building a sustainable and resilient agrifood value chain;
- advancing innovation and innovating the food digital tech environment; and
- fostering innovation, commercialisation and business capability.

Global demand for food brings enormous opportunities, which will lead to economic benefits for Melbourne's north, and create new businesses and high value jobs. The alliance will help industry to create and capture value added opportunities. Extensive consultation with industry found that there is a need to add value to products so that

local businesses can export the value added product and avoid that value adding occurring elsewhere.

Next steps are engaging with industry, socialising ideas, seeking feedback and looking for project ideas that can be taken forward. The alliance is also working with the Department of Jobs, Precincts and Regions and seeking co-investment from the Victorian Government to commence activities.

## Markets and sales

- Our distribution business buys from suppliers and sells to the hospitality industry. In March 2020 we lost 90 per cent of our business on the spot as companies scrambled to find how they could pivot. When they found new ways of working, our business experienced a slight improvement.
- Each lockdown gets harder and harder. At the moment we are sitting at more than 70 per cent below what we thought we'd be doing.
- Lockdowns are getting tougher. This is the sixth – people have less money or are reluctant to spend the money they have, so that impacts on food businesses. Loss of JobKeeper has made a big difference.
- For a distributor it's very difficult. We buy stock from our suppliers but then there's a lockdown and we're left holding stock – there's nobody to sell it to. Customers don't pay for what they've ordered.

- As a dairy, we are also distributors and suppliers. We are fortunate in that we are 80 per cent hospitality and 20 per cent manufacturing. During the long lockdown in 2020 we moved to the opposite – almost 80 per cent manufacturing because everyone was stripping supermarket shelves bare. But that isn't happening this time around, although we are still selling to restaurants and hospitality venues in outer suburbs. Our volume of sales has dropped 60-70 per cent over where we should be. We are on average 33 per cent down on sales to Sydney and 36 per cent down on sales in Melbourne. That's on top of the 25 per cent we were down previously.
- The waste we are experiencing is extraordinary. We don't know how to get rid of it all.
- Labour planning is impossible. We don't know how long things are going in for. We don't know whether to move to 3 days, 4 days or 5 days a week – or not.
- Ordering ingredients in advance is a problem too.
- We only received JobKeeper for 4 months because we were able to pivot and couldn't prove a 30 per cent downturn. We couldn't access any grants either. And the process you have to go through to get grants is arduous.
- We supply the hospital sector. We kept trading last year at 30 per cent of our previous levels but things bounced back this year when hospitals recommenced surgery and other treatments.
- Prices are going up throughout the supply chain. A lack of stability in the supply chain has meant we need to stockpile things like packaging and ingredients because there's no reliability any more. Price rises make things extremely difficult for us as we contract to hospitals on a fixed price basis.

### *Business models and work practices*

- Employing casual staff is a risk these days. Normally we employ people on a casual/part-time basis to see how they work out but we can't do that now. It's dangerous to have employees who are working across multiple sites. So we've put people on full-time hours and now we have more labour than we really need.
- A lot of predictions about emerging trends focused on more use of contract labour, but that hasn't happened. Now more people are hiring permanent, full-time staff.
- Remote working has had a huge impact on workflow and disrupted business processes. But it's really affected managers. They now need to find ways to engage, monitor and support employees who are working remotely. Previously managers set

the terms for the working relationship but now the power has switched to the employee. It's a trend that is entrenching itself and businesses need to have a system for managing this.

- We're a TAFE institute and we're seeing labour shortages across all industries, particularly in hospitality. We manage four cafes and are struggling to find staff. We've had to pay above award wages to attract people.
- With a lockdown, we had to throw out \$5000 worth of product and then within a few days we had to buy \$5000 worth of product again.
- The ebb and flow of customer demand is very challenging.

### *Vulnerability of businesses*

- Lockdowns need to stop. The longer they go on, the greater the difficulties that businesses face. There are a lot of businesses in real trouble. Many will close and not come back.
- It's hard for distributors too. We buy stock in for specific customers and when there's a lockdown, they don't want the stock. But then as soon as things reopen they expect us to have everything available and ready to go. We can't possibly hold all that stock. Then we have trouble getting products quickly from manufacturers.
- Minimum order requirements from suppliers are also a huge barrier in this environment. Some of the big companies have been brutal about this.
- Capacity to reinvent is critical. Some smaller businesses have been really innovative in adapting to the new environment and others could take note of what works.

### *Impact on jobs/jobs and skills required*

- As a TAFE institute, we're finding that employers in our Agriculture, Food Manufacturing and Horticulture sectors are struggling and unable to release students for training.
- The biggest concern local employers face is compliance and OHS regulations. Meeting all these is a real burden.
- As business consultants we're finding that there are some roles in high demand – supply chain, sales and finance, supported by engineering and operations roles. And businesses aren't spending time planning. Sales are becoming more sophisticated, supply chains are continuing to sophisticate and accountants are keeping control of cash flow. That's where the jobs are.

- Our staff are struggling with lockdowns and underperforming. They have issues with home schooling, with managing family issues. They've been overstretched for months because we couldn't get casuals. It's hard to get work out of people. They're overtired, over COVID and worried about how they're going to get their families through it.
- I haven't been able to find an HR person and still haven't filled a warehousing/logistics role despite having 26 interviewees.
- It's a lot harder to keep teams together and keep standards up.
- Compliance around COVID is huge and a big drain on resources.
- The impact on leadership has been profound. Old ways are not standing the test. Management has had to re-educate, reinform and readjust.

### *Age*

- We usually have a 70 per cent male, 30 per cent female response for production jobs. But a job I advertised recently had an 80 per cent response rate from females. That's new.
- For driving positions, we always have a higher percentage of older men applying.
- We normally have trouble attracting older people but lately we haven't seen a shift in the age of people applying to work with us.
- I'm not seeing young people applying for process roles. We had some young people apply for admin positions pre-COVID but they were disastrous. There was a lack of commitment and their expectations about salary were unrealistic.
- Our process workers are all 38+.

### *Skills for the future*

- We find companies are not looking ahead for the skills they might need as the business evolves, particularly in regard to issues like succession planning and the impact of new technologies.
- We're keen to become more digitally capable and are interested in hosting a student project in the digital space. As a medium sized business we can't find an affordable, effective system suitable for us. Products seem to be designed for big companies or for start-ups. Mid-market businesses like ours miss out.
- It might seem basic, but I'm seeing a lack of email etiquette and knowledge of the Microsoft Office suite of products. When people move from trades

into sales or other areas, they don't have the computer skills they need to carry out their work professionally.

- In warehousing and logistics, I'd like to see a bigger focus in Certificate IV on things like forklift driving, receivable goods logistics and Lean Six Sigma.

### *Jobs that will go in the short term*

- Increased mechanisation will put unskilled production worker roles at risk.

### *Training*

- We can't see the numbers of unskilled employees going down too far, although we might want to upskill and train good staff.
- My experience with RTOs has been beyond a joke. I don't think anybody benefited other than ending up with a bit of paper. Very few lifted talent. Factory floor training wasn't customised to what they do every day, so staff learned things and then forgot about them.
- Safety, OHS and chemical handling training was good; that was customised.
- Training should definitely be customised to a particular industry, otherwise it isn't worthwhile.
- In-house training is much better for us. We don't have to factor in travel time to a training site or replace them on a shift.
- Customising training for industry comes at a cost and has to be cost-effective for both the RTO and the industry.
- The current system is supply driven and it needs to be demand driven.
- There's an assumption that people want to be trained, and that's not always true. If staff are not motivated to learn, the training won't stick and it won't be beneficial.

### *Industry links with TAFE and universities*

- The new collaboration between La Trobe University, RMIT University and CSIRO sounds like a great idea. Our business would be particularly interested in foods for the future and adopting digital technology.

### *Compliance*

- The ongoing need for compliance is difficult, and it just keeps coming. The NPC catalogue for qualifications and policies didn't work. I can't keep

paying and producing every time I do a tender. I don't get to work on my business. The compliance requirements never end. There are so many and half of them overlap.

- There needs to be a way to centralise and standardise requirements like HACCP, SQF, Dairy Safe and more – every audit costs us tens of thousands of dollars. We need to have one qualification that we can be audited on. The system definitely needs to be simplified.
- I have seven people in my QA department and four of them work full-time on compliance.

## 4.2 The Business, Professional and Digital Services Sector

Employment for the Business, Professional and Digital Services industries are mostly located within the inner regions of Melbourne, in particular the CBD and surrounding areas. As such, many workers that are employed within the industry commute into the city from the North, while the local industry is much smaller in terms of employment.

This section reviews the following industries:

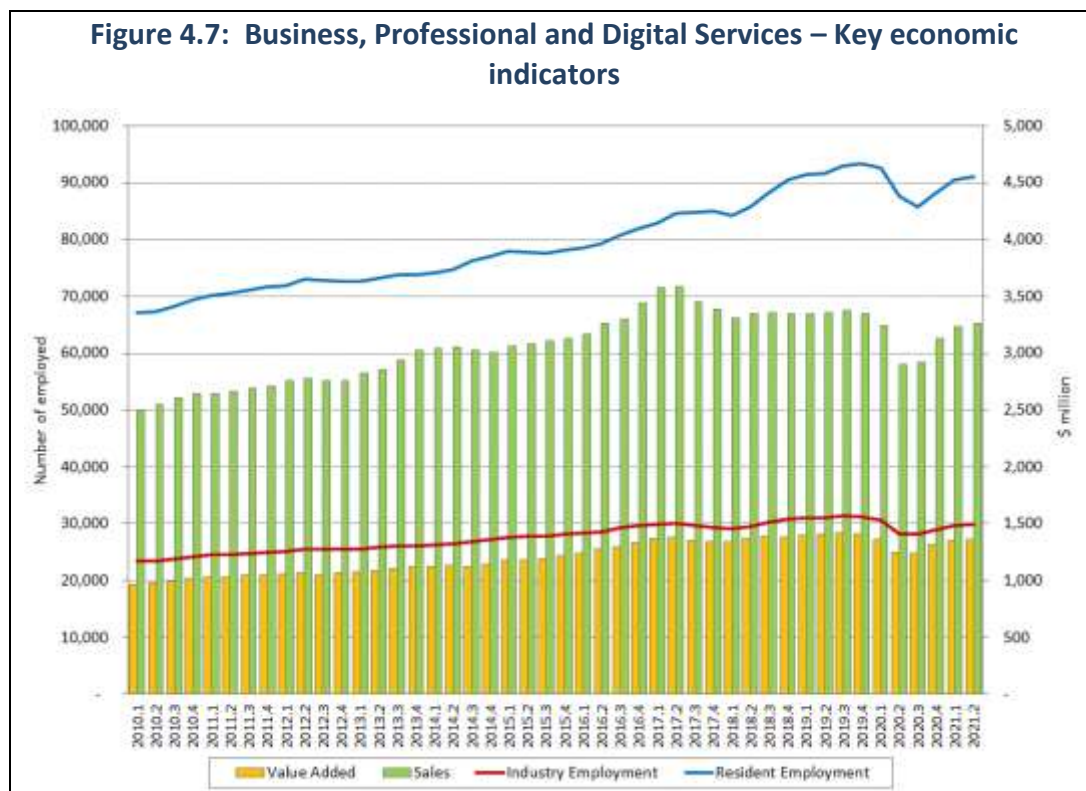
- Information Media and Telecommunications (partially);
- Financial and Insurance Services;
- Rental, Hiring and Real Estate Services;
- Professional, Scientific and Technical Services; and
- Administration Services.

### Key economic indicators

Business, Professional and Digital Services within Melbourne's North have sales of around \$3.4 billion per quarter, or \$13.5 billion annually in recent years. The industries have a relatively high proportion of value added, contributing around \$5.6 billion annually to the local economy. This accounts for around 14 per cent of annual economic activity within Melbourne's North. Over the past ten years the industries have grown by around 2.7 per cent per annum, which is at a similar rate to the 2000's decade.

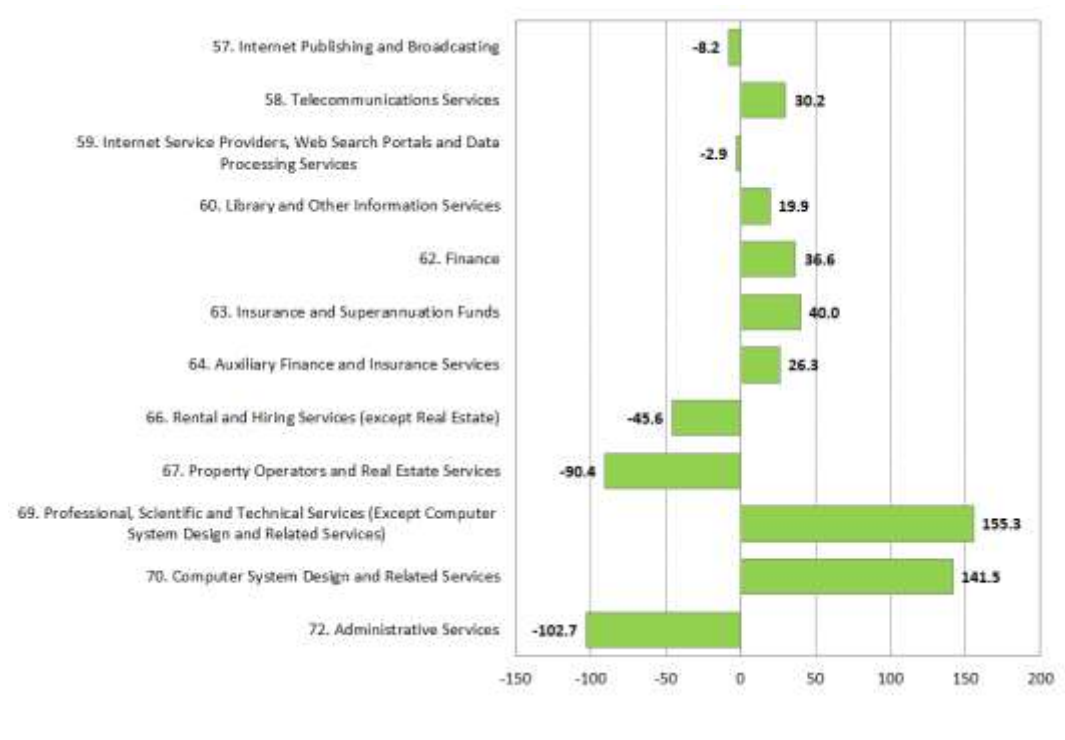
Those that work in the Business, Professional and Digital Services industries are largely commuting to regions outside of the North. Local industry, up until the end of 2019, employed around 31,000 workers. While Melbourne's North has a resident workforce of around 93,000 persons during 2019. This implies a net worker outflow of around 62,000 persons for Melbourne's North with many of these jobs located with Melbourne's CBD and surrounding inner suburbs.

The majority of employment within these industries are from Professional, Scientific and Technical Services with a workforce of around 13,000.





**Figure 4.8: Business, Professional and Digital Services – Average annual change in employment, 2016 to 2021 (number)**



**Table 4.2 Industry employment for Business, Professional and Digital Services industries – 2016 to 2021 (financial year)**

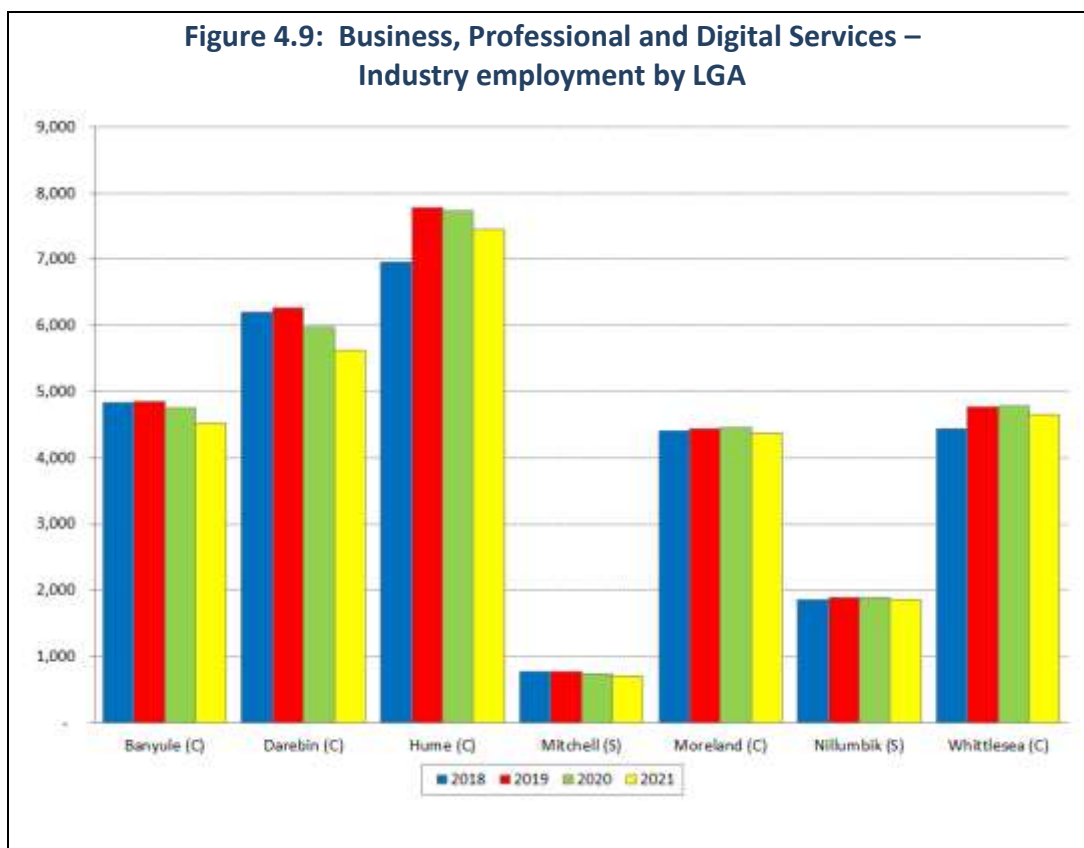
ANZSIC Code	ANZSIC Industry	2016	2017	2018	2019	2020	2021
57	Internet Publishing and Broadcasting	50	11	20	31	13	10
58	Telecommunications Services	1,012	1,015	1,047	1,237	1,199	1,163
59	Internet Service Providers, Web Search Portals and Data Processing Services	164	124	117	127	141	150
60	Library and Other Information Services	316	303	278	354	389	415
62	Finance	2,316	2,530	2,449	2,478	2,500	2,499
63	Insurance and Superannuation Funds	447	473	480	501	592	647
64	Auxiliary Finance and Insurance Services	1,200	1,296	1,304	1,341	1,365	1,331
66	Rental and Hiring Services (except Real Estate)	1,170	1,212	1,086	1,097	1,054	942
67	Property Operators and Real Estate Services	3,267	3,379	3,102	3,118	3,073	2,815
69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	11,702	12,397	12,459	12,925	12,698	12,479
70	Computer System Design and Related Services	2,051	2,160	2,445	2,627	2,684	2,758
72	Administrative Services	4,507	4,846	4,691	4,934	4,635	3,994
	<b>Total</b>	<b>28,202</b>	<b>29,746</b>	<b>29,476</b>	<b>30,771</b>	<b>30,342</b>	<b>29,202</b>



## Employment by LGA

The distribution of employment across the Northern region is fairly wide spread, with the exception of the smaller populated LGAs of Mitchell and Nillumbik. Hume City Council has the largest workforce in Melbourne's North with a workforce of 7,733 over the 2020 financial

year, followed by Darebin with 5,968, Banyule and Whittlesea each have a workforce of around 4,800, while Moreland has 4,455. Professional, Scientific and Technical Services is the largest employing industry within each region.

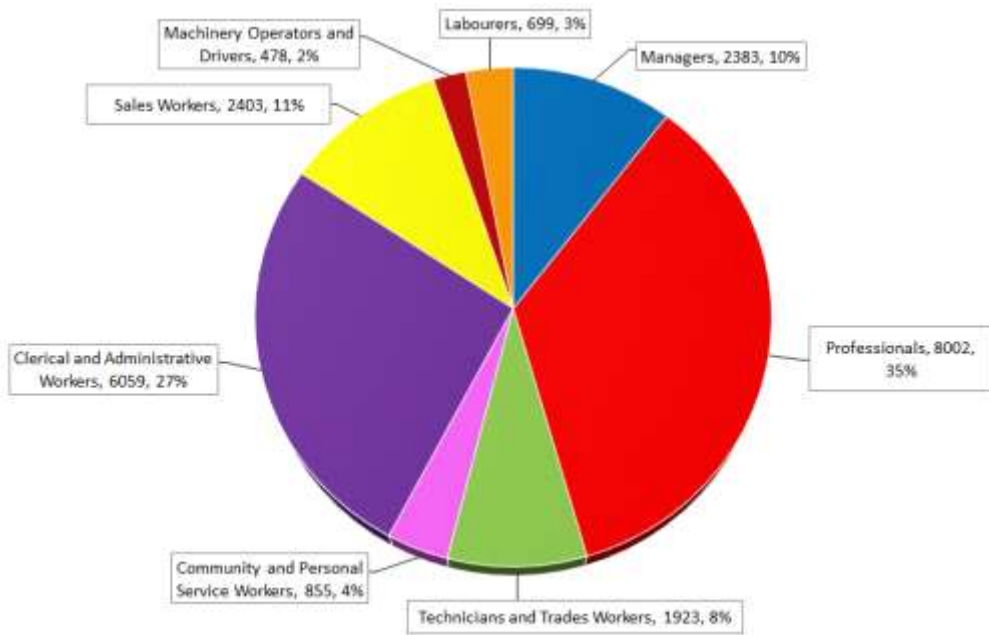


## Occupations

Each of the following charts summarises the occupations within the target industries. At the major group level, which separates all occupations into eight broad categories, Professionals make up around 35 per cent of the workforce. Clerical and administrative workers also make up a high proportion of the workforce with around 27 per cent of the workforce.

The following chart shows the top 20 occupations at the sub-major group level (around 40 occupations). The highest employing occupation is Business, Human Resource, and Marketing Professionals with 3,700 employed during 2016. Numerical clerks (2,586) and Design, Engineering, Science and Transport (2,027) also make up a large proportion of the workforce. Sales Representatives (1,675) and Specialist Managers (1,245) round out the top five highest employing occupations within the target industries.

**Figure 4.10: Business, Professional and Digital Services – Employment by occupation (ANZSCO major group), 2016**



**Figure 4.11: Business, Professional and Digital Services – Top 20 employment by occupation (ANZSCO sub-major group), 2016**

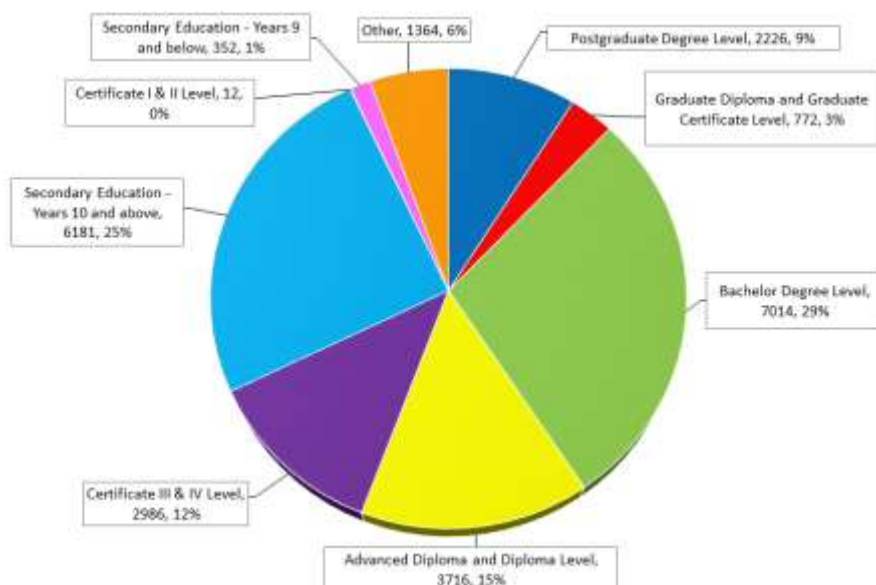


## Education and skill

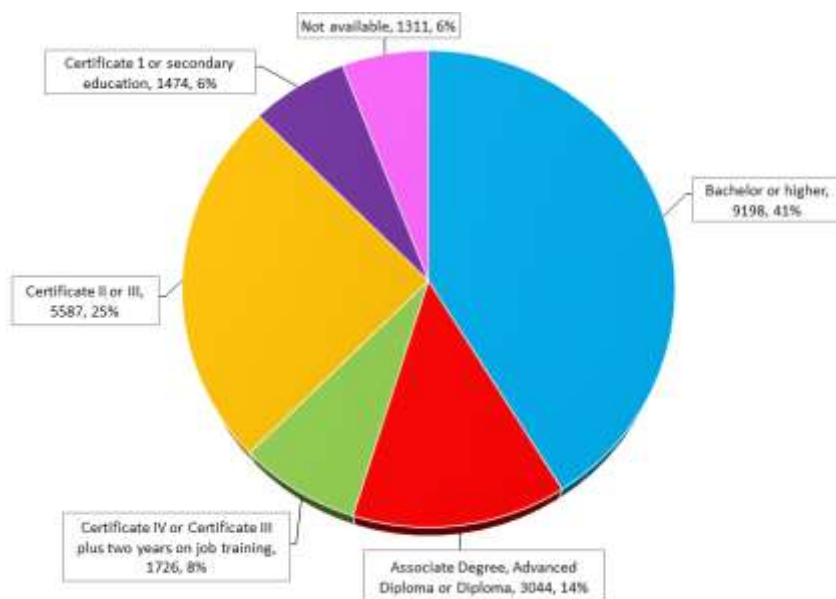
The next two charts summarise the highest level of education attained for the workforce within the target industry, as well as the required skill level that the collectively occupations within the target industry require. Overall, the workforce is highly education with 41 per cent of the workforce having Bachelors Degrees of higher, while 27 per cent of the workforce have Certificate III, Certificate IV or Advance Diploma/Diploma qualifications as their highest level of education. Those with at least some high school make up 26 per cent of the workforce.

The second chart shows the skill level, what skills do the occupations need, rather than what qualifications do they have? Bachelors and above lines up well with the level of education in the workforce. However, 47 per cent of the occupations have a skill level equivalent of Certificate III, Certificate IV or Advance Diploma/Diploma (excluding Certificate II). This implies that around 20 per cent of the workforce is working at this level without having a formal skill training, but rather on the job or experience substituting for formal training.

**Figure 4.12: Business, Professional and Digital Services – Highest level of education attained for those employed, 2016**



**Figure 4.13: Business, Professional and Digital Services – Skill level of occupations, 2016**



## Roundtable findings

### Employing staff

- We're looking for more qualified people and want to take them on a career path. But what we're seeing now is an absolute shortage.
- We're accountants and advisory firm, with a staff of 50, and our clients are varied. At the moment we're finding it extremely difficult to recruit. It's the worst I've seen it in 20 years.
- The staff shortage has been brought about by a range of things. The bigger firms in Melbourne are paying exorbitant amounts of money to get highly qualified people. It's a real barrier in terms of business growth and we're hearing it everywhere, Australia-wide.
- In the future we're going to need to employ staff with higher qualifications and capabilities to match what our clients want going forward. The driver is the expertise our clients are seeking in areas like HR, technology, OHS and the digital economy.
- Hiring is just horrendous at the moment. We've been trying to hire a warehouse team leader without success for almost 12 months. It's a problem hiring the right people with the right skills.
- One of the real factors is businesses need to think about how business is to be done in their own organisation. Today the relationship between employer and employee is very different to what it was. People are hiring jobs rather than hiring people. There is almost a 'knee-jerk' reaction where somebody needs an employee now; they see who is in the market now and if they can afford them. Managers need to plan their human resources in line with their business plan. They don't plan strategically for obsolescence or upskilling.
- With changes in channels to market, particularly in manufacturing, we're seeing a lot of middle-management roles being engineered out. They're not seen as fully client facing or essential.
- I've recently been involved in a project that included surveys of large organisations. We found that the top three criteria for employment were cultural fit, work experience and enterprise skills. Qualifications and certifications have slipped down the chart quite dramatically.
- People are looking to employ new employees and upskill existing employees who they believe will get up to speed quickly and add value to the organisation. Some of the traditional models are less popular now.

### Conduit to resources

- We pay annual subscriptions but the professional bodies we belong to are not asking us what we want. Neither do universities. NORTH Link is the only connection we have.

### Using data analytics

- As the only analytics association in Australia we know there is a huge talent shortage. We know the analytics professionals out there can choose their jobs. Remuneration doesn't turn them on. They're looking for purpose and 'groovy' data sets they can use. We work with our members and help them to become an employer of choice.
- Talent and skills is one of the major issues in analytics.
- These jobs used to be just in companies with lots of data, like financial services, retail and utilities. But now smaller organisations are setting up data teams of one and two. They need the support because they're building things from scratch.
- Companies often say 'I have so much data, I don't know what to do with it'. They want to extract more value out of what they have.
- There is no specific title for this work. You might have a data engineer, data analyst, data scientist, data visualisation, business intelligence – it depends on what you're trying to achieve in your business.
- If you're starting, you don't need AI, you just need someone who can understand your data and deliver you insights, so that you can make better business decisions tomorrow.
- Most major universities offer data science, data analytics or business analytics courses, but employers want people with business experience to provide the context for the analytics work. So NORTH Link offering opportunities through the Data Analytics Hub is a great way to provide that understanding.
- At universities they get nice clean data sets to work with, but it isn't like that in the real world. The data is all over the place, there's a lot of wrangling to do, and it has to be done in two hours. Experience in dealing with those issues is important.
- Anyone who has experience in dealing with data is really useful.
- Being a family business, we have a lot of work to do in increasing skills, professionally and on the work floor. I see automated production requiring extra skills – upskilling and new hires.

- We hosted a data analytics project with Melbourne Polytechnic students. They worked on our milk payment database and it was complex. It was also a tremendous success. It went from being a student exercise to a full database that's going to be a real asset to our business.
- We operate a data analytics company with about 50 people. We used to hire for technical skills and I agree that there's a shortage there. But what we're really looking for now is the ability to communicate to the rest of the business, to tell a story from the data, to make it meaningful to stakeholders. That's a skill that isn't taught enough in universities, or maybe it's a personality issue. But there's an art to it and it's critical to getting data accepted in the culture of a business.
- Communication is an important skill in any business, for any role, but especially in technical roles. It's critical to success.
- Data analytics doesn't have to be complicated. The number one analytics tool is still an Excel spreadsheet. It's getting over the fear, and having a go, maybe being shown a few tricks about manipulating data in Excel. People need to see some value and they'll go further.
- There's an issue with teaching people to be data literate without using the words 'data' or 'maths'. We have to get them to see data analysis as something exciting and new, not a chore.
- If data analytics is framed in a business context 'how do I get to know what my customers want, how can I understand how to make the business run better', they are more likely to listen. It's providing business insights that will help them make the right decisions.
- I'm not seeing smaller companies embracing digital in terms of how to run the business better, outside of finance and supply chain. Digital jobs are mainly marketing, e-commerce and supply chain, as businesses find different ways to engage with their customers.
- Data is a distinct language. We have to find ways to train people to speak that language, tell the story and to create interest and excitement around it.

### *Upskilling and business improvement*

- There is a difference between privately owned, family controlled businesses, and larger or publically owned companies with a lot of resources. The mindset in family businesses is very different. The board room is the kitchen table and success is measured in personal take-outs from the business. They're not driven by shareholders to perform

better each year. There is less willingness to invest in new skills and technology, and less capacity to pay.

- NORTH Link is a great resource for informing businesses and facilitating connections.
- NORTH Link could 'educate' SMEs that don't have the depth of skills, capabilities or resources to look at the value of making changes and support businesses in how they might use available skills. Businesses often don't understand the value of the skills that tertiary graduates have.
- Working with students is the way to go in the future for small businesses. They can get a lot out of value out of it.
- NORTH Link is a conduit for partnering businesses with skill sets. Smaller businesses can't afford to hire these resources. It has an important role to play.

### *Gender balance*

- Today, fewer than 30 per cent of data analysts are women. That's an issue. We need far more diversity around the table when we're working on analytics problems.
- There's a steep decline in schools with girls continuing on with maths.
- Young women are good communicators and storytellers. If the data industry is looking for people with communication skills, it would be worth refocusing data analytics roles as storytellers. It's about information and that could help attract young women to the role.
- Girls working in our industry have different skills; some deeply technical, others great communicators who love the behavioural aspects of the data and the stories that can come out of that data. Most of our work is with businesses that have customers, so most of the work is being able to tell stories about the behaviour of those customers and they do it brilliantly.
- As a parent, I've found that peer pressure is a barrier to young girls continuing on with STEM subjects at secondary school. It's deeply ingrained.
- Gender balance is very important to us and good for business. We discovered that over 70 per cent of accounting and commerce graduates are female and that didn't match our demographics. We introduced gender improvement policies to address that.



- If businesses are not thinking that way, they'll be left behind. We're working extremely hard to be an employer of choice for females, offering family friendly policies and flexible working hours.
- Things have changed dramatically over the last 12 months and we'll never go back to how it was. We're embracing it – a flexible workplace, four days a week in the office, gender equality.
- Looking at jobs from a different angle can help in attracting a diverse workforce.
- Getting girls interested in STEM subjects has to start in secondary school and continue into tertiary studies.
- Feedback from the construction industry, where females make up less than 2 per cent in trades, showed that females consider their jobs differently – they build homes, not houses. If we changed the narrative we might attract a wider demographic, including people with disabilities and those with different cultural backgrounds.
- It's difficult to get young women interested in trades and areas like data analytics. Again, it's how you tell the story. We have to rethink how we market it. If COVID has taught us anything it's taught us how to be innovative and how to change.
- We've been working on apprenticeships for a few years and that will continue. If the labour market doesn't recover quickly or we have a double dip recession for example, young people having a side hustle and being able to create their own jobs will be important.
- We need to create hope for young people, and let them know that there will be a lot of new and diverse roles emerging, and available locally.
- We run a jobs platform (Jobs for Youth) including jobs available in inner Melbourne, the CBD and St Kilda Road. Over the last 12 months we've had a 40 per cent reduction in jobs. The labour market has been destroyed for young people. There are still jobs but there's a mismatch ... there are young people looking for work, and there are jobs available. How do you join the two together?
- In Whittlesea in particular, more and more young people are opting for building and construction (above popular subjects like sport and recreation, the most popular stream state-wide). We're in a growth area and there's a lot of construction going on. But there is still a gender issue. Language we use in our industries can be improved on.

### *Work placement/structured workplace learning*

### *Future jobs for young people*

- The fact that Australia is embracing the space program should encourage young people to get excited about science and the jobs around it. Stimulating their curiosity and interest should be part of the curriculum.
- The jobs market for young people since COVID-19 has been hammered. They often work in sectors such as hospitality and retail, which are badly impacted. Many lost their jobs and until we open up again, those sectors will struggle and young people will be disadvantaged.
- LLENs are working with schools on entrepreneurship, and the skills and capabilities needed for 21<sup>st</sup> Century jobs.
- Young people have no line of sight to local businesses; they don't look at the local community. The challenge is to create aspirations for that.
- If they don't know about local businesses, it's hard to aspire to work there.
- Promoting local jobs for local people, including young people, will help our region to recover from the pandemic.
- We haven't been able to run structured workplace learning in industry during the pandemic. We have quite a few young people who've been doing vocational programs but haven't been able to work with an employer, and that means they're missing out on potential job outcomes.
- You can't be what you can't see. We have a bit of work to do around raising the profile of local businesses in our schools. And structured workplace learning is a great vehicle for doing that.
- There's an amazing opportunity coming with changes to the Year 12 qualification. Vocational education will be a critical component for a Year 12 qualification going forward. If business can really embrace opportunities for young people to get local work experience, structured workplace learning, school based apprenticeships leading into apprenticeships or even combining a university degree with work experience we could really fly in the north with all the growth that's happening, particularly in interface councils. We need to get that across to schools.
- It would be great to look at real partnerships with structured workplace learning between schools and industry associations that create a pathway for young people.



- Tech Schools were set up to bring schools and industry together around the concept of entrepreneurship and skill development. They are currently working on design projects from industry. There are opportunities for this platform to be better utilised.
- Linking entrepreneurship with various industries provides a good basis. We need to be better at creating partnerships to elevate the work that's happening.
- Young people need experience. You can't put wise heads on young shoulders. Training programs need to include skill building. Industry needs to take this on.
- Where it works is when TAFE students work in the industry they are studying for, either on work placement, part-time or in their holidays. Employers can see if they are a good fit with the business and its culture. We don't have enough of that workplace learning built into the system.
- Years ago there were a lot of large corporations that trained young people, who then went on to other jobs. That path is gone now.
- We know that work placement gets results. But the traditional structure of two or three year tertiary courses doesn't suit everyone. Industry is looking for options such as bite-sized qualifications, and they would suit many workers too.
- The smaller the businesses, the more challenging it is to engage with opportunities, understand skill gaps and what solutions are, and to partner with tertiary organisations.
- There are opportunities around, for example the traineeship model or work integrated learning model, where the business has more input into the training and can make sure it's more tailored to their requirements. This helps businesses to build their own workforce.
- Entry level jobs are the ones mostly being engineered out by technology. So where are the opportunities?
- Trade jobs are popular because they offer career pathways to young people and an opportunity to start a business within that industry.
- We are closely aligned with SEMMA (South East Melbourne Manufacturers Association), which is mostly metals and components manufacturers and assemblers. They work closely with a local senior secondary college to offer pathways into jobs like boilermakers and welding.

### *Business and professional services in Melbourne's north*

- Commercial office space availability is a factor in attracting business and professional services, including digital services, to the region. If there is not enough office space, and business services, businesses will go elsewhere and the region could be left behind.
- The north and west are traditionally 'underdone' in terms of professional services. A lot of those businesses have drifted to the south, the CBD or the east. A recent example was a company looking to set up a call centre in the north because they found the eastern suburbs were saturated and they couldn't get staff. Setting up in the north, they were able to hire straight away.
- We could do with a lot more jobs in the business and professional services sector to service the growing population.
- Historically there was a lack of office space in the north but that has changed.
- Until COVID-19, commercial office space in the north was snapped up as soon as it was built. Now people planning new large property investments are incorporating office spaces for the post-pandemic economy. People won't want to travel to the office five days a week.
- The population in the north is growing so rapidly that the job deficit has grown. All the LGAs other than Hume have a significant jobs deficit. So if COVID-19 creates positive differences, we should build on those.

## **4.3 The Advanced Manufacturing Sector**

Advanced Manufacturing is the use of innovative new technologies and processes to increase manufacturing efficiency and output. Advanced Manufacturing techniques may include a high degree of process automation.

The following discussion encompasses all manufacturing industries, which includes 15 sub-industries as listed in Table 4.3.

### *Key economic indicators*

The manufacturing industry had annual sales of around \$15.94 billion during 2019 and has been relative stagnant over the past ten years with annual sales growth of 0.28 per cent per annum. Over the same time period, value added has been falling by an average of -0.57 per cent

each year. On an annual basis, manufacturing value added contributed \$ 4.9 billion in output over 2019. The decline in value added within manufacturing is largely driven by losses of high value-added transport manufacturing industry.

The manufacturing industry has gone through a transition over the past five to ten years as the motor vehicle manufacturing has wound down in Australia, in particular Ford had a manufacturing plant in Broadmeadows that directly employed 600 staff and ceased manufacturing in 2016. While the aggregate level of profitability within manufacturing has gone down over the past 5 years, employment levels have been relatively stable with employment increasing in other manufacturing sub-sectors. Annual employment growth has increased by around 0.11 per cent per annum.

Overall, the manufacturing industry employed around 48,000 workers within Melbourne's North. Resident employment, that is, workers that live within Melbourne's North, is at a similar level but marginally greater than industry employment. This means that there is a small outflow of manufacturing workers to regions outside of Melbourne's North.

The biggest employing manufacturing industries within Melbourne's North are:

- (1) Food Product Manufacturing;
- (2) Transport Equipment Manufacturing;
- (3) Furniture and Other Manufacturing;

- (4) Machinery and Equipment Manufacturing;
- (5) Polymer Product and Rubber Product Manufacturing; and
- (6) Textile, Leather, Clothing and Footwear Manufacturing.

Over the past five years from 2016 to 2021 the strongest growing industries have been Pulp, Paper and Converted Paper Product Manufacturing, Basic Chemical and Chemical Product Manufacturing, Furniture and Other Manufacturing, and Polymer Product and Rubber Product Manufacturing.

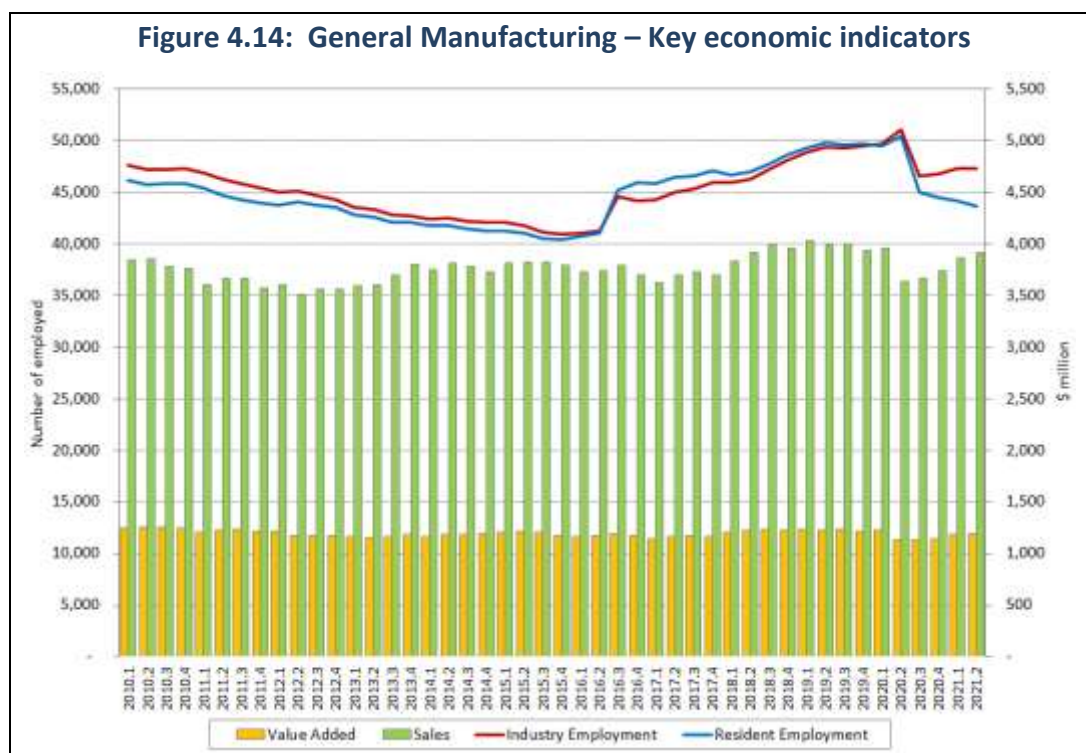
However, the 2021 financial year has been heavily impacted by the COVID-19 pandemic which has skewed historical trends somewhat.

The industries that have been the most adversely impacted by the pandemic and restrictions have been:

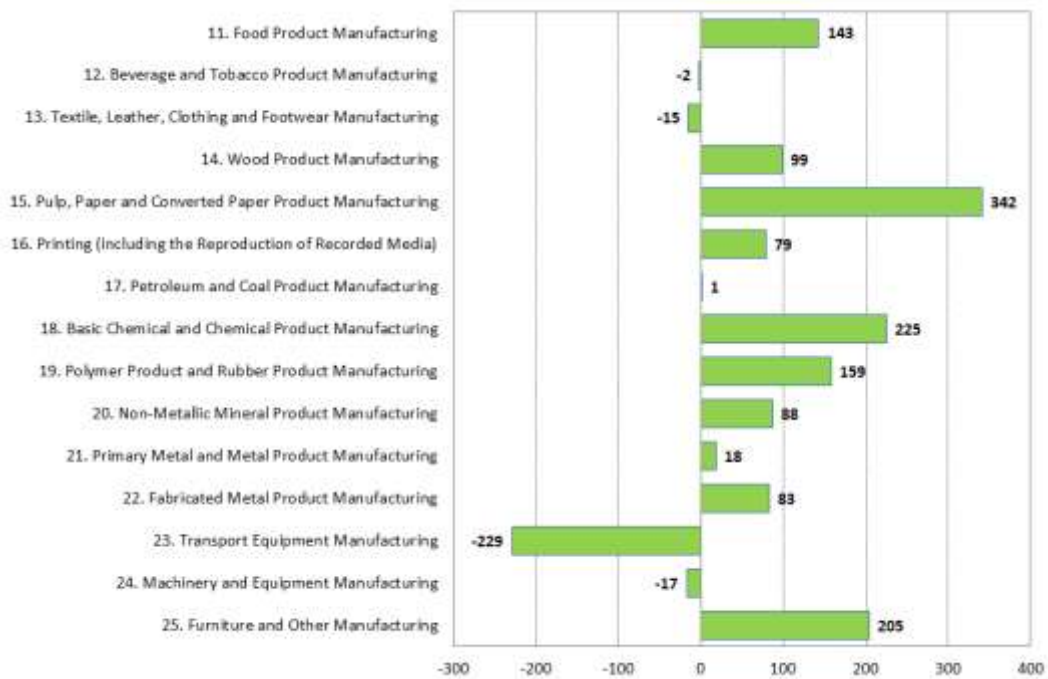
- Transport Equipment Manufacturing; and
- Food Product Manufacturing.

While other industries have benefitted from the COVID-19 pandemic with increased employment from the second quarter of 2020:

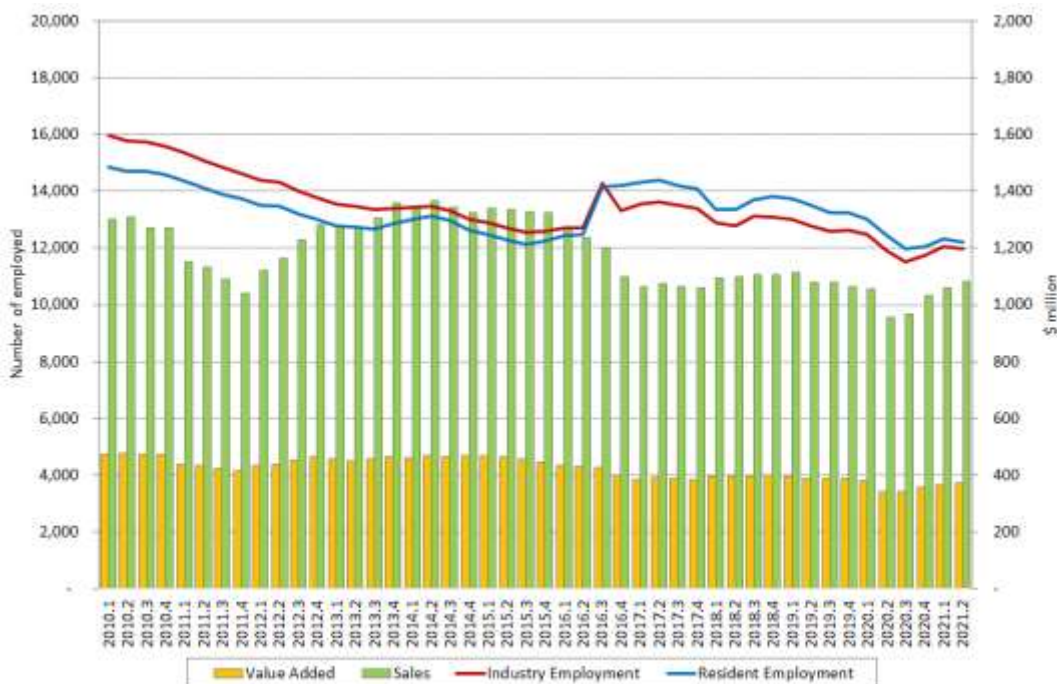
- Pulp, Paper and Converted Paper Product Manufacturing ; and
- Basic Chemical and Chemical Product Manufacturing.



**Figure 4.15: Advanced Manufacturing – Average annual change in industry employment, 2016 to 2021**



**Figure 4.16: Hi-Tech Manufacturing – Key economic indicators**



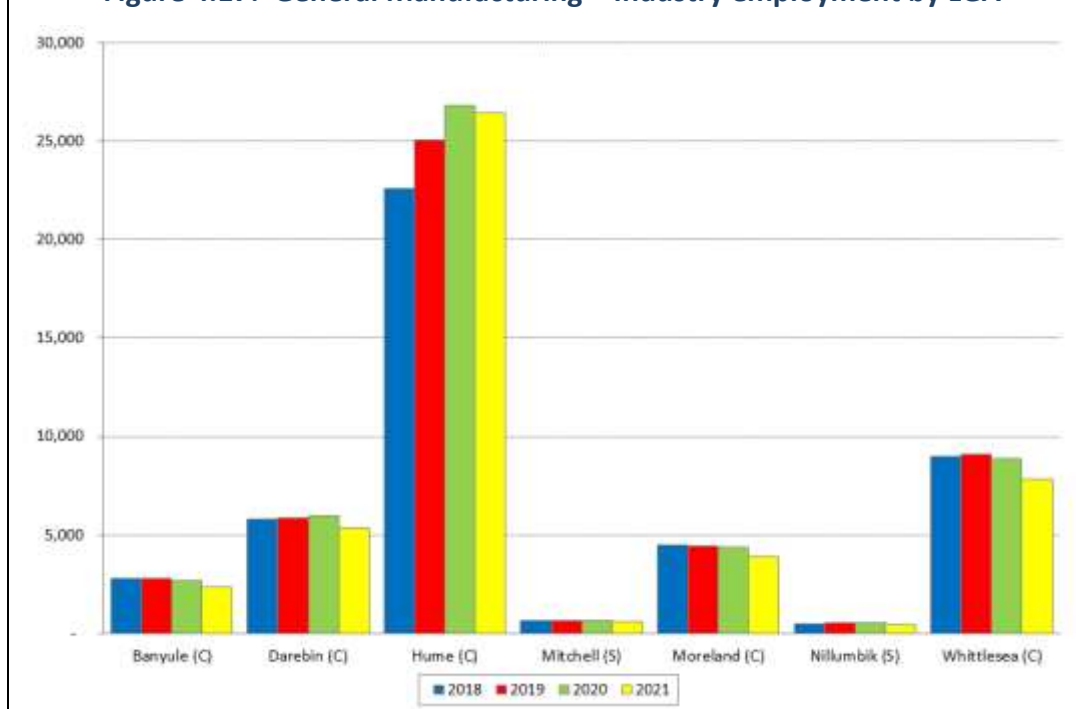
**Table 4.3 Industry employment for Advanced Manufacturing industries – 2016 to 2021 (financial year)**

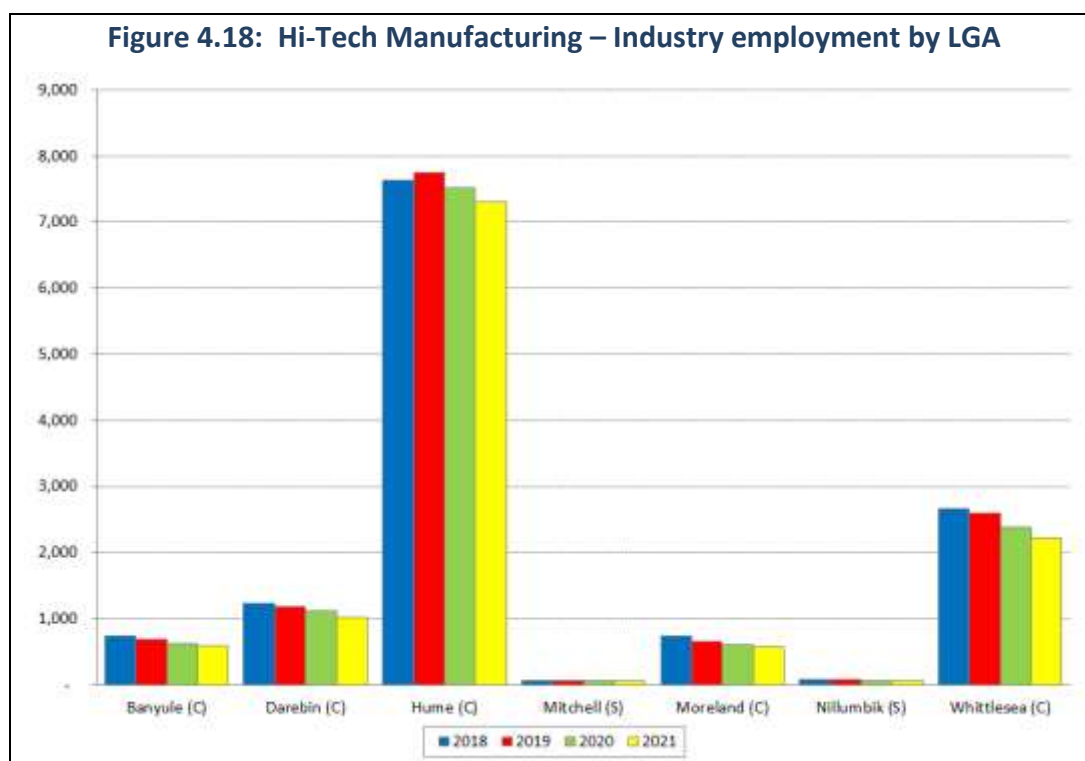
ANZSIC Code	ANZSIC Industry	2016	2017	2018	2019	2020	2021
11	Food Product Manufacturing	8,267	8,518	8,905	9,219	9,350	8,982
12	Beverage and Tobacco Product Manufacturing	343	380	352	348	349	332
13	Textile, Leather, Clothing and Footwear Manufacturing	2,941	2,647	2,627	3,073	3,495	2,865
14	Wood Product Manufacturing	1,352	1,632	1,913	2,102	2,173	1,847
15	Pulp, Paper and Converted Paper Product Manufacturing	2,211	2,518	2,674	2,881	3,304	3,919
16	Printing (including the Reproduction of Recorded Media)	2,103	2,217	2,333	2,500	2,566	2,498
17	Petroleum and Coal Product Manufacturing	32	44	60	53	54	40
18	Basic Chemical and Chemical Product Manufacturing	2,188	2,340	2,506	2,818	3,131	3,315
19	Polymer Product and Rubber Product Manufacturing	2,710	3,072	3,177	3,488	3,951	3,502
20	Non-Metallic Mineral Product Manufacturing	1,396	1,604	1,638	1,741	1,899	1,834
21	Primary Metal and Metal Product Manufacturing	1,932	2,225	2,253	2,577	2,421	2,024
22	Fabricated Metal Product Manufacturing	2,741	3,390	3,656	3,538	3,298	3,156
23	Transport Equipment Manufacturing	6,135	6,279	5,595	5,567	5,246	4,989
24	Machinery and Equipment Manufacturing	3,763	4,020	3,899	3,904	3,844	3,678
25	Furniture and Other Manufacturing	2,947	3,588	4,255	4,590	4,792	3,971
	<b>Total</b>	<b>41,060</b>	<b>44,474</b>	<b>45,842</b>	<b>48,400</b>	<b>49,872</b>	<b>46,951</b>

### Employment by region

The Hume City Council region accounts for just over half of all manufacturing jobs within Melbourne's North with 26,789 workers during 2020. The Hume City Council region covers large manufacturing districts around Campbellfield,

Broadmeadows and Melbourne Airport with critical freight connections via road, rail and air. Whittlesea City Council has around 9,000 jobs in manufacturing, while the inner LGAs of Darebin and Moreland have workforces of 6,000 and 4,500 respectively.

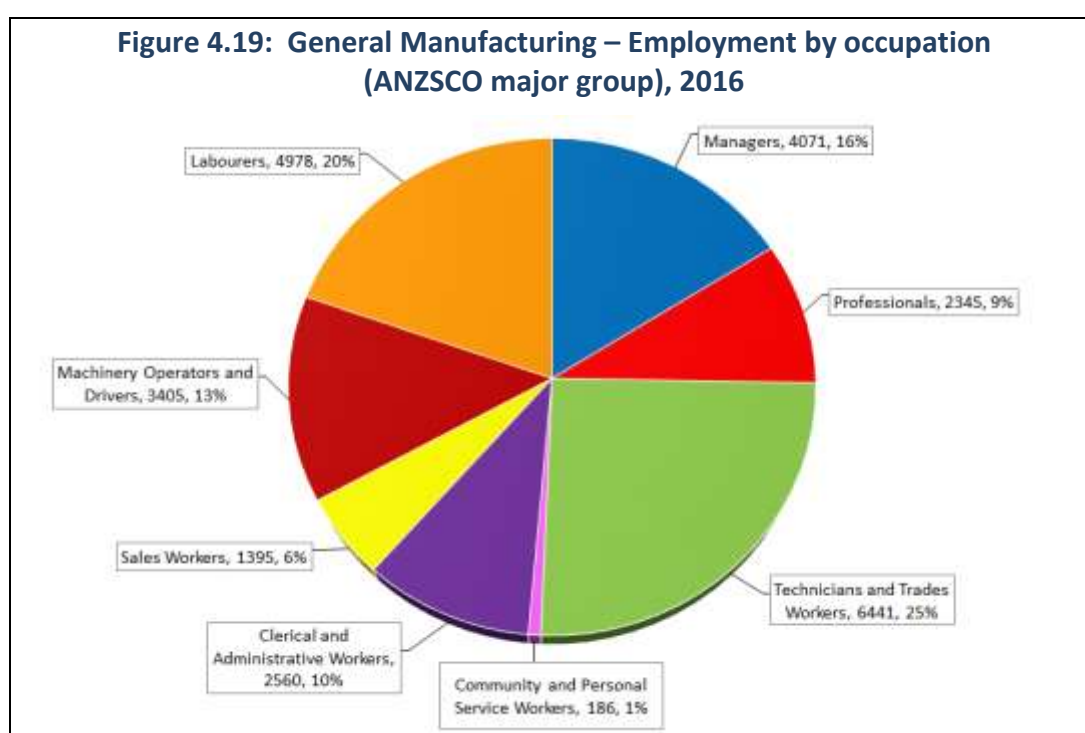
**Figure 4.17: General Manufacturing – Industry employment by LGA**



## Occupations

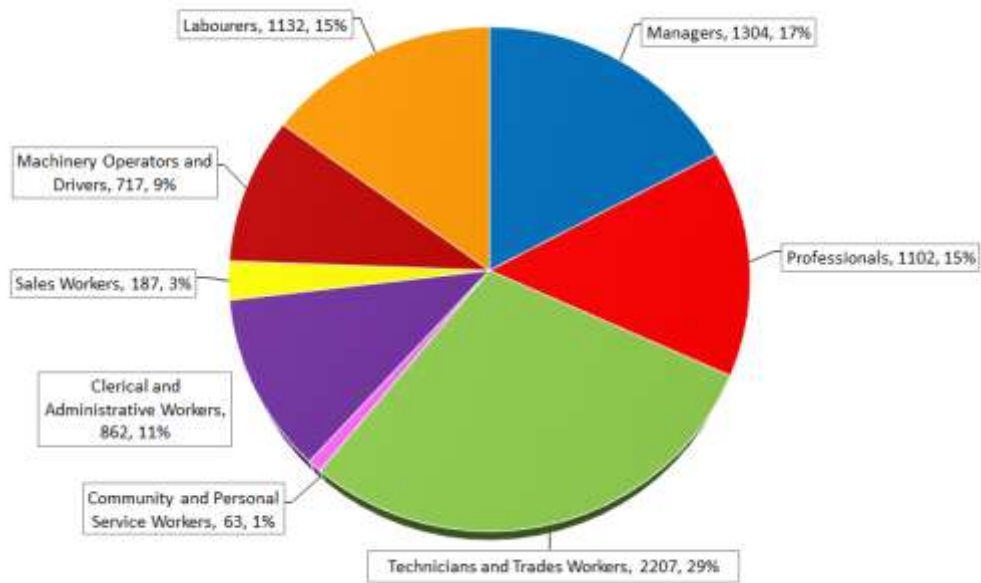
Each of the following charts summarises the occupations within the total manufacturing industry within Melbourne's north. At the major group level, which separates all occupations into eight broad categories, Technicians and Trades workers make up the largest group with 25 per cent of the workforce, while Labourers are closely behind with 20 per cent of the workforce.

Figure 4.21 shows the top 20 occupations at the sub-major group level (around 40 occupations). The highest employing occupation are Factory Process Workers (4,213), followed by Specialist Managers (3,216), Automotive and Engineering Trades Workers (2,353), Other Technicians and Trades Workers (2,171), and Machinery and Stationary Plant Operators (1,667).





**Figure 4.20: Hi-Tech Manufacturing – Employment by occupation (ANZSCO major group), 2016**

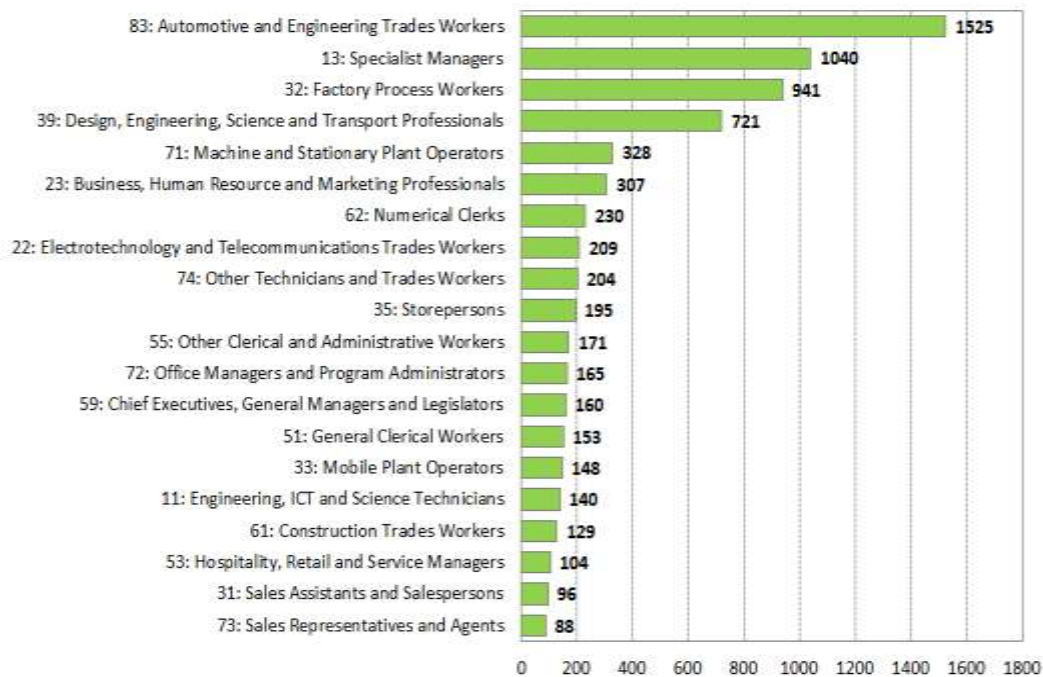


**Figure 4.21: General Manufacturing – Top 20 employment by occupation (ANZSCO sub-major group), 2016**





**Figure 4.22: Hi-Tech Manufacturing – Top 20 employment by occupation (ANZSCO sub-major group), 2016**



### Education and skill

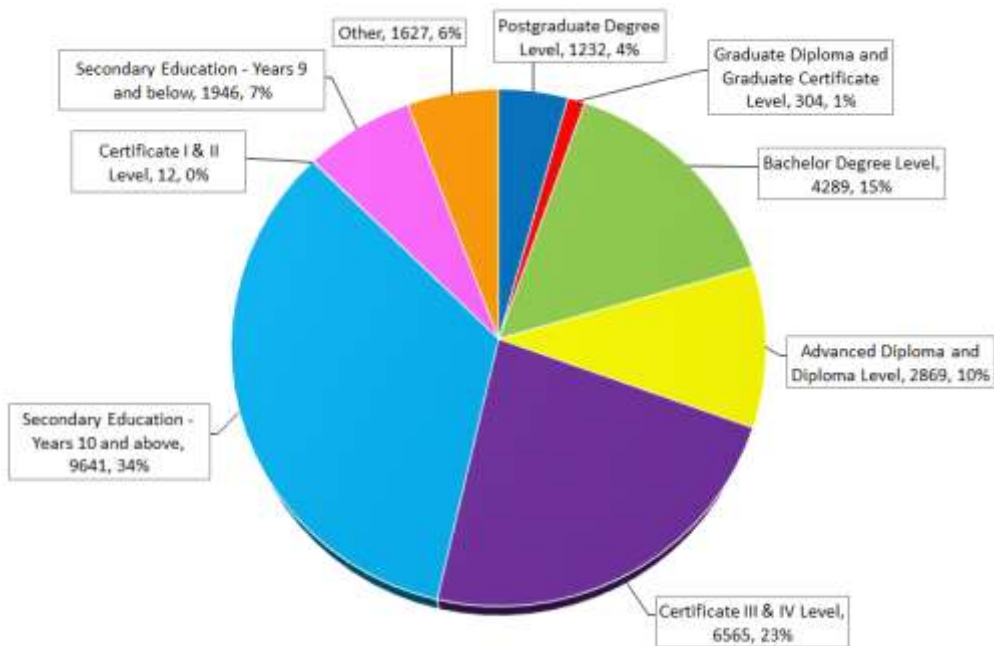
The next two charts summarise the highest level of education attained for the workforce within the manufacturing, as well as the required skill level that the collectively occupations within manufacturing require. Overall, 20 per cent of the workforce have Bachelors degrees or higher, while 33 per cent of the workforce have Certificate III to Advance Diploma level of education, and

41 per cent of the workforce only have secondary level education without any further tertiary qualifications.

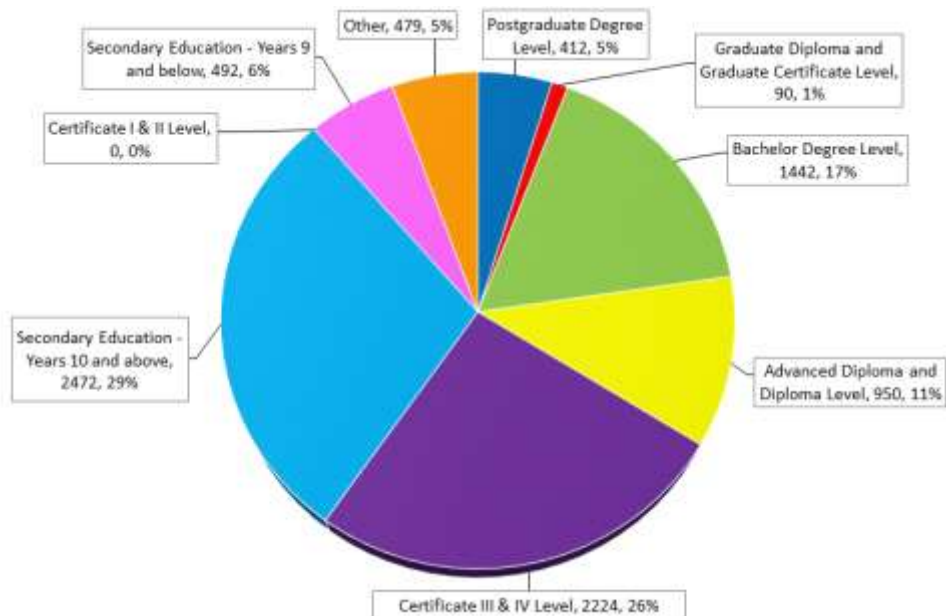
The second chart shows the skill level, what skills the occupations need, rather than what qualifications the workforce have. Around 22 per cent of occupations within manufacturing require Bachelors Degrees and above, while 47 per cent require a skill level equivalent of Certificate II to Advance Diploma/Degree.



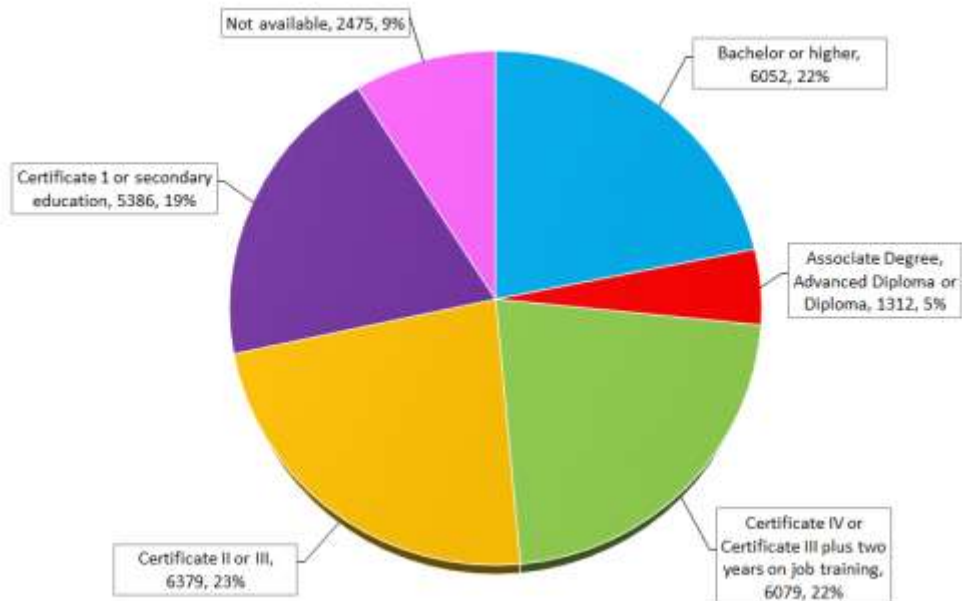
**Figure 4.23: General Manufacturing – Highest level of education attained for those employed, 2016**



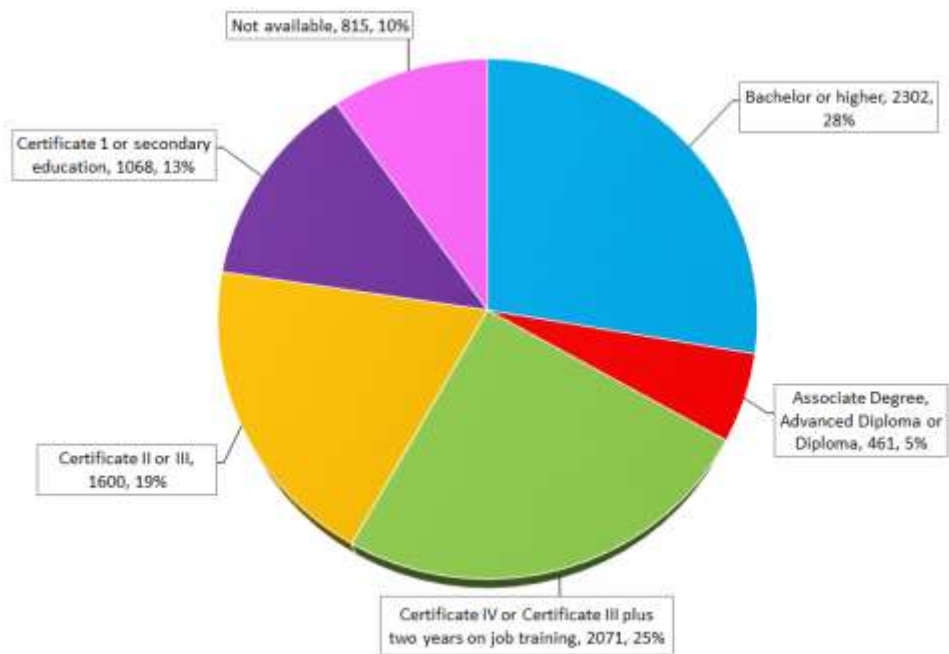
**Figure 4.24: Hi-Tech Manufacturing – Highest level of education attained for those employed, 2016**



**Figure 4.25: General Manufacturing – Skill level of occupations, 2016**



**Figure 4.26: Hi-Tech Manufacturing – Skill level of occupations, 2016**



## Roundtable findings

### Importance of Advanced Manufacturing

- Manufacturing is an incredibly important. High levels of value adding and the strategic component of the industry have become really evident during COVID-19. Countries that don't have their own manufacturing have put themselves at risk.
- A critical part of the economy is the impact manufacturing has on innovation and knowledge diffusion to other industries.
- It's challenging to define 'Advanced Manufacturing', for government policy and for us. We define it by the way we're working, how we are operating and changing what we do.
- Advanced Manufacturing is not just about machinery, it's about process.

### Potential for manufacturing

- Future improvements for us are less about machinery and more about our mindset and frameworks for Advanced Manufacturing. It's about how we design and create things. We have to become more tailored to our customer. To create value, we need a design thinking process.
- I still have basic food processing machinery but it hasn't been possible to keep upgrading. I reached out to a local Advanced Manufacturer to collaborate on upgrading one of our ovens and the result was great. We're still evolving and there are a lot of opportunities.
- The critical things are ability to design, the importance of recycling, how we use our materials in the first place. We get one shot at using the materials so we need to think about the front end and how we use all our raw materials. We need to put design thinking upfront.
- Designing for sustainability should be factored in to the whole product cycle.
- ANZSIC and ANZSCO codes don't reflect the recreational vehicle sector employment numbers. There are close to 3000 people employed in RV in the north. The RV sector is predominately a domestic market, as 98 per cent of what we make stays in Australia. But that's changing. The export market is growing, particularly for IP. We're world-renowned for RV design skills.

## Circular economy

- The linear economy centres on three words – take, make and waste. There are three tenets of the circular economy: to design products and systems with reuse and longevity, keep products in circulation for as long as possible and ensure businesses are regenerative in nature.
- The circular economy can't operate in isolation. Individual businesses can't create a circular economy, even a small one. We need to develop trust, open collaboration and robust communication and then create a group of businesses to execute the circular economy.
- One of the products we make at Close the Loop is TonerPlas, which is an asphalt additive. We also make another product called rFlex, which is a plastic for injection moulding purposes. Both those products are made from post-consumer recycling of soft plastics. One opportunity I can see for the region is that we unite to collect, bale and send those soft plastics to 'Close the Loop' to be converted into higher value products like TonerPlas or rFlex, which could be used to repurpose into shipping pallets, tubs and crates. These are things that we're already using. The circular economy isn't about creating extra things. It's about using raw materials that are part of our supply chains over and over again. This aspect of future manufacturing is important.
- Hume City Council, over the last 12 months, has used over 20,000 tonnes of asphalt containing TonerPlas. Hume is at the forefront of Australia's transition to a circular economy and is now looking at circular procurement in different areas of operations. The City of Whittlesea is making great progress as well, having appointed a circular economy executive. The circular economy will be a priority for all levels of government from now on.

### Changes to manufacturing

- People are ordering more and more products online, and that will continue.
- Changes will be subtle more than dramatic and they have already started. We're rearranging workplaces, introducing lean principles and doing some innovative things. The worker of the future will be more in tune with processes like lean and elimination of waste.
- Digitisation will affect manufacturing over the next ten years. So many changes are happening, like customer expectations in terms of smart supply chains, customers wanting to know where goods come from, inter-operability between machines and

ability to update supply chains with real-time knowledge, using digital twins for developing stock. All this is changing service models, with smaller manufacturing runs of bespoke items rather than a production run of thousands.

- Things are going more online for all businesses; a good example is 3D printing which is now used for a whole range of things across industry sectors.
- Recreational vehicles are hand-made products. If you look at the next ten years, there will be different machinery but it's actually the processes that will change rather than the machinery – the way people come into our industry and how we use those people. We'll have to think about what our future workforce looks like.
- Retailers are now controlling what's happening in the textiles sector. Digital space is going through the roof, whether it's content or purchasing. There is so much people can buy. Inventory levels are really high due to lockdowns. Melbourne and Sydney represent 80 per cent of stock turn and revenue.
- We are a full vertical operation and even our model is changing. You have to respond. When the pandemic hit, everyone had to move fast – masks, PPE, the needle turned 180 degrees. You're doing this one day, and doing something completely different the next.
- What it gave us is knowledge that we had the potential and the capability to adapt quickly. There was a lot of conversation with government, they said they supported us, but nothing came of it. Increasing output and boosting the industry requires government support.
- Everyone needs to be agile – design, engineering. Our engineers have never worked in this industry before and they're working on how to make things better. And our design team, working with our engineers, are figuring out how we can become more agile, what our core products are, what we can do to differentiate ourselves a bit more.
- Nimbleness in this sector is increasing, because you need a point of difference if you're competing on the same e-commerce platforms.

### *Digitisation*

- Technology will change a lot of work environments over the coming years and we need to upskill our people so that we're not left behind.
- New graduates are used to working with digital tools but wouldn't have a clue about reading two-dimensional drawings these days. If you go completely digital, it's a much more familiar

environment for people and they can work across any type of manufacturing company.

- By having digital work instructions and up to date information for people on the shop floor, you're empowering them and quality becomes inherent in what you do.
- Some businesses have difficulty taking the first steps to implementation, to understand what they need and then to get all their machines 'talking'.
- Often people have heard about these technologies but don't know how to integrate machines, get their staff to understand what's going on and identify the hidden costs. Sometimes the answer is just introducing them to the right information and putting them in touch with people.
- We developed our own Industry 4.0 solution, at first just for our own use. It's a stand-alone system that we'll now sell to other manufacturers. It collates backend systems, ERP systems and CAD data. We've interfaced all our machines with it. It takes live data out of the machines – completely digital work instructions, from pdf drawings to solid works composer drawings. It's putting the best information into our people's hands and they know the information is current.
- Some German machinery comes with excellent documentation and support. That's a good start. But it has to be taken back to the business model. What's the benefit of technology? If we can answer the business side and see how changes can affect output, or enable us to tap into new markets or work with new partners, then the rest of the pathway will make a lot more sense.
- A lot of people don't know where to start. Our system evolved over three or four years. If you have a vision, and put the means there, your people will help you drive it.

### *Skill shortages*

- As an industry group we have manufacturers coming to us and we hear about a range of skill shortages: sheetmetal workers, upholsterers, fitters, skilled warehouse people, caravan assemblers, process workers and clothing machinists.
- NORTH Link is currently working on a major project with Caravan Industry Victoria, funded by the Victorian Government, to put 150 unemployed people into roles in the caravan industry.
- There's a view that people only go into manufacturing if they can't find anything else. Some also wrongly think that manufacturing is a contracting industry and it's not a good place to go.



- A good analogy is the beer industry. Previously, CUB and Tooheys were large factories that weren't seen as attractive places to work. But craft beer has turned that around. Craft breweries are desirable workplaces. We should look to the beer and coffee sectors to see how they did it.
- We have a media that keeps reinforcing that local manufacturing is 'dead'. It doesn't help.

### *Pathways for young people*

- The challenge will be promote manufacturing so that young people will gain skill sets that are transferable to other manufacturing areas. We need to create a manufacturing workforce.
- We're finding it's really hard to get good people. We've found young people are willing to work at a lower level in our factory to learn the nuts and bolts, which is going to help them down the track. If you have digitalisation and technological equipment, they're more likely to engage.
- We need to create aspirations for young people in the industry. Around 15 years ago, businesses had trouble engaging young people in engineering. A VET cluster of about 50 schools in the region was introduced and at first it was a struggle to get kids involved in engineering. It's improved now but not a lot. We don't have them rushing to the door for engineering.
- We don't do enough work as an industry to create pathways from school to work in Advanced Manufacturing. Young people only have choice if they know what the industry is about.
- The number of young people in manufacturing apprenticeships is small. Most who end up in manufacturing take a pathway from TAFE or university, or fall into it as they come out of school.
- It's always been an issue, marketing manufacturing to people as a career. As an industry we don't market or tell our story well.
- A long-standing lack of investment in career education at secondary level impacts Advanced Manufacturing. There have been some programs implemented by government, but more can be done to link industry and education at the secondary level and maybe even at the primary level.
- TAFE is highly underrated as a career path for manufacturing. There are some great technology courses such as the Diploma of Applied Technologies.

- Young people are increasingly aware of the importance of buying locally and ethically. They want to be part of their community but they also need know what is out there in terms of careers in the industry and how they can engage.

### *School-industry links*

- Young people don't know what they don't know. Exposing young people to industry is critical.
- Industry needs to link in with secondary schools and bring back mandatory work experience to expose young people to these jobs.
- There are plenty of opportunities to partner with schools. Industry needs to take the lead and commit to supporting young people through work placements, school-based apprenticeships and traineeships, and jobs.
- Career aspirations for manufacturing need to start in earlier years of secondary schools, with presentations in schools. Businesses can help also by putting skin in the game and offering work placements for students.
- IBM's PTech program links schools with industry. You can partner with them for internships.
- Government research in 2004 recognised that the health workforce was ageing, the market would be increasing and we needed to get young people into the industry. A school-industry engagement strategy was developed to encourage interest. We now have hundreds of young people in school-based apprenticeships, VET in schools, going on to TAFE and university then work in the health industry. This strategic approach is transferable to Advanced Manufacturing.
- There are a lot of opportunities to work with schools but we need a strategy. That has a knock-on effect to upskill career practitioners in schools, school leadership, general staff and parents, who are all strong influencers of student choice.
- Industry can work with LLENs, who do a lot around school engagement, structured workplace learning and work experience. The two Tech Schools in this region develop students with design thinking processes and they need local industry to bring design thinking problems to them. HeadStart school-based apprenticeships and traineeships are quality, flexible programs where students spend increasing time in the workplace while they continue their education. We've also set up bespoke programs with companies that want to build a workforce.



- A plan and campaign to attract young people would be a great outcome. NORTH Link would be a good conduit for development of this type of strategy.

### *Bringing manufacturing back to Australia*

- There is an appetite now for local manufacturing. A lot of brands are saying 'how can we bring things back?' And what are the opportunities? But with lockdowns adversely affecting retail, nobody is sure of what the future will hold. We don't know if people will still want to support Australian made in the future. There is massive uncertainty.
- Clothing companies have had great difficulty having their clothes designed in China recently, factories are closing and there are difficulties with transport. So it's forcing designers to look locally for factories to produce their goods. The trouble is that, with so many companies having shifted to China, there are only a few local companies left available to manufacture. They don't have the supply chain relationships.
- The issue here is about loyalty and commitment. If you go back to the start of the pandemic, a group of about 50 clothing brands got together to talk about bringing manufacturing back to Australia. They were all keen but it's not a short-term commitment. And all the uncertainty stops them making a commitment over the longer term.
- It's interesting to see if people are willing to bring manufacturing back from overseas. The ones who've sat on the fence and not re-aligned with an Australian supply chain are going to really struggle. Because there is only a limited manufacturing footprint and those manufacturers we have only have limited capacity and ability to scale up fast.
- Many people want to understand the supply chain of their goods and are choosing to buy locally made. The pandemic has accelerated it. The question is how long this effect will last.

### *Key manufacturing sectors for the future*

- Key sectors for manufacturing in the future will be Food, Health and Defence, given the skills and companies that we have.
- Defence has put a big focus on sovereign capability. You never know what's next. It's a long process to get into that industry but you have to start somewhere. There are big opportunities.
- There are two areas where growth would benefit our region. We could respond to the upcoming health needs that will affect all businesses, for example when the pandemic hit there was a scramble for masks. Now it's rapid-antigen testing.

There could be more opportunities in this space in manufacturing. The other is nutrition, for example as a cheese manufacturer we are looking at non-dairy as well. This sector can benefit from thinking outside the square and looking at new opportunities for design or manufacture.

### *Attracting more industry to our region*

- Bringing more industry to Melbourne's north and keeping it there is important. Relationships will make that happen. Melbourne's North Food Group is a good example of bringing regional manufacturers together and being advocates for the region.
- Clusters are important in keeping us here in the region and relevant. Sharing resources and capability to create and grow clusters is the way to go. There might be ways that textile companies can provide customised product for the Food industry.
- Clustering can be very helpful. Melbourne's North Food Group manufacturers and suppliers support each other morally but they also share equipment and resources. It's a win-win.

## **4.4 The Health and Community Services Sector**

The Health and Community Services industry is one of the largest industries within the North with key precincts in Heidelberg around the Austin/Mercy Hospitals and the Northern Hospital in Epping. The Health and Community Services industry has been one of the most resilient industries during the pandemic with industry employment above pre-pandemic levels.

### *Key economic indicators*

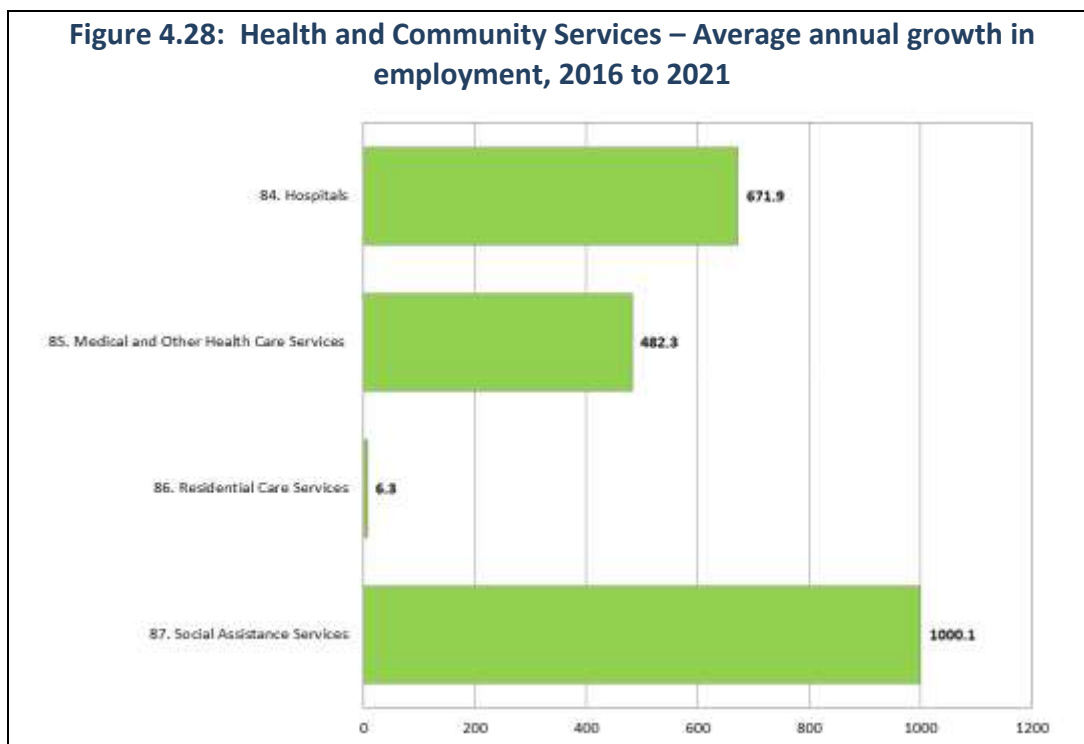
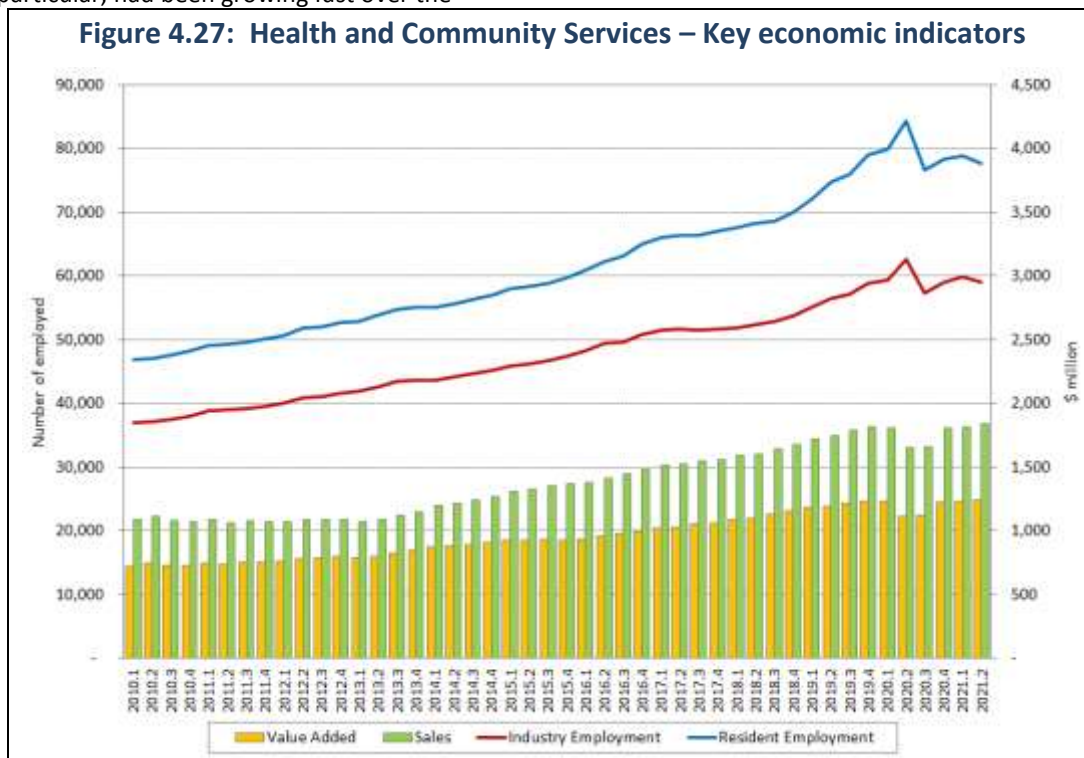
The Health and Community Services industry had annual sales of \$7.1 billion in 2019 with value added of \$4.8 billion over the same time period. The Health and Community Services industry has been growing strongly over the past ten years with annual average growth in value added of 5.1 per cent per annum.

The Health and Community Services industry employed around 60,000 workers prior to the pandemic, which has continued on an upwards trend throughout the 2021 financial year. Initially, there seemed to be a large bump in employment in response to the initial stages of the pandemic throughout 2020. Employment has softened in late 2020 and early 2021, but in contrast to many industries, employment has remained above pre-pandemic levels, remains at historically high levels and looks to continue to grow over the coming years. Resident

employment is slightly higher than industry employment with around 80,000 workers. This implies a net outflow of around 20,000 workers from the North to outside regions.

All of the sub-industries shown in Figure 4.28 and Table 4.4 have been growing incredibly fast over the previous five years, with the exception of Residential Care Services (Aged care), which has been stagnant. Social Assistance services, in particular, had been growing fast over the

previous five years. Social services have increased by a total of 5,000 workers from 2016 to 2021. While Hospitals employment (both private and public) have increased by 3,359, and Medical and Other Health Care Services has increased by 2,411 over the same time.

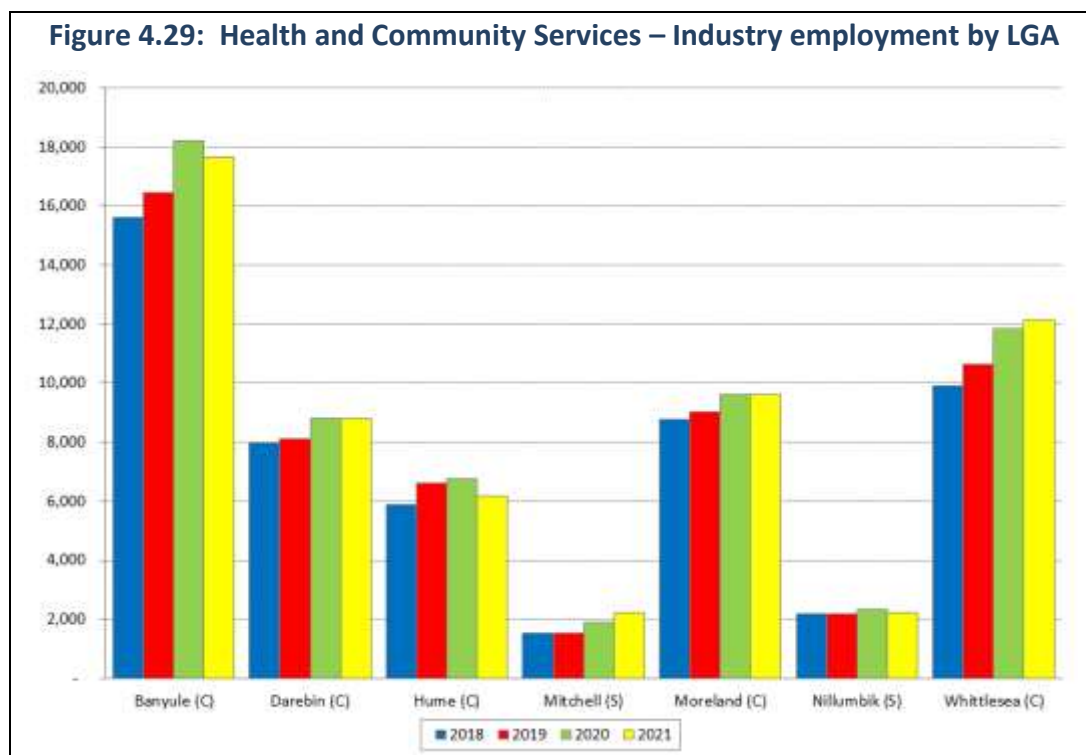


ANZSIC Code	ANZSIC Industry	2016	2017	2018	2019	2020	2021
84	Hospitals	14,007	13,431	14,006	15,284	17,392	17,367
85	Medical and Other Health Care Services	14,673	15,642	14,516	15,181	16,896	17,084
86	Residential Care Services	7,225	6,631	6,992	6,771	7,216	7,257
87	Social Assistance Services	12,105	15,295	16,314	17,327	17,995	17,106
	<b>Total</b>	<b>48,010</b>	<b>50,999</b>	<b>51,828</b>	<b>54,564</b>	<b>59,499</b>	<b>58,813</b>

## Employment by LGA

Banyule has the greatest number of workers within the North, given the large medical precinct around Heidelberg that includes the Austin Hospital, Mercy Hospital and

Heidelberg Repatriation Hospital. Whittlesea also has a large workforce, which includes the other major public hospital in Melbourne's North, the Northern Hospital. Most regions have been growing over the past few years, with some adjustments over the 2021 financial year.

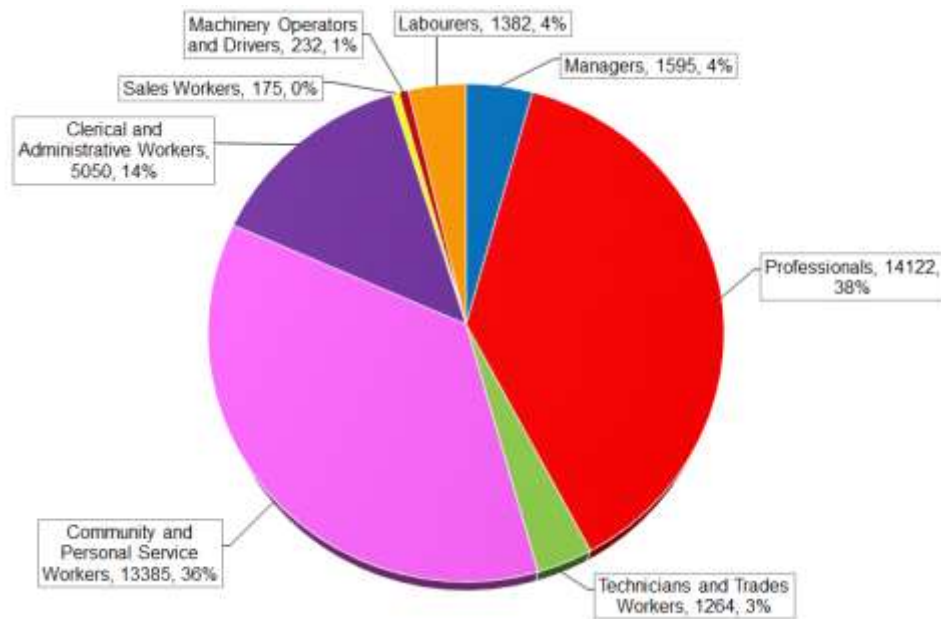


## Occupations

The Health and Community Services sector is made up of a workforce that contains 38 per cent Professionals and 36 per cent Community and Personal Service Workers. Combined these two occupational major groups account for 74 per cent of the Health and Community Services workforce.

Figure 4.41 shows the Top 20 occupations within the industry at the sub-major group level which reflect the detail available at major group. Most workers are employed as either Health Professionals (10,579) or Carers and Aides (10,298). Many are also employed as Health and Support Workers, Inquiry Clerks or Receptionist or Legal, Social and Welfare Professionals with each occupation having between 2,000 and 3,000 workers each. Other occupations that make up the top 20 include administrators supporting the health professionals, and food workers.

**Figure 4.30: Health and Community Services – Employment by occupation (ANZSCO major group), 2016**



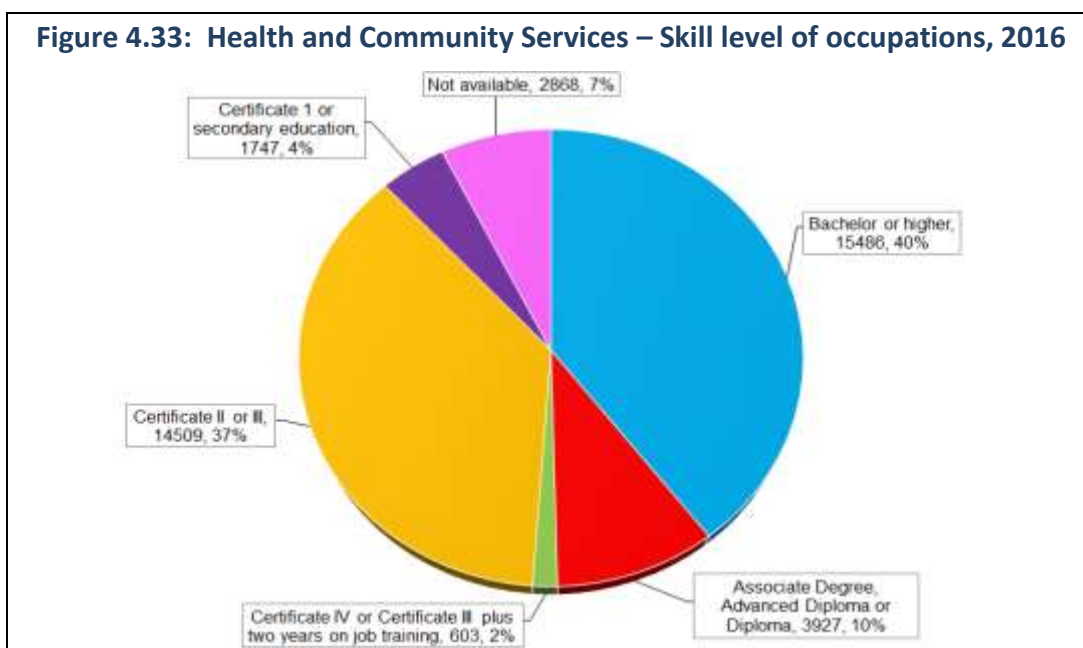
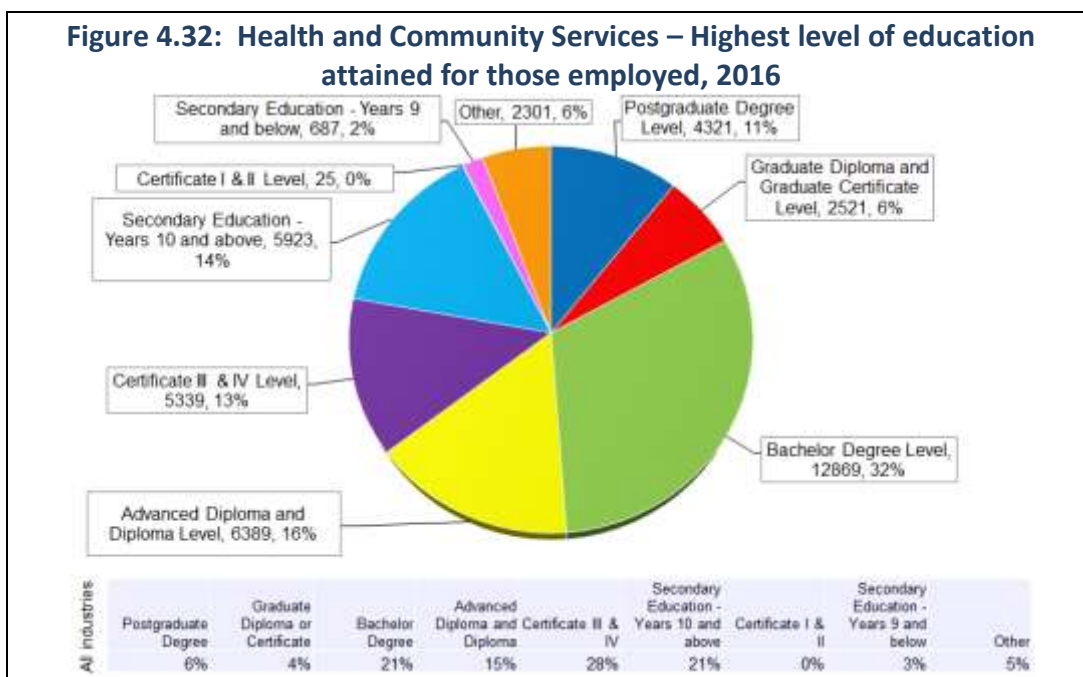
**Figure 4.31: Health and Community Services – Top 20 employment by occupation (ANZSCO sub-major group), 2016**



## Education and skill

Figure 4.32 shows the workforce by the highest level of education attained. Overall, the education level of Health and Community Service workers is very high, above the average across all industries. Just under half the workforce have Bachelors or higher level of education. While a further 29 per cent of the workforce have either a Certificate or Diploma/Advance Diploma level of education as their highest educational qualification. Only 16 per cent of those that work within the industry have no qualifications beyond secondary education.

The level of skill required for the workforce is shown in Figure 4.33. Overall, the workforce tends to be more qualified (education) than is required by the skill level of the occupations. Only 40 per cent of the workforce require Bachelors or higher (compared to 49 per cent that have this qualification). This implies that many qualified workers are employed below their highest level of education. While the occupations within the industry at the Certificate or Diploma level make up 49 per cent of the occupations.





## Roundtable findings

### Health system in the north

- Health is about more than just hospitals. It's a robust public health system, with community services and many other services that work collaboratively.
- Because of our region's demographics, we're really dependent on public health. We don't have much of a private system and we don't have sufficient numbers of private practitioners working in general practice and other areas that are very important in a balanced system. That's a real issue for the north.
- We have a strong need for GPs and allied health professionals, as well as workers in aged care and disability.
- There aren't many incentives for GPs to set up in outer areas, which have high need, a high level of chronic illness and require bulk billing services. There needs to be system-wide incentives for people willing to work in areas of high need.

### Infrastructure

- Key indicators on how Melbourne's north compares with other regions is that Northern Hospital has the busiest emergency department in Victoria. The hospital wasn't built to service the level of population growth that our region has experienced and when migration resumes the issue will become more serious. There is a need for capital investment down the track, if not now.
- Regional research reflects that outer northern Melbourne has experienced underinvestment over years when compared with other regions. This is slowly improving but not enough to meet the demand created by massive population growth. There are community hospitals going into Craigieburn and Mernda, investments in Northern Hospital and funds for family violence prevention. But this is catch-up rather than real progress.
- Over the last eight years we have experienced year-on-year growth of 7 to 8 per cent. Government is funding capital improvements but by the time they're finished they're full up and we're ready for the next batch.
- There has been a population growth hiatus over the last 18 months due to COVID, but the pandemic itself has caused a huge upsurge in workload. There are plans for a new hospital in the outer areas but that won't be ready for another 15 years. We need more in the interim.

- Infrastructure is catching up but recent data we developed showed that we were significantly under-bedded when it came to aged care and disability.
- As the region has grown there has been a lag in services being delivered near where people live. They have to go into activity centres elsewhere for services.
- Outer areas of the region have lower levels of all services. It's a fault of infrastructure planning. But it means health professionals don't want to work there either.

### Changing workforce needs

- One of the great needs in the coming years is the growth in mental health services coming out of the Royal Commission. This presents an opportunity for training and education providers to come up with skilled workers in mental health.
- Because of acuity changes, such as mental health, we need a different workforce at hospitals, one that includes specialist skills across a range of areas to meet client needs.
- Providers of disability support in the centre and the home will need more staff.
- What we've learned from deployment of a COVID positive community pathway is that having a bicultural workforce is critical for engagement. There is an issue of trust in CALD communities. People who have a health qualification in their own country, and speak the language, have been 'mission critical' to engagement for us during this time.
- Our staff shortages are all at the Certificate III and Certificate IV levels.
- With more people receiving care in their homes and with the effects of long COVID there is a need for case managers for COVID monitoring.
- Today there is demand for continuous care rather than episodic care, which is usually given by a university-qualified specialist. Continuous care providers may not need a degree. For example, people with a mental health issue might see a psychologist once a month but seek out additional help in between, like a health coach or personal care trainer.
- Engagement with communities in their own language is essential.
- There are opportunities that have come out of the pandemic. Because the system has been hit so hard there are new systems, processes and relationships being developed. Localised digital strategies are



being used and we can optimise these in the future. Part of the challenge with CALD communities is that they receive messages from the Department of Health but they're also receiving messages from their country of origin. These issues have workforce and infrastructure implications.

- We need a culturally competent workforce to engage with clients and break down barriers in a complex health system.
- We look for Certificate III and IV qualifications in the disability sector, and people with sensitivity.

### *Workforce challenges*

- Re workforce challenges, it's not easy getting health professionals to the outer parts of the region. Hundreds of thousands of people are moving into the area over the next ten years. Cohorts of young families and seniors are growing, and getting there before the workforce will. It's difficult to get physiotherapists and occupational therapists.
- We've always had systemic issues attracting GPs to outer suburban areas. Demand well exceeds supply and doctors are aware of this, so they charge top dollar to work in outer Melbourne locations. That causes significant sustainability issues.
- Mental health is a huge issue and there isn't enough investment and not enough professionals to meet the need. There's also a massive waiting list for dental care.
- Up to 45 per cent of people with an intellectual disability also have mental health issues.
- Mental health funding needs are serious. Across Banyule, Nillumbik, Whittlesea and Mitchell they're looking at 4000 support staff and 265 additional NDS funded therapists by 2023.
- Some roles are in very high demand. For complex NDIS clients there is a real shortage of speech pathologists and behavioural support specialists.
- Federal Government changes to where overseas-trained doctors can work mean that Melbourne's north is not included.
- Until funding improves, we won't attract staff. We're a disability employment provider and our staff are working 50 to 55 hours a week, with no overtime, for a minimum wage. It's not a fair system. NDIS funding doesn't allow us to pay people what they should earn and because of that we have trouble finding staff. For financial reasons they move to other sectors.
- Our CALD communities don't have agency, they don't have powerful people to advocate for them. Parts of our community are 'invisible' to

mainstream media. We have to quantify the level of disadvantage and to give a hand-up, not a handout. There shouldn't be this disparity in outcomes.

### *Digital literacy*

- Literature says that 52 per cent of the workforce needs to be upskilled in terms of digital capacity and digital literacy. What does that mean for how services are delivered and how we are going to get there? We'll be delivering care in a different way in ten years' time.
- On the digital front, I'd urge us to think about how we can look at digital integration using application program interface (API) integration. We're trying to reach out to a tech-illiterate, health-illiterate and English-illiterate community who may be illiterate in their country of origin.
- What we need is regional integration for collaborative healthcare. There is a real opportunity to be an exemplar on this.
- Having a digitally savvy workforce is critical.
- Bringing technology into aged care can have challenges. Some staff members can't keep up with the tech requirements of the job. Others spend more time trying to work out tech and less on care. There's an issue around how we get tech skills into the workforce and who pays for it.

### *Training and education*

- There are two elements to training: new entrants and workforce upskilling. Most training and education providers focus on new entrants but there is a real need for upskilling.
- We have to re-examine our training system and look at how we repackage training to meet health workforce needs.
- In normal times the saying is that regulations are ten years behind what's happening. But if, as they say, one COVID year is worth seven average years, we're now 14 years behind. We need rapid change in the training system to keep up with what's happened over the last 18 months.
- Articulation between TAFE and universities is an issue. Sometimes pathways from university to TAFE are what people need, for example for a health professional to pick up admin skills. It should be easier to move from one to the other.
- Over the pandemic, health students have had their practical placements cut back significantly due to the pandemic. So their workplace experience is limited. We don't know yet how that will affect the health system.

- Significant cutbacks to universities mean that they can't operate business as usual and will have to cut courses.
- There is a perception that if you go to university rather than TAFE, you'll have better opportunities for work. But that's not true.
- Supply and demand is the issue. Courses are offered based on student demand, not industry demand for available jobs. So you get a lot of people graduating as paramedics, for example, with no jobs to go to.
- Because the workforce needs health, IT and cultural literacy, there's no easy way to build appropriate training to cater for it all. Perhaps the way forward is to start with smaller building blocks and develop genuine pathways to higher level jobs.
- As we support people in community more there is potential to train up CALD carers, if the right courses and support are available.

### *Attracting young people to health*

- There is a real mismatch between the number of secondary students taking VET community services subject, and the number of those jobs available. We need to promote these careers more effectively.
- When the COVID crisis is over, a lot of people in healthcare will review their work and leave the sector. We have to make sure we attract young people to the sector and provide pathways and a decent wage.
- Senior secondary students are showing an interest in health and undertaking a VET delivered in secondary schools program. But they struggle to get a work placement in industry at any time. COVID has made everything worse.

### *NDIS*

- There are NDIS incentives for people in the new outer suburbs to build robust disabled-specific accommodation (in partnership with landlords or alone), but the services that these people need to access can be a long way away.
- The subsidy mentioned for new disability housing builds is only for 6 per cent of participants and of that, 3.7 per cent has already been allocated. So we're going to have a shortage of disability housing for a long time.
- Because 58 per cent of NDIS participants in the area are under 18, transport is a major issue. Services are largely inaccessible.

- The take-up of NDIS for people with disability in the CALD community is smaller than average because the system is so hard to navigate. Their share is 45c in the dollar. For the Indigenous community it's much worse – just 12.5c to 15c in the dollar is being spent. That's because they can't get to services, don't trust services, services are not set up specifically for them or they don't understand what's going on. These are people with very high needs and the system is not working for them.
- What the NDIS calls market failure is probably going to be caused by not having enough staff, and skilled staff, to deliver on tight prices.
- In terms of accessing support in the community, in Whittlesea alone there are 1000 children diagnosed with autism who have funding packages but can't access a provider. Data says that in the next three years there are going to be another 2700 kids diagnosed with autism who are supported in the community.
- Getting NDIS funding to flow through to where it's most needed is critical.
- Re the NDIS, individual choice is great if the client and the carer have the education and capability to understand the system. Many don't.
- The current NDIS system interrupts the flow of funds to where they're needed on the ground so that clients can take advantage of what they're entitled to.

## **4.5 The Visitor Economy Sector**

The Visitor Economy is broadly made up of travellers who visit the region for tourism, business, international students, and to visit friends and family. This section covers some of the industries directly associated with the Visitor Economy in Melbourne's North. For the purposes of this section some of the larger industries that benefit from tourism have been excluded from this analysis. This section excludes industries such as retail, and education sectors, which have a significant local component.

The following industries have been included in the following analysis:

- Accommodation;
- Food and Beverage Services;
- Water Transport;
- Air and Space Transport;
- Rental and Hiring Services (except Real Estate);
- Heritage Activities;

- Creative and Performing Arts Activities;
- Sports and Recreation Activities; and
- Gambling Activities.

### Key economic indicators

The industries associated with the Visitor Economy generated \$11.0 billion in sales over calendar 2019 prior to the pandemic. The value-added component was \$3.6 billion over the same time period. Average annual growth in value added for these industries was around 4.4 per cent per annum over 2011 to 2019. While sales growth over the same time period was around 3.4 per cent per annum. In particular, there was strong growth in these industries in the two years prior to the pandemic.

The industries employed around 36,500 workers within the businesses operating within Melbourne North. While there was a resident workforce of around 48,600 prior to the pandemic. This means that there is a net outflow of around 12,100 workers out of the region.

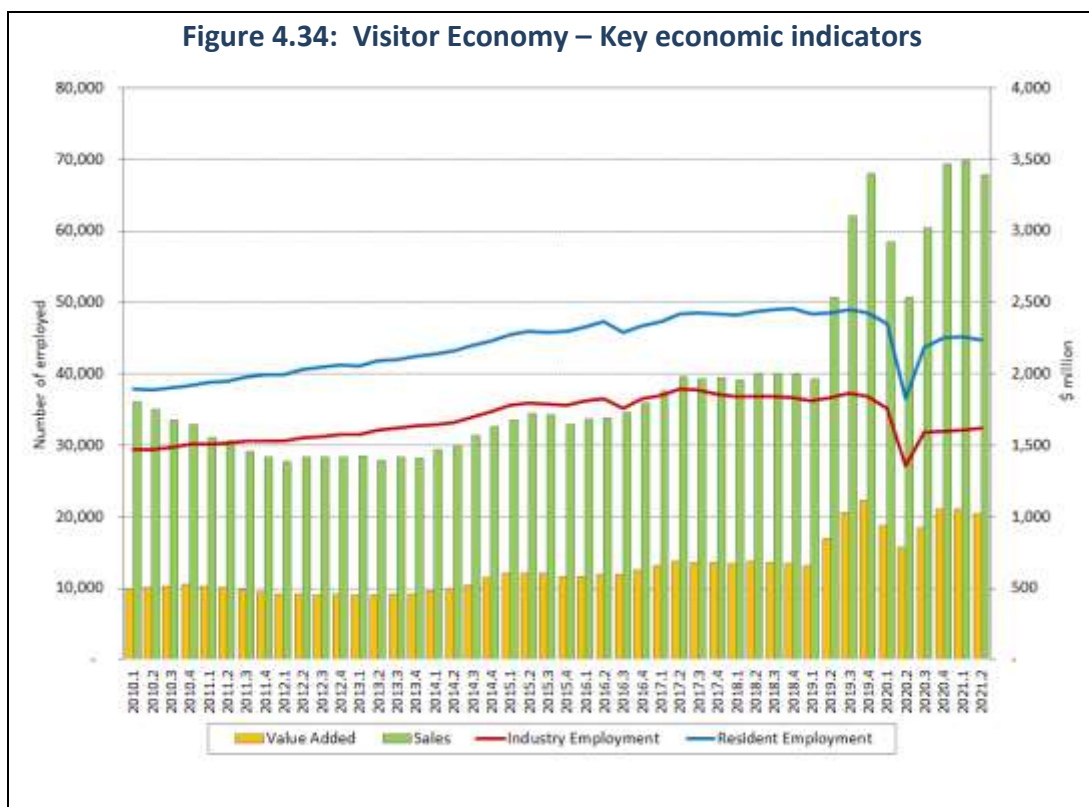
The industries associated with the Visitor Economy have been some of the most impacted by the COVID-19 pandemic. The government response to the COVID-19 pandemic has been to restrict movement across borders,

this includes closing international and state borders and at various times, imposing local restrictions of residents that prevent anything other than short trips. This has severely hampered visitors into the region (and domestic activity associated with these industries).

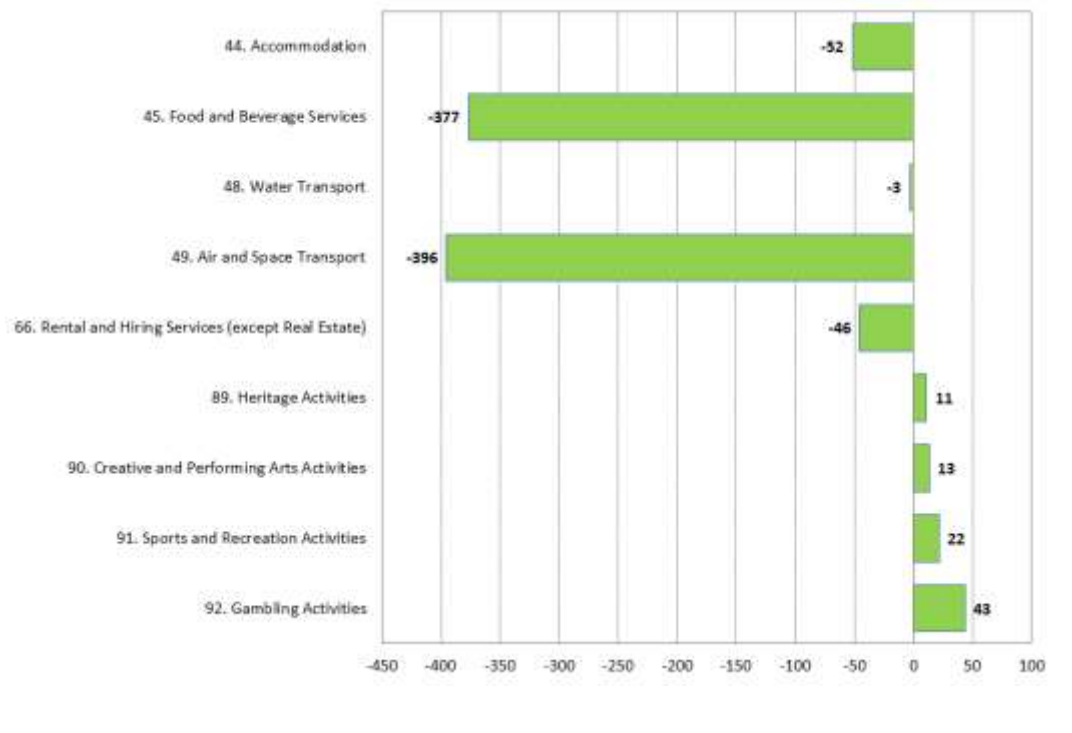
Employment in these industries dropped by 23 per cent going into the June quarter of 2020, during the first lockdown period. Since this time, employment has started to recover but remains well below pre-pandemic levels.

The following chart shows the change in employment over the previous five financial years. This includes the 2020 financial year where the June quarter was impact by the pandemic and the slow recovery into the 2021 financial year. Most industries that have been severely impacted by the pandemic have continued to be below 2020 levels. The previous two years dominate trends over the past five years.

In particular, Air Transport remains hampered by travel restrictions and remains at low levels. While remaining industries have seen some recovery over the previous year. This includes growing employment in Food Services and Sports and Recreation and Creative and Performing Arts.



**Figure 4.35: Visitor Economy – Average annual change in employment, 2016 to 2021**



**Table 4.5 Industry employment for Visitor Economy industries – 2016 to 2021 (financial year)**

ANZSIC Code	ANZSIC Industry	2016	2017	2018	2019	2020	2021
44	Accommodation	1,260	1,300	1,244	1,140	1,047	1,002
45	Food and Beverage Services	20,737	20,374	20,115	19,979	19,251	18,852
48	Water Transport	117	100	129	109	109	100
49	Air and Space Transport	7,529	8,858	8,942	7,595	6,797	5,551
66	Rental and Hiring Services (except Real Estate)	1,170	1,212	1,086	1,097	1,054	942
89	Heritage Activities	208	166	168	242	294	264
90	Creative and Performing Arts Activities	1,536	1,319	1,437	1,692	1,655	1,602
91	Sports and Recreation Activities	3,257	3,089	3,769	4,411	3,445	3,366
92	Gambling Activities	232	234	260	338	416	449
	<b>Total</b>	<b>36,045</b>	<b>36,652</b>	<b>37,150</b>	<b>36,604</b>	<b>34,068</b>	<b>32,128</b>

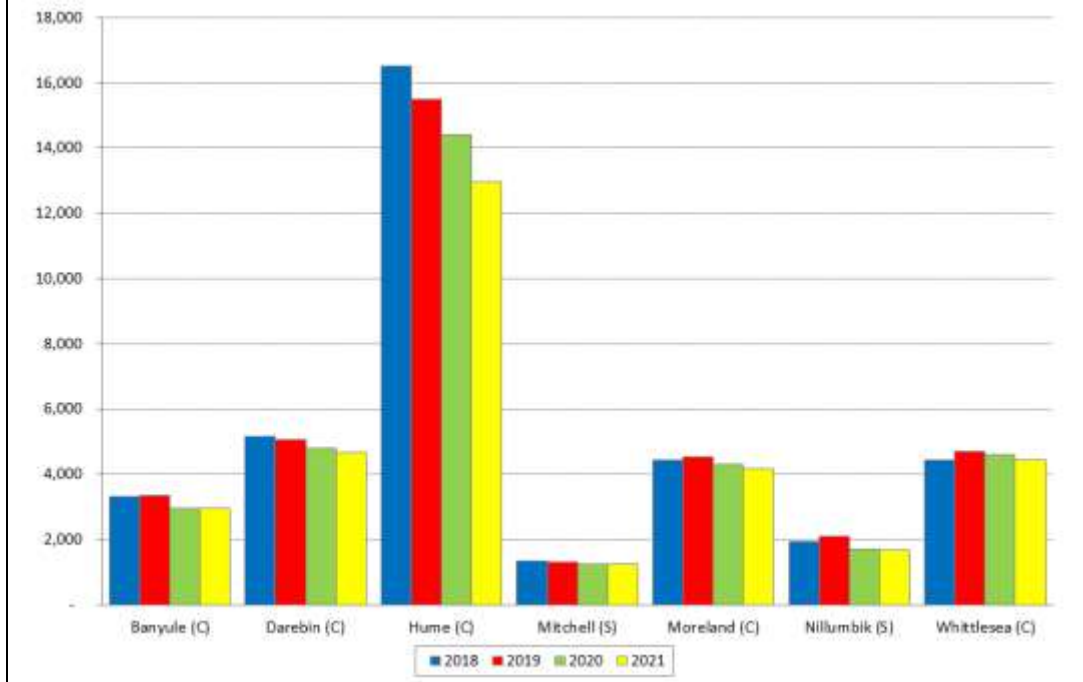
### Industry employment by LGA

Most of the employment for industries related to the Visitor Economy are located within Hume, given Melbourne Airport is located within the region. Around 5,000 to 7,000 are directly employed in air transport. Even

without Air transport, Hume remains the largest employment region. Hume also employs the largest amount of people in the Food Services industry, and in Sports and Recreation.

Employment in creative industries is mostly within the inner regions of Darebin and Moreland.

**Figure 4.36: Visitor Economy – Industry employment by LGA**

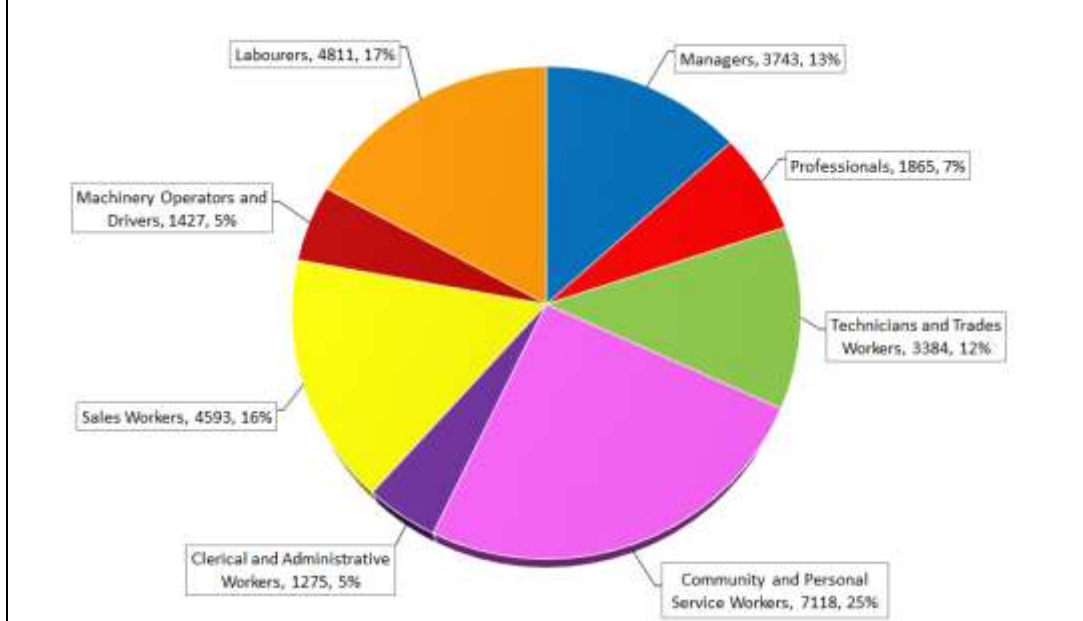


## Occupations

Figure 4.37 shows the occupations within the industries related to the Visitor Economy. Overall, the occupations at the major group level are quite diverse. The largest group are community and personal service workers at 25 per cent of the workforce. Labourers, sales workers, managers and technicians and trades workers all have between 10 and 20 per cent of the workforce each.

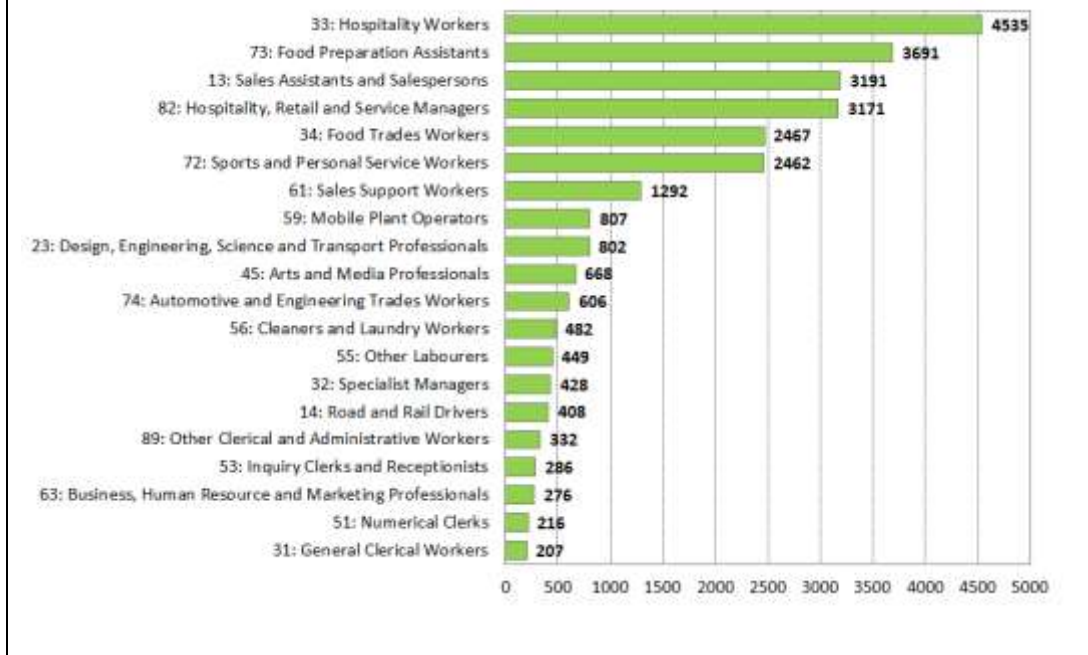
Figure 4.38 gives a breakdown of the top 20 occupations within these industries. The top occupations reflect major employment from the Food Services industry with the top occupations including Hospitality Workers and Food Preparations Assistants.

**Figure 4.37: Visitor Economy – Employment by occupation (ANZSCO major group), 2016**





**Figure 4.38: Visitor Economy – Top 20 employment by occupation (ANZSCO sub-major group), 2016**

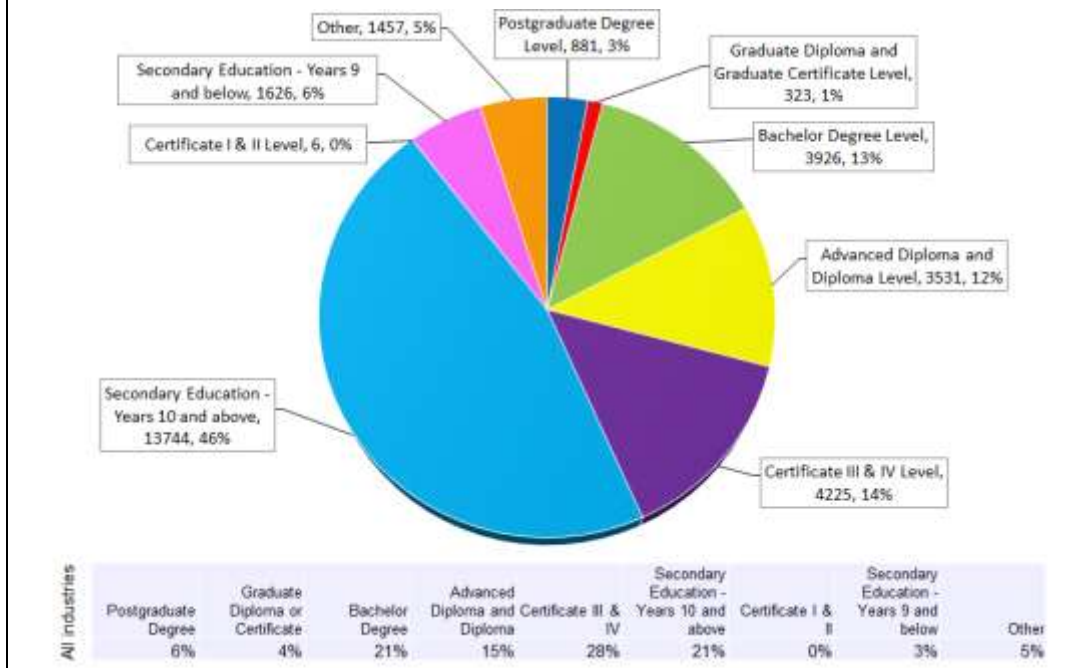


### Education and skill

Overall, these industries combined do not require a high level of education. Most workers within these industries do not have any tertiary qualifications, but only secondary

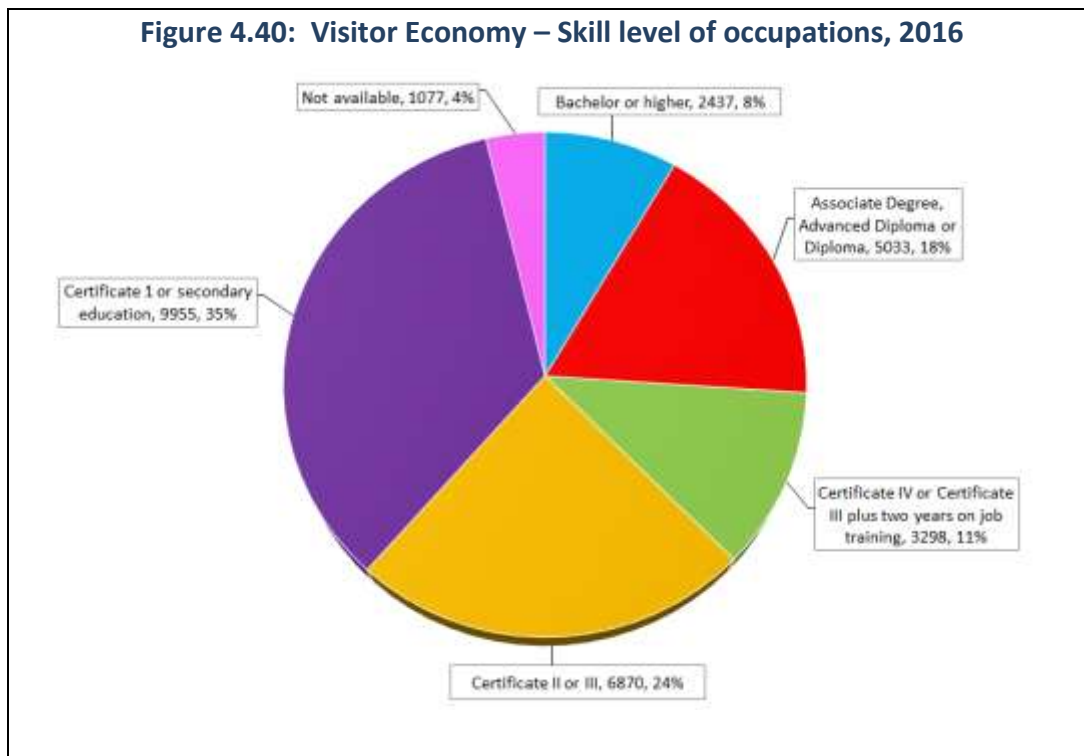
level education (51 per cent). Given many of the jobs available suit young workers such as students. The industries have less qualifications across all tertiary levels than the overall average for workers within the North.

**Figure 4.39: Visitor Economy – Highest level of education attained for those employed, 2016**





**Figure 4.40: Visitor Economy – Skill level of occupations, 2016**



### Roundtable findings

#### Victoria University presentation: RESET project Dr Joanne Pyke, School for the Visitor Economy

Victoria University is undertaking a project for the Department of Education and Training, in partnership with Western Melbourne Tourism. They are looking at how to build the resilience of the Visitor Economy in Melbourne's west. Methods being used are a regional survey as well as interviews with stakeholders. Conducting a survey in the current climate is challenging, as businesses deal with the ramifications of the pandemic and lockdowns. While the survey instrument is available it is being offered to other regions as well to help every region to build resilience.

NORTH Link will disseminate the survey to stakeholders throughout the north.

#### About the Visitor Economy

- Visitor Economy is defined as the direct and indirect activities that visitation generates. Since the pandemic everyone has a better understanding of the importance of the Visitor Economy and how its supply chain is affected by downturns.
- Visitor Economy isn't just one industry. It captures many visitor touchpoints and their supply chain. It involves targeting locals and visitors to spend money in the region to benefit businesses and create local jobs.

- The Visitor Economy has been embraced and is now valued at a political level.
- It's important to look at the language we use around Visitor Economy and how (and if) we separate that from the general economy.
- The education sector is important to this industry, certainly from a tourism perspective. The visiting friends and relatives market is underpinned by international tourism.

#### Pandemic impact on the industry

- Visitor Economy was the first and hardest hit sector when the pandemic arrived last year. High casualisation in the workforce made it easy for people to be quickly stood down as businesses opened and closed. So staff moved on to other jobs that provided more stability.
- It's an incredibly vulnerable industry. Loss of international students and new migrants has made a huge difference to the workforce and locals aren't picking up the jobs available.
- People who worked in retail, hospitality and the Visitor Economy have been hit hard. We are looking at the impact of COVID and pathways to get back.
- COVID has impacted all industry sectors in some way and accelerated change. Workers and businesses have had to adapt quickly. Visitor Economy businesses and their supply chain had to

understand how to reposition themselves. Some have done very well.

### *Workforce issues*

- Underpinning all the issues is the casualisation of labour. This needs to be looked at. We may need to pay more when we go out so that people have regular hours and secure work.
- We need to look at salary structures in the industry. I don't think that what we had in 2019 will be sustainable in 2022 and beyond.
- Our businesses are telling us there's a real shortage of front of house staff, chefs and cooks, all hospitality workers – they're struggling to get people on board.
- Others say they struggle to find middle-level managers, who are often coaxed to other jobs.
- Some hospitality workers have lost their soft skills and confidence during lockdown. They're hesitant and scared to come back, particularly to hotels.
- There is a perception that tourism and hospitality is a stepping stone, and not a career in itself. We need to promote the many pathways available to people who work in the Visitor Economy.
- We need to make it a more inclusive industry and gender equity is part of that.
- Some businesses lost staff with all the uncertainty and now there are lots of ads for staff. But people are put off because they don't know what the future holds.
- We need to build the confidence and skill levels of our residents to take these jobs on.

### *Events*

- Events is a very challenging space where a long lead time is required. The uncertainty is coming from the state, because so far there's no framework for them to work within. They don't know when or how they'll be allowed to operate. It affects events of all sizes. We need some surety.
- There's going to be a big shortage of people with event experience, back and front of house. Many have left the industry due to the uncertainty and it's difficult to know if they'll return.
- Big events have all been significantly affected, as have smaller community events and markets.

### *Training*

- With training, we're in a tricky spot. Training providers need to partner with industry to make sure that the training they deliver can meet industry demand and expectations. But at present, businesses are not in a position where they can partner with us.
- At present we need practical skills which are difficult to teach virtually. Beyond that we need to develop industry career professionals who can have a long term impact on the industry.

### *Infrastructure*

- We have good bike paths in our region but we need more than that. We need signage, wayfinding, public amenity, better footpaths and improvements to the urban environment.
- Mitchell has a severe shortage of accommodation, particularly quality accommodation. When operators are interested in expanding they express concern about finding the right staff.
- Hume has accommodation clustered around the airport but not much else. Through our investment attraction strategy we are working with developers but we have the issue of the Melbourne Airport overlay which affects height restrictions.
- Visitors don't understand or care about municipal boundaries. From a visitor perspective it's not easy to get around the region.
- In growth areas our roads are struggling. New Visitor Economy businesses further out have difficulties connecting to things like water and having to pay for that infrastructure.
- The Regional Trail Strategy and a \$2.1 million upgrade to Plenty Gorge will mean more visitors. Both these span across municipalities.
- Accommodation is a shortage in Nillumbik too. Planning scheme is a barrier to this. And public transport to rural areas of Nillumbik is challenging, particularly St Andrews
- General connectivity in rural areas is a challenge just to make sales, run a website etc.

### *Cultural infrastructure and the creative sector*

- We're aware of art collections that can't be displayed because there isn't appropriate gallery space. Our region has a rich art heritage. But galleries are expensive to build and maintain.
- Smaller galleries in Brunswick are being priced out of the area, which is incredibly challenging.

- The entertainment sector has been hard hit and it's going to take a while to get that back in terms of venue capacity and audience confidence.
- Moreland has a diverse range of privately owned creative and co-located spaces, and a rich creative cohort, and they need help to get them back to where they were.
- The Nillumbik creative community wants a regional gallery, which we would love to see come to fruition as a visitor attraction. We need a David Walsh (MONA)!

### *Melbourne Airport*

- Melbourne Airport is working hard to get back into business as restrictions lift and borders open. It will take three to five years to get back to where they were pre-pandemic. That's hard work.
- Support for Melbourne Airport is important. During COVID we lost a lot of direct flights and it's going to be difficult to get them back because that's been a 30-year process. We'll lose people if they have to come to Melbourne via Sydney.
- We also need to ensure the airport keeps its curfew-free status. That's a competitive advantage.
- Melbourne Airport employed a lot of Hume residents and they have lost their jobs. Our unemployment rate in Hume is now high; all our good work leading up to that is gone.

### *Digital*

- Understanding data analytics and the power of data is important in understanding businesses, markets and customers.
- Business owners are so busy working in the business they don't have time to step outside and think about capturing that important data which can inform the future of their business.
- If there's any specific, dedicated digital training we can offer our operators, it would be great. We'd have to find a time that suits the industry though.
- COVID has pushed a lot of businesses to pivot and diversify to help them move through COVID, and in many cases digital tools have been central to that.
- Adapting to technology is critical. Moving into the digital space and use of social media to attract customers has been a benefit to some businesses and will have a long term impact.

### *Attracting young people to the industry*

- We need to get Visitor Economy career options in front of young people and tell them the jobs are there. The industry should work with schools to inform students about line of sight jobs.
- It's about encouraging young people to get out, network and explore options. The work is there.
- There are very enthusiastic young people leaving schools, some with hospitality experience already and keen on pursuing a broader Visitor Economy career path.
- Structured workplace learning is one of the first pathways but there's school based apprenticeships and traineeships.
- Employers want experience but many school leavers don't have that experience. They need opportunities for them to prove themselves.
- LLENs deliver a structured workplace learning program and there are also opportunities for apprenticeships through the HeadStart program. Employers are welcome to reach out to LLENs.
- The secondary sector is undergoing significant generational reform that focuses on vocational education. There will be a focus on VET being delivered in industry growth areas and every school will offer hospitality training to students.
- If businesses can't afford full-time staff, school based apprenticeships could be the answer.
- School-industry engagement would be a good strategy for the industry in the north.

### *Opportunities for the future*

- There is an opportunity to help the Visitor Economy reimagine how it employs people, how it engages, trains and retains people. There is a message for the industry in all this.
- People will be considering their lifestyle and seek out a better life-work balance. Employers will need to offer career options that are attractive to jobseekers.
- We don't understand yet how the market will work in the short term and longer term. People will start spending locally but once international travel opens up we'll have to work harder for the tourist dollar. We need to influence government to make sure our suburban tourism offers are being promoted as part of their campaigns.
- Businesses that succeed in the future are the ones that are able to adapt quickly. For some, it's been an opportunity to shape up.

- We'll find that going out isn't something people take for granted. They'll plan carefully and do their research to make their experiences worthwhile. It's an opportunity.
- We work with large tourism operators moving into the area from the start. We ask about their labour force needs so that we can find people and upskill them.
- Nillumbik is a big day trip destination. We're focusing on marketing and re-informing people about the great things we have to offer.
- This industry has great value in that it offers entry-level jobs, which are declining elsewhere.
- We have three Quest properties in the north. Each time we come out of lockdown things have quickly bounced back, especially the friends and family market. After last lockdown we quickly reached 89 per cent capacity. People want to get back to business.
- It's looking very positive for demand for experiences once lockdown is off.

#### *Regional tourism board*

- State Government funds regional tourism directly and supports the City of Melbourne. But there's no support for suburban tourism in any significant way. There is an equity issue.
- The Melbourne's North Visitor Economy project is a great start. It would be good to engage tourism operators with a model like the Melbourne's North Food Group. But at the moment it would be impossible to ask businesses to pay to join.
- We've been moving towards a regional tourism board for a while now. Our work so far is a good starting point and we can build on that.
- We've tried in the past to develop a regional tourism strategy, but it became complex.
- Why it didn't work for us last time was the need for Council approval on every item and no resourcing or budgets for actions.
- The outcomes of the recent *Parliamentary Inquiry into the impact of the COVID-19 pandemic on the tourism and events sectors* identify the gap in Greater Melbourne being picked up as a destination by the State Government. Recommendations are to explore the option of a regional tourism board for Greater Melbourne. What that looks like, we don't know.
- We need someone to take a leadership role in the region for the Visitor Economy, starting small.

- One common element we have across the region is food.

## **4.6 The Logistics, Supply Chain and Property Sectors**

This section reviews the key economic indicators from the Logistics, Supply Chain and Property industries within Melbourne's North. Where Logistics and Supply Chain industries cover all modes of transport, including air, road and rail. Logistics industries also include transport services, Postal and Delivery and Warehousing.

While the Property industry covers Construction including Building, Heavy and Civil Engineering, and Construction Services.

The Logistics industry within Melbourne's North covers key freight routes going out of Melbourne including by air through Melbourne airport and the intermodal freight terminal at Somerton.

### ***Key economic indicators***

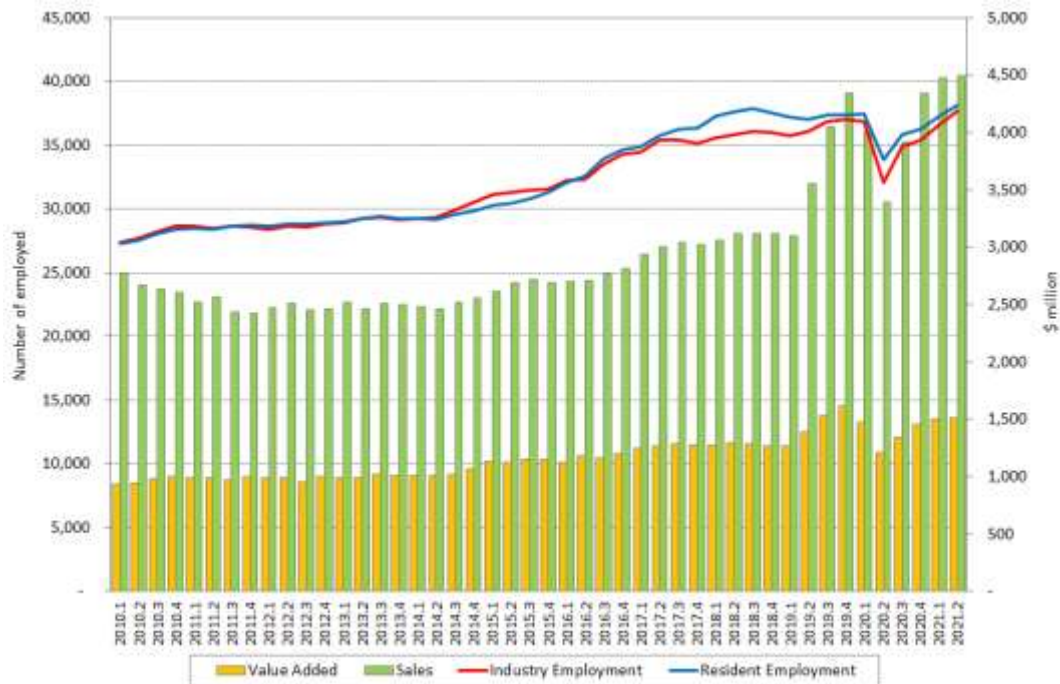
The Logistics and Supply Chain industry within Melbourne's North had annual Sales of \$15.1 billion in 2019 prior to the pandemic with a Value Added component of \$5.8 billion. The past five years has seen growth accelerating within the North with annual average industry (value added) growth of 4.8 per cent per annum over 2014 to 2019.

In 2019 the industry employed 36,440 workers, while there is a resident workforce of 37,370 workers. Throughout history the industry and resident workforces have been at similar levels, which points to a local workforce.

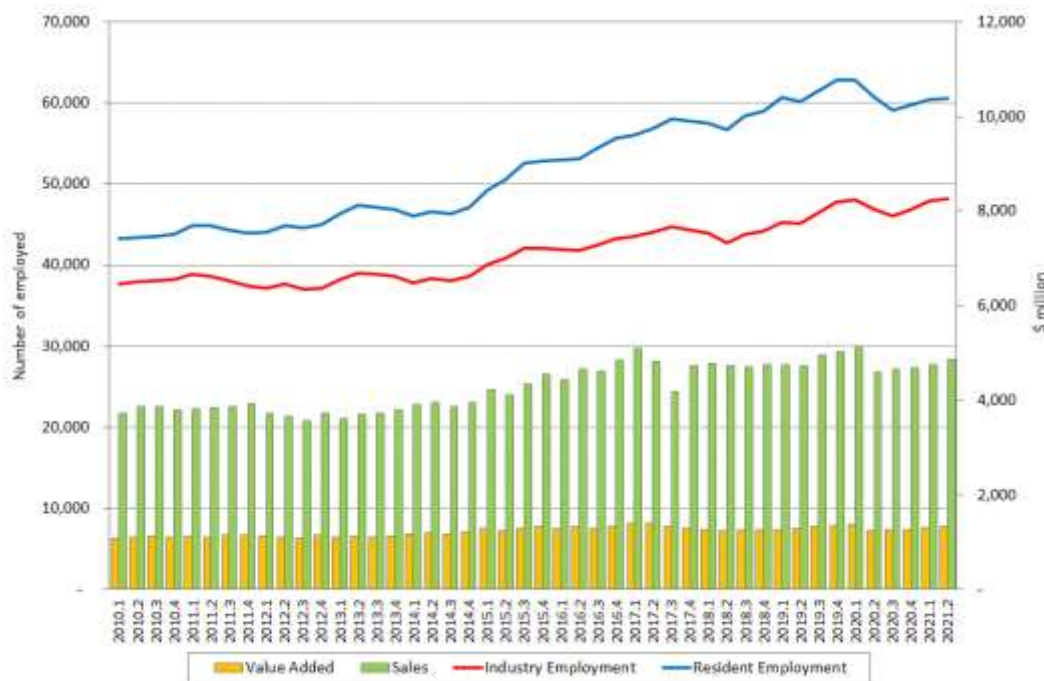
Overall, the industry remains above or near pre-pandemic. Passenger transport, air transport in particular, has been lower than pre-pandemic levels which affects the overall industry. While freight, delivery and warehousing have been more resilient throughout the pandemic and have been growing in response to increased demand for online delivery when movement is restricted.

The property industry had sales of \$19.4 billion in 2019 with a value added component of \$5.2 billion. Over the past five years the industry has grown at around 2.1 per cent per annum over 2014 to 2019. The construction industry has had some impact from the pandemic, but overall remains fairly resilient with employment levels currently hovering around pre-pandemic levels. The Property industry employs just under 46,000 workers within the industry, while there is a resident workforce of around 61,000.

**Figure 4.41: Logistics and Supply Chain – Key economic indicators**

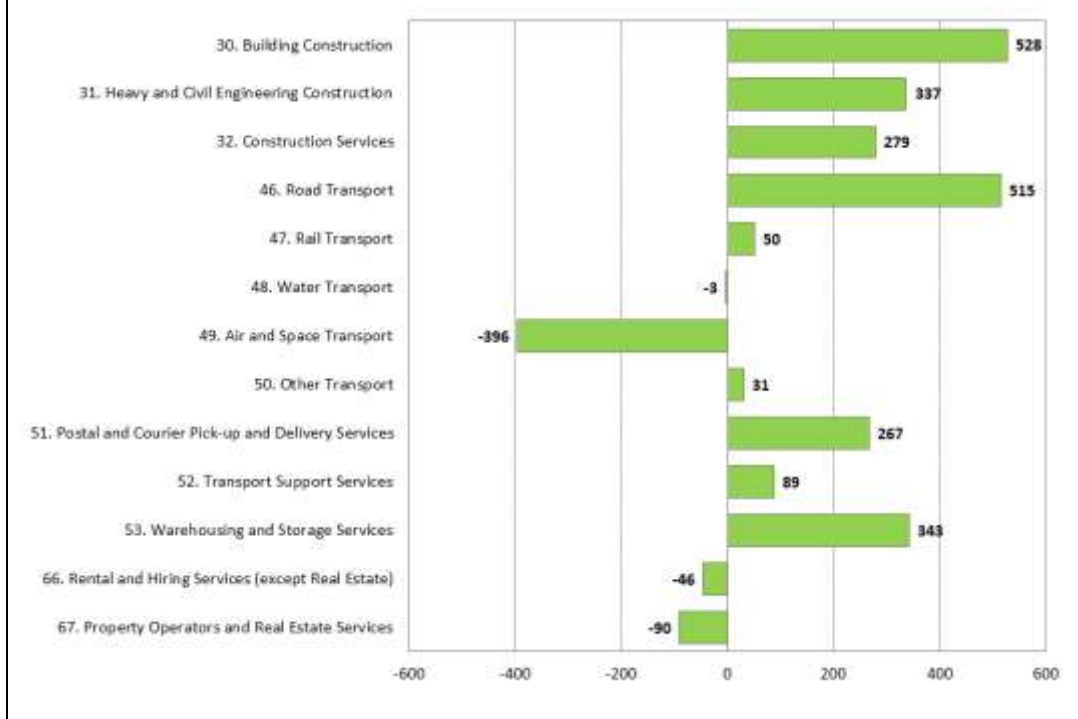


**Figure 4.42: Property – Key economic indicators**





**Figure 4.43: Logistics, Supply Chain and Property – Average annual change in employment, 2016 to 2021**



**Table 4.6 Industry employment for Logistics, Supply Chain and Property industries – 2016 to 2021 (financial year)**

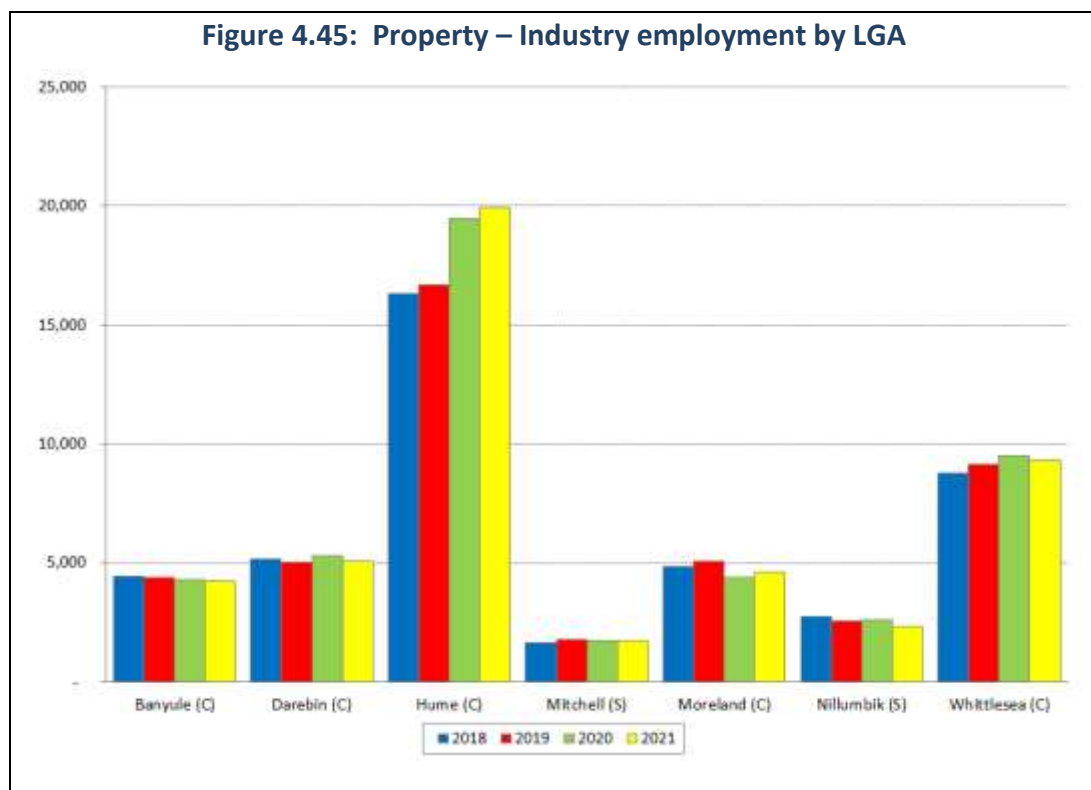
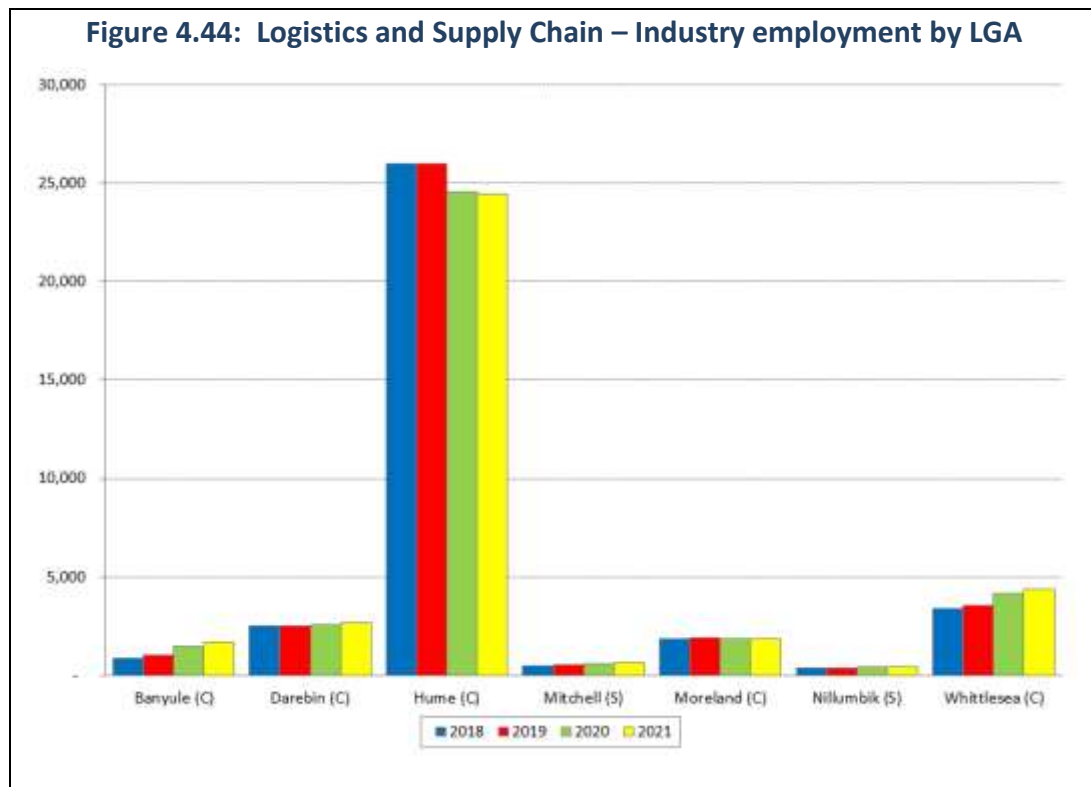
ANZSIC Code	ANZSIC Industry	2016	2017	2018	2019	2020	2021
30	Building Construction	8,173	8,186	8,905	9,475	10,008	10,813
31	Heavy and Civil Engineering Construction	2,272	2,334	2,586	2,664	3,130	3,959
32	Construction Services	28,246	29,416	29,311	29,337	31,087	29,642
46	Road Transport	10,598	12,104	12,627	13,794	13,371	13,175
47	Rail Transport	578	571	593	624	766	830
48	Water Transport	117	100	129	109	109	100
49	Air and Space Transport	7,529	8,858	8,942	7,595	6,797	5,551
50	Other Transport	235	203	176	204	308	388
51	Postal and Courier Pick-up and Delivery Services	3,197	2,897	3,003	3,389	3,984	4,530
52	Transport Support Services	6,183	6,111	6,368	6,266	5,837	6,627
53	Warehousing and Storage Services	2,313	2,398	2,566	2,920	3,483	4,026
66	Rental and Hiring Services (except Real Estate)	1,170	1,212	1,086	1,097	1,054	942
67	Property Operators and Real Estate Services	3,267	3,379	3,102	3,118	3,073	2,815
	<b>Total</b>	<b>73,877</b>	<b>77,769</b>	<b>79,394</b>	<b>80,593</b>	<b>83,007</b>	<b>83,399</b>

## Industry by LGA

The vast majority of the Logistics and Supply Chain industry is located within Hume, given the region is home to key freight routes by air, road and rail. This covers Melbourne Airport, freight access along the Hume including key freight terminal at Somerton. Industry employment in regions outside of Hume is relatively small.

Hume also has the largest workforce in construction with around 16,500 workers as of 2019. While there is also a fairly large workforce in Whittlesea with just under 10,000 jobs, and each other LGA has a workforce of between 1,600 and 5,500 workers per region. The Property industry within most LGAs grew over the past few years, in particular the outer northern regions. Employment growth within the inner regions has been slower than the outer regions, with small declines within Darebin and Moreland areas.





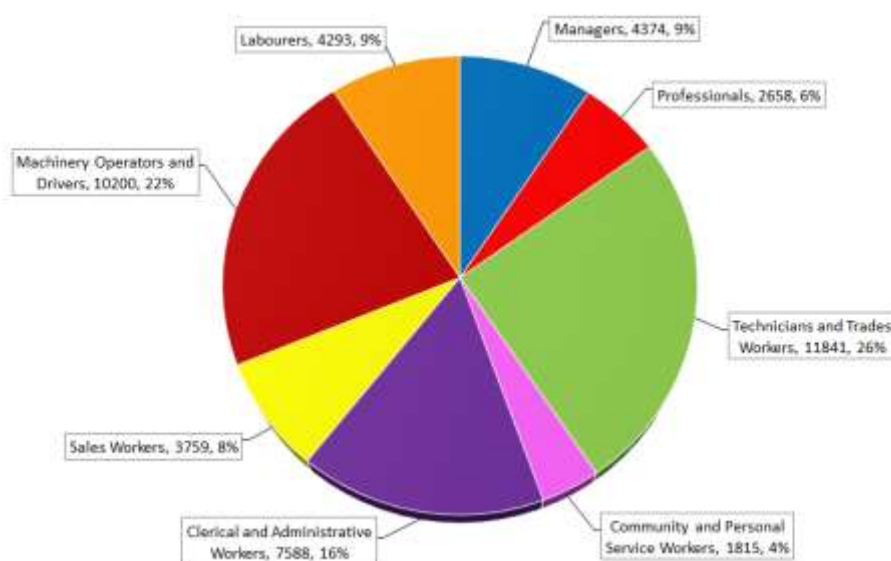
## Occupations

Figure 4.46 shows occupations by major group within the combined Logistics, Supply Chain and Property industries. Technicians and Trades makes up 26 per cent of the combined workforce, with this segment weighted more towards those that work in the Property industry. The second highest major group is machinery operators and drivers, which comprise of 22 per cent of the workforce, and is weighted more towards the Logistics and Supply Chain industries. The occupations are spread out fairly evenly between the remaining major groups, with the

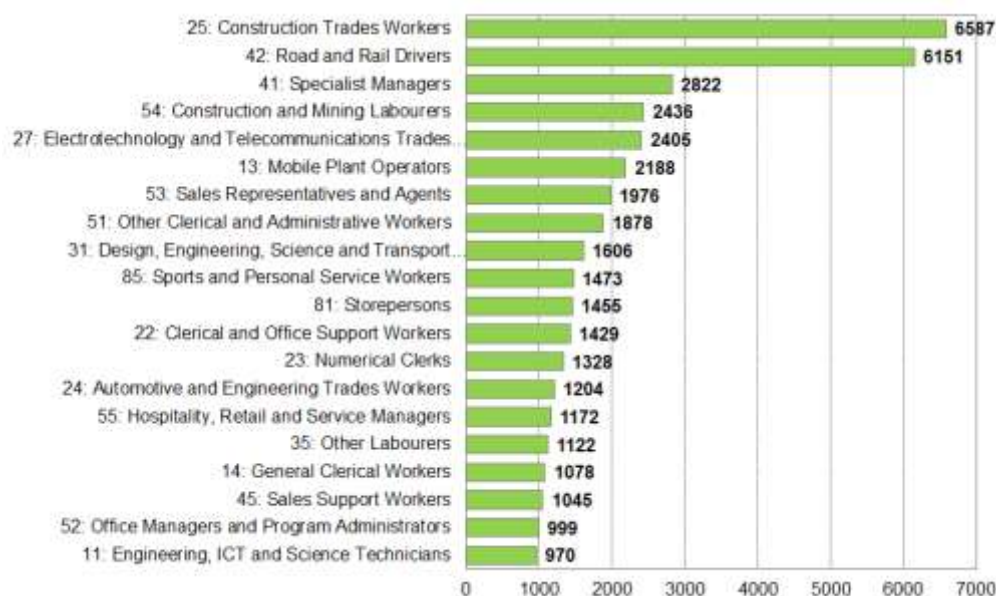
exception of Professionals and Community and Personal Service Workers, which make up a small proportion of the workforce.

Figure 4.47 shows the Top 20 occupations at the sub-major group level for the combined Logistics, Supply Chain and Property industries. Construction Trades Workers is the highest employing profession followed close behind by Road and Rail Drivers. Other high employing occupations include Specialist Managers, Construction and Mining Labourers, and Electrotechnology and Telecommunications Trades Workers (Electricians).

**Figure 4.46: Logistics, Supply Chain and Property – Employment by occupation (ANZSCO major group), 2016**



**Figure 4.47: Logistics, Supply Chain and Property – Top 20 employment by occupation (ANZSCO sub-major group), 2016**



## Education and skill

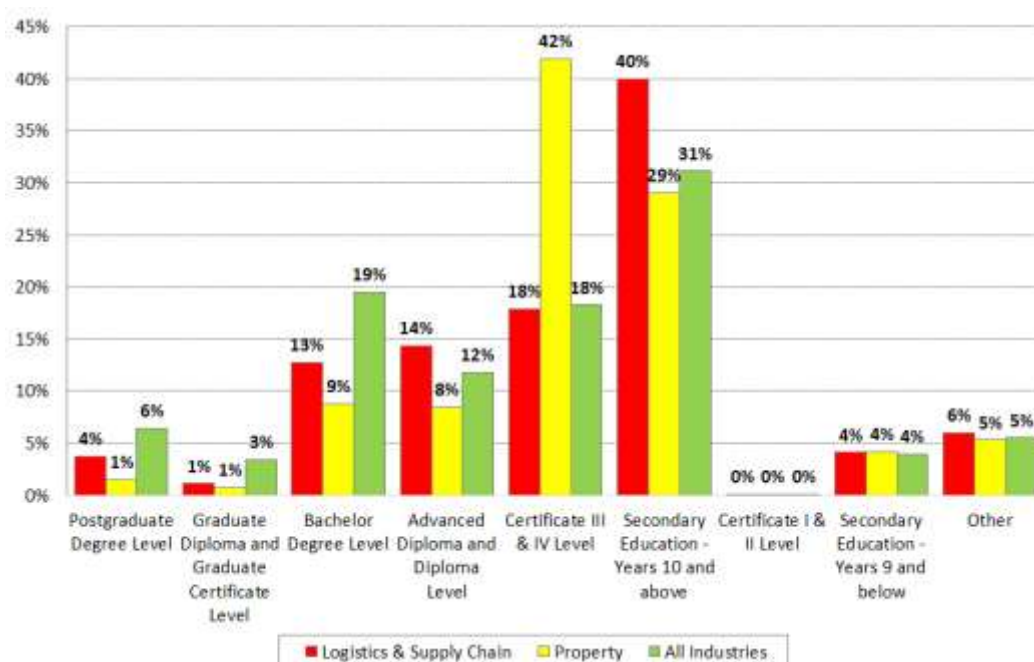
Figure 4.48 summarises the highest level of education for each of the Logistics and Supply Chain, and Property industries as well as including a comparison against the average education level amongst all workers employed within Melbourne's North.

The Logistics and Supply Chain industry generally has a low barrier to entry with the largest proportion of the workforce only having secondary education (40 per cent) without any further tertiary education. While the Property Industry has a high proportion of workers that have either Certificate III or Certificate IV (42 per cent). Both of these majority segments are well above the average education level across all industries.

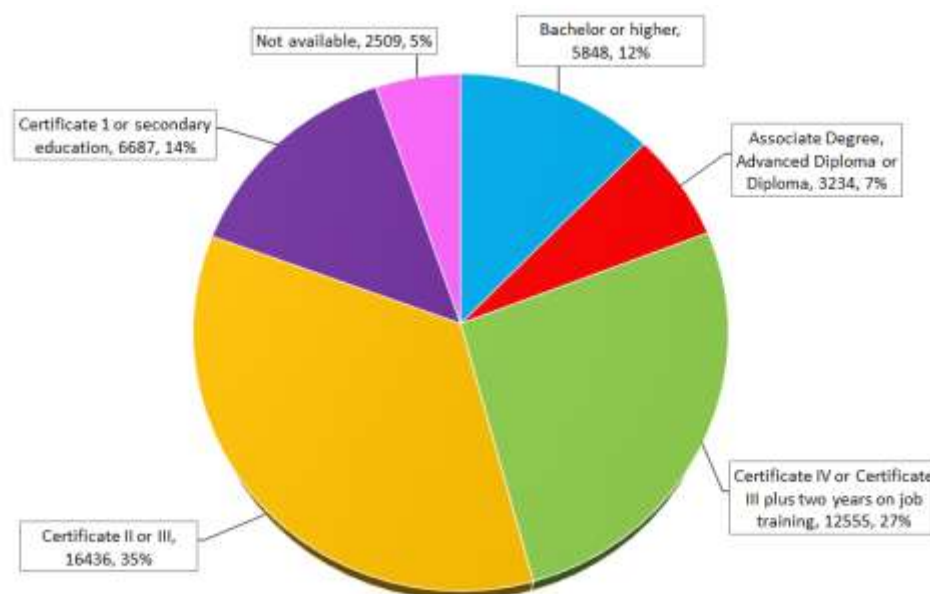
At the bachelors and above level of education, both Logistics and Supply Chain and Property industries have a lower proportion of workers than the industry average.

Figure 4.49 shows the skill level of the workers within the both industries combined. Each industry on its own has a similar composition of required skill, however Logistics and Supply Chain tilts to the lower skilled end of the workforce. Only 12 per cent of jobs require Bachelors or higher, while the vast majority of jobs within these industries have a skill equivalent to Certificate or Diploma (62 per cent of the workforce).

**Figure 4.48: Logistics, Supply Chain and Property – Highest level of education attained for those employed, 2016**



**Figure 4.49: Logistics, Supply Chain and Property – Skill level of occupations, 2016**



## Roundtable findings

### Importance of infrastructure

- Critical infrastructure is hugely important for property decisions, new investments and the location of businesses as they grow.
- Infrastructure is definitely driving investment decisions now.
- Over the last few years we've had a number of businesses commit to Merrifield as a location because of North East Link. It's about the ability to distribute to the whole of Melbourne from a major distribution centre.
- The Hume Freeway has been the backbone of a number of our projects, as has the Western Ring Road and North East Link. Our region also has great access to Melbourne Airport and the CBD.
- Before 2019, most of the larger players in the north from an industrial perspective were private groups. We've seen a real shift in institutions now coming in and buying up larger pieces of land.
- The north and the west have almost become one market in terms of businesses looking for space. They'll go to both markets. This is largely driven by institutions wanting to increase their exposure and portfolios in the north because of our infrastructure.

- The labour force in the north in particular is thriving and this is a big benefit for a lot of businesses. Access to labour force is critical.
- We've been involved in employment precincts in Melbourne's north for 25 years. Businesses usually won't move more than 15-30 minutes away from labour.

### Accommodation (offices and hotels)

- One of the biggest barriers for offices and hotels is planning. A lot of the precincts now, particularly in the growth areas, are proscribed in terms of what can and can't be allowed. It's difficult to change established planning provisions. Rather than being flexible, the process is governed by documents that are 10 or 15 years old.
- At University Hill, there is over 35,000 square metres of office space as an alternative to inner city locations. There could be opportunities for more of this in other parts of the north.
- Hotels have tended to follow economic development and Epping is a classic example. Epping is now a large commercial centre with Northern Hospital, Melbourne Market, Epping Plaza and more. Two accommodation facilities have followed: Quest and Mantra.
- Quest has an apartment complex and conference centre at University Hill to service that market.

- We're seeing interest in Broadmeadows, given the revitalisation projects happening there.
- Growth of the Austin Health precinct in Heidelberg means that there could be potential for accommodation providers there.
- Quest is about 85 per cent corporate stays. It's an advantage for the City of Whittlesea. They see a lot of what's going on, for example relocating businesses. They could do with an extra 50 rooms.
- There is talk of other franchises moving into the Beveridge/Mickleham area if the Beveridge Intermodal Freight Terminal takes off.

### *Hospitals*

- The health sector is a major employer and planning is a real issue.
- Healthcare planning seems to come behind the people rather than in front of the people.
- It's about having a good grasp of population growth. That's the real driver, particularly for a private hospital and private healthcare.
- We've just signed a contract to build a private hospital next to the public hospital at Epping. Our experience from that process is they need to have a really good understanding of a business case. They need to understand an expansion of an area so they can plan for it.

### *Industrial land supply*

- Land supply is a major issue. The south-east just about at capacity in terms of industrial land. They don't have many big lots available, but there are some available in the north and west.
- NORTH Link commissioned an Industrial Land Report last year with the cities of Hume and Whittlesea. It found that there isn't as much industrial land available as initially thought and work needs to be done to unlock more industrial land in the north. There is significant benefit in terms of jobs and investment if that land is unlocked.
- In the middle and inner suburbs, there are boutique sites but no larger pieces of land available for industrial development.
- When manufacturers grow, it's hard to find extra space in inner suburbs. A lot of food manufacturers in particular are growing; they are looking for new factory spaces all the time.
- The old Ford site is now owned by a developer, Citinova. Their vision is to focus on Advanced Manufacturing. Big chunks of that site will be used

for food and general manufacturing, and part will be warehousing and logistics. There will also be retail and a commercial precinct.

### *Melbourne Market*

- At Melbourne Market we've seen a lot of change, not in volume but in how it comes to us and where it goes. What comes in from overseas has drastically reduced and what we send overseas has drastically reduced. We have a lot of produce going into China via Hong Kong. That has picked up over recent months as previously there wasn't any.
- We supply flowers around Australia and our market in Melbourne was 80 per cent grown in Victoria. A lot of growers closed down in Victoria, which created a surge in imports. At the start of the pandemic we found we were so reliant on product from overseas, and local growers weren't planting enough, so we had a massive shortfall. That's balanced out now.
- We have an oversupply of a lot of produce because there isn't as much going overseas. Prices have taken a dip on products like mango and avocado.
- Our interstate transport and logistics has grown dramatically over the past few months and we expect that to continue until about February.
- Over the last three months the number of vehicles coming into the market has gone up by about 15 per cent compared with the previous quarter. There's strong growth, year on year.
- The 52 hectares of land next to Melbourne Market is earmarked for development. Ernst and Young have been appointed to look at what that facility should look like and what the blend will be. This new facility has the potential to dramatically increase employment, education and commercial business in Whittlesea. We are working with the State Government on a way forward.

### *Intermodal Freight Terminal*

- The Beveridge Intermodal Freight Terminal is an infrastructure priority for our region. It's in our Northern Horizons infrastructure wish list document and it's part of our North and West Melbourne City Deal Proposal. We see it as a major job-creating piece of infrastructure and a game-changer for the north and for Melbourne.
- Growth in freight has brought forward the need for the terminal, particularly construction of the inland rail. Melbourne needs to have a terminal in place for inland rail to work.

- There is a private sector investor looking at the capital cost of building the terminal, but there would need to be Commonwealth and State Government investment in Hume Freeway connections to make it happen.
- There is a western freight terminal proposal as well. As far as we know, the State Government preference is for the west terminal to go first, while the Commonwealth have a preference for Beveridge. Given the current and projected volume of freight, we believe that both are needed.

### *Melbourne Airport*

- While Melbourne Airport's property business has performed reasonably well over the pandemic, retail and other operations are driven by aviation and so have been adversely affected.
- The airport precinct is a major employer and there are questions about how quickly it can come back.

### *Employment*

- The pace of job creation in our region hasn't kept up with population growth.
- There's been an increase in employment where businesses are dealing with COVID regulations.
- Fewer people on the factory floor meant more shift bubbles and a requirement for manpower.
- Businesses have had trouble replacing staff who've had to go into quarantine.
- The transport industry has one of the oldest workforces of any industry other than agriculture. As staff retire, it's going to get harder and harder to replace them, particularly drivers.
- There seems to be vacancies across the unskilled level – process workers, pick packing, machine operators – there is strong demand in these areas.
- There are also a lot of jobs for drivers, couriers and mechanics.
- The market for warehousing workers is very strong at the moment.
- It's hard to get people to work at Melbourne Market because of the unsociable hours.
- The Victorian Government has a Head Start school-based apprenticeship and traineeship program that combines secondary education with training and employment. While a business is rebuilding, there's an opportunity to take on a young person in a part-time capacity. As a business grows, the young person can increase the number of days they work in the business.

### *Indigenous employment*

- The employment sector is having trouble keeping up with demand for work-ready, skilled people from an Aboriginal and Torres Strait Islander background.
- There are a lot of Aboriginal businesses supplying a range of government contracts. Where the business is engaging in social procurement and has the right connections, there is high demand for Aboriginal workers.
- A problem is emerging through the supply chain. Infrastructure partners continue to use the businesses they know and have worked with before. Major contractors are not engaging with the breadth of Aboriginal businesses. The same workers keep getting the jobs.
- There is an issue with bundling contracts as well. Some of the contracts are very large and as Aboriginal businesses are generally small, they are not able to do all the work. If they can tender for pieces of a contract, it's easier for them to take part.

### *Technology*

- Warehousing with automatic systems, automatic logistics, digital supply chains that can track and personalise for efficiency and traceability – these things are coming more into use.
- There has been huge movement at farms in the way they manage technology with picking, packing and grading fruit. Supermarkets require a particular size, quality and colour of product. The technology from overseas grades by all those criteria.
- Robotics are used a lot now in warehousing and this is growing.
- If we can get the 52 ha at Melbourne Market up as a food manufacturing hub, we can move produce underground, by conveyor, in a highly robotic operation that takes transport out of the equation. It will still generate employment, but the jobs will be different.
- Autonomous driving is going to become a 'thing' and we need to prepare for that.
- Climate sustainability in terms of electricity and energy use will affect businesses in the future.

### *Pathways to employment*

- Where young people are undertaking VET studies as part of their senior secondary education, transport warehousing and logistics isn't in high demand.



- Students aren't exposed to career pathways in this industry in the same way as they are in building and construction, and health.
- Students need to be aware that this is an industry that's exciting and one that's great to work in.
- We need opportunities for school-industry engagement, and LLENs can do that. Students need exposure to the industry. Tours and placements in industry are essential.
- There are awesome pathways available in this industry but they're not on the radar of students, parents or schools. There isn't enough industry connection at the secondary school level.
- Tertiary education courses don't keep up with the speed of change in this industry.
- Educators can keep up with the pace of change through partnerships with industry leaders.
- Students find it hard to travel to Melbourne Airport and the outer areas where many of these businesses are located.
- Kangan Institute in Broadmeadows has a new logistics training centre.
- There seems to be some strong career pathways for women in logistics, right up to high level professional careers. Schools would be very interested in these career paths for women.
- Statistics show that the qualification level for transport and logistics is quite low. At school levels, where students are encouraged to improve their qualifications, this industry may not be seen as an attractive destination for young people.
- We have two Tech Schools in the north and they do a great job elevating understanding of design thinking and solving business problems. They are preparing young people for the workforce.

## 4.7 The Creative Economy Sector

The Creative industry within Melbourne's North represents a small, highly skilled workforce with concentrations of creative professionals around the inner northern Melbourne. For the purposes of this section, the following industries have been included within the analysis:

- Publishing (except Internet and Music Publishing);
- Motion Picture and Sound Recording Activities;
- Broadcasting (except Internet);

- Internet Publishing and Broadcasting;
- Creative and Performing Arts Activities; and
- Library and Other Information Services.

Other definitions of creative industries may include visual arts, jewellery making, photography, architecture and software development. Most of these industries are embedded within other larger industries within ANZSIC industries (2-digit level), so have been excluded. While computer system design has been excluded to focus on the cultural side of the creative industries (many of these workers commute to the CBD also).

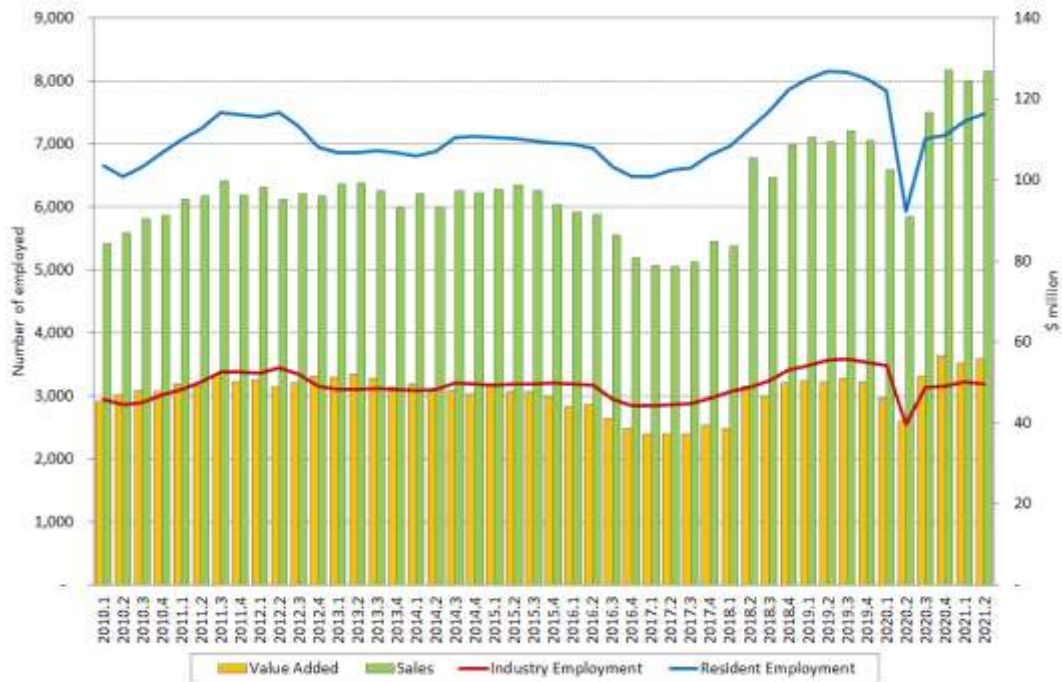
### *Key economic indicators*

The creative industries represented within this section contributed \$442 million in annual sales for the 2019 calendar year (in the year prior to the pandemic) with a value-added component of \$201 million. The industries are a relatively small workforce with around 3,500 employed by local businesses within Melbourne's North, and a resident workforce living within the region of around 8,000 workers. Over the previous ten years, economic indicators out of the creative industries show some volatility with swings up and down in both output and employment indicators. In the year leading up to the pandemic, the industry appeared to be experiencing a period of relatively strong employment and output with sales increasing by 21 per cent from 2018 to 2019, and employment increasing by 14 per cent over the same time period.

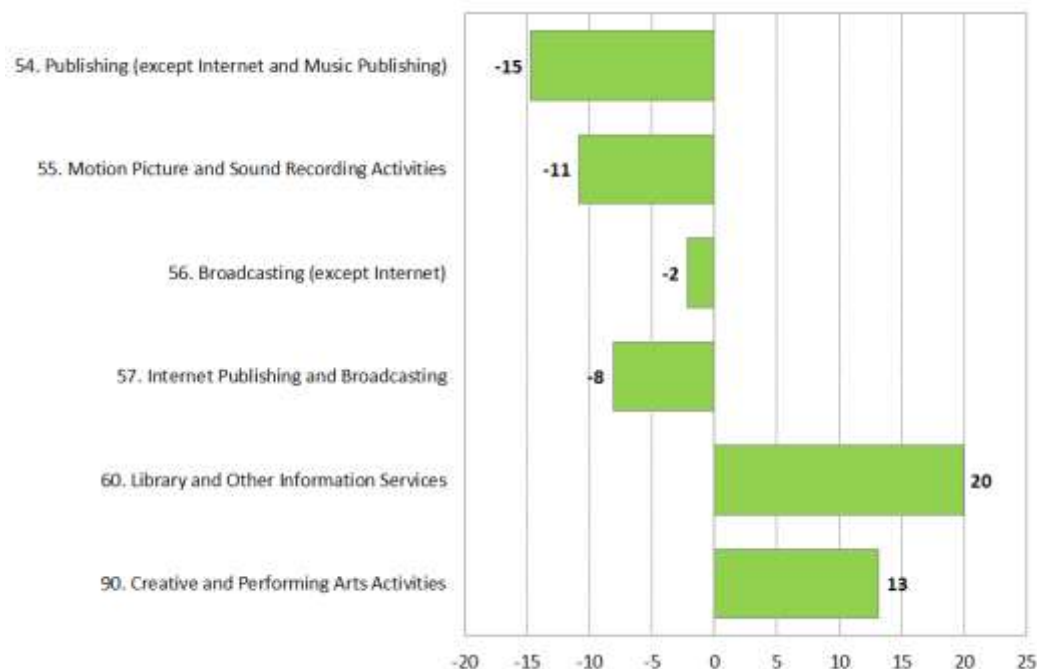
The creative industries were one of the hardest hit by the COVID-19 pandemic, in particular the creative sectors that rely upon performance, as venues were forced to close or activity was restricted. During the second quarter of 2020, employment within the creative industries fell by 24.4 per cent. Employment recovered slightly in late 2020, but employment levels remain below pre-pandemic levels.

Figure 4.51 shows the average annual change in employment over the previous five years from 2016 to 2021. Creative and Performing Arts is the largest sub-industry accounting for around half of the workforce, and has grown by an average of 13 workers per year. While Publishing has continued to decline over the previous five years losing 15 workers per year, and Motion Picture and Sound Recording activities have also been in decline at 11 workers per year.

**Figure 4.50: Creative Economy – Key economic indicators**



**Figure 4.51: Creative Economy – Average annual change in employment, 2016 to 2021**



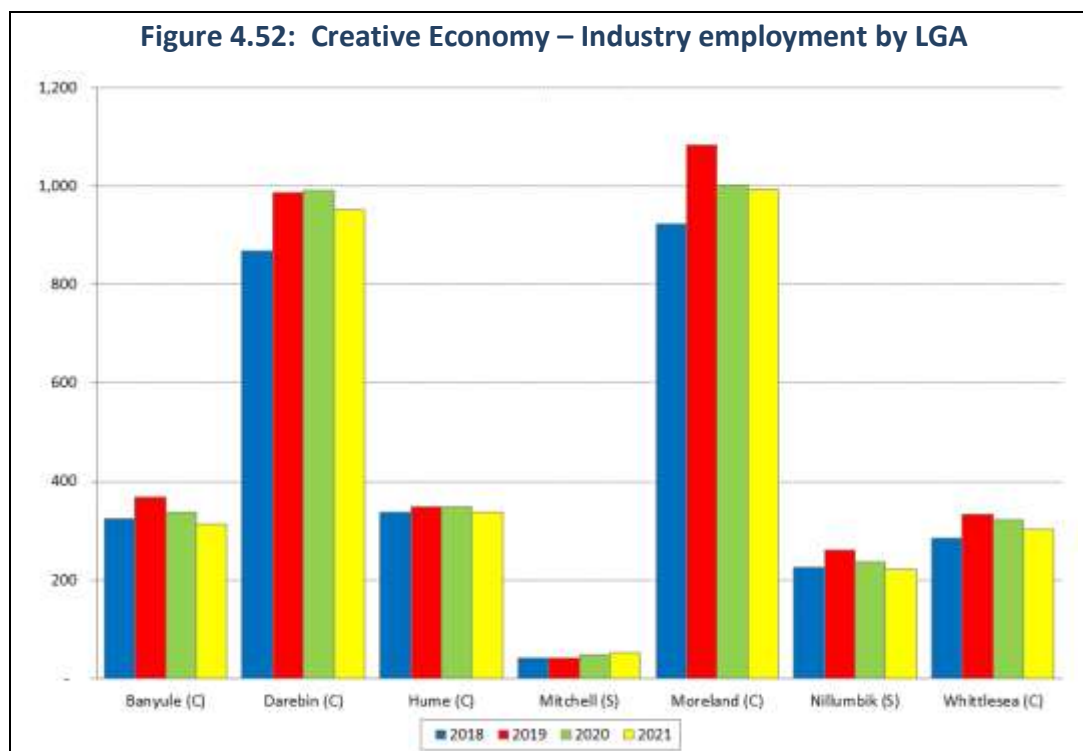
**Table 4.7 Industry employment for Creative Economy industries – 2016 to 2021 (financial year)**

ANZSIC Code	ANZSIC Industry	2016	2017	2018	2019	2020	2021
54	Publishing (except Internet and Music Publishing)	401	426	416	387	349	327
55	Motion Picture and Sound Recording Activities	776	695	744	850	771	722
56	Broadcasting (except Internet)	110	117	116	111	111	99
57	Internet Publishing and Broadcasting	50	11	20	31	13	10
60	Library and Other Information Services	316	303	278	354	389	415
90	Creative and Performing Arts Activities	1,536	1,319	1,437	1,692	1,655	1,602
	<b>Total</b>	<b>3,190</b>	<b>2,871</b>	<b>3,010</b>	<b>3,426</b>	<b>3,287</b>	<b>3,176</b>

### Industry by LGA

The creative industries within Melbourne's North are largely concentrated within the inner regions of Darebin and Moreland with around 1,000 creative workers employed within each region. Banyule, Hume, Whittlesea and Nillumbik LGAs are employ around 200 to 400 workers

each while Mitchell only employs a small number of workers. Across all regions (with the exception of Nillumbik), employment has declined going into the pandemic affected 2021 financial year. Prior to the pandemic, the creative industries had been increasing employment within most LGAs.

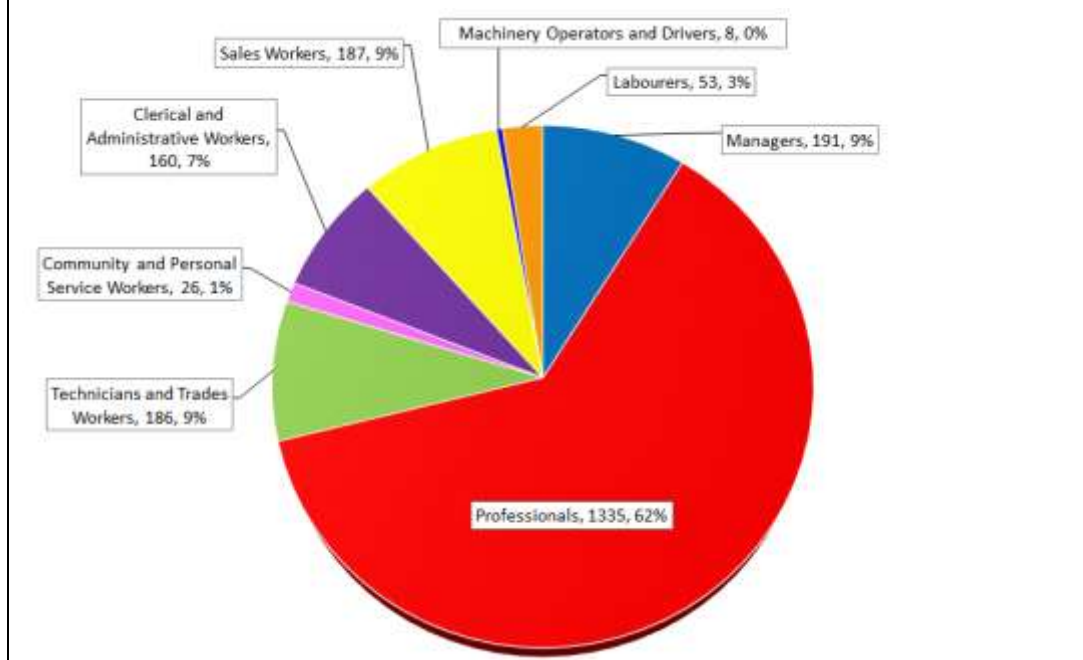
**Figure 4.52: Creative Economy – Industry employment by LGA**

### Occupations

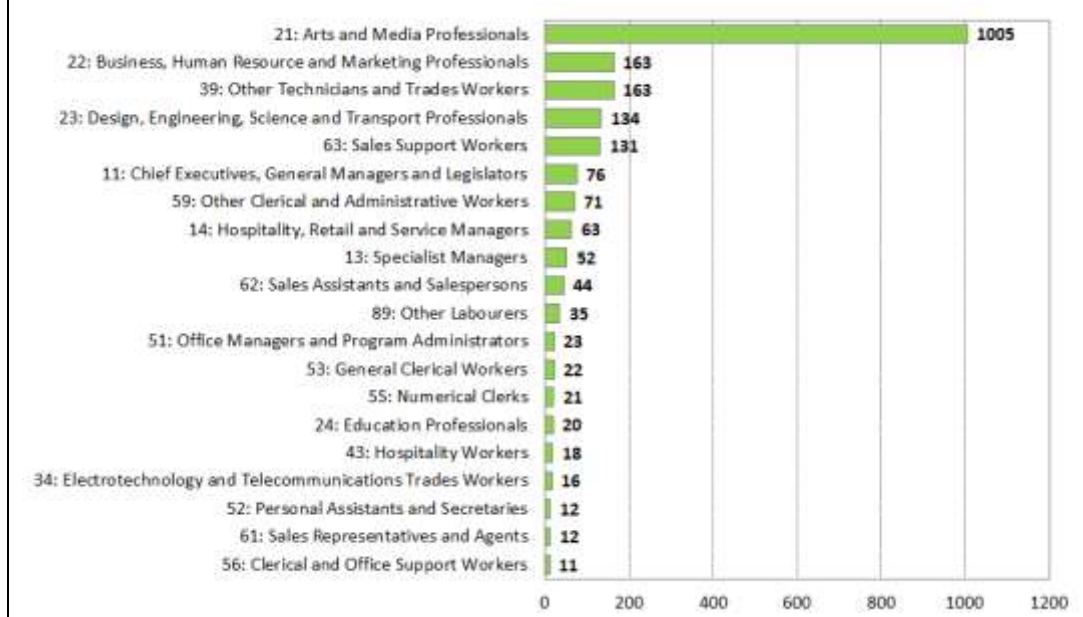
The creative industries employ a mostly professional workforce with the vast majority of people employed as Arts and Media Professionals. Figure 4.53 contains occupation by major group, which shows 62 per cent of the workforce are Professionals, while Figure 4.54 shows the top 20 occupations within the creative industries (sub-major group) with Arts and Media Professionals the

greatest employing occupation. Below the top occupation, there are also two other occupations making up the top 5 within the industry. These are Business, Human Resource and Marketing Professionals and Design, Engineering, Science, and Transport Professionals. While Other Technicians and Trades Workers and Sales Support Workers are also prominent within the creative industries. Most occupations below Arts and Media Professionals only make up a small part of the industry employment each.

**Figure 4.53: Creative Economy – Employment by occupation (ANZSCO major group), 2016**



**Figure 4.54: Creative Economy – Top 20 employment by occupation (ANZSCO sub-major group), 2016**



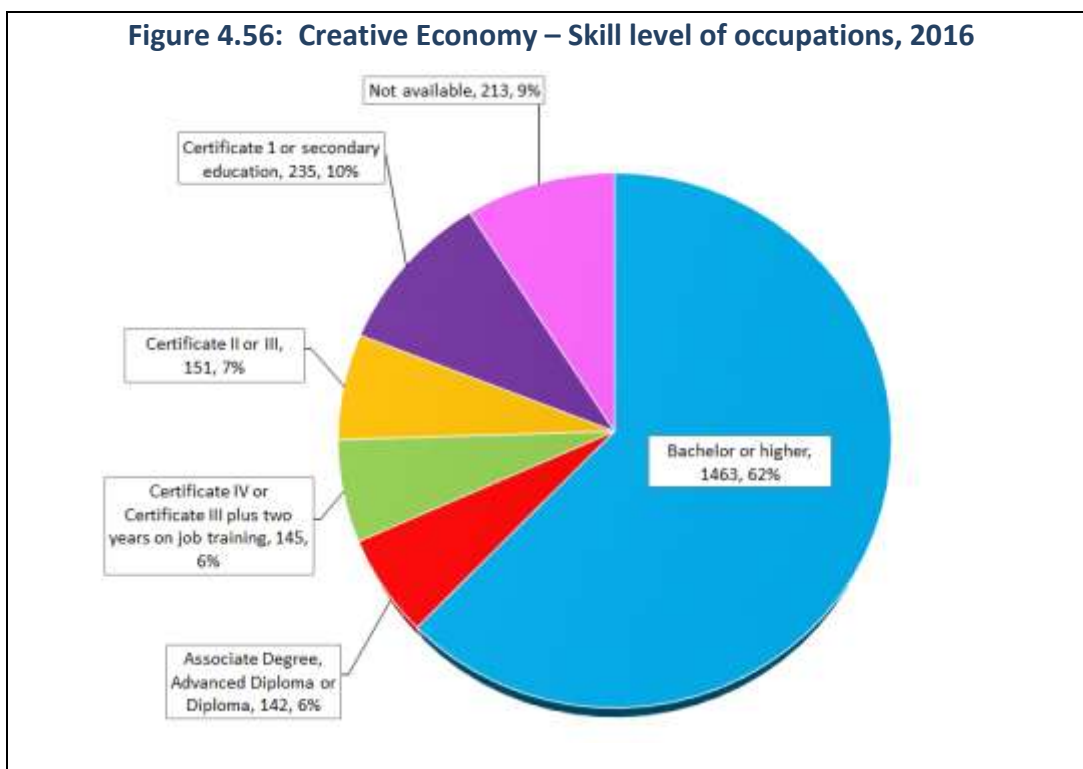
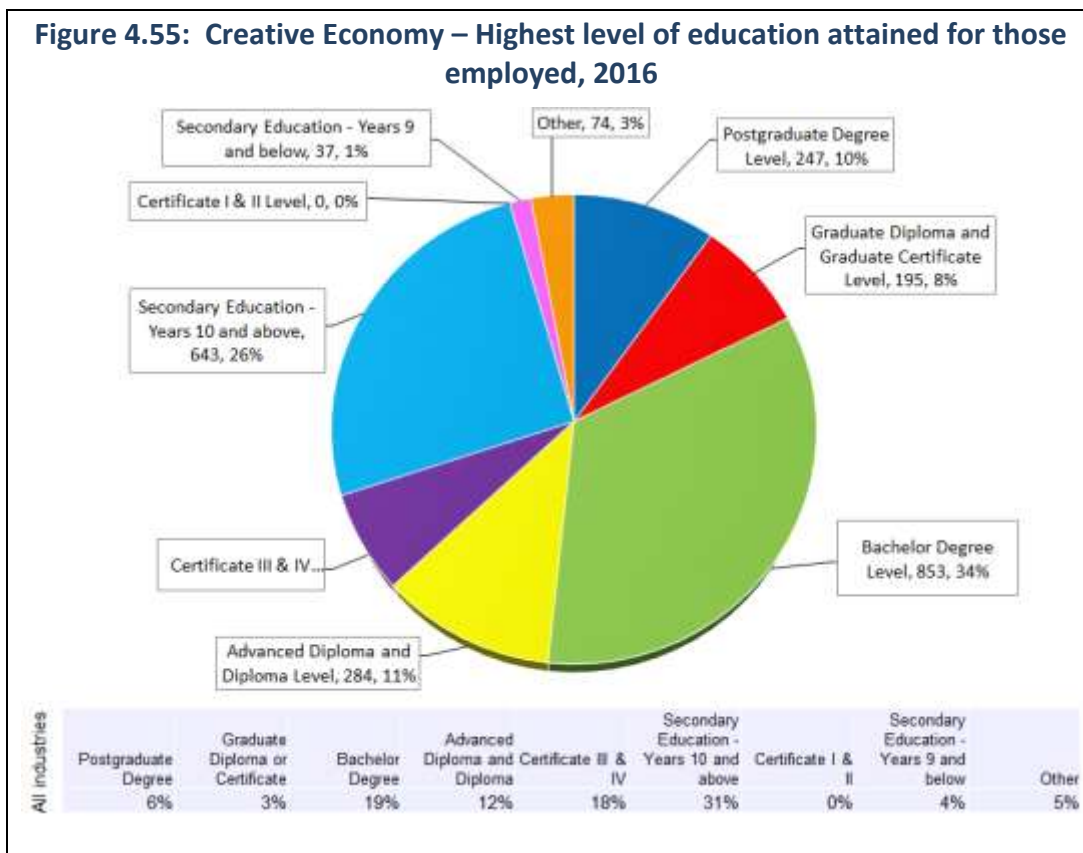
## Education and skill

People working within the creative industries within Melbourne's North are highly educated with the 52 per cent workers having obtained Bachelors or higher levels of education. This includes 34 per cent of the workforce obtaining Bachelors Degrees, compared to an average 19 per cent across all industries within Melbourne's North.

Conversely, this means that the creative industries have a lesser proportion of workers training through the VET sector at either a certificate or diploma level than the average across all industries. In addition, only 27 per cent of the workforce have secondary level education as their highest level of education obtained.

The high level of education within the creative industry is also reflected in the high level of skill required to work within the industry, which is shown in Figure 4.56. The

creative industry requires 62 per cent of workers to perform their duties at a Bachelors or higher level of skill.





## Roundtable findings

### Advantages of the north as an artistic hub

- The inner north is popular with creatives because of the overall scene. People all come together, share, and bounce ideas off each other – that collaboration element. There is somewhere to perform your music and people who will come along to hear your music in a space near where you live.
- In Moreland we have a wide range of professionals in the creative arts sector – musicians, performers, visual artists, makers, producers, designers and all the allied roles such as audio-visual, venues, photography, graphic design, architecture and more. Our programs respond to that community. We are seeing evolution of activity from RMIT Brunswick campus, which hosts creative courses. In the non-COVID world we have a schedule of events across the year, and we are developing the Brunswick Design District to be a hub for creative enterprise activity.
- The inner north is home to more composers nationally than anywhere else. That's a real advantage and worth supporting.
- We've 'stolen' people from everywhere else in Melbourne. They want to live in the north. When you have people living in one place it generates more creative energy.
- Young people wanting to work in creative industries come from different parts of Melbourne or Victoria, to live here. They feel it's the place to meet others, join the arts community and become part of the industry.
- All film and TV, advertising industry, musicians used to live in St Kilda 10-15 years ago. I could play music 5 or 6 nights a week without leaving that area. But it became too expensive and so people moved across to the inner north.

### Skills gaps in the sector

- There's one upskilling gap that I'm seeing constantly. Technology has changed how artists record and put out their music, but they don't have the skill set to maximise the benefits. The technology is accessible but nobody is showing them how to use it.
- Artists need to learn to teach themselves and have the agility to change. What's here today will be different tomorrow. It's not about learning a product, but continuously relearning to keep up.

- Creatives need to skill up their business capability if they want to make a living from their art.
- A recent project between INLLEN and NCAT found the skills young people were lacking were digital capabilities and strategies, enterprise skills, how to run your own business, how to build networks and understanding the systems and supports available.

### Effects of the pandemic

- Any creative endeavour that requires an audience has suffered. Some have adapted to online but there is a lot of fatigue associated with that.
- We have major issues with shortages of crew and technical skills in the contemporary music industry. Lots of people have left and we don't know if we're going to get them back. People are looking for more secure opportunities and workforce streams. The careers weren't great to start with and we need to re-establish value so that we can make it attractive for them to return.
- Live shows have been non-existent but podcasts have flourished. That's an example of people in our industry using their skills in a different way. Mixing sound for a live show and mixing sound for a podcast uses the same skillset. It's about showing clients what you can do.
- For large touring bands who make their money by being on the road 8 months out of 12, Australia won't be a great for the next 18 months or so. We'll lose them to overseas.
- We can't get bar staff because the borders are closed. If we want to put on a gig, it's really hard because we don't have what we once had and took for granted. It's a long road ahead.
- People really want to buy tickets again and there is a strong appetite to re-engage. But remounting box office configurations and events pushes ticket prices up for entrepreneurs.
- As an audio engineer, my partner has been hammered by COVID. Most of the people he knows in the industry have left. A lot are doing gardening and handyman work because it pays the rent. It's tough when you don't know if you're going to get work on a week to week basis.
- Live music is really tricky. Professional touring musicians have lost thousands of dollars.
- Most creatives are sole traders and insurance/liability is going to be a big issue. The risk on their business with a COVID overlay is a huge burden, for example WorkCover costs. Insurance might be out of reach for most sole traders in the future.



- The silver lining is that people have been forced to rethink their markets. Local is the most profitable in terms of impact and social dividend but also in returns for creative professionals.

### *Council activities*

- Darebin is investing in arts partnerships creatively, looking at a network of other galleries and other spaces like live music venues, and coming together to talk about a new way of doing business based on collaboration around practice, not just facility activation. We have a local awareness among residents that we didn't have before.
- Artists need affordable space to create in and affordable housing. At Moreland, we are doing a lot of work to provide spaces for creative people, for example stipends and residencies to help develop their skills. We also work with developers on affordable housing options.
- Hume is seeing professional artists moving further north, following housing affordability. We're finding through our arts grants and arts awards programs that the number of artists with a professional or international practice is growing each year.
- In Nillumbik, we don't have the infrastructure we need to support arts activity and programs. We recently completed a consultation with 2,000 residents who had an interest in arts and culture – and found there is high demand across the municipality.
- Hume is working on a creative precinct at Jacksons Hill in Sunbury. Our new creative community strategy involved community engagement, and results indicated a need for spaces, and opportunities to promote work, network and engage with others.

### *Housing and space affordability*

- Gentrification and affordable housing is an issue worldwide for the creative sector and no one has found a solution.
- Creative industries need security of tenancy to flourish, find markets and sell product.
- The biggest need among artists is affordable workspaces near cultural infrastructure, near where they live. If you're a creative who wants to live in Brunswick, it's not affordable.
- Gentrification over time has moved north and so have the creatives. If you extrapolate the trends, Brunswick is almost a tourist precinct rather than a local precinct.

- Having a space that give artists time, freedom to create, and that doesn't feel like a doctor's office, is important. It's hard to be creative when you just have a booking for 4 hours.
- Link to affordable housing is related to wanting to live near live music venues. St Kilda was a point in time and perhaps the north will be a point in time if we don't intervene.
- Most commercial galleries have survived COVID but property prices and gentrification are still continuing to drive them out.

### *Pathways from school*

- We need to invest in pathways at entry level through to artistic directing, producing or presenting your own work.
- These days a lot of young people are choosing higher education in a music industry, business, journalism or law course. But I don't think the industry cares about the qualification. It's more about your experience and passion for the work and your personal qualities.
- INLLEN created a Youth Enterprise Hub, developing new enterprises from a new economy perspective – ethical, sustainable businesses. It's around entrepreneurship and design thinking. This year we've had 3 projects in 3 different schools and put mentors into those schools, which changed the dynamics. We're looking at scaling that up.
- At NCAT there is high demand from secondary school students to join the creative industries sector. The sound production course is oversubscribed. Although people are leaving the industry, there are a lot of young people keen to gain employment there.

### *Infrastructure and the arts*

- Hume is supporting our own social procurement so that local artists can build their skills and be more competitive for our public art projects. We're also engaging with large developers to make them aware of our public arts policy. If we can connect the two, that's a good result.
- Libraries have been closing during the pandemic but have been a core point providing access to the arts. We also have the Hume Multiversity, which uses our libraries (global learning centres) for co-located education programs.
- We need exhibition space to service our community's need and a complete feasibility study covering specific areas and parts of infrastructure. It's important to be smart about how we approach

Federal and State Governments, and large developers, around this issue.

- There is a great need for exhibition space in Nillumbik. My son and I opened our own gallery because there wasn't anywhere to exhibit his art. We've opened it up to the wider community of artists.

### *Industry and the arts*

- There are ways that the creative sector can engage with industry, in things like product design, packaging, project design and the circular economy.
- With fabrication of larger pieces of public art, we have fabricators and stonemasons doing work in Hume for artists from elsewhere. We'd like to build on that link.
- A big chunk of our arts community don't want to be professional artists but feed into the arts ecosystem. That's part of the growth, with more work being created, presented and consumed.
- With the Brunswick Design District, we're placing residency programs into our Brudi business incubator, which has a focus on medtech. We're interested in what happens when you place an artist into that environment.

### *Regional focus*

- We need to think regionally. That's where we will have impact.
- When we think about international touring and the cost of running events, we don't maximise our network of performing arts centres and the associated workforce that can deliver.
- RMIT University has an entrepreneurial support hub where students or staff can turn up with creative ideas or things they want to turn into a business. Melbourne Polytechnic, La Trobe University and GOTAFE have similar initiatives. How can we harness these to benefit our region?
- Artists like to socialise with other creatives but it's hard because there's no central focus. A northern creative hub could bring everything happening in the region together, perhaps online.

### *What governments can do better?*

- State and Federal Governments have committed to a North and West Melbourne City Deal, and part of that includes the arts. We are waiting to see what funding might eventuate.
- I'd like other tiers of government to invest in allowing us to increasing employment in the creative sector, things like more commissions, more temporary social impact collaborations between artists and communities, activating public ground in different ways, and maximising the potential of our galleries by looking at indoor and outdoor zones.

### *Other*

- Creative sector jobs have always been undervalued and underpaid, and the current situation gives us a chance to rethink that. Creative people have always performed a community service by cutting their own fee first. Our partnerships with them need to be adjusted.
- At Music Victoria we find ways to bring people together. We're also working with Community Music Victoria because it's no longer just about professional versus industry. There has to be flow through with what you do in the classroom, outside hours, at home, at work ... building networks is critical. You never know when connections will occur. You have to be ready.
- If Australia is a financially viable touring destination for international acts, our local artists engage with them and local touring companies get to meet in person with management and labels. It makes it easier for our bands to get international recognition.
- With crew and technical support, we're trying to diversify our workforce, including more women and people from diverse backgrounds both on stage and offstage.
- We need to consider the impact of people moving to regional Victoria. This is something that artists might be considering and could be a trend going forward.
- Climate emergency is another element we need to tackle in the creative industries, finding solutions in policy and planning, not just delivery.

## 5. Education and training, including attainment in Melbourne's North

### A well-educated north: Key findings from the Northern Horizon's report and current and previous research for the Melbourne's North Future Workforce reports

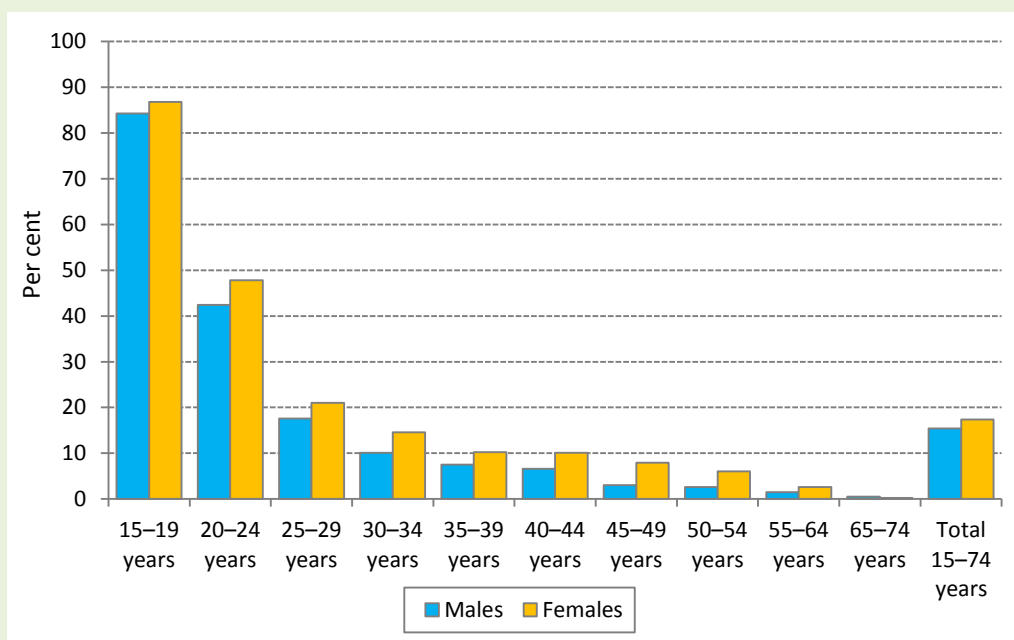
- Further development of La Trobe and RMIT Universities and their key specialisations.
- Year 9 literacy and numeracy improvement programs.
- Early childhood development.
- Programs to raise skills, individuals must take responsibility for lifelong learning practices and this idea must be taught.
- A greater focus on vocational mentoring to redress entrenched disadvantage.
- Relatively poor links between education providers and industry in Melbourne's North needs actions to improve current circumstances including better funding and specialisations in career guidance in schools.
- The education system needs to be far more cohesive, with employability as a key goal throughout the system.
- Further develop successful programs linking education and industry in a practical way, such as the Northern Industry Student Placement Program and the North and West Melbourne Data Analytics Hub.
- Low levels of foreign language teaching are creating a monolingual business culture despite the rich cultural composition of the population.
- Characteristics of strong VET programs include policies that employers are involved in setting qualification standards, deciding when to update the curriculum and setting the examination form, and that the larger component of the training activity should occur in the workplace.
- TAFEs are in transition phase following review with likelihood of improvements to assist TAFEs to deliver VET training focussed on industry demand.
- Despite COVID, the physical presence of tertiary institutions and their campuses will grow in importance and are crucial in building clusters of excellence in high-tech and knowledge economy employment and research links with local industry.
- Leaving school early continues to be a lifelong impediment to a higher proportion of early school leavers to finding secure employment and that early leavers are less likely to engage with training activities and other education.
- As Melbourne's North has gentrified the culture of education has grown, with many migrant families keen to see their children attend university.
- The sectors that attract young workers, food and hospitality, retail and the arts, particularly performance and events, have been damaged by COVID, it will be important to maintain and enhance training for these sectors to assist recovery post pandemic.
- The dropout rate from traineeships and apprenticeships is far too high, this is a long-term problem that needs a clear focus and strategy for improvement. While enrolments have risen in the COVID period this may signal the possibility of even higher dropout rates over the next few years.
- Sensitivity to Government subsidies for traineeships and apprenticeships means funding needs to be long-term. When funding stops, training stops.
- Mitchell Shire needs special attention in terms of how its population engages with education and training, at school level and beyond, access to education is just one of many likely issues.
- The capacity of universities has declined, specifically because of the loss of revenues from international students combined with the impacts of COVID. The next few years will continue to be difficult as universities adjust to new circumstances. It is important that universities maintain their links to local industry and research activities.
- Practitioners need to be aware that for those residents who hold a tertiary qualification, speakers of a language other than English at home tend to be slightly more disadvantaged in terms of their employment prospects than residents of Melbourne's North who speak English at home.

## CASE STUDY 5.1

### Education and Training: Australian Snapshot

As at May 2021, 1.3 million people were studying at higher education institutions, while 489,000 were studying at technical and further education (TAFE) institutions, and 895,000 were at schools. Two-thirds of students were studying full-time. The most popular fields of non-school study for women were society and culture (28 per cent), health (23 per cent) and management and commerce (17 per cent). For men, these were management and commerce (20 per cent), engineering and related technologies (20 per cent), and society and culture (15 per cent).

**Figure 5.1: Currently enrolled in study, by sex and age, 2021<sup>(a)</sup>**



*Note:* (a) All persons aged 15-74 years.

*Sources:* Education and Work, Australia, 2021, Customised data.

Australian Bureau of Statistic, Education and Work, Australia May 2021.

### ***Reversing the trend***

As at May 2021, more females than males in the younger age groups had non-school qualifications (31 per cent of young females aged 15-24 compared with 26 per cent of young males, and 79 per cent of females aged 25-44 compared with 75 per cent of males in this age group) reversing the trend that was established in the older cohorts (45 years and over), with 66 per cent of males in the older cohorts holding non-school qualifications compared with 59 per cent of females.

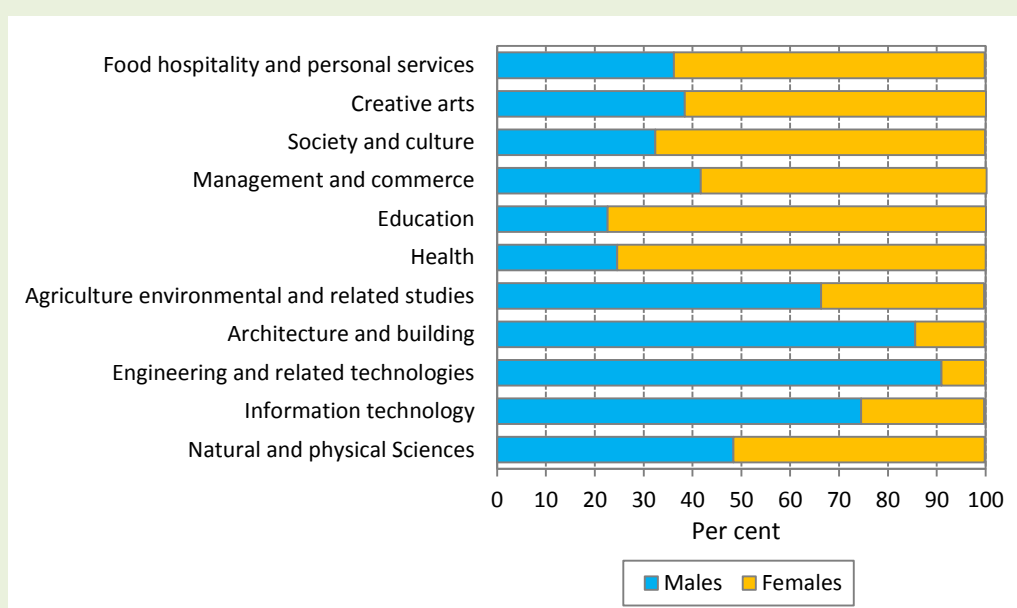
## The significance of higher education in Australia

In May 2021 Australians aged 15-74 were:

- Over two-thirds (68 per cent) had or were studying for a non-school qualification;
- The proportion studying for a non-school qualification was the same in May 2021 and May 2020 (12 per cent in both years);
- 78 per cent with a non-school qualification were employed in May 2021, compared with 56 per cent of individuals without a non-school qualification;
- Half of all young women aged 25-34 years now hold a bachelor degree or above, compared with just over a quarter (26 per cent) twenty years ago.
- 460,000 individuals were studying for a non-school qualification in a science, technology, engineering or mathematics (STEM) field, 73 per cent of these students were men; and
- 490,000 individuals were studying the STEM-related fields of architecture and building, and health. While architecture and building students reflected the gender split of students in STEM fields (76 per cent male, 24 per cent female), the gender split was reversed for health students, where 76 per cent were female.

Field of study with the highest non-school qualification by gender 2021 (all persons holding qualifications 15-74-year-olds).

**Figure 5.2: Field of study of highest non-school qualification, by sex<sup>(a)</sup>**



**Note:** (a) All persons aged 15-74 years with a non-school qualification.

**Sources:** Education and Work, Australia, 2021, Customised data.

Australian Bureau of Statistic, Education and Work, Australia May 2021.



## 5.1 Relationships between education and training and industry

Typically the large numbers of relatively small businesses which comprise the regional economy, and this is even more the case in the COVID years, struggle with their capacity to engage with structured training activities. COVID has also shown us that many businesses in Melbourne's North have been able to navigate the difficulties imposed on them by COVID, by lockdowns and the continual uncertainty the pandemic has delivered to the northern suburbs. If this situation tells us anything, it is that training activities, the capacity to adapt, to understand new ways of working, how to get the most benefit from technology and how to navigate the online world.

The first edition of the Future Workforce report identified relatively poor links between education/training and businesses in Melbourne's North and that 3.3 per cent of businesses surveyed had a mentoring or advisory relationship with secondary schools, and that 19.8 per cent of all businesses had a relationship with a post school institution. The original report discussed the role of universities in the regional context and the importance of the VET sector.

Two things, which are of major significance have occurred since the original workforce report was published, universities have been impacted by COVID and this has significant implications for the capacity of universities to engage and contribute as deeply and broadly with their immediate geographic region as we had all hoped a few years ago. So there will be a rebuilding period as the universities in Melbourne's North adjust to changed circumstances. It remains of critical importance that the universities continue their local engagement activities with local industry in research and high-level education in those industry sectors which are critical to the economic development of Melbourne's North. The second thing that has happened is that progress has been made in rebuilding the public TAFE sector and signs are that public VET strategies in Victoria have improved. That is not to say that the TAFE sector has not suffered from the impact of the COVID pandemic, it has, and particularly due to the complications of delivering hands on subjects and retaining students, not enthused by online learning.

In its 2017 report, Business cooperating with vocational education and training providers for quality skills and attractive futures, commissioned by the Directorate-General for Employment, Social Affairs and Inclusion, European Union, the report states:

*"Vocational education and training (VET) can play a crucial role in tackling many of the most pressing challenges that Europe is faced with today, such as*

*competitiveness, youth unemployment and social inclusion. To put the VET-sector in the best possible position to do so, it is crucial to increase quality and attractiveness of VET. The main conclusion in the existing studies that include elements of VET-business cooperation is that the link between the world of education and the world of work is of paramount importance for VET-quality and attractiveness."*

Staying in Europe, where countries such as Germany and Switzerland have traditionally strong and effective VET programs, the report Comparing International Vocational Education and Training Programs (2018), KOF Swiss Economic Institute in Zurich, prepared for the Centre on International Education Benchmarking, suggests that key characteristics of strong VET programs across those countries analysed in the report include; that employers are involved in setting qualification standards, deciding when to update the curriculum and setting the examination form, and that the larger component of the training activity should occur in the workplace, instead of the classroom. In the report, countries with a dual VET system are shown to have performed best, among the top performers were Austria and Switzerland. In Switzerland the dual VET program is called apprenticeships resulting in a full certificate, enrolling 90 per cent of all upper secondary VET students with 60 to 80 per cent of the training occurring in the workplace. At school, around 50 per cent of the classroom content is occupation specific. Switzerland's highest scores in the analysis were in the areas of curriculum implementation and work contracts for apprentices. The methodology for the study enables the opportunity to identify the key drivers, features and processes that create the foundations of a strong VET program. The top three drivers were identified as; the curriculum-design phase, the curriculum-application phase and the curriculum- updating phase.

Engagement with industry should indeed commence at primary school level. This is not to say that industry takes over the educational processes but that students are taught about the different kinds of industries, the opportunities the workplace brings and so on, so that these concepts become part of the educational process at an early time in learning and continue through the full cycle to employment.

Amplified by COVID, industry, the workplace, the structure of employment and technology are all changing and doing so more quickly. This means it is now more complex to provide education and training to meet the needs of rapidly changing industry. The research for this report reinforces the significance of both foundation skills and STEM skills in providing students with improved prospects for employment and employers with job ready employees.

## CASE STUDY 5.2: Inner Northern Local Learning Employment Network (INLLEN) Vocational Mentoring Exchange

*"If you want to go fast go alone, if you want to go far go together."*

*African proverb*

The Vocational Mentoring Exchange (VME) recruits, trains and supports vocational mentors who volunteer to assist young people from the north of Melbourne in their career journey. VME is coordinated by the Inner Northern LLEN with funding support from multiple partners. A steering committee comprised of partner schools and representatives from key local organisations guides the development, implementation, evaluation and sustainability of the Exchange.

Our aim is to develop a bank of 100+ vocational mentors who can support the career transition of young people in education or community agency settings across the region.

This unique community resource brings together a pool of vocational mentors with diverse and wide-ranging working lives and lived experience to support young people's (16-25 years) transition to further education, training or employment. In the current climate of extreme youth unemployment, an opportunity to directly connect young people with local industry is invaluable.

*"It is such a great opportunity to be able to have that tailored mentoring and experience to assist you with employment, everyday life and goal setting skills. It's also really good to get knowledge of the industry you are looking at getting into, and getting first hand advice on what to expect and how to excel in your career."*

A Young Person 2021

Vocational mentoring is a key support in career exploration and job-seeking for socially and economically disadvantaged young people. Vocational mentoring can help young people with limited social capital learn about the workplace, clarify their aspirations, extend their networks and help find work opportunities.

*"The mentee is feeling a lot more confident when it comes to discussions and asking questions. She has gained a lot of knowledge from her mentor surrounding various topics discussed and therefore believe there was a considerable positive impact on her learning and growth."*

Community Agency 2021

Mentors gain a wealth of experience, skills and confidence from the experience – strengthened leadership, problem-solving, listening and interpersonal skills; wider professional networks; and a fabulous sense of achievement in having helped a young person on their vocational journey.

*"I think that the most valuable aspect of the mentoring for my mentee was passing on to her knowledge of human resource departments and further education. We talked about learning in HR and different platforms to utilise to find information, which we did together."*

Vocational Mentor 2021

In 2021, the Exchange has three streams of vocational mentoring and has established the Northern Youth Mentoring Network. These have been developed in collaboration with local secondary schools, community agencies, local employers and vocational mentors.

1. **VME Mentoring Matters:** Secondary school-based program embedding vocational mentoring in the VCAL.
2. **Youth Enterprise Hub:** Entrepreneurial skilled mentors supporting a school based VCAL Youth Entrepreneurship program.
3. **Community Partnerships:** Community based mentoring and the development of a Regional Youth Mentoring Network.

### ***Building stronger partnerships with local business 2022-2025***

The VME can play a pivotal role in addressing local skill and labour shortages with greater support from local business and industry. Many young people have a limited line of sight to local jobs which are available to them. As is often said ***“If you cannot see it, you cannot be it!”***

Through VME we can all work together to support local young people into positive employment opportunities in our local labour market, which is a win for everyone.

This is a win for the young person, a win for local business and a win for the community!

<http://inllen.org.au/vme/>

## **5.2 Individual responsibility for lifelong learning**

It is becoming increasingly obvious that the COVID pandemic has had a significant impact on ways of working, disruption and new opportunities, for both business and workers, mean that a disciplined approach to lifelong learning strategies is even more important. What the pandemic has done is to expose structural features that are weaknesses in the economy and in doing so has brought forward the changes that would have happened

anyway over the next 10 to 15 years. The idea that lifelong learning practices are an individual responsibility should be taught from an early age, so that the practice is imbedded across the culture of learning.

In the many discussions with employers that underpin the research for this report, employers talk about the demand for workers who are multi-skilled, for example engineers with writing skills or sales skills and so on. Companies are less likely to train across disciplines, so the responsibility for greater flexibility in employment skills falls back to the individual.

### **CASE STUDY 5.3: Melbourne Polytechnic Skills development and contemporary requirements**

As a provider of both vocational education and training (VET) and higher education courses, Melbourne Polytechnic is leading the way in ensuring their students are equipped for the future workforce.

Increasingly, employers are seeking new employees who can demonstrate ‘enterprise’ skills – attributes like teamwork, creativity, problem solving, digital literacy and communication – along with career-specific technical skills. That’s why Melbourne Polytechnic is incorporating work integrated learning into most of their courses, ensuring that their students are ready for work when they hit the jobs market.

Marc Blanks, Executive Director of Curriculum Innovation and Teaching Excellence at Melbourne Polytechnic, explained that the goal is to improve outcomes – for students, employers and for the region as a whole. Marc said:

***“We’re keen to get that skills balance right. Usually, it’s about 50 per cent technical/practical skills and 50 per cent generic skills. But different industries have different needs. For example, you wouldn’t want a Veterinary Nurse using creativity in the middle of a procedure, but that’s an attribute that our Interior design and Marketing students need plenty of. We try to make sure that each course emphasises the generic skills applicable to that industry. The bottom line is that employers want graduates who can apply their practical skills in the workplace from day one.”***

Despite the pandemic, during 2021 students have worked on a range of real-world industry projects, from assisting a local social enterprise with a business problem and developing strategic plans for start-up companies through to developing an app and designing a brand for a local food business.

Marc noted that things are moving faster today, and what was applicable one year could move on the year after. So there has to be flexibility and agility in what training providers offer.

*“When we are designing curriculum, we consult with industry right from the start. Industry representatives help us design electives around their current and future needs. That way, we know that students will have the skills that employers want when they graduate.*

*A good example is our Locksmithing course. While the basic skills needed to be a locksmith haven’t changed, contemporary concepts such as digitisation and security, along with a simulated business experience, are also important. We’ve worked together with the industry to integrate those skills and keep a future focus.”*

The pandemic saw Melbourne Polytechnic quickly shift learning for all students to the online environment. While it was challenging for both teachers and students at the time, the situation led to the realisation that for some students, online learning is the best option. So in the future many courses will be offered as a mix of in-person and online learning.

*“We found that our students appreciated the flexibility of online learning. Most of them work and now they can fit their study around their work, rather than trying to find a job that would fit around their class times. But for subjects such as pathology, in-person learning is the only way.*

*As industry sectors move and evolve, we’ll continue to do the same. Our goal is for each of our students to enter the workforce fully equipped for and confident about the future.”*

## 5.3 Language, diversity, education and industry

Melbourne’s North is home to a large number of diverse communities from around the world. There are two opportunities that stand out. Language teaching at school level and beyond is important in that language connects cultures, it also connects businesses to new export opportunities and markets.

The second aspect of living in a language diverse and multicultural society is to ensure the opportunity to maximise the contribution migrants can make, both culturally and in business and work life, is properly understood in the regional context of Melbourne’s North. This process is essentially a joint venture between governments and education and training providers to ensure pathways for upskilling to meet Australian qualification requirements are available and flexible enough to allow hard working migrants to access them. Because of the COVID pandemic and resulting worker and skill shortages, the idea that engineers and dentists with overseas qualifications should be driving taxis is, and now more than ever, an immense waste of talent.

This matter is now far better understood than it was when NIEIR undertook research for the previous edition of the Melbourne’s North Future Workforce Report which also asked the question, ‘to what extent foreign languages should be used in teaching in local universities should also be considered? This may appear controversial but the point is that, as well as the likelihood of improving educational exports, this change might actually encourage monolingual students to participate in learning the languages of the region.

## 5.4 Education and training: Employability, quality and relevance

The importance of the relationship between education, training, research and industry has again been sharpened by the COVID pandemic, worker and skill shortages. The solution is a more cohesive system that communicates and integrates pathways and opportunities for skilled employment more effectively. The quality and relevance of what is being delivered by education and training providers is core to the success of the education and training system and to the participation of employers who sometimes express concerns about the ability of training providers to meet their needs.

## 5.5 VET, TAFE and Future Skills for Victoria: Driving collaboration and innovation in post-secondary education and training

TAFE colleges have played an important role in providing residents in Melbourne's North with training opportunities across a wide range of subject areas and skills

development. An effective and integrated VET system is more important today than it has ever been as the training system closest to industry and in a period of rapidly changing demand and uncertainty. NIEIR studies have shown that where TAFE systems have been eroded, and sadly that has been the history of the last two decades, there will be skills shortages in regions, particularly in times of economic boom and periods of high labour demand.

### CASE STUDY 5.4: GOTAFE Promoting Employee Wellbeing During the Pandemic

At the onset of the COVID-19 pandemic, GOTAFE established a Wellbeing Committee to ensure that staff were engaged and supported throughout this challenging period. Members of the committee comprised staff members from a cross-section of the Institute. The only prerequisite was a genuine interest in promoting the wellbeing of others.

Recognising that not everyone has the same needs, and not everyone would be engaged with every activity, members were encouraged to come up with a wide range of ideas. Across the program of initiatives, the committee hoped to reach everyone in some way.

Activities over the 18-month period included:

- free optional general health checks, with nurses visiting each campus; in a regional area, people often know their doctors and nurses socially, so having external people undertake the checks was a bonus;
- implementation of a Health@Work dashboard, providing a wealth of webinars and health/wellbeing resources that staff could access 24/7;
- a staff-led book club;
- healthy eating presentations;
- Mindfulness with Marion; periodic 15-minute mindfulness sessions that encouraged staff to take a break and relax during their day;
- a resilience webinar for all staff;
- the opportunity for staff to redeem a one-month free gym membership or piece of gym equipment to support their health goals; and
- a virtual comedic presentation with a message on RUOK Day, for all staff and students, on 'The Lighter Side of Working from Home'.

The World Walking Challenge was very a popular initiative, with 96 people taking part in group virtual walks. Staff tracked their steps, contributed their data and could see on a map how the Institute was progressing. Over the first year they logged 30 million steps, 'walking' from China to the UK. In 2021 the goal is to walk around Australia and so far, the Brisbane to Broome leg has been completed.

Management also encouraged staff to access the existing Employee Assistance Program, where staff could have a confidential chat with a counsellor free of charge about any issues of concern to them.

Clarissa De Palma, Culture and Engagement Officer at GOTAFE and a member of the Wellbeing Committee, said:

***"We knew we were never going to solve people's problems or alleviate their worries. But our program helped to engage people in a positive way during a very difficult period."***



She added:

*“There was a real sense that GOTAFE cared about the wellbeing of staff, showing consideration for what people were going through. We found that people felt very supported and informed by management. They enjoyed having activities to brighten the day and helpful resources that were accessible 24/7.”*

GOTAFE CEO Travis Heeney also initiated a weekly Thursday catch-up where he and others presented information and all staff were invited to ask questions. Feedback on this initiative was extremely positive and it will remain a feature of GOTAFE communications into the future.

As the public provider of VET education, TAFEs in Victoria have had an important and historic role to:

- provide a strong and sustainable skills-based Victorian economy;
- support lifelong learning; and
- address disadvantage.

While there may be an argument that some vocational courses are hard to deliver online because of the need to deliver hands-on learning, a rethink of digital education and its integration in this sector may enhance the viability of and provide competitive advantage to TAFEs. Recent experience shows reluctance for some TAFE students in some disciplines to study online and this has added to the dropout rate for VET courses during the period of pandemic. The question here is what more can be done to assist TAFEs in addressing this challenge as it relates to vocational training activities, workplace-based learning, higher quality Internet and improved interactive learning systems and learning opportunities in the metaverse all need attention.

*“Over the past two years online innovation has accelerated at a staggering pace, spurred by the realities of the pandemic. As the saying goes: necessity is the mother of invention.”*

*Claire Graves, President of the Webby Awards  
(US web awards)*

Access to VET training for school leavers (including early school leavers) and other disadvantaged groups can reshape young people’s lives, so the social benefits of a strong TAFE sector remain an important contribution by this sector to regional economic development and social cohesion.

The Victorian Government’s Vocational Education and Training Funding Review issues paper (2015), a result of the difficulties being experienced by TAFE because of earlier changes, including contestability, was an attempt to improve outcomes for TAFEs and VET in Victoria. The purpose of the review was to achieve best value for money in relation to government expenditures on VET and to improve the quality, stability and sustainability of the

Victorian training market. The issues paper discusses the need for an emphasis on quality of training and argued that the TAFE sector was essential to the provision of VET and **that students needed to be better supported and protected to make informed training decisions** and that VET must meet the needs of industry and provide pathways to training and employment to the most vulnerable.

The VET system has been contestable since 2009, when the sector was opened up to competition from private providers eligible for government funding and effectively adopted a student demand driven model. The review’s terms of reference assume that contestability will continue.

Following extensive research, it has been NIEIR’s view that the VET demand driven model is not necessarily in the interest of employers or students. It relies on significant understanding of the occupation and skills needs of industry, which student customers of the VET training system are unlikely to possess. So this added to the misalignment of training and industry demand and the fragmentation of what must always be a cohesive system of training for the skills that industry need.

In November 2019, the Victorian Government commissioned a review into Victoria’s post-secondary education and training system. The terms of the review as stated by the Victorian Governments were as follows.

- What are the education and training needs for jobs in Victoria over the next ten years?
- What reforms are required to meet the skills and capability needs of industry and employers, government and the community over the next decade?
- What reforms are required to build industry investment in skills and workforce development, including apprenticeships and traineeships?
- What reforms are required to improve access to Higher Education and VET for students that are entering the workforce, and those seeking to reskill or upskill later in life, no matter their background?



- What reforms are required to ensure relevant, high quality teaching and VET courses that produce job-ready graduates at all stages of their career?
- What reforms are required to improve pathways, and connections, between TAFE and other VET providers, adult and community education providers, universities and other non-university higher education providers, schools, and employers, so students can easily understand and navigate the post-secondary system and update their skills throughout their careers?
- What reforms are required to improve the funding arrangements of Victoria's VET sector?

The complex policy landscape that TAFE providers in Victoria have had to deal with, which differs in part from at least some other states in Australia, includes:

- increasing competition in relation to VET training from the University sector in Victoria. Conversely TAFEs in Victoria are not allowed to teach or provide training in the space traditionally occupied by universities, that is, degree qualifications. For GOTAFE, Certificate III and Certificate IV courses are the largest area of delivery, the highest qualification a registered training organisation in Victoria (that includes TAFEs) can give is a diploma;
- undefined physical operating boundaries and course responsibilities, which means TAFEs in Victoria compete with each other (Queensland for example has one TAFE Queensland with 56 campuses);
- competing for students with private training organisations (RTOs), this has been an issue for the reasons of quality and costs where a pattern of courses from private RTOs that are provided at lower cost to the student has undermined the viability of TAFE courses in some subject areas;
- the Victorian Government is offering free TAFE courses in certain subject areas, while these courses are free, they may not be viable from the perspective of individual TAFEs for some courses in some regions; and
- quality and consistency of delivery of content provision have been areas of difficulty across the VET training sector in Victoria as the qualifications being issued by a large range of providers do not differentiate the quality of the training provided by different providers. (It appears that public providers are told by the government how many hours should be delivered if TAFEs want to get funded for a particular course, private RTOs do not necessarily have those restrictions).

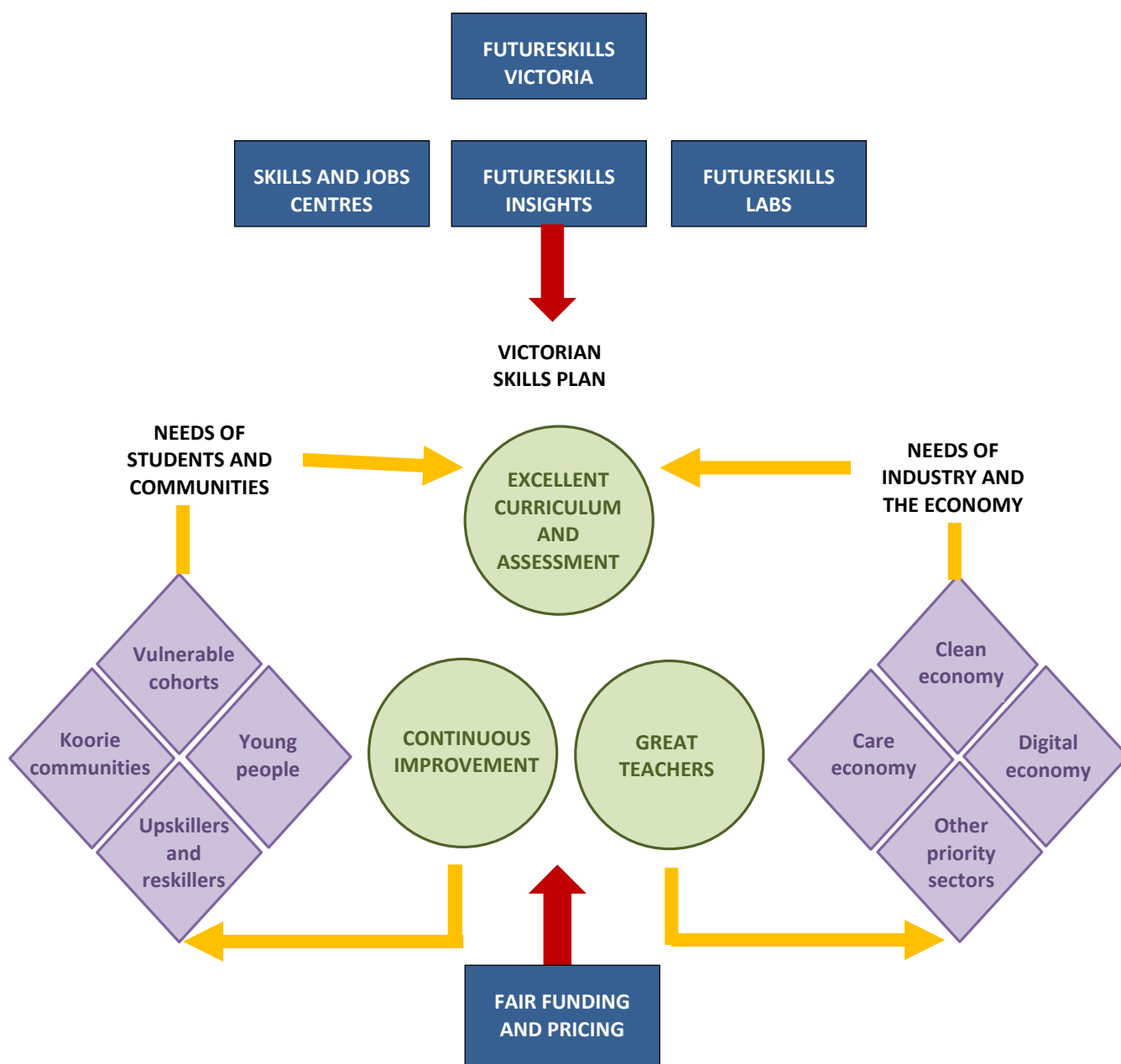
The Future Skills for Victoria – Driving collaboration and innovation in post-secondary education and training was released on 3 February 2021 following consultations with:

*“300 stakeholders from Victorian TAFEs, universities, private providers, industry, students, community organisations, advocacy groups and post-secondary policy experts provided critical input, helping shape the Review’s findings and recommendations”.*

The report makes 30 recommendations for improving Victoria's training and skills system which include addressing these broad categories of concern:

- establish a strong institutional base for a more collaborative skills system that can deliver the training requirements Victoria needs;
- build and share an evidence and database that can support improved planning and decision making;
- begin development of an annual Victorian Skills Plan that sets out Victoria's skills needs for the year ahead and beyond;
- encourage specialised labs with a focus on emerging industries, commencing with the Clean Economy, Care Economy and Digital Economy;
- strengthen on-the-ground support available to local learners and businesses; and
- develop and share excellent curriculum and improve professional learning for VET practitioners.

**Figure 5.3: The shape of Victoria's skills system led by FutureSkills Victoria**



Source: Macklin J., 2020, *Future Skills for Victoria, Driving collaboration and innovation in post-secondary education and training*, Victorian Government, Melbourne.

## CASE STUDY 5.5: Kangan Institute Delivering a Health and Community Centre of Excellence

A new state-of-the-art \$60 million health training facility at Kangan Institute Broadmeadows campus will contribute to revitalisation of the Broadmeadows town centre, introduce health courses in Broadmeadows for the first time and make a positive contribution to the local economy.

The Broadmeadows campus is the cornerstone of Kangan Institute's metropolitan offerings, with 10,700 enrolments accessing 126 courses. Funding from the Victorian Government will establish a new Broadmeadows Health and Community Centre of Excellence that focuses on delivering quality aged care, mental health, disability, nursing, pathology, allied health and healthcare education services.

Health and community related skills are increasingly in demand due to a range of factors including an ageing population, changes to the NDIS, focus on mental health and family violence, and a greater focus on virtual and digital healthcare. The new centre will provide best practice tech-enabled health simulation spaces, introduce greater capacity across a range of health and community offerings and facilitate increased engagement with industry.

Built over 30 years ago, the current Broadmeadows campus is located on a 21-acre site near the town centre and many service providers. It is made up of 19 buildings, many of which have had to be repurposed to meet student needs, giving rise to issues that drive the need for investment.

The revitalised campus aligns with Northern Health's long-term strategic plan to develop a new hospital facility in Broadmeadows. Kangan Institute will build its health offering to align to the needs of the hospital. This means that students will learn in an environment that replicates the physical space and procedures used at Broadmeadows Hospital so that they are employment ready. The Centre of Excellence will also align to the hospital project by providing the technology facilities to upgrade and enhance key skills in eHealth, virtual healthcare and assistive technologies.

Importantly, the Institute will leverage the relationship between the Broadmeadows campus and hospital to ensure local jobs are filled by local people, and to establish strong partnerships within the health and community services sector.

Broadmeadows is an area of systemic disadvantage that has been hit hard by COVID-19 and needs the skills delivered by TAFE to stimulate economic repair. Given the lasting impacts of the pandemic, support for local businesses and jobseekers is crucial. Kangan Institute and other training providers will play an important role in pandemic recovery as they help to re-skill, maximise employment opportunities and meet changing industry demands.

*"There is every reason to be confident that a reformed skills sector will accelerate Victoria's economic recovery in the wake of COVID-19. The sector can not only prepare Victorians to get jobs, but also fuel the creation of new industries and jobs. For all its current difficulties, Victoria has strong, long-term economic opportunities, including in the digital, clean and care economies, and in advanced manufacturing and construction. By building a skilled workforce, Victorians can seize these opportunities and power a bright future."*

The recommendations are:

1. establish FutureSkills Victoria;
2. support a quality TAFE network;
3. strengthen connections between TAFE and training, higher education and ACFE;
4. improve data for decision-making;
5. establish a Victorian Skills Plan;
6. establish a FutureSkills Insights student interface to support decision-making;
7. publish selected performance data for Skills First providers;
8. establish a culture of continuous learning;
9. develop a new model for financing the VET system;
10. ensure fairness in what students pay;
11. ease eligibility restrictions;
12. finance lifelong learning;
13. establish specialised FutureSkills Labs;
14. promote innovative learning for the future;

15. scale up innovation in digitally supported learning;
16. establish digital Learner Profiles and advocate for updating digital skills in VET programs and National Training Packages;
17. expand Skills and Jobs Centres to connect local people, skills and jobs;
18. embed self-determination for local Koorie communities;
19. scale up and connect leading models of student support;
20. coordinate work-integrated learning in local communities;
21. expand support for apprentices and trainees;
22. place students at the centre of learning;
23. develop and share excellent curriculum;
24. improve assessment through shared resources and moderation;
25. lead national reform to get training packages right;
26. grow the next generation of VET innovators;
27. set clear expectations for VET and ACFE teacher professional learning;
28. expand collaborative teacher professional learning;
29. advocate for streamlined VET regulation, including self-accrediting status for trusted providers; and
30. develop a continuous improvement framework and culture.

## 5.6 Careers guidance: Fit for purpose?

The ability for schools in Melbourne's North to provide career guidance to students at levels now required to build an integrated pathway system to successful employment outcomes still needs careful review. It remains likely that teachers do not have the time or resources available to them to properly understand changing industry demand for knowledge and skills and this probably means they are more and more disconnected from industry, as processes and technologies change. As things stand, rather than a constant progression about what a student considers to be their goal of building a successful career, decisions tend to be made at critical points in a student's pathway because something needs to happen at that time. Knowing what you want to do as a teenager can of course be difficult, but it is however still possible to improve the journey from education and training to employment and this is something that really matters, high dropout rates in post school training attest to that.

Increased investment in strengthening the linkages between various components of the pathways through education and training for employment, through career guidance at school and through the activities of LLENs and similar organisations, will improve the viability of courses offered by tertiary and TAFE institutions by reducing the high drop-out rates currently experienced in the Victorian system. We know that improved standards of integration and assistance to navigate pathways to employment are helpful because other countries have achieved more stable and integrated systems. These countries include Germany, Singapore and South Korea.

## 5.7 Apprenticeships

Skills shortages in trades where demand is high can cause significant problems in regions where economic activity is strong. Trades that have historically been in short supply during periods of higher economic growth include electricians, plumbers, diesel mechanics, refrigeration mechanics and fitters.

If the dropout rates of apprentices can be reduced there will be significant benefits to small businesses, in both long-term productivity and quality improvements.

Younger apprentices have little work experience and often little knowledge about the industry they are about to enter, nor the expectations of employers. Small business provides a significant proportion of a region's employment and small businesses by their nature have less capacity to manage training and training structures and the relationship with training providers. The relationship between the employer and the training provider is very important in helping to keep young apprentices engaged in their training. Apprentices are also vulnerable to economic downturns, because if an apprentice is made redundant, it is less likely that they will be able to find similar employment and continue their training.

Other issues such as low wages and difficulty in getting to work due to poor access to public transport for work and study can also have a significant impact on completion rates. Job readiness, particularly standards of numeracy and literacy, can mean that some apprentices are on a pathway to fail. A significant number leave at the beginning of their apprenticeship when they discover the employment circumstances and trade they have elected to engage with is not for them.

Looking at the recent history of apprenticeships in Australia the pattern is clear, the report *An Investment in Productivity and Inclusion: The Economic and Social Benefits of the TAFE System*, Australia wide, traineeships and apprenticeships have declined sharply since 2012. In 2019 the participation rate of traineeships and apprenticeships was 2.1 per cent of the workforce, half the rate that it was in 2012. Starkly, pre-COVID-19, this decline occurred as the number of people in employment rose.

Traineeships were introduced as part of an important reform to the apprenticeship system in 1985, this change extended the apprenticeship model to a much wider range of occupations, for which the traineeships were generally at lower qualification levels. A significant part of the decline was in traineeships, in 2012, 138,625 individuals completed a traineeship, by 2017 this number had fallen to 52,535, a fall of 62 per cent. The COVID years have, in part, seen a reversal in previous trends.

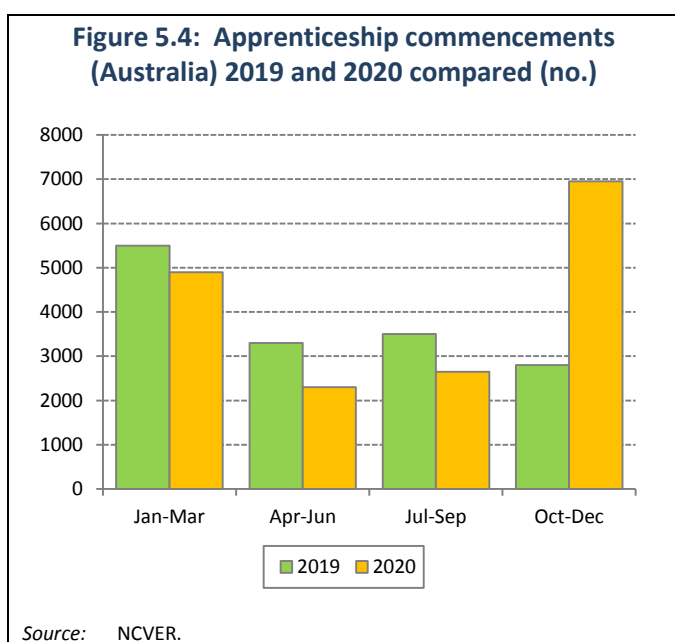
### 5.7.1 Trade apprenticeships: Commencements and completions in Australia

*"It is vital apprentices are given the right training and support. We can't properly address the skills' shortage if we continue to lose around half of those who begin an apprenticeship."*

Dianne Dayhew, Chief Executive of the National Apprentice Employment Network, December 2021

In late September 2021, the Federal Government announced a scheme intended to boost the completion of apprenticeships. The new Completing Apprenticeship Commencements (CAC) followed on from the Boosting Apprenticeships Commencements (BAC) scheme commenced in 2020.

Figure 5.4 (NCVER) shows the commencement numbers for each quarter, across both 2019 and 2020. Because of the impact of COVID on work patters, in the first three quarters of 2020 apprenticeship commencement numbers were lower than in 2019.



In 2020, by Q4 commencements were growing rapidly, due to easing of COVID restrictions and some semblance of normality returning at that time and the Federal Government's wage subsidy BAC (the awaited introduction of CAC may also have had the impact of backloading commencements so employers could participate in the scheme). History tells us that when government subsidies for training and apprenticeships/traineeships are removed, the dropout rate increases significantly. Even with the rapid increase in commencements in Q4 2020 is taken into account, the number of apprentices in 2020 increased 10.6 per cent when compared to the previous year.

A 2019 NCVER survey of trade apprentices showed that in 2019 more than 90 per cent of apprentices who had completed a traditional trade course had found employment. This compared to 75 per cent for non-completers. Completers also benefited from more stable employment outcomes, staying with the same employer, and from higher incomes (the difference in median annual income approximately \$19,000 in favour of completers).

### 5.7.2 Apprenticeships and traineeships: Completion and attrition rates in Australia

NCVER's Completion and attrition rates for apprentices and trainees report 2020 shows that (following declines in previous years):

Individual completion rates for apprentices and trainees commencing in 2016 were:

- 56.1 per cent for all occupations, down 1.5 per cent from commencements in 2015;
- 55.1 per cent for trade occupations, down 2.5 per cent from commencements in 2015; and
- 56.5 per cent for non-trade occupations, down 1.2 per cent from commencements in 2015.

It is worth noting that an individual apprentice is able to complete training under more than one contract if employers change or a break in their training occurs, hence contract completion rates for apprentices and trainees commencing in 2016 were:

- 48.3 per cent for all occupations, down 1.4 per cent from individuals commencing in 2015;
- 42.5 per cent for trade occupations, down 2.3 per cent from individuals commencing in 2015; and
- 53.8 per cent for non-trade occupations, down 1.1 per cent from individuals commencing in 2015.

### 5.7.3 Traineeships and apprenticeships in Victoria

*“The Victorian Government is providing up to 1,500 apprenticeship and traineeship opportunities per year to help Victorians who are finishing school or looking to re-skill, to kickstart a career on some of the biggest and most iconic infrastructure projects in the state.”*

Table 5.1 shows that for commencements in Victoria for the year ending 31 March 2021, the number of individuals commencing a traineeship or apprenticeship grew by 19.8 per cent over the previous year. The number of apprentices in training in 2021 rose by 18.8 per cent when compared to the previous year and over the period since 2017 has increased by 17.7 per cent. The number of cancellations and withdrawals was significantly lower in 2021 than in previous years, while actual completions in 2021 fell by 19.6 per cent when compared to the previous year to 15,380 individuals. The impact of COVID is clearly visible in the numbers.

Table 5.2 shows that since 2017, the number of individuals 25 years and over commencing traineeships or apprenticeships has grown, particularly so in the COVID period, while the number of 19 to 24-year-olds commencing traineeships or apprenticeships has fallen over the period, rising again in the COVID period. The number of females commencing traineeships or apprenticeships in 2021 grew much faster than their male counterparts, rising by 29.6 per cent over the previous

year. The private sector was by far the largest employer of apprentices and trainees, the number increasing by 23.8 per cent in 2021 when compared to the previous year. The figures show that the number of government employed apprentices and trainees fell by 28.9 per cent over the same period to 340 individuals, this suggests that government, which should be a significant contributor to the training of workers in the state, could do better and various press releases show that this is hopefully the plan.

In 2021 for the trade professions, Construction trades, Electrotechnology and telecommunications trades and Automotive and engineering trades had the highest enrolments to apprenticeships and traineeships. With the highest growth in enrolments, when compared to the previous year, occurring in the Other technicians and trades, Skilled animal and horticultural and Engineering, ICT and science technicians trades.

In 2021 for the non-trade professions, Community and personal service, Clerical and administrative and Sales had the highest enrolments to apprenticeships and traineeships. With the highest growth in enrolments, when compared to the previous year, occurring, albeit from a small base, in the Professionals and Managers traineeships.

In 2021 by far the highest commencements were for Certificate III qualifications at 28,670, a rise of 8.3 per cent over the previous year. The largest share of commencements was for new workers, while commencements for existing workers increased by 133.4 per cent when compared to the previous year.

Table 5.1 Apprenticeships in Victoria: Commencements, cancellations and completions (12 months ending 31 March 2017 to 2021)							
	2017	2018	2019	2020	2021	2020 to 2021 (% change)	2017 to 2021 (% change)
Commencements	41250	36810	36525	31420	37640	19.8	-8.7
Cancellations and withdrawals	24665	22055	21090	20385	14235	-30.2	-42.3
Completions	20985	20295	18600	19125	15380	-19.6	-26.7
In-training	63630	62775	65220	63035	74900	18.8	17.7

Source: NCVER.



Table 5.2 Apprentices and trainees – Victoria demographic overview (12 months ending 31 March 2017 to 2021)							
	2017	2018	2019	2020	2021	2020 to 2021 (% change)	2017 to 2021 (% change)
<b>AGE commencements</b>							
19 years and under	19220	18385	18015	15980	17000	6.4	-11.5
20 to 24 years	9775	8500	7965	6995	7825	11.9	-19.9
25 to 44 years	9865	8065	8440	6875	9995	45.4	1.3
45 years and over	2390	1860	2110	1570	2815	79.1	17.8
<b>GENDER</b>							
Male	26935	25125	25065	21495	24775	15.3	-8
Female	14315	11685	11460	9925	12865	29.6	-10.1
<b>FULL-TIME STATUS</b>							
Full-time	28255	26360	26970	22955	27960	21.8	-1.1
Part-time	12990	10450	9555	8465	9680	14.4	-25.5
<b>EMPLOYER TYPE</b>							
Government	360	420	525	480	340	-28.9	-5.8
Private sector	36870	32690	32330	27875	34500	23.8	-6.4
Group training scheme	4015	3700	3670	3065	2800	-8.6	-30.2
<b>TRADES (Occupation, ANZSCO group)</b>							
Engineering, ICT and science technicians	495	510	570	650	900	37.9	80.6
Automotive and engineering trades	3735	3495	3490	3145	3135	-0.3	-16.1
Construction trades	6580	7170	7260	6210	7220	16.2	9.7
Electrotechnology and telecommunications trades	2600	3070	3415	2965	3250	9.5	24.9
Food trades	2635	1770	1860	1670	1800	7.8	-31.6
Skilled animal and horticultural	1295	1315	1270	1125	1585	41.1	22.1
Other technicians and trades	2560	2240	2020	1545	2245	45.5	-12.2
<b>NON-TRADES (Occupation, ANZSCO group)</b>							
Managers	790	305	315	230	1165	401.7	47.7
Professionals	95	50	70	40	270	552.9	178.9
Community and personal service	7600	6670	6685	6090	6045	-0.7	-20.4
Clerical and administrative	3855	3270	3295	2530	3820	51	-1
Sales	4385	2805	2175	1825	2750	50.8	-37.3
Machinery operators and drivers	1760	1850	1765	1475	1150	-22.3	-34.8
Labourers	2865	2285	2340	1920	2320	20.8	-19
<b>AQF QUALIFICATION LEVEL</b>							
Certificate I or II	2230	1755	1865	1545	1495	-3.3	-33
Certificate III	34435	31410	30635	26480	28670	8.3	-16.7
Certificate IV	3815	2840	3065	2685	5925	120.8	55.4
Diploma/advanced diploma	770	805	960	715	1550	117.2	100.8
<b>EXISTING WORKER</b>							
Existing worker	4815	4230	4525	3385	7905	133.4	64.2
Newly commencing worker	36435	32580	32000	28035	29740	6.1	-18.4
<b>TOTAL</b>	<b>41250</b>	<b>36810</b>	<b>36525</b>	<b>31420</b>	<b>37640</b>	<b>19.8</b>	<b>-8.7</b>

Source: NCVET.

## 5.8 Universities, research and collaboration

The original Melbourne's North Future Workforce Report (2015) found that the strengths universities bring to Melbourne's North should be leveraged to the advantage of the region's industries and service organisations. This analysis of Australian Research Council's Excellence in Research for Australia (ERA) rankings at La Trobe University and RMIT University shows that Melbourne's North has above world standard research strength in a range of sciences including medical sciences, computing, maths, engineering, design, arts, history and culture. The mix of excellence in research appears to have significant relevance to the future business development goals of the region and makes the linkages between universities and industry even more important.

NORTH Link's Northern Horizon's report (2020) found that development of La Trobe University's City of the Future should be given the highest priority, because of its potential to drive regional exports and other clusters of innovation in the knowledge economy. La Trobe will accelerate the \$5 billion University City of the Future Plan with development partner Plenary. The report suggested that 2-3 specific initiatives should be identified to support this initiative, one in the infrastructure facilities space (such as assistance for development of the sporting complex) and another in the innovation space, particularly focused on food/beverages and/or health.

## 5.9 Excellence in Research for Australia (ERA) rankings

The Australian Research Council's 2018 analysis found that:

La Trobe University was ranked above world standard in 23 fields of research in these subject areas:

- Arts, social sciences and communications;
- Business and commerce;
- Health (nursing top rated nationally);
- IT and engineering;
- Law and criminology; and
- Science.

RMIT University was ranked well above world standard and above world standard in 37 areas of research, 15 more than in 2015. These are shown in Table 5.3.

Table 5.3 RMIT University ranking of world standards areas of research	
Well above world standard	Above world standard
Physical Sciences	Mathematical Sciences
Analytical Chemistry	Applied Mathematics
Macromolecular and Materials Chemistry	Numerical and Computational Mathematics
Physical Chemistry (Incl. Structural)	Chemical Sciences
Environmental Science and Management	Organic Chemistry
Microbiology	Environmental Sciences
Aerospace Engineering	Artificial Intelligence and Image Processing
Electrical and Electronic Engineering	Data Format
Environmental Engineering	Distributed Computing
Manufacturing Engineering	Engineering
Materials Engineering	Civil Engineering
Clinical Sciences	Mechanical Engineering
Complementary and Alternative Medicine	Medical and Health Sciences
Pharmacology and Pharmaceutical Sciences	Built Environment and Design
Medical Physiology	Architecture
Communication and Media Studies	Building
	Urban and Regional Planning
	Psychology
	Visual Arts and Crafts
	Language, Communication and Culture
	Cultural Studies

## 5.10 Educational attainment in Melbourne's North

### What are school leavers doing?

Tables 5.4(a) and (b) give the destinations of year 12 or equivalent completers who exited school in 2020 and 2017 and shows that 77.1 per cent of respondents to the On Track survey who were resident in Melbourne's North when at school were in further education or training after leaving school. For 2020 this is very similar to the survey results for all Victoria. The share of those completers in further education or training from the 2017 were again similar at 77.5 per cent. For both years 54 per cent of respondents were undertaking a bachelor degree. Again for both years, Certificate IV or higher was the highest enrolments at 10.8 per cent in 2020, above the all state average. Students enrolled as apprentices and trainees in comprised 9.7 per cent of respondents and 9.1 per cent in 2017. Mitchell Shire had the lowest percentage of

respondents enrolled in further education or training and the lowest enrolments in bachelor degree courses, this needs attention to avoid creating future pockets of disadvantage.

Of the 22.9 per cent of survey respondents not in further education or training in 2020, 16.5 per cent were employed, this is lower than the state average for this cohort of 18 per cent. Similar comments apply to 2017. In 2020 0.8 per cent of the group were not in the labour force, education or training (NILFET). This is similar to the all Victorian figure.

**Table 5.4(a) Destinations of Year 12 or equivalent completers who exited school in 2020 (per cent)**

Post-school destination	Banyule (C)	Darebin (C)	Hume (C)	Mitchell (S)	More-land (C)	Nillumbik (S)	Whittle-sea (C)	Mel. North	Victoria
In further education or training	81.2	74.2	76.7	60.4	78.9	71.7	80.3	77.1	77.2
Bachelor degree	63.3	51.0	51.6	38.4	51.6	56.5	54.1	54.1	56.1
Certificates/Diplomas	8.3	15.2	15.2	7.5	19.1	6.0	15.8	13.3	11.3
Certificate I to III	1.0	4.0	2.3	2.5	4.7	1.4	2.3	2.4	2.1
Certificate IV or higher	7.3	11.2	12.9	5.0	14.4	4.6	13.5	10.8	9.2
Apprentice/Trainee	9.6	8.0	10.0	14.5	8.2	9.2	10.5	9.7	9.8
Apprenticeship	7.8	6.3	7.6	12.6	6.5	6.7	8.6	7.7	7.3
Traineeship	1.8	1.7	2.4	1.9	1.8	2.5	1.9	2.0	2.5
Not continuing in further education or training	18.8	25.8	23.3	39.6	21.1	28.3	19.7	22.9	22.8
Employed	15.5	16.4	16.0	33.3	13.5	23.3	13.5	16.5	18.0
Employed full-time	4.6	4.4	5.4	10.7	2.1	6.0	2.9	4.6	6.0
Employed part-time	10.9	12.0	10.5	22.6	11.4	17.3	10.6	11.9	12.0
Looking for work	2.8	8.6	6.4	5.0	5.6	4.9	5.5	5.6	3.9
NILFET	0.5	0.8	0.9	1.3	2.0	0.1	0.7	0.8	0.9
Unknown								0.0	0.0
<b>Total respondents</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Notes: NILFET = Not in the labour force, employment or training. NDP = No data published.

Sources: Department of Education and Training, "The On Track Survey 2021".

**Table 5.4(b) Destinations of Year 12 or equivalent completers who exited school in 2017 (per cent)**

Post-school destination	Banyule (C)	Darebin (C)	Hume (C)	Mitchell (S)	More-land (C)	Nillumbik (S)	Whittle-sea (C)	Mel. North	Victoria
In further education or training	80.2	76.2	78.2	65.7	81.9	72.6	78.8	77.5	75.1
Bachelor degree	61.6	53.5	51.2	42.2	58.4	48.9	53.7	54.0	54.9
Certificates/Diplomas	10.3	14.4	16.7	11.3	18.1	11.6	17.2	14.5	12.1
Certificate I to III	1.7	2.2	3.4	2.6	4.2	np	2.8	2.6	2.2
Certificate IV or higher	8.6	12.3	13.3	8.7	13.9	10.5	14.5	11.9	9.9
Apprentice/Trainee	8.3	8.3	10.3	12.2	5.5	12.1	7.9	9.1	8.1
Apprenticeship	6.2	6.3	7.9	9.1	3.2	7.9	5.8	6.7	5.7
Traineeship	2.1	2.0	2.4	3.0	2.3	4.2	2.0	2.4	2.4
Not continuing in further education or training	19.8	23.8	21.8	34.3	18.1	27.4	21.2	22.5	24.9
Employed	15.5	17.3	15.1	28.3	11.3	23.4	16.4	16.9	19.8
Employed full-time	4.4	3.6	5.0	10.9	3.9	8.9	4.7	5.2	6.8
Employed part-time	11.0	13.7	10.1	17.4	7.4	14.5	11.7	11.7	13.0
Looking for work	3.7	4.9	5.2	4.8	6.1	3.2	4.2	4.5	4.3
NILFET	0.6	1.6	1.5	np	np	np	np	1.0	0.8
Unknown		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total respondents</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Notes: NILFET = Not in the labour force, employment or training. NDP = No data published.

Sources: Department of Education and Training, "The On Track Survey 2018".

Tables 5.5(a) and (b) give the destinations of year 12 or equivalent non-completers (early school leavers) who exited school in 2020 and 2017 and shows that 50.9 per cent (compared to 77.1 per cent for completers) of respondents to the On Track survey who were resident in Melbourne's North when at school, were in further education or training after leaving school. In 2020, this is lower than the Victorian average. The share of the non-completers in further education or training from the 2017 survey responses were slightly higher at 52.5 per cent. For 2020 responders, 2.7 per cent of respondents were undertaking a bachelor degree.

Apprenticeships and traineeships were an important pathway to employment for the non-completers, in 2020, 27.5 per cent of non-completers chose this pathway, lower than 2017 when the figure was 30.4 per cent. The share of non-completers looking for work in 2020, at 16.2 per cent was slightly higher than in 2017, when it was 15.2 per cent, and was higher than the Victorian average. For non-completers the share of survey respondents not in the labour force or further education and training in the 2020 cohort was 5.4 per cent compared to 0.8 per cent of completers in that year.

**Table 5.5(a) Post-school destinations of Year 12 non-completers who exited school in 2020 (per cent)**

Post-school destination	Banyule (C)	Darebin (C)	Hume (C)	Mitchell (S)	More-land (C)	Nillumbik (S)	Whittle-sea (C)	Mel. North	Victoria
In further education or training	68.2	49.4	44.4	43.8	66.7	33.3	52.1	50.9	53.3
Bachelor degree	0.0	6.3	0.0	0.0	0.0	0.0	2.1	2.7	1.8
Certificates/Diplomas	27.3	16.5	25.0	6.3	50.0	0.0	22.9	20.7	15.6
Certificate I to III	4.5	10.1	11.1	0.0	25.0	0.0	10.4	9.5	8.5
Certificate IV or higher	22.7	6.3	13.9	6.3	25.0	0.0	12.5	11.3	7.1
Apprentice/Trainee	40.9	26.6	19.4	37.5	16.7	33.3	27.1	27.5	35.9
Apprenticeship	36.4	22.8	13.9	37.5	0.0	22.2	22.9	22.5	32.2
Traineeship	4.5	3.8	5.6	0.0	16.7	0.0	4.2	5.0	3.6
Not continuing in further education or training	31.8	50.6	55.6	56.3	33.3	66.7	47.9	49.1	46.7
Employed	27.3	21.5	36.1	31.3	16.7	33.3	29.2	27.0	27.2
Employed full-time	9.1	8.9	16.7	0.0	0.0	0.0	16.7	10.4	11.3
Employed part-time	18.2	12.7	19.4	31.3	16.7	33.3	12.5	16.7	15.9
Looking for work	4.5	21.5	11.1	12.5	16.7	33.3	14.6	16.2	14.6
NILFET	0.0	7.6	5.6	12.5	0.0	0.0	4.2	5.4	4.9
Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
<b>Total respondents</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Notes: NILFET = Not in the labour force, employment or training. NDP = No data published.

Sources: Department of Education and Training, "The On Track Survey 2021".

**Table 5.5(b) Post-school destinations of Year 12 non-completers who exited school in 2017 (per cent)**

Post-school destination	Banyule (C)	Darebin (C)	Hume (C)	Mitchell (S)	More-land (C)	Nillumbik (S)	Whittle-sea (C)	Mel. North	Victoria
In further education or training	54.5	53.6	50.0	59.1	51.9	42.3	56.0	52.5	52.6
Bachelor degree	2.2	2.1	1.0	0.0	0.0	0.0	0.0	1.1	0.9
Certificates/Diplomas	18.2	27.8	20.7	18.2	18.5	11.5	18.0	20.9	19.5
Certificate I to III	13.6	17.5	9.8	13.6	18.5	7.7	14.0	13.7	11.6
Certificate IV or higher	4.6	10.3	10.9	4.6	0.0	3.8	4.0	7.3	8.0
Apprentice/Trainee	34.1	23.7	28.3	40.9	33.3	30.8	38.0	30.4	32.1
Apprenticeship	31.8	17.5	26.1	40.9	18.5	26.9	36.0	26.3	28.5
Traineeship	2.3	6.2	2.2	0.0	14.8	3.9	2.0	4.2	3.6
Not continuing in further education or training	45.5	46.4	50.0	40.9	44.4	57.7	44.0	47.5	47.3
Employed	36.4	16.5	31.5	31.8	18.5	30.8	36.0	27.8	27.5
Employed full-time	11.4	4.1	17.4	9.1	3.7	7.7	14.0	10.4	11.2
Employed part-time	25.0	12.4	14.1	22.7	14.8	23.1	22.0	17.4	16.3
Looking for work	9.1	22.7	15.2	9.1	18.5	19.2	8.0	15.2	15.0
NILFET	0.0	7.2	3.3	0.0	7.4	7.7	0.0	4.5	4.8
Unknown		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
<b>Total respondents</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Notes: NILFET = Not in the labour force, employment or training. NDP = No data published.

Sources: Department of Education and Training, "The On Track Survey 2018".

Tables 5.6(a) and 5.6(b) give the share of year 12 or equivalent completers living in Melbourne's North by tertiary institution. At University level, as one would expect, the RMIT and La Trobe universities are dominant. For both years, that is enrolment in 2018 and 2021 the two universities accounted for slightly over half of all enrolments of survey responders. The data available to the NIEIR research team in relation to TAFE is incomplete, however, it shows that Melbourne Polytechnic, Kangan Institute and RMIT (TAFE Division) are important in delivering VET training in the region.

Table 5.7 gives the reasons given for not studying in 2021 by both year 12 or equivalent completers and non-completers (early school leavers). Respondents could give more than one reason. For the completers, wanting to start working and needed a break from study were the main reasons given for not studying in 2021 with 30.1 per cent of completers who responded to the survey stating they had never planned to study. 16.9 percent of completers stated that the courses they were interested in were not available locally.

For the non-completers 77.4 per cent said they wanted to start working, 58.7 per cent said that they needed a break from studying, 27.1 per cent stated they had never

planned to study and 20 per cent stated that the courses they were interested in were not available locally.

Table 5.8 gives education attendance by age group, for students aged over 14 years living in Melbourne's North 2016 from the census. For 15-24-year-olds, for those not at school, 28.7 per cent were at university or other tertiary education and 7 per cent were attending TAFE, while 34.8 per cent were not in education. For the 25-year-olds and over 93.2 per cent were not in education or training at the time of the census, while 3.9 per cent were at university or other tertiary and 1.6 per cent were attending TAFE.

Table 5.9 shows the age distribution by education category for students aged over 14 years (2016). For Melbourne's North, age composition of those attending TAFE shows that 54.1 per cent of students who reside in Melbourne's North and are attending TAFE are over 25 years old. In the case of universities and other tertiary education 58.6 per cent of students who reside in Melbourne's North and are attending tertiary education are under 25 years old. 93.2 per cent of residents in Melbourne's North who were over 25 were not in education during the year of the census.

**Table 5.6(a) Year 12 or equivalent completers who were enrolled in campus based tertiary study in 2021 and who attended a school in Melbourne's North in 2020 (per cent)**

Institution	Banyule (C)	Darebin (C)	Hume (C)	Mitchell (S)	Moreland (C)	Nillumbik (S)	Whittlesea (C)	Mel. North
<b>UNIVERSITY</b>								
Australian Catholic University	5.9	4.2	5.5	NDP	2.3	4.1	3.7	4.8
Charles Sturt University								
Deakin University	3.7	4.8	4.4	8.8	2.3	7.1	2.2	4.2
Federation University (formerly Ballarat University)		NDP	NDP	NDP		NDP		
La Trobe University	26.5	22.5	18.1	25.0	29.4	27.8	36	26.7
Melbourne University	19.7	15.7	7.9	13.2	12.7	15.4	7.3	13.0
Monash University	8.8	7.0	6.3	13.2	5.4	7.1	7.5	7.6
RMIT University	17.7	20.8	29.3	11.8	20.8	20.1	21.1	23.1
Swinburne University	7.4	8.1	3.1	NDP	2.7	8.9	6.6	5.9
Victoria University	2.6	4.5	13.1	NDP	9.5	NDP	5.1	6.8
Interstate Universities	1.8	1.4	1.5	NDP	NDP	NDP	NDP	1.0
Other Universities	NDP	NDP	NDP		NDP	NDP		
<b>TAFE/VET</b>								
Bendigo Regional Institute of TAFE							NDP	
Box Hill Institute of TAFE	0.9	2.2	NDP		NDP	NDP	NDP	0.5
Chisholm Institute of TAFE								
Federation Training (formerly Advance TAFE)								
Federation Training (formerly Central Gippsland TAFE)								
Federation University - TAFE Division (formerly Ballarat University - TAFE Division)	NDP	NDP						
Gordon Institute		NDP						
Goulburn Ovens Institute of TAFE			NDP				NDP	
Holmesglen Institute		NDP	NDP				NDP	
Kangan Institute		NDP	3.1	NDP	5.0		NDP	1.3
Melbourne University (TAFE Division/ILFR)								
Melbourne Polytechnic	1.7	2.2	NDP	NDP	3.2	NDP	2.6	1.5
RMIT (TAFE Division)	1.7	1.7	3.5	NDP	2.7	NDP	3.3	2.5
South West Institute of TAFE								
Sunraysia Institute of TAFE								
Swinburne (TAFE Division)	NDP	NDP	NDP	NDP	NDP	NDP	NDP	
Victoria University (TAFE Division)			1.6		NDP		1.3	0.7
William Angliss Institute of TAFE	0.9	NDP	NDP	NDP	NDP		NDP	0.2
Wodonga Institute of TAFE								
Other TAFE		NDP						
<b>Total respondents in campus-based study</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Notes: NDP = No data published.

Sources: Department of Education and Training, "The On Track Survey 2021".



**Table 5.6(b) Year 12 or equivalent completers who were enrolled in campus based tertiary study in 2018 and who attended a school in Melbourne's North in 2017 (per cent)**

Institution	Banyule (C)	Darebin (C)	Hume (C)	Mitchell (S)	More-land (C)	Nillumbik (S)	Whittle-sea (C)	Mel. North
<b>UNIVERSITY</b>								
Australian Catholic University	4.4	4.7	6.5	6.4	5.9	5.7	2.6	5.2
Charles Sturt University		np		NDP				0.0
Deakin University	4.4	5.0	1.9	7.3	NDP	7.2	1.5	3.4
Federation University (formerly Ballarat University)		NDP	NDP					0.0
La Trobe University	29.6	25.5	24.7	30.0	28.4	34.4	38.2	30.9
Melbourne University	17.1	15.0	6.0	7.3	9.5	9.1	7.8	11.1
Monash University	8.8	6.1	6.5	6.4	6.8	3.8	4.3	6.7
RMIT University	16.6	21.1	27.1	17.3	21.6	19.6	19.4	22.0
Swinburne University	8.8	8.0	2.1	np	np	6.2	6.5	5.5
Victoria University	1.5	3.0	12.2	10.9	11.3	3.3	6.0	6.9
Interstate Universities	1.7	NDP	NDP	NDP	NDP		NDP	0.4
Other Universities	NDP	NDP	NDP		NDP	NDP	NDP	0.0
<b>TAFE/VET</b>								
Bendigo Regional Institute of TAFE								0.0
Box Hill Institute of TAFE	1.7	NDP	NDP		NDP	NDP	NDP	0.4
Chisholm Institute of TAFE								0.0
Federation Training (formerly Advance TAFE)								0.0
Federation Training (formerly Central Gippsland TAFE)								0.0
Federation University - TAFE Division (formerly Ballarat University - TAFE Division)								0.0
Gordon Institute		NDP						0.0
Goulburn Ovens Institute of TAFE				NDP				0.0
Holmesglen Institute	NDP	NDP						0.0
Kangan Institute	NDP	NDP	4.3	NDP	4.1		NDP	1.5
Melbourne University (TAFE Division/ILFR)								0.0
Melbourne Polytechnic	2.4	3.6	1.5	NDP	2.3	NDP	5.2	2.6
RMIT (TAFE Division)	1.4	1.4	3.5	NDP	4.1	3.8	3.5	2.8
South West Institute of TAFE								0.0
Sunraysia Institute of TAFE								0.0
Swinburne (TAFE Division)	NDP	NDP	NDP		NDP	NDP	1.5	0.3
Victoria University (TAFE Division)	NDP	NDP	1.2	NDP	NDP		NDP	0.3
William Angliss Institute of TAFE	NDP	NDP	NDP	NDP	NDP		NDP	0.0
Wodonga Institute of TAFE								0.0
Other TAFE			NDP			NDP	NDP	0.0
<b>TOTAL RESPONDENTS IN CAMPUS-BASED STUDY</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Notes: NDP = No data published.

Sources: Department of Education and Training, "The On Track Survey 2021".

Table 5.7 Reasons for not studying in 2021: Melbourne's North (per cent)								
	Banyule (C)	Darebin (C)	Hume (C)	Mitchell (S)	More-land (C)	Nillumbik (S)	Whittle-sea (C)	Mel. North
<b>YEAR 12 OR EQUIVALENT COMPLETERS</b>								
<i>Not in education or training and did not defer</i>								
You wanted to start working/earning your own money	84.3	73.7	78.9	91.1	62.0	88.9	77.6	78.7
You just needed a break from study	76.4	52.5	64.4	68.9	54.0	80.0	56.1	64.0
You never planned or intended to study	32.6	27.3	30.4	37.8	24.0	33.3	29.0	30.1
The courses you were interested in were not available locally	11.2	19.2	20.6	20.0	12.0	11.1	19.6	16.9
<b>EARLY SCHOOL LEAVERS</b>								
You wanted to start working/earning your own money	57.1	68.4	95.0	66.7	75.0	83.3	91.3	77.4
You just needed a break from study	57.1	65.8	65.0	55.6	50.0	50.0	47.8	58.7
You never planned or intended to study	28.6	26.3	40.0	22.2	50.0	33.3	13.0	27.1
The courses you were interested in were not available locally	0.0	21.1	30.0	44.4	0.0	16.7	17.4	20.0

Sources: Department of Education and Training, "The On Track Survey 2021".

Table 5.8 Education attendance by age group for students aged over 14 years living in Melbourne's North, 2016									
Educational institution	Age	Banyule (C)	Darebin (C)	Hume (C)	Mitchell (S)	More-land (C)	Nillumbik (S)	Whittle-sea (C)	Mel. North
Secondary	Less than 15 years	95.7	94.2	93.3	95.8	93.9	97.4	93.6	94.3
TAFE	Less than 15 years	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
University and Other Tertiary	Less than 15 years	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other education	Less than 15 years	0.9	1.3	2.5	0.7	1.7	0.7	2.0	1.7
Not in education	Less than 15 years	3.4	4.5	4.2	3.5	4.5	2.0	4.4	4.0
<b>Total</b>	<b>Less than 15 years</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Secondary	15 to 24 years	31.6	21.9	29.6	34.5	20.7	35.8	28.0	27.6
TAFE	15 to 24 years	6.3	5.7	8.0	8.2	5.9	7.7	7.5	7.0
University and Other Tertiary	15 to 24 years	31.3	40.4	21.6	9.8	36.8	25.0	25.6	28.7
Other education	15 to 24 years	1.6	1.9	2.3	2.4	2.1	1.2	2.0	2.0
Not in education	15 to 24 years	29.2	30.1	38.5	45.2	34.5	30.2	36.9	34.8
<b>Total</b>	<b>15 to 24 years</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Secondary	25 years and over	0.1	0.1	0.2	0.1	0.1	0.0	0.2	0.1
TAFE	25 years and over	1.2	1.8	1.8	1.5	1.6	1.0	1.6	1.6
University and Other Tertiary	25 years and over	3.4	5.9	2.4	1.9	6.0	2.6	2.8	3.9
Other education	25 years and over	0.9	1.3	1.6	0.7	1.3	0.7	1.2	1.2
Not in education	25 years and over	94.5	90.9	93.9	95.8	91.0	95.7	94.3	93.2
<b>Total</b>	<b>25 years and over</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Sources: ABS Census 2016.

Table 5.9 Age distribution by education category for students aged over 14 years, 2016									
Educational institution	Age	Banyule (C)	Darebin (C)	Hume (C)	Mitchell (S)	Moreland (C)	Nillumbik (S)	Whittlesea (C)	Mel. North
Secondary	Less than 15 years	41.2	43.7	43.1	41.4	44.5	42.3	44.2	43.2
Secondary	15 to 24 years	57.9	54.7	55.1	58.1	53.7	57.5	54.2	55.4
Secondary	25 years and over	0.9	1.6	1.8	0.5	1.8	0.2	1.6	1.4
<b>Secondary</b>	<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
TAFE	Less than 15 years	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAFE	15 to 24 years	47.5	35.7	50.2	52.7	38.8	61.6	47.3	45.9
TAFE	25 years and over	52.5	64.3	49.8	47.3	61.2	38.4	52.7	54.1
<b>TAFE</b>	<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
University and Other Tertiary	Less than 15 years	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
University and Other Tertiary	15 to 24 years	60.4	54.2	67.3	50.3	51.2	67.2	63.9	58.6
University and Other Tertiary	25 years and over	39.6	45.8	32.7	49.7	48.8	32.8	36.1	41.4
<b>University and Other Tertiary</b>	<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Other education	Less than 15 years	3.0	2.6	6.2	3.0	3.1	4.1	5.6	4.4
Other education	15 to 24 years	23.4	20.2	22.8	38.2	21.7	26.5	22.8	22.9
Other education	25 years and over	73.6	77.2	70.9	58.8	75.2	69.5	71.6	72.7
<b>Other education</b>	<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>99.9</b>	<b>100.0</b>	<b>100.0</b>	<b>100.1</b>	<b>100.0</b>	<b>100.0</b>
Not in education	Less than 15 years	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2
Not in education	15 to 24 years	4.9	5.4	8.5	8.6	6.1	6.3	7.0	6.6
Not in education	25 years and over	95.0	94.4	91.2	91.3	93.8	93.6	92.8	93.2
<b>Not in education</b>	<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>99.9</b>	<b>100.1</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Sources: ABS Census 2016.

Table 5.10 shows educational outcomes for residents in Melbourne's North between 2011 and 2016. It should be noted that in the intervening five years further education may have occurred, this could be particularly so for secondary students.

For 15-19-year-olds, and as expected, secondary students from 2011 were most likely to be in education five years later (54.6 per cent). Those not in education in 2011 were the most likely to be not employed and not in education five years later (18.7 per cent). TAFE and University students from 2011 were more likely to have employment in 2016, than those not in education in 2011.

For 20-24-year-olds, many in this cohort would have completed their studies, of those that were still studying in 2011, those in University were most likely to be employed in 2016.

Table 5.11 shows level of qualification and field of study for residents of Melbourne's North aged 15-24. Young, qualified people are taken as a proxy for recent graduates.

For Melbourne's North, students studying Natural and Physical Sciences chose to do that at degree level, 88 per cent of recent graduates held Bachelor or Postgraduate qualifications. For Hospitality and Personal Services, 98 per cent of graduates held Certificate or Advanced Diploma qualifications.

The most common field of study for residents 24 years or under who held a Bachelor or Postgraduate qualification was Management and Commerce. The second most common field of study for this group was Society and Culture.

The most common field of study for residents 24 years or under who held a Certificate or Advanced Diploma was Management and Commerce. The second most common field of study for those who held a Certificate or Advanced Diploma was Food, Hospitality and Personal Services.

**Table 5.10 Five year outcome for residents in Melbourne's North and aged 15 to 24 years in 2011 (Status in 2016)**

Education type attending 2011	Age 2011	Employed in education	Not employed in education	Employed not in education	Not employed not in education	All
Secondary	15-19 years	35.7	18.9	34.9	10.5	100.0
Secondary	20-24 years	0.0	0.0	100.0	0.0	100.0
TAFE	15-19 years	13.1	10.0	66.7	10.2	100.0
TAFE	20-24 years	14.8	5.8	62.4	17.0	100.0
University	15-19 years	26.1	13.7	53.0	7.2	100.0
University	20-24 years	17.2	8.0	68.0	6.8	100.0
Other education	15-19 years	0.0	0.0	82.0	18.0	100.0
Other education	20-24 years	0.0	0.0	81.6	18.4	100.0
Not in education	15-19 years	7.6	5.6	68.1	18.7	100.0
Not in education	20-24 years	8.5	2.7	72.2	16.6	100.0

Notes: Not employed includes both the unemployed and those not in the labour force.

2016 data includes those that have moved out of Melbourne's North in preceding five years.

Source: ABS Australian Census Longitudinal Dataset, 2011-2016.

**Table 5.11 Melbourne's North: Level of qualification and field of study for residents aged 15 to 24 years, course level share of field (per cent)**

Field	Banyule	Darebin	Hume	Mitchell	More-land	Nillumbik	Whittle-sea	Yarra	Melb. North
<b>BACHELOR AND POST GRADUATE</b>									
Natural and Physical Sciences	92.3	90.0	80.0	80.0	91.1	93.5	82.8	92.4	88.7
Information Technology	41.3	61.8	29.4	0.0	55.6	35.5	34.1	56.1	44.9
Engineering and Related Technologies	24.9	32.8	10.1	4.3	31.4	11.6	13.3	49.4	21.0
Architecture and Building	6.3	15.9	2.8	0.0	19.7	3.4	3.4	53.8	10.1
Agriculture, Environmental & Related Studies	13.0	33.3	8.6	8.5	44.9	5.4	5.5	44.2	19.6
Health	73.6	67.9	56.4	16.9	74.9	62.2	60.8	83.6	67.2
Education	81.6	81.5	79.0	90.6	86.4	79.3	74.4	87.3	80.8
Management and Commerce	45.3	47.4	24.0	10.2	46.5	37.5	31.4	62.4	39.9
Society and Culture	42.9	55.3	26.8	14.8	57.3	34.7	29.1	77.6	44.9
Creative Arts	38.6	38.5	28.6	9.6	48.1	38.9	26.2	65.0	43.3
Food, Hospitality and Personal Services	2.6	4.6	0.7	0.0	1.2	0.0	0.4	1.3	1.6
Mixed Field Programs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>CERTIFICATE AND ADVANCED DIPLOMA</b>									
Natural and Physical Sciences	7.7	10.0	20.0	20.0	8.9	6.5	17.2	7.6	11.3
Information Technology	58.7	38.2	70.6	100.0	44.4	64.5	65.9	43.9	55.1
Engineering and Related Technologies	75.1	67.2	89.9	95.7	68.6	88.4	86.7	50.6	79.0
Architecture and Building	93.7	84.1	97.2	100.0	80.3	96.6	96.6	46.2	89.9
Agriculture, Environmental & Related Studies	87.0	66.7	91.4	91.5	55.1	94.6	94.5	55.8	80.4
Health	26.4	32.1	43.6	83.1	25.1	37.8	39.2	16.4	32.8
Education	18.4	18.5	21.0	9.4	13.6	20.7	25.6	12.7	19.2
Management and Commerce	54.7	52.6	76.0	89.8	53.5	62.5	68.6	37.6	60.1
Society and Culture	57.1	44.7	73.2	85.2	42.7	65.3	70.9	22.4	55.1
Creative Arts	61.4	61.5	71.4	90.4	51.9	61.1	73.8	35.0	56.7
Food, Hospitality and Personal Services	97.4	95.4	99.3	100.0	98.8	100.0	99.6	98.7	98.4
Mixed Field Programs	100.0	100.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0

Note: Table 5.11 shows, by Melbourne's North Local Government Area, the share of level of qualification, by field of study, for residents aged up to 24 years. For example, for Melbourne's North as a whole, students studying a Bachelor or Post-Graduate Degree in Natural and Physical Sciences make up 88.7 per cent of those studying this subject, while a further 11.3 per cent of students studying this subject are undertaking a Certificate or Advanced Diploma qualification.

Source: Derived from ABS 2011 Census, Usual Residence dataset.

Table 5.12 shows Melbourne's North university students by place of residence local government area. For the number of students enrolled at university, comparing three census years, Darebin had the highest number of students enrolled in 2016, followed by Moreland, Whittlesea and Hume. Because of rapid population growth, the number of university students enrolled from Hume and Whittlesea increased substantially between 2011 and 2016. Mitchell had the highest rate of growth in the number of university students but from a low base, again the increase can be explained by population growth. In the case of Mitchell, and in some parts of the shire, access to tertiary education could be difficult for students without access to a vehicle.

Darebin had the highest share of its 18-24-year-old residents enrolled at university in 2016 at 50.3 per cent, Mitchell had the lowest at 14.4 per cent. Fastest growth of the 18-24-year-old population between 2006 and 2016 occurred in Whittlesea, Mitchell followed, and if the growth in population of this cohort continues at the rate since 2006, then this reinforces the need for Mitchell to receive special attention in relation to investment in education and associated infrastructure. Not to do so will create growing educational disadvantage in the young community of the shire.

Table 5.12 Melbourne's North: University students – municipality of home address				
	2006	2011	2016	Growth 2011 to 2016 (%)
<b>Number of students enrolled at university</b>				
Banyule (C)	3558	4067	4431	24.5
Darebin (C)	5185	5953	7332	41.4
Hume (C)	2707	3959	6100	125.3
Mitchell (S)	210	355	514	144.6
Moreland (C)	4530	5328	7292	61.0
Nillumbik (S)	1704	1926	2117	24.2
Whittlesea (C)	2692	3873	6365	136.4
<b>Melbourne's North</b>	<b>20538</b>	<b>25448</b>	<b>34148</b>	<b>66.3</b>
<b>Population 18 to 24 years – municipality of home address</b>				
Banyule (C)	10858	10995	10221	-5.9
Darebin (C)	13081	13694	14574	11.4
Hume (C)	15005	17790	20284	35.2
Mitchell (S)	2562	3027	3563	39.1
Moreland (C)	13766	14973	16069	16.7
Nillumbik (S)	6028	6138	5782	-4.1
Whittlesea (C)	12683	15239	18369	44.8
<b>Melbourne's North</b>	<b>73983</b>	<b>81856</b>	<b>88862</b>	<b>20.1</b>
<b>Share % of 18-24 year olds enrolled at university – municipality of home address</b>				
Banyule (C)	32.8	37.0	43.4	32.3
Darebin (C)	39.6	43.5	50.3	26.9
Hume (C)	18.0	22.3	30.1	66.7
Mitchell (S)	8.2	11.7	14.4	75.9
Moreland (C)	32.9	35.6	45.4	37.9
Nillumbik (S)	28.3	31.4	36.6	29.5
Whittlesea (C)	21.2	25.4	34.6	63.2
<b>Melbourne's North</b>	<b>27.8</b>	<b>31.1</b>	<b>38.4</b>	<b>38.4</b>

Source: ABS Census 2006, 2011 and 2016.

Table 5.13 shows the participation rate and unemployment for 15-24-year-olds in Melbourne's North labour force region. For Melbourne's North the unemployment rate for 15-24-year-olds fell by an average 1.1 per cent per year over the 2016 to 2019 period. It has risen by an average of 0.2 per cent over the two COVID years.

After an initial drop in 2020 the participation rate for 15-24-year-olds rose by 2.6 per cent from 2020 to 2021. This was due to increased employment opportunities for local youth in COVID times.

Table 5.13 Melbourne's North labour force region, participation rate and unemployment rate									
Average of year ended November		2016	2017	2018	2019	2020	2021	Average annual percentage point change	
								2016 to 2019	2019 to 2021
<b>Unemployment rate %</b>									
15 to 24 year olds	Northern Melbourne total	14.1	13.5	10.3	10.8	15.4	11.2	-1.1	0.2
15 to 24 year olds	Victoria	13.0	13.0	11.8	10.2	14.7	12.1	-0.9	1.0
Total working age population	Northern Melbourne total	5.3	5.8	4.7	4.8	6.4	5.6	-0.2	0.4
Total working age population	Victoria	5.8	5.9	5.1	4.7	6.3	5.2	-0.4	0.3
<b>Participation rate %</b>									
15 to 24 year olds	Northern Melbourne total	63.4	63.4	62.8	63.7	62.1	64.7	0.1	0.5
15 to 24 year olds	Victoria	65.9	65.4	64.8	66.0	62.4	65.5	0.0	-0.2
Total working age population	Northern Melbourne total	67.4	69.0	67.9	67.9	68.2	68.7	0.2	0.4
Total working age population	Victoria	65.2	66.1	65.7	66.2	65.1	66.3	0.3	0.0

Notes: Northern Melbourne total is comprised of these SA4 regions: Melbourne – Inner, Melbourne – North East, Melbourne – North West and Hume.

Source: ABS Detailed Labour Force Survey, November 2021.

The following group of tables describe employment and ethnicity in Melbourne's North. Tables 5.14 and 5.15 give the speakers of English and other than English at home with post school qualifications and their employment status. Unemployment rates are more than double for other than English speakers at home for those holding a bachelor degree or graduate diploma and nearly three times higher for those holding a postgraduate degree.

Tables 5.16 and 5.17 give the speakers of English and other than English at home with post school qualifications by occupation in Melbourne's North. For those workers with qualifications from higher education, the occupation with the most workers, for both speakers of English and other than English at home, was Professionals, for speakers of English at home the share of Professionals was higher. For speakers of other than English at home the share of Machinery Operators and Drivers and Labourers was significantly higher, as it was for Community and Personal Service Workers.



**Table 5.14 Qualifications, employment and ethnicity in Melbourne's North (residents)**

		Bachelor Degree level		Graduate Diploma and Graduate Certificate level		Postgraduate Degree level	
		Speaks other than English at home	Speaks English at home	Speaks other than English at home	Speaks English at home	Speaks other than English at home	Speaks English at home
Banyule (C)	Employed	3925	11942	434	2529	2117	3817
Banyule (C)	Unemployed	271	357	16	65	142	125
Darebin (C)	Employed	6262	14414	641	3017	3077	5325
Darebin (C)	Unemployed	626	475	41	81	302	132
Hume (C)	Employed	6431	5758	601	1023	2453	1018
Hume (C)	Unemployed	562	202	30	35	259	45
Mitchell (S)	Employed	232	1615	17	396	74	322
Mitchell (S)	Unemployed	16	42	0	8	3	10
Moreland (C)	Employed	7233	16667	757	3207	3612	6048
Moreland (C)	Unemployed	602	619	44	86	329	162
Nillumbik (S)	Employed	870	6491	119	1396	403	1816
Nillumbik (S)	Unemployed	41	159	8	30	27	42
Whittlesea (C)	Employed	8462	6669	733	1156	3627	1165
Whittlesea (C)	Unemployed	613	200	42	32	290	48
<b>Melbourne's North</b>	<b>Employed</b>	<b>33415</b>	<b>63556</b>	<b>3302</b>	<b>12724</b>	<b>15363</b>	<b>19511</b>
<b>Melbourne's North</b>	<b>Unemployed</b>	<b>2731</b>	<b>2054</b>	<b>181</b>	<b>337</b>	<b>1352</b>	<b>564</b>

Source: ABS Census 2016.

**Table 5.15 Qualifications, employment and ethnicity in Melbourne's North – unemployment rate in each group**

	Bachelor Degree level		Graduate Diploma and Graduate Certificate level		Postgraduate Degree level	
	Speaks other than English at home	Speaks English at home	Speaks other than English at home	Speaks English at home	Speaks other than English at home	Speaks English at home
<b>Unemployed</b>						
Banyule (C)	6.5	2.9	3.6	2.5	6.3	3.2
Darebin (C)	9.1	3.2	6.0	2.6	8.9	2.4
Hume (C)	8.0	3.4	4.8	3.3	9.6	4.2
Mitchell (S)	6.5	2.5	0.0	2.0	3.9	3.0
Moreland (C)	7.7	3.6	5.5	2.6	8.3	2.6
Nillumbik (S)	4.5	2.4	6.3	2.1	6.3	2.3
Whittlesea (C)	6.8	2.9	5.4	2.7	7.4	4.0
<b>Melbourne's North</b>	<b>7.6</b>	<b>3.1</b>	<b>5.2</b>	<b>2.6</b>	<b>8.1</b>	<b>2.8</b>

Source: ABS Census 2016.

**Table 5.16 Qualifications, occupation and ethnicity in Melbourne's North (number of residents)**

Occupation	Bachelor Degree level		Graduate Diploma and Graduate Certificate level		Postgraduate Degree level	
	Speaks other than English at home	Speaks English at home	Speaks other than English at home	Speaks English at home	Speaks other than English at home	Speaks English at home
Managers	3881	9681	366	1855	1958	3621
Professionals	13551	34641	1812	8116	7482	13151
Technicians and Trades Workers	2297	2465	115	265	727	304
Community and Personal Service Workers	3150	4440	403	1002	1105	630
Clerical and Administrative Workers	4425	7466	335	1122	1717	1315
Sales Workers	2198	3275	108	231	914	323
Machinery Operators and Drivers	1590	583	83	39	607	65
Labourers	2313	1003	92	89	859	119
<b>Total</b>	<b>33405</b>	<b>63554</b>	<b>3314</b>	<b>12719</b>	<b>15369</b>	<b>19528</b>

Source: ABS Census 2016.

**Table 5.17 Qualifications, occupation and ethnicity in Melbourne's North (per cent of residents)**

Occupation	Bachelor Degree level		Graduate Diploma and Graduate Certificate level		Postgraduate Degree level	
	Speaks other than English at home	Speaks English at home	Speaks other than English at home	Speaks English at home	Speaks other than English at home	Speaks English at home
Managers	11.6	15.2	11	14.6	12.7	18.5
Professionals	40.6	54.5	54.7	63.8	48.7	67.3
Technicians and Trades Workers	6.9	3.9	3.5	2.1	4.7	1.6
Community and Personal Service Workers	9.4	7	12.2	7.9	7.2	3.2
Clerical and Administrative Workers	13.2	11.7	10.1	8.8	11.2	6.7
Sales Workers	6.6	5.2	3.3	1.8	5.9	1.7
Machinery Operators and Drivers	4.8	0.9	2.5	0.3	3.9	0.3
Labourers	6.9	1.6	2.8	0.7	5.6	0.6
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: ABS Census 2016.

**Table 5.18 Language spoken at home – 2016 (per cent of residents by LGA)**

LGA	English	Other European	SW Asian	South Asian	SE Asian	East Asian	African	Pacific
Banyule	77.6	9.7	1.8	2.6	1.6	5.5	1.0	0.1
Darebin	60.6	19.2	4.3	5.4	3.7	6.0	0.7	0.1
Hume	52.2	8.3	23.2	9.6	3.2	1.1	0.8	1.3
Mitchell	92.4	3.3	0.7	1.3	1.0	1.0	0.1	0.2
Moreland	59.7	17.6	1.4	7.9	2.5	3.4	0.3	0.2
Nillumbik	90.7	6.1	0.7	0.6	0.4	1.5	0.1	0.0
Whittlesea	54.0	18.0	8.0	10.3	4.4	3.9	0.8	0.6
Melbourne's North	63.0	13.5	9.1	6.9	2.9	3.5	0.6	0.5
<b>Victoria</b>	<b>72.6</b>	<b>8.7</b>	<b>3.2</b>	<b>4.9</b>	<b>3.9</b>	<b>5.7</b>	<b>0.6</b>	<b>0.4</b>

Source: Census 2016. 'Pacific' includes Australian indigenous languages. Table excludes residents who failed to state a language.

Melbourne's North has a reputation as an ethnically diverse region, and it is indeed the case that the percentage of residents who speak a language other than English at home is greater than the Victorian average. However, this does not apply in three of the region's seven constituent LGAs – Mitchell, Nillumbik and Banyule. Among the four relatively polyglot LGAs European languages other than English are widely spoken in Darebin, Moreland and Whittlesea, while the languages of South West Asia (Turkish, Arabic and others) are prominent in Hume, with some spread into Moreland and Whittlesea. South Asian languages are relatively common in Whittlesea and Hume. Whittlesea is the only LGA in Melbourne's North where the proportion of residents speaking a South-East Asian language (Indonesian etc.) is above Victorian average, and Darebin is the sole LGA in the region where the proportion speaking an East Asian language (Chinese, Japanese, Korean) is above Victorian average. Very few residents speak African, Australian indigenous or Pacific languages. Insofar as it is an economic advantage to speak the language of Australia's major trading partners, the ethnic diversity of Melbourne's North is not particularly advantageous. It may also hinder the recognition of professional and trade qualifications gained overseas. However, the diversity of cultural heritage should provide artistic and culinary background to the development of industries such as food processing.

## 5.11 Historical context: Brief overview of education and training in Melbourne's North

### *Features of education and training in Melbourne's North*

Leaving school early can be a lifelong impediment to finding secure employment. As Melbourne's North has gentrified the culture of education has grown, with migrant families working very hard to provide their children with the opportunity to access post school education. It was found that this had strengthened the region's capacity to deal with changes in industry employment and skills demand and enhance workforce capability and adaptability.

At the time of researching the previous edition of the Melbourne's North Future Workforce Report in 2015, the On Track survey showed that just over 50 per cent of school leaver respondents in the region were enrolled at university in the six months after leaving school. VET Certificate IV and above accounted for 16 per cent of enrolments, and apprenticeships were undertaken by 4 per cent of survey respondents.

In 2014 the highest demand for VET training was from the Health care and social assistance, and Construction sectors. The fastest growing demand for VET training was for the Wholesale trade, Transport, postal and warehousing and Public administration and safety sectors. For residents in Melbourne's North seeking training, Health care and social assistance saw the highest growth in enrolments. Demand for construction courses followed. Non-industry training was larger than any industry training and continued to grow.

At the time of researching the previous edition of this report the quality of training delivered by Registered Training Organisations (RTOs) had been variable, and despite this, the private sector had been successful in capturing a significant proportion of the VET market. At the time there were around 1,000 RTOs engaged in delivering VET in Victoria, of which around 50 per cent were delivering government funded VET.

Over the period 2005 to 2015, Whittlesea and Hume experienced the largest growth in university enrolled residents. After adjusting for population growth, this was still the case in 2015. Moreland and Banyule had the highest number of university enrolled residents in 2013. Mitchell had the lowest proportion of university enrolled residents in 2013.

The municipality of Mitchell had the highest percentage of respondents to the On Track survey not continuing with study or training in the year following school. Darebin had the highest proportion of respondents seeking work.

Lack of attention to career guidance education at school and low levels of connectivity between schools and industry could be costly as the dropout rate from technical/trades apprenticeships showed, NIEIR calculations suggested that nearly half of all technical/trades apprentices (49.4 per cent) had dropped out in the year proceeding the research. The dropout rate was higher for the younger students and differed between industry sectors.

Research showed that improving the linkages and pathways between education, training and industry, and starting early with informed career guidance at school, would improve the viability of courses offered by tertiary and TAFE institutions and help to reduce the dropout rates, then a feature of the Victorian education system.

These are some of the main findings from previous NIEIR research in Melbourne's North, including from the previous edition of the Melbourne's North Future Workforce Report, work completed prior to the COVID-19 pandemic.

**Figure 5.5: Seven step employment and skills strategy from the first edition of the Future Workforce: Melbourne's North report (2015)**



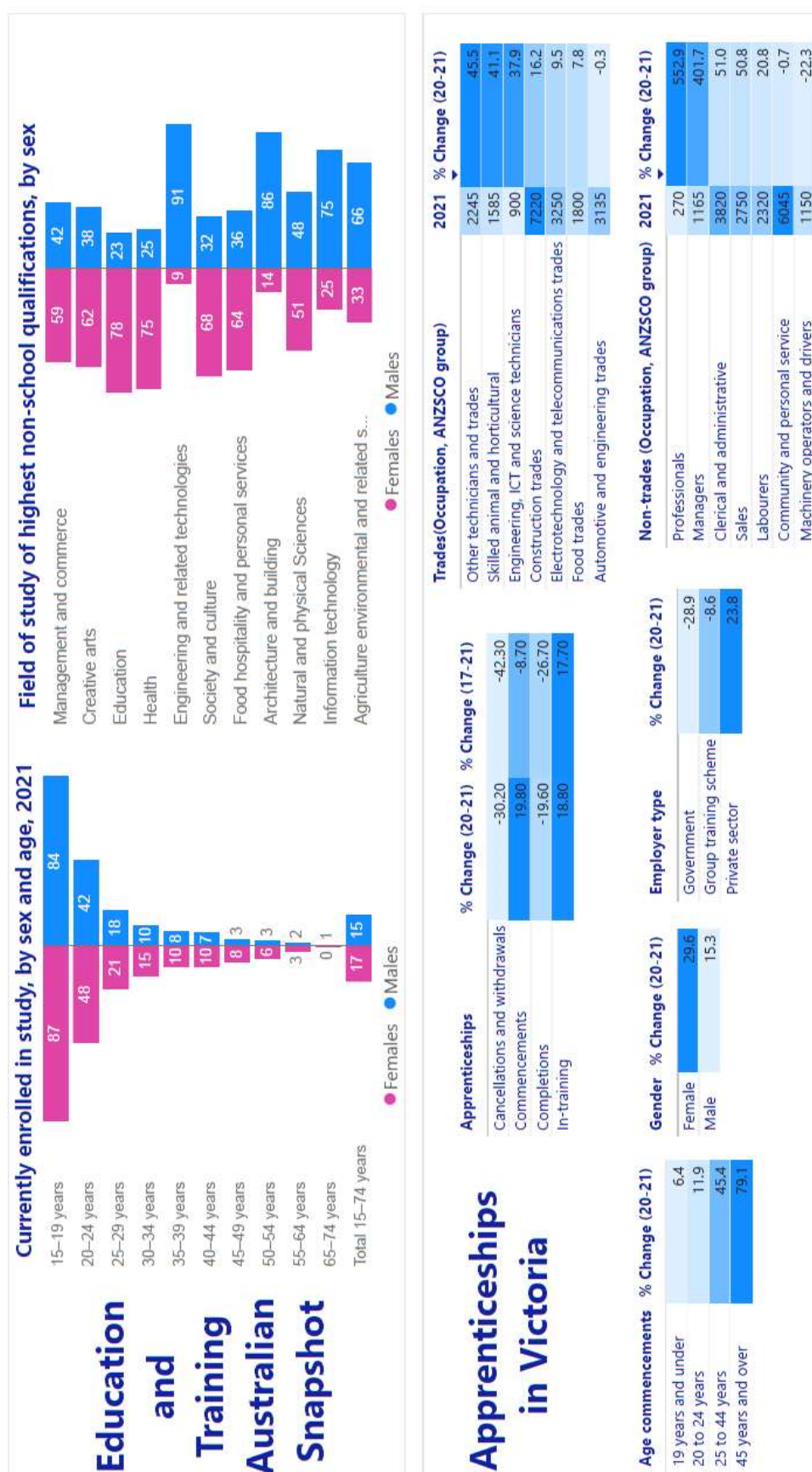
These were among the issues to be addressed:

- relatively poor links between education providers and industry in the region;
- education and training system needed to be far more cohesive in the regional context and employability should be a top line theme throughout the education and training system;
- young people who leave school early were the most likely to find difficulties in finding secure employment and more work was needed to retain

students in education, including further development of alternative educational pathways. For school leavers in Melbourne's North who did not complete Year 12, and were not in education or training, almost 53 per cent were not in employment. For early school leavers who were working, 11 per cent were employed as Sales assistants and store persons and 10 per cent were employed in Food, hospitality and tourism;

- career teaching at school had historically suffered from limited funding and was under-provided, resulting in a disjointed system and in particularly low levels of completion of apprenticeships and other courses;
- given the difficulties being experienced by the public TAFE system in Victoria and the growth of private VET providers, public TAFE's share of education had declined while the university share had grown;
- for the residents of Melbourne's North over 25 years old, lifelong learning activities need to be actively encouraged and this should become a regional theme. The theme to be promoted by local governments, the region's TAFEs and universities, encouraging individuals to take responsibility for their own lifelong learning practices, while using the educational resources available to them to enhance their employability and skills;
- more focus should be applied to maximising opportunities for the skilled migrant workforce and that low levels of foreign language teaching were creating a monolingual business culture, doing so despite the rich cultural composition of the population. Enhancing language skills within the business community in the region would help future export development for Melbourne's North goods and services;
- the physical presence of tertiary institutions and their campuses would grow in importance and were fundamental to building clusters of excellence in high-tech and knowledge economy employment;
- the task for universities in Melbourne's North was to transform delivery models as well as administrative systems so that educational quality could be maintained amidst an environment of continued government funding cuts; and
- the region's universities had particular strengths in research as described by their ERA rankings. Melbourne's North industry should be encouraged to build on these strengths.

## 5.12 Melbourne's North: Education and training dashboards



### Apprenticeships in Victoria

#### Apprenticeships

Category	% Change (20-21)	% Change (17-21)
Cancellations and withdrawals	-30.20	-42.30
Commencements	19.80	-8.70
Completions	-19.60	-26.70
In-training	18.80	17.70

#### Age commencements % Change (20-21)

Age Group	% Change (20-21)
19 years and under	6.4
20 to 24 years	11.9
25 to 44 years	45.4
45 years and over	79.1

#### Gender % Change (20-21)

Gender	% Change (20-21)
Female	29.6
Male	15.3

#### Employer type % Change (20-21)

Employer type	% Change (20-21)
Government	-28.9
Group training scheme	-8.6
Private sector	23.8

#### Trades (Occupation, ANZSCO group)

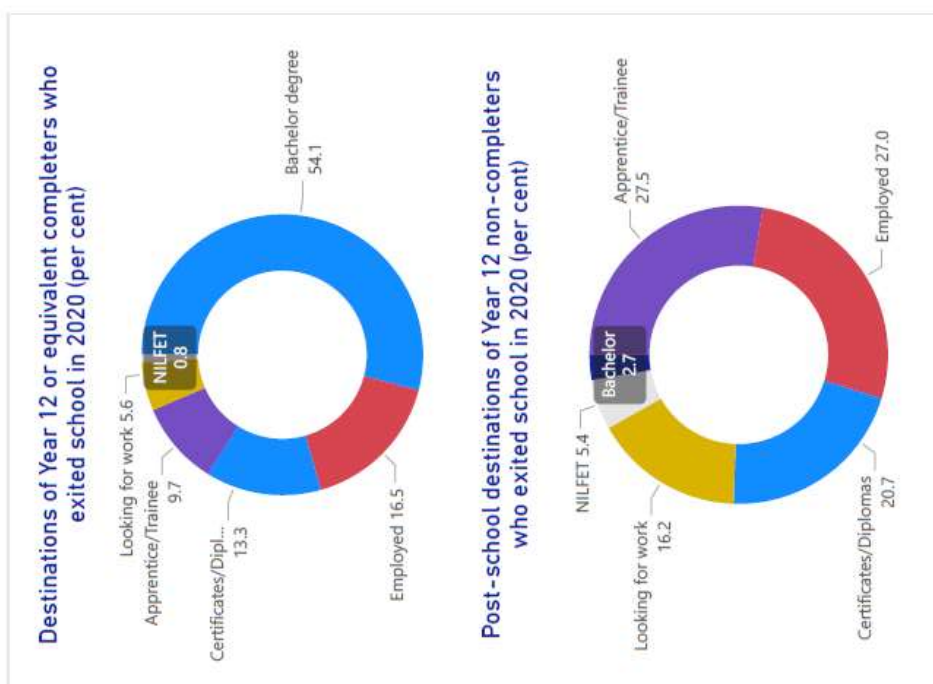
Occupation	2021	% Change (20-21)
Other technicians and trades	2245	45.5
Skilled animal and horticultural	1585	41.1
Engineering, ICT and science technicians	900	37.9
Construction trades	7220	16.2
Electrotechnology and telecommunications trades	3250	9.5
Food trades	1800	7.8
Automotive and engineering trades	3135	-0.3

#### Non-trades (Occupation, ANZSCO group)

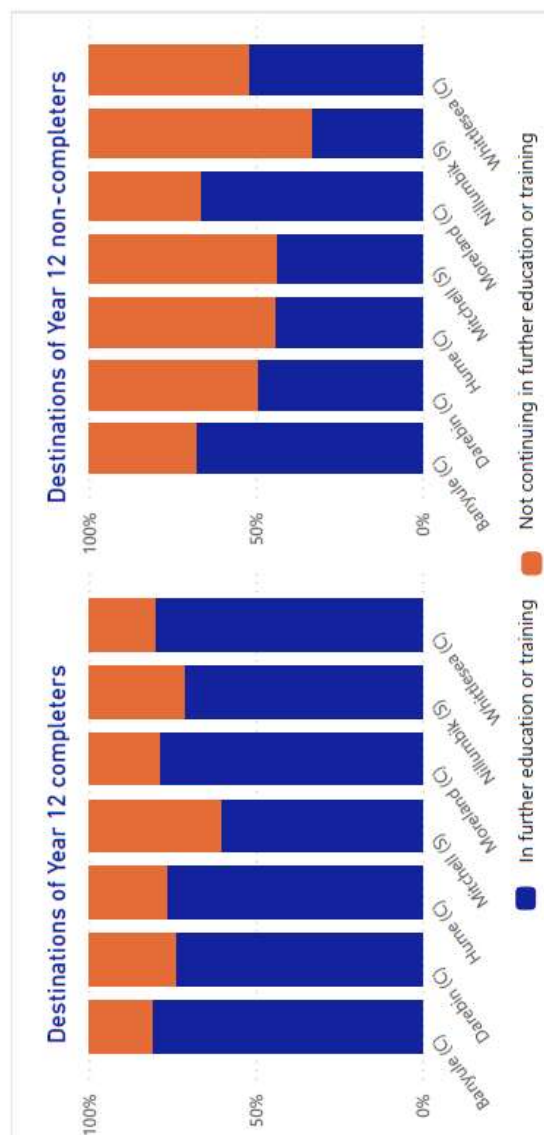
Occupation	2021	% Change (20-21)
Professionals	270	552.9
Managers	1165	401.7
Clerical and administrative	3820	51.0
Sales	2750	50.8
Labourers	2320	20.8
Community and personal service	6045	-0.7
Machinery operators and drivers	1150	-22.3



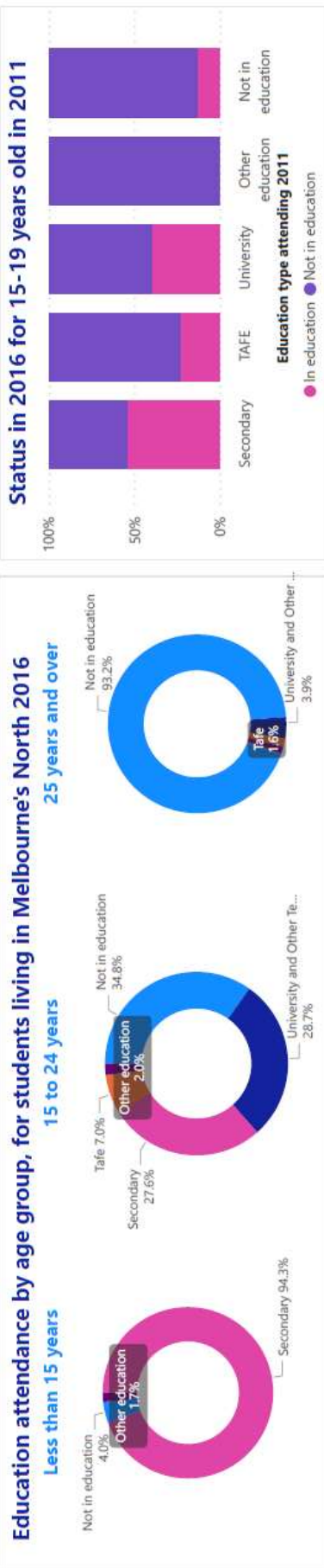
## Melbourne's North - Education Levels



Top Universities and TAFEs	La Trobe University	RMIT University	Melbourne University
Year 12 completers enrolled in 2021 and attended a school in Melbourne's North in 2020 (per cent)	26.7 Melbourne's North	23.1 Melbourne's North	13 Melbourne's North
	RMIT (TAFE Division)	Melbourne Polytechnic	Kangan Batman Institut...
	2.5 Melbourne's North	1.5 Melbourne's North	1.3 Melbourne's North



## Melbourne's North - Education



### Age distribution (14+) by educational institution 2016

Educational Institution	less than 15 years	15 to 24 years	25 years and over
University and Other Tertiary	0.00	58.60	41.40
TAFE	0.00	45.90	54.10
Secondary	43.20	55.40	1.40
Other education	4.40	22.90	72.70
Not in education	0.20	6.60	93.20

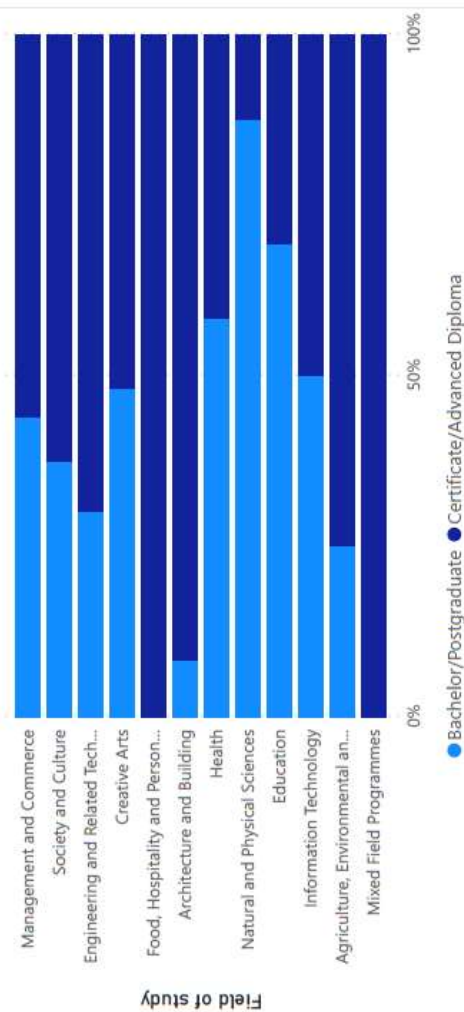
### Highest number of university students enrolled in 2016

Darebin (C)  
Moreland (C)  
Whittlesea (C)

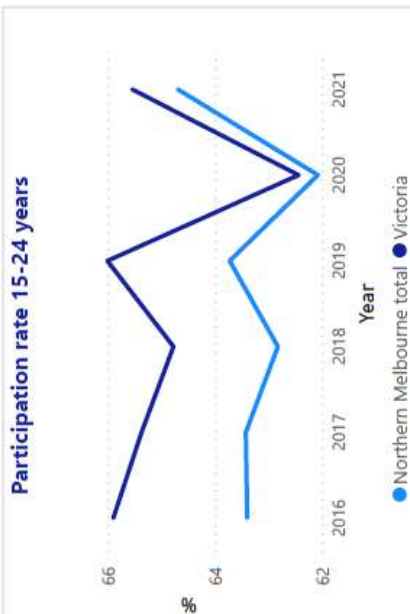
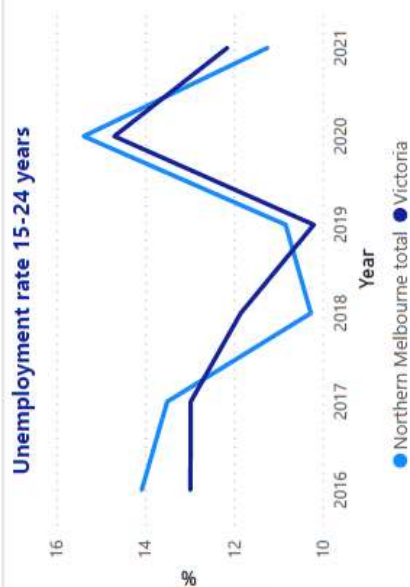
### Highest rate of growth in university student numbers 2011 to 2016

Hume (C)  
Mitchell (S)  
Whittlesea (C)

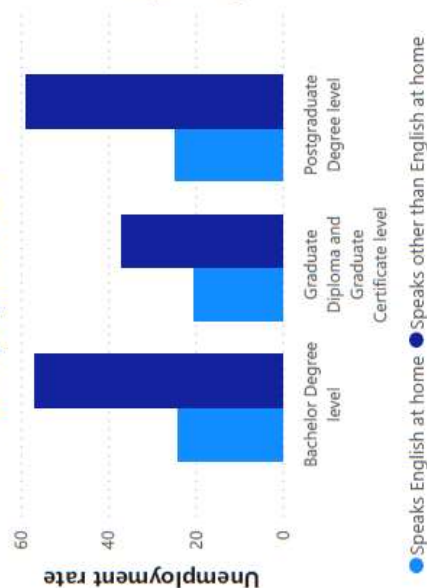
### Field of study for residents of Melbourne's North 2016



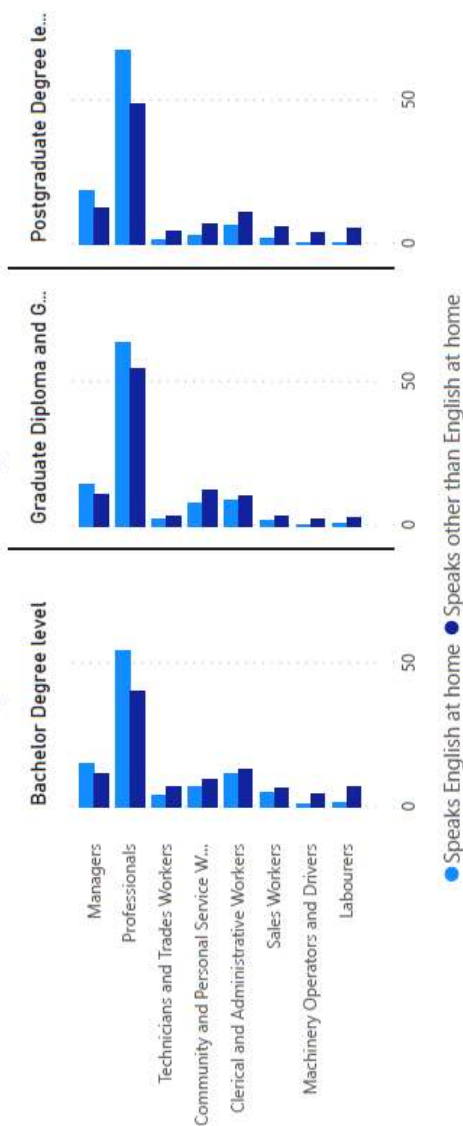
**For Melbourne's North the unemployment rate for 15-24-year-olds fell by an average **1.1** per cent per year over the 2016 to 2019 period. It has risen by an average of **0.2** per cent over the two COVID years.**



**Qualifications, employment and ethnicity - unemployment rate**



**Qualifications, occupation and ethnicity - Per cent of share**



## 6. Macro influences on employment and skills formation

### 6.1 Key findings: Skills formation

1. Literacy and numeracy skills are a foundation requirement for most jobs in the economy. Occupations that do not require a reasonable standard in these skills are declining over the long term, albeit now influenced by low skilled worker shortages because of the COVID pandemic.
2. Adaptability, flexibility and lifelong learning are three critically important components of skills formation, in an individual and in society as a whole.
3. Important to ensure that the skills of workers and individuals are aligned to the needs of the labour market.
4. Fine-tuning of workforce skills provides industries in Victoria with the workers and skills that industry requires.
5. The Victorian Skills Authority is now established and will produce its first Victorian skills plan in 2022.
6. Importance of linking skill development with industry clusters.
7. The gender differences in skills held in the economy continue to be striking and what opportunities exist in redefining roles in employment and skills development over the next ten years?
8. Employers recruiting for medium and higher skilled vacancies in areas outside of capital cities (this applies to parts of Mitchell for example) not only have recruitment difficulty most frequently, but also experience a greater severity of difficulty.
9. Information and communication technologies and the internet are key drivers of innovation, growth and labour productivity.
10. Innovation in the tech sector has led to a rise in the gig economy, where the workers are employed on contract to perform short-term services, such as ride-sharing and food delivery. This provides opportunity for workers to generate an income, but contractors lack the rights of employees. Digital skills and literacy are essential to take advantage of this growing sector.
11. Generally, in the Australian economy at this time, skills shortages are greatest among technicians and trades workers occupations, which includes electricians, carpenters, chefs, fitters and motor mechanics.

12. Over the 20 year period before the impact of COVID-19, employment in STEM occupations grew by 85 per cent, more than twice the rate of non-STEM occupations which grew at 40 per cent over the period.
13. We need to stress the importance of the continual improvement of Melbourne's North broadband infrastructure in enabling the knowledge economy and development of the digital skills that drive innovation and the high speeds and capacity of the communication systems that enable it.
14. 75 per cent of employers considered employability skills to be as important, if not more important, than technical skills.

### 6.2 Melbourne's North: Economy, employment and skills

Employment patterns do not change rapidly. Established employers carry on and established skills are, for the most part, utilised. However, industries grow and contract and the skill requirements within industries also change.

As described in Chapter 1, the residents of Melbourne's North work in a wide range of industries. The major economic base industry within the region remains manufacturing. Though employment in manufacturing so defined has declined, some of this is due to the contracting-out of services previously provided in-house by manufacturing firms. Such services can be counted as part of the economic base, though it has to be admitted that the office-based services which support manufacturing in Melbourne's North are not necessarily located within the region. The region also generates significant employment in logistics, some of which is related to local manufacturing but much of which is part of supply chains connecting other regions.

Many residents of Melbourne's North commute to work in adjacent regions, chiefly central Melbourne, where they work in office-based industries and in related support activities. Much of the income so earned, along with that earned in local manufacturing and logistics, is spent within the region and supports employment in retail and visitor services. Local employment is also generated in area services including education and health care, which serve the needs of the regional population and are largely financed from the tax/transfer system, and in construction, which ultimately depends on regional incomes and prospects but which is heavily debt-financed so that



activity can boom or slump depending on the availability of finance.

In the mining-boom decade, manufacturing in Melbourne's North was adversely affected by loss of competitiveness when, as measured by the Trade Weighted Index, the ratio of overseas prices to Australian prices halved: imports became cheaper and export returns plummeted, with serious consequences for Australian manufacturing. Since 2016 the exchange rate has fluctuated, averaging roughly half way between its mining boom peak and its pre-boom level.

Future trends in the exchange rate are likely to depend on its most volatile determinant: the value of mining exports. The outlook for mining exports is mixed. As the world moves to zero greenhouse gas emissions, coal exports will disappear followed by natural gas exports, but these exports will most likely be replaced by exports of zero-emission energy and of minerals in demand as inputs to the new emission-saving technologies. There is potential for wild fluctuations in exchange rates, both up and down, but also a possibility that global cooperation might smooth the rate at roughly the present level. New mining developments are likely to be as far from Melbourne as were the developments during the mining boom, with Perth and Brisbane the likely urban beneficiaries. Industry in Melbourne did not capture much of the demand arising from the recent boom and it remains to be seen whether it can do better during the next.

Pioneering analysis conducted in the 1990s, when it first became apparent that it would be wise to reduce greenhouse gas emissions, came to two conclusions, both of which are still valid. The first was that considerable cuts can be achieved at low cost by improving energy efficiency, and the second was that the necessary switch to zero-emission sources would require investment in new capital equipment. Given time, this could be financed from depreciation allowances. Now that time has been frittered away, it is likely to require the replacement of energy-related equipment before the end of its accounting life. The electricity supply industry requires investment to support the switch to distributed intermittent generation involving storage capacity, requiring a very different transmission network from the current network which radiates outwards from coalfields power stations. The transport industries will have to convert from petroleum power to renewable power, requiring investment in replacement equipment and very probably adjustment to changes in modal cost differentials – it looks as though it will be particularly difficult, and perhaps costly, for air transport to shift to renewables. There could also be changes in shipping costs that increase the 'natural protection' which local industries receive from transport costs. To the extent that the investment campaign replaces stranded assets, it will require finance beyond that generated by depreciation allowances.

The question of finance raises the question of debt. Australian households (and, in particular, Victorian households) are heavily in debt. Government debt has recently increased considerably due to Covid-related expenditures. Both household and government debt are currently manageable thanks to very low interest rates, but will become problematic should interest rates rise. With rates near their lower bound of zero, the risk is all on the upside. The current low level is being sustained by monetary policy world-wide, but this is unlikely to go on for ever. In Australia, the Reserve Bank may be able to stave off an increase should world rates rise, but only for a limited time.

Increased interest rates, while good news for savers, are likely to cut into the disposable incomes of indebted households, reducing their demand for retail and visitor services. They will also cut into government budgets, requiring tax increases, expenditure reductions or a combination of both. A further factor impinging on the Commonwealth budget will be demands for increased defence expenditure, most of which will go on overseas purchases or be spent in Northern Australia. Along with the requirements for public investment in the conversion to zero emissions, these factors are likely to curtail funds available for the area services in Melbourne's North.

Much of the increase in government debt will be a long-run result of what everybody hopes will be a short-run pandemic. A second set of long-term repercussions will be due to the cessation of immigration during 2020-21, running into 2021-22 and perhaps beyond. Immigration is likely to resume, but even if it returns to 'normal' rates the population will fall short of the levels projected in 2019. An obvious result of the shortfall will be a reduction in the rate of new household formation, and hence in dwelling construction, though at current low interest rates it is likely that the demand for new dwellings can be maintained for a few years. An equally obvious result has been a reduction in labour supply. The likely immediate effect is an increase in wage rates, possibly leading to a revival of inflation and increase in interest rates. In the longer term, say from 2025 onwards, the heritage of debt and delay in the conversion to zero emissions is likely to reduce the growth rate of Australian GDP leading to the curtailment of immigration.

## 6.3 Skills and work

Influences on skills formation are global, national and local. In large part the success of a region depends on its capacity to respond to external influences, hence the importance of training, which in combination with tacit knowledge of how things are done in a particular place or business, form the solid foundations on which economic growth is built.

The COVID pandemic has taught us all that flexibility, for both the individual and in the workplace, are central to managing the journey through the years of pandemic. Being adaptable, understanding the types of skills which are transferable, mean that opportunities for employment are enhanced and in a range of occupations and industries.

The skills listed below are generalist, that is, not specifically applied to any one business or industry sector and they are important foundation skills in a modern economic system.

- Leadership and social influence.
- Emotional intelligence.
- Creativity, originality and initiative.
- Analytical thinking and innovation.
- Active learning.
- Technology design and programing.
- Complex problem-solving.
- Critical thinking and analysis.
- Reasoning.
- Resilience, stress tolerance and flexibility.

Over the last 30 years Melbourne's North has been impacted by a number of external shocks, the closure of the automotive manufacturing sector and the COVID pandemic among the most significant, Melbourne's North has shown it can adapt to new circumstances. Climate change will create significant challenges for the region in the next 20 years. The rapid evolution of technology, the importance of the Internet, the rise of the gig economy and the unbounding of work-life are changing society. All of these changes have a very big impact on the types of skills that are and will be required in the workplace and beyond. Despite the powerful influence of these mega-trends, regional levers to improve Melbourne's North employment outlook and employment distribution do exist as is the importance of life-long learning strategies. Strategic investment in infrastructure including schools and hospitals is one such lever. Melbourne's North is well placed to benefit from these investments.

*"When applying for jobs remember to emphasise your employability skills, rather than just the technical skills you may have. Communication, reliability, teamwork, patience, resilience and initiative are required for all jobs, and this will continue to be the case in the future. These skills are also highly valued by employers. A 2019 survey conducted by the National Skills Council asked employers about the importance of these skills, 75 per cent of employers considered employability skills to be as important, if not more important, than technical skills."*

Australian Government, Australian Jobs 2020

Over a working lifetime the kinds of skills a person, an employee, will need will change. For any employee, the capacity to adapt skills to changing technologies and industry demand are skills that needs to be taught early and at school and beyond.

- There are foundation skills that are also employability skills.
- There are the particular skills that apply to a particular task within a particular occupation and industry sector.
- There are industry generic skills that require, for example, a particular knowledge of computer programs, relevant to all industries.
- There are global knowledge skills that allow an individual to grow their career based on their knowledge of industry sectors and markets, languages, creativity and so on.

Literacy and numeracy skills are a foundation requirement for most jobs in the economy. Occupations that do not require a reasonable standard in these skills are declining rapidly. Literacy and numeracy skills are core to future employment prospects.

Personal skills are important, including the skill to make sensible decisions, to be honest, motivated, flexible and to understand the value of further study and lifelong learning principles.

*"Various factors influence the demand for skills, including the level of innovation the economy relies on and the stage of the product cycle firms operate in. The more economies strive to rely on the highest levels of innovation the more they have to provide relevant high-level skills."*

OECD, Skills for the digital economy

Among the most important future skills will be a set of skills that enable the development and ongoing function of the digital economy. No industry sector or business will escape this transition. These skills include computer programing across a range of disciplines and sectors that enable transactions, security and sales in the digital economy.

## 6.4 The state of Australia's skills: National Skills Commission

In October 2019 the Australian Government announced that it would establish a National Skills Commission.

An early task of the National Skills Commission has been creating skills profiles, building on work from the Department of Education, Skills and Employment to develop a data-driven Australian Skills Classification. A key outcome from this work will be to understand more about



the connections and transferability within, and between, jobs and qualifications. To date some 600 skills profiles have been developed for occupations that fill the needs of the Australian Labour Market defining competencies, specialised tasks and technology tools.

The data driven approach being developed by the National Skills Commission will assist workers and employers to identify skills from past employment and occupations that can be used in transitioning to new occupations.

*“The gender differences in skills held in the economy are also striking, with women twice as likely as men to use skills from the health and care family and from the fashion, grooming and cosmetics family. Men are three times as likely as women to use skills from the construction family and are twice as likely to use skills from the vehicle operations family and from families associated with manufacturing work, such as work activities preparation.”*

National Skills Commission

The National Skills Commission, in its report *The state of Australia's skills 2021: now and into the future*, finds that COVID pandemic aside, Australia's workforce and skill needs have been impacted by a range of major forces including:

- a shift to higher skilled jobs and hence the importance of further education and training;
- an ongoing shift towards services;
- the resilience of non-routine and cognitive jobs in the face of automation; and

- the opportunities and new jobs being created by technology.

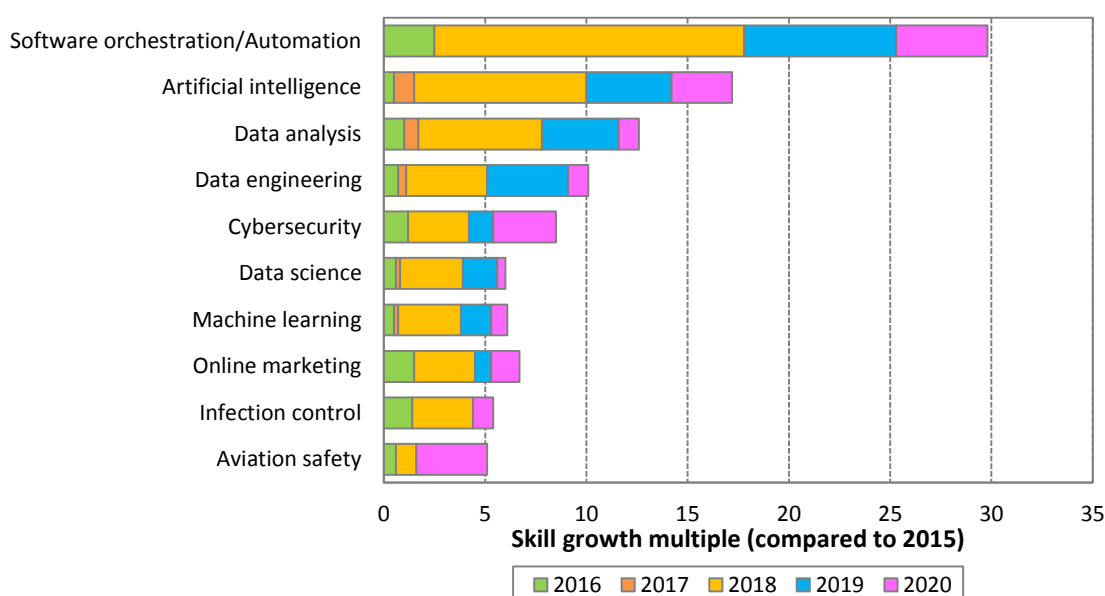
The commission goes on to report that some of the most important and rapidly growing skills needs can be summarised as the ‘Four Cs’: care, computing, cognitive and communication skills:

- care, the group of skills responding to demographic and health challenges;
- computing, a group of specialised technical skills needed to respond to the digital world;
- cognitive abilities, the group of advanced reasoning and higher order skills computers cannot easily replace; and
- communication, the group of skills needed to collaborate and engage within and across workplaces.

The commission points to STEM skills (science, technology, engineering and maths) as contributing to the emergence of more complex, innovative work in many industries. Over the 20 year period to February 2020, before the impact of COVID-19, employment in STEM occupations grew by 85 per cent, more than twice the rate of non- STEM occupations which grew at 40 per cent over the period.

The commission report that the fastest growing emerging skills are data and digital skills, such as those in software orchestration and automation, artificial intelligence and data analysis. Since 2015, demand for software orchestration and automation in job advertisements has grown almost thirty times.

**Figure 6.1: Cumulative growth multiple of the share of all skills, past five years compared with 2015**



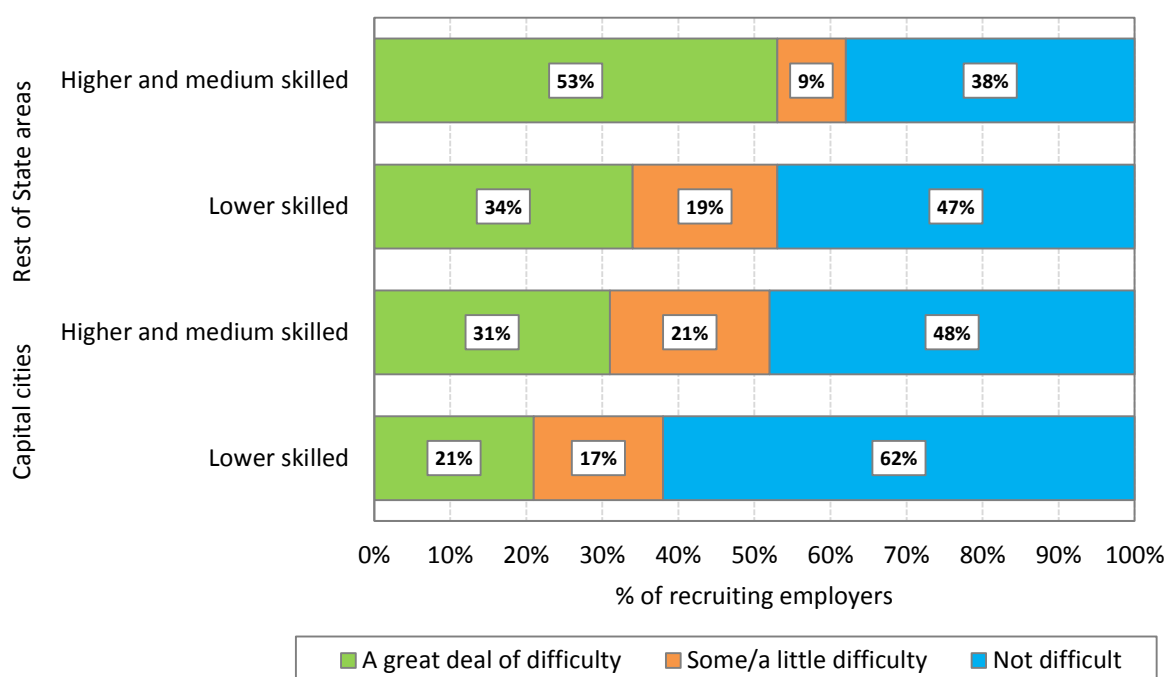
Source: National Skills Commission, *The state of Australia's skills 2021 – Report overview*.

*"If, for example, wages in the occupational group of Science and Engineering Professionals grow faster than average wages across occupations in a given country, this signals shortages. In other words, employers compete with one another and use wages to attract scarce talent and workers to the advertised jobs. Similarly, when average hours worked in a specific occupation grow faster than the country average, this signals that employers might be facing hiring difficulties and, as a consequence, are being forced to increase the work hours of their current employees to satisfy rising demand."*

OECD 2021

In its 2021 Recruitment Experiences and Outlook Survey, the commission finds that employers recruiting for medium and higher skilled vacancies in areas outside of capital cities not only have recruitment difficulty most frequently, but also experience a greater severity of difficulty. This finding may point to the importance of clusters and the density of skills in a given industry or place. Generally, shortages are greatest among technicians and trades workers occupations, which includes electricians, carpenters, chefs, fitters and motor mechanics.

**Figure 6.2: Severity of recruitment difficulty, by region and skill level of vacancy, March and April 2021**

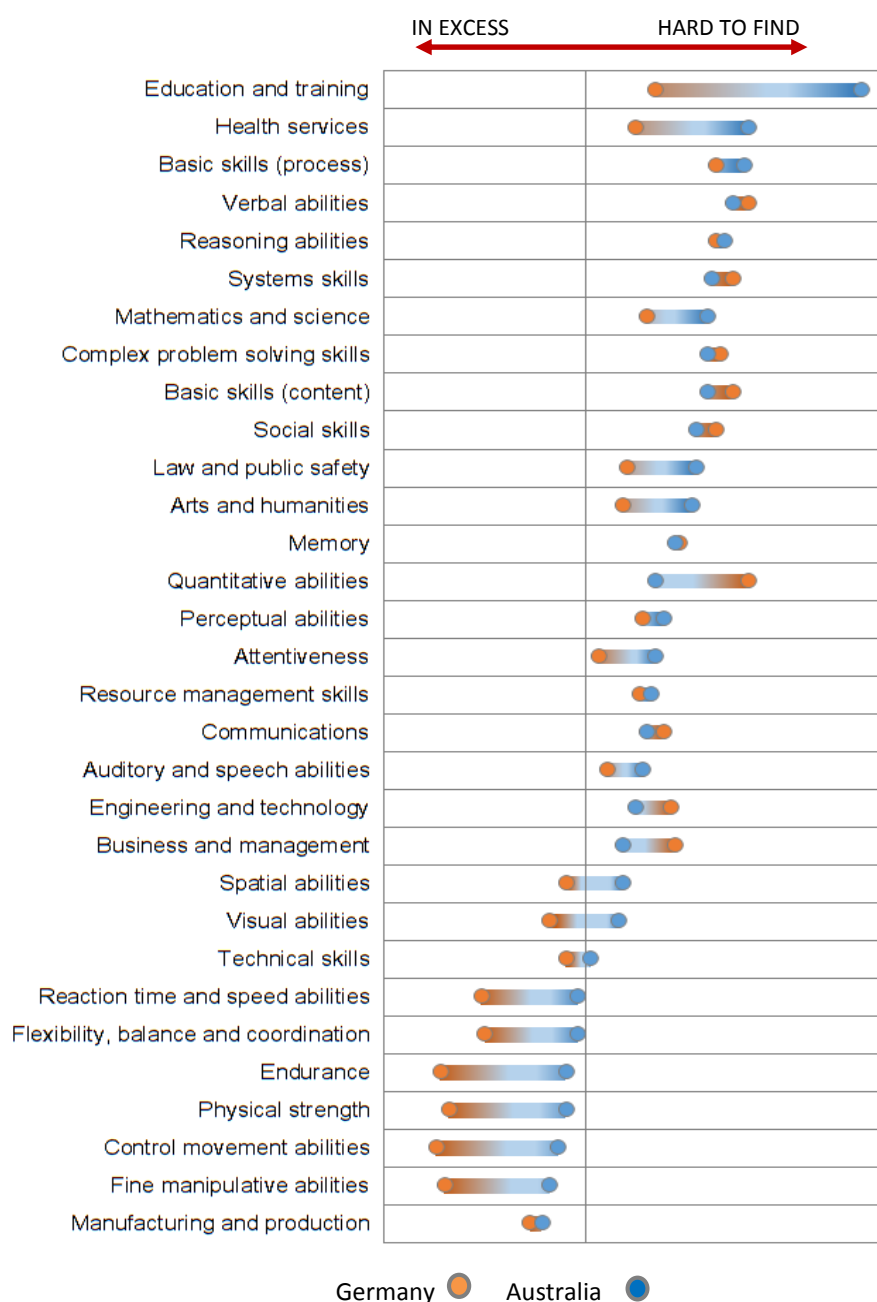


Source: National Skills Commission, The state of Australia's skills 2021 – Report overview.

**Note:** The National Skills Commission, in partnership with the Australian Bureau of Statistics, is creating the VET National Data Asset (VNDA). The VNDA will link Total VET Activity data – showing who has participated in accredited training, whether they completed the course and their background characteristics – to the Multi-Agency Data Integration Project (MADIP).

In its global research focussed on skills development the OECD found that In Australia (2018), verbal and reasoning abilities are in strong shortages. Shortages in the skills areas of instructing and social perceptiveness are also high and stronger than in the average across the OECD. Australia also faces shortages in several knowledge areas, especially in education and training as well as psychology and therapy and counselling knowledge areas where shortages are more acute than the OECD average. Simultaneously, Australia experiences surpluses in the knowledge areas of production and processing (the latter could be redirected to climate change adaptation including the manufacture of building materials and adoption of new energy technologies).

**Figure 6.3: Skills for jobs – Australia versus Germany**



Source: OECD.

## 6.5 The Victorian Skills Authority

The Victorian Skills Authority was established in July 2021 as a link between Victoria's industry sectors, training providers, employers and communities with a remit to assist in matching Victoria's employment demands with training to ensure that industry across Victoria is able to employ workers with the skills industry needs and when and where they need them. The authority is also tasked with helping Victorians access the training they require to

help them find employment and build a career. The four key areas of work are described as being:

1. Data analysis and insights;
2. State-wide and local problem-solving;
3. Quality; and
4. Skills development and innovation

The Victorian Skills Authority will build its database and produce an annual Victorian Skills Plan. The first Victorian Skills Plan will be released in 2022.

*“The plan will set out training needs both for local communities and industries for the year ahead and beyond. This will include a focus on the state’s areas of economic growth.”*

Victorian Government

The ten Industry Advisory Groups (IAGs) previously advising the Victorian Government will continue to do so within the Victorian Skills Authority and will help inform the Victorian Skills Plan.

The Victorian Skills Authority continues to publish Industry Sector Snapshots, originally developed by the former Office of the Victorian Skills Commissioner and key industry stakeholders, to provide information on the skills and training needs of different industry sectors and these complement the Regional Skills Demand Profiles, in defining the skills requirements of Victorian employers.

Key tasks of the Victorian Skills Authority include:

- gathering and analysing data;
- developing local solutions for local problems;
- helping to improve the quality of training; and
- identifying skills needed to boost jobs and economic growth.

The Victorian Skills Authority brings together and is now responsible for the VET Development Centre, which promotes professional development for training practitioners, and the Skills and Jobs Centres, which support students and jobseekers as well as the Victorian Skills Gateway online resource.

## 6.6 Tech schools

*“Technology is changing our world and Tech Schools build on what secondary schools students learn at school, helping them gain the skills and capabilities they’ll need to get a job in high-growth industries.”*

Victorian Government

The Tech Schools in Melbourne’s North are Banyule Nillumbik Tech School and Whittlesea Tech School and part of their remit is to strengthen employability skills, these include:

- communication;
- analytics;
- planning and organisation;
- problem-solving;
- entrepreneurialism;
- self-management; and
- teamwork.

Traditionally schools have taught a broad range of subjects to equip students with a general understanding of society, creativity, geography and science and the important skills of literacy and numeracy. There are cross curriculum subjects, which can be applied to a range of disciplines that include Indigenous studies, sustainability principles and Asia Pacific cultures. These serve to broaden the knowledge of students, and the combination of all this learning is essential for the foundations of work. Tertiary education providers will sometimes report that school leavers do not have the level of STEM skills they require in to flourish in higher education. So tech schools add an important element to learning as well as teaching students about employment opportunities and industry.

*“It is becoming increasingly important to ensure that the skills of workers and individuals are aligned to the needs of the labour market. Skills imbalances, such as shortages (when adequate skills are hard-to-find in the current labour market) or surpluses (when certain skills are in excess in the labour market relative to the demand) can slow the adoption of new technologies, cause delays in production, increase labour turnover and reduce productivity. Individuals who do not possess the “right” skills would also face poor labour market outcomes.”*

OECD 2021

## 6.7 Skills in the digital economy

*“Information and communication technologies (ICTs) and the internet have become key drivers of innovation, growth and labour productivity, brought new business and employment opportunities and have changed the ways our societies communicate, learn and live. People with the high-end skills needed to invent and apply ICTs are in high demand the world over. At the same time, the portfolio of basic skills needed to navigate ICT-rich environments and function effectively in our connected societies has expanded.”*

OECD, Skills for the digital economy

We should not forget that among the most important future skills are those that enable the development and ongoing function of the digital economy. These skills include computer programming across a range of disciplines and sectors that enable transactions, security and sales in the digital economy. We need to stress the importance of the continual improvement of Melbourne’s North broadband infrastructure in enabling the knowledge economy and development of the digital skills that drive innovation and the high speeds and capacity of the communication systems that enable it.

**Table 6.1 The ten Victorian Industry Advisory Groups**

<b>Construction including construction technologies and civil construction</b>		<b>Electro technology</b>	<ul style="list-style-type: none"> <li>■ Electricity generation and supply</li> </ul>
<b>Resources, forestry, paper and pulp</b>			<ul style="list-style-type: none"> <li>■ Gas supply</li> </ul>
<b>Business services</b>	<ul style="list-style-type: none"> <li>■ Financial services</li> <li>■ Professional services</li> <li>■ Property services</li> <li>■ Education (including International education)</li> <li>■ IT</li> <li>■ Printing and graphic arts</li> <li>■ Cultural and related industries</li> </ul>	<b>Transport and logistics</b>	<ul style="list-style-type: none"> <li>■ New energy technology</li> <li>■ Aviation</li> <li>■ Road transport</li> <li>■ Rail</li> <li>■ Maritime</li> <li>■ Ports</li> <li>■ Warehousing</li> </ul>
<b>Primary industries</b>	<ul style="list-style-type: none"> <li>■ Agriculture and rural production</li> <li>■ Food and fibre</li> <li>■ Horticulture</li> <li>■ Animal care and management</li> <li>■ Racing</li> <li>■ Conservation and land management</li> <li>■ Seafood and aquaculture</li> </ul>	<b>Community services and health services</b>	
		<b>Service industries</b>	<ul style="list-style-type: none"> <li>■ Retail</li> <li>■ Tourism</li> <li>■ Travel</li> <li>■ Personal services</li> <li>■ Sport, fitness and recreation</li> </ul>
		<b>Public safety, public sector, corrections, water and local government</b>	
<b>Manufacturing, engineering and automotive</b>	<ul style="list-style-type: none"> <li>■ Aerospace</li> <li>■ Medical technology</li> <li>■ Pharmaceuticals</li> <li>■ Transport technology</li> <li>■ Defence technology</li> <li>■ Furnishing</li> <li>■ Textiles, clothing and footwear</li> </ul>		

**CASE STUDY 6.1****Melbourne's North food and beverage manufacturing cluster, linking skills formation with growing industry clusters**

The links between education, training and industry in their regional setting remains a critically important issue. Poor links will equal poorer outcomes for young people seeking employment and there is also a possibility that poorly defined pathways for young people seeking employment will equal out migration of young people to find employment away from the regions in which they grew up. NIEIR's research indicates that links and collaborations between industry and education are becoming even more important as changes to industry and economic structure accelerate.

The food and beverage manufacturing cluster in Melbourne's North continues to grow. The food and beverage manufacturing cluster in Melbourne's North is made up of over 400 companies including national and international major brands.

NORTH Link estimates that, over the next ten years, the Food Product Manufacturing sector will double in size and create an additional 7,000 jobs. The food and beverage product manufacturing sector creates value adding processes to agricultural production and includes processes such as grading, sorting, packaging, food processing and manufactures including baking and prepacked meals.

Specialist skills will be required as food manufacturing technologies continue to develop.

Adding significant strength to the cluster, in 2015 the Melbourne Wholesale Fruit, Vegetable and Flower Market relocated to a 70-hectare site and a modern purpose built facility at Epping in Melbourne's North. Investment of around \$460 million was required to create the new facility. The wholesale market's operations continue to grow and \$2 billion worth of produce is traded at the market each year with over 5,000 businesses using the market for daily trading activities. What is particularly important is the adjoining food and beverage precinct, which has already attracted a significant range of food and beverage companies and their service suppliers.

The strength of the food and beverage manufacturing cluster also enables the growth, scale and scope of a series of complementary businesses which include logistics, packaging, links to education, training and research at local TAFEs and universities, specialist commercial services and the opportunity to encourage the growth of new businesses and start-ups in the sector using the incubator model.

To achieve strong growth in an industry cluster, access to highly skilled labour and research capacity, are key drivers of opportunity, productivity and growth. Melbourne's North is richly supplied with tertiary institutions with aligned food and beverage manufacturing education and research activities that include RMIT's Food Research and Innovation Centre, La Trobe University's Centre for AgriBiosciences, La Trobe Institute for Agribusiness and Food (LIAF), Research Hub for Medicinal Agriculture, Melbourne Polytechnic and Kangan Institute.

La Trobe University has welcomed the Victorian Government's announcement of \$1.5 million in funding as part of its 2022-23 Budget (Victorian Industry Fund) to explore the co-location of agrifood research and development capability at La Trobe's Bundoora campus in Melbourne that builds on the existing expertise within the Centre for Agribiosciences (AgriBio).

The freight and logistics network in Melbourne's North is mature, good regional road networks and connections to both air and seaports. Agricultural production in the northern section of the region helps to drive growth in the region's established food and beverage manufacturing businesses.

In turn the cluster and its strong and efficient supply chains make Melbourne's North an increasingly attractive location for companies who see the advantages in cluster strength, including the skills available, and wish to relocate to the region.

## 6.8 Regulatory factors influencing skills demand and development

Trends in regulation and compliance as well as changes to industry structure, the workplace, demographics and society are drivers of skills formation and development across industry sectors. Business and compliance skills are those skills that allow companies to comply with the regulations that are developed as a result of these changes. As an example changes to construction codes, required as a result of the changing climate, will require new skills for workers in the construction industry because of the changes required in the architecture/design and construction of houses and commercial and industrial

buildings. Added to this are the new skills that compliance officers and building inspectors will need to ensure new buildings conform to the new standards.

*"Amendments the Victorian Government has made to the Building Act 1993 mean that further changes to licensing regulations for carpenters are currently underway, which will mandate registration and licensing of building trades. These changes, due to commence in 2022, will require carpenters to have a robust understanding of contracts, permits and estimating. The next stage of changes will include trades such as bricklayers, tilers and concreters, and future changes will eventually further expand licensing arrangements across all building trades."*

Victorian Skills Authority





## **SECTION TWO:**

# **MELBOURNE'S NORTH – HOW DO WE GET THERE?**

## Introduction: How do we get there?

### Section 2: How do we get there?

This section includes a series of chapters that explore future opportunities for the economic development of Melbourne's North and associated employment opportunities from that development. Education and the linking of education and industry are core themes. The chapters in this section have been developed through extensive research in the region and discussion with education providers, business, the public sector and other agencies.

### Changes since the last report

Melbourne's North population growth rate prior to COVID has been higher than was forecast, which suggests that needs are accelerating and have probably been underestimated. The region was forecast to add 500,000 residents from 2016 to 2036, one-third more than the original forecasts. This is partly because growth rates are increasing in Moreland and Darebin, changing the pattern of need by adding the challenges of coping with increasing densification to those of fast outer area growth. Key questions are, how has COVID impacted population growth in terms of the distribution of that growth and in the light of an estimated loss of national population growth (loss of migration) of 700,000 and what share of that will accrue to Melbourne's North? The other trend that needs to be considered is the outflow of residents from Melbourne's North to country Victoria and the rest of Australia, also as a result of COVID. Section 3 of this report, *What it looks like*, will answer those questions.

The driving factor has been the fringe growth in the north and the rapid growth from Broadmeadows to the north has been phenomenal. There are other things as well like a shift in the kind of workforce that Melbourne's North requires, that is, a shift in the occupations that are needed, for example, there are lot more occupations that are in the services industries. There is a corresponding decline in small manufacturing activities. A significant change in occupational demand has been triggered by the growth of the food industry and consequently food manufacturing, food preparation and distribution, including the development of the wholesale markets. There may be a lot more unemployment out there than we really know about, there are a lot of people who have given up looking for work and might end up just doing the odd job here and there.

The longer term changes that COVID has created in the northern economy include working from home, but the situation has also narrowed the ambition of many people and made people less optimistic than they were before and the extent to which people are resigned to the changes that have been forced on them by the pandemic. It has changed peoples' perceptions about work life and about careers.

There has been a great deal of discussion in the media regarding the increasing number of households making the move to regional Victoria. What appears to have occurred is that a significant number of those choosing to make that change, rather than adding to the regional workforce, continue to work for their Melbourne based employer using a home office and the Internet. The economic benefit, for Mitchell Shire for example, comes through household expenditures on local goods and services. Lifestyle changers, if the COVID forced trend continues, are likely to create growing demand for regional services. Whether the home based regional workforce chooses to make the shift to local employment will be interesting to watch.

TAFEs are in a better place today than they were in 2015, when the original Future Workforce report was written, but a lot more needs to be done. We cannot say the same thing for universities, and that is a major problem, particularly the drop in income and the loss of at least some of the highly skilled workforce, is likely to reduce the capacity of universities to integrate more closely with business development in Melbourne's North. What has occurred in relation to universities and the decline in demand for courses over the COVID period, could mean that governments then might be able to modify the funding model even more, and to the detriment of university education.

There has been a great loss in the number of international students attending on campus. This also impacts the local economy as the students are not spending. International students will come back, the brand is still strong enough, but the universities have a very big job in trying to make sure that the reputation of their programmes remains as strong as it has been in the past. Over the next five years we might see more stability coming back to the tertiary education sector, but that is still uncertain, depending on COVID. One of the consequences of all this might be that universities have greater difficulty than before in attracting young people to university life and education.

The shift to blended learning was accelerated by COVID and many students are finding the change to online learning difficult and not as engaging as face-to-face learning. So the danger is that students lose their energy and enthusiasm for the course they are studying for. This means the courses do not work as well for their post university options.

In terms of progress for Melbourne's North, business developments that reflect the opportunities that computer science and IT can create are lacking in that these processes are not embedded deeply enough and tend to be peripheral, that is for example, everybody has a website, but the websites are just a very small part of what should be happening. Melbourne's North appears to have lost some of the small and computer aided fine and cutting edge engineering firms. The North needs to focus on developing engineering skills as well as improving the capacity of TAFEs and universities to create impetus to attract students back to those courses.

International market development opportunities have changed significantly since the original Future Workforce Report, much of it due to COVID and disruption to supply chains. The other significant influence is the deteriorating relationship with China, which is disappointing.

The loss of the automotive manufacturing industry was not timely in that manufacturing companies in Melbourne's North are missing out from the knowledge diffusion of at least some of the new technologies now evolving in the automotive manufacturing sector overseas. The opportunities for the region's manufacturing firms include helping to safeguard Australia's strategic requirements by increasing the capacity to manufacture the kinds of products that shortages during the COVID period have highlighted as a significant national weakness. Over the period, firms in Melbourne's North have struggled to add more high-tech jobs as the residents of Melbourne's North become more highly skilled and highly qualified.

## 7. Getting there: Economic levers of employment growth and productivity gains

### 7.1 Key findings

It is important to link the work undertaken by NORTH Link and NIEIR in developing the Northern Horizons report. Northern Horizons provides a carefully structured approach to facilitating the future development of the Melbourne's North economy.

- Melbourne's North has a larger workforce living within the region than there are local jobs available. The hours worked from jobs located within the region are around 31 per cent less than the hours worked by people who live in the North. This means that local residents are currently dependent on the commuter infrastructure network to access employment. Improved travel times by road or public transport will allow greater access to employment opportunities, not only for people living in Melbourne's North, but for residents outside the region who would benefit from greater access to jobs in the North.
- The employment opportunities that are located within the region are also less productive than the Greater Melbourne each hour worked generating \$72 per hour in GRP. In contrast, the average productivity for Metropolitan Melbourne and Victoria is \$81 per hour and \$79 per hour respectively.
- NIEIR has identified an investment shortfall within the Northern Region over the past five years within a range of \$393 million to \$1,081 million, and up to \$2,271 million over ten years, as compared to the average investment rate of the other regions within Greater Melbourne. The gap was identified on a per capita basis and a population growth basis, where the latter is derived from analysing the level of investment for every new person between the regions over the past five years and 10 years.
- Had investment levels been equalised within Melbourne's North compared to all the other regions within Greater Melbourne (outside of the CBD), Melbourne's North GRP would have increased by \$164 to \$208 million per annum over the period 2015 to 2019. The annual benefit translates to a total GRP impact of around \$818 to \$1,040 million over the 2015 to 2019 period, and greater than this over a longer period.

The COVID pandemic and climate change have shown the importance of regions becoming more self-reliant. The benefits of fast track infrastructure development in Melbourne's North improve the dynamism of the potential of the region over coming decades. The Northern Horizons report identified the reasons why Melbourne's North is a priority for location for infrastructure investment and these include:

- to accommodate more effectively and more productively a rapidly growing population.
- to help offset the impact of a decline in employment because of a contraction in manufacturing employment in some sectors, including automotive;
- to help offset the gap between the scale of the resident workforce and the number of jobs available in Melbourne's North;
- to ease the growing pressure on transport systems as the population grows and more people travel outside the region to employment. The danger here is also the possibility that transport issues, already a problem in Melbourne's North, will mean greater difficulties for the industry in the region;
- to facilitate the growth of clusters such as a hi-tech cluster in the outer north, the Melbourne Airport cluster, medical precincts, a hi-tech cluster around La Trobe and RMIT Universities, and a food and logistics cluster around the Melbourne wholesale markets. For example, La Trobe estimate that the University City of the Future development will create economic and social growth in Melbourne's north that includes education facilities for over 40,000 students, more than 20,000 new jobs, 3,000 construction jobs per annum and \$3.5 billion gross regional product (GRP) over 10 years; and
- to facilitate growth of manufacturing to benefit from the sector's high value adding and innovation potential.

The Northern Horizons report points out that industry clusters in Melbourne's North that are strong and gave potential for significant growth should each have an industry body to manage innovation processes and business development. Innovation systems are critically important and that continual improvements are required to the way that industry, education and research are connected. This process starts at school with career guidance linked strategically to local tertiary education and industry. Innovation systems can be concentrated in the

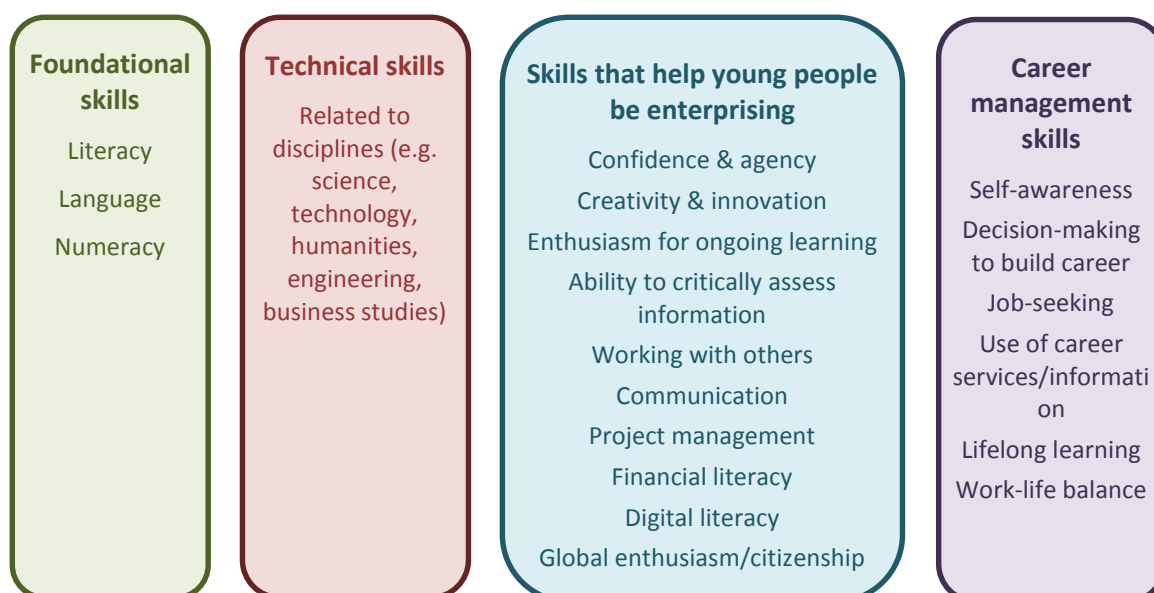
key industries and sectors in Melbourne's North, including Health, Manufacturing and Food.

*"Educational/skill outcomes are affected by many things, including the quantity and quality of associated infrastructure and services and the timeliness in their delivery. The report has noted a positive story in terms of the presence of people with bachelor's degrees in Melbourne's Northern Region but has also raised some concerns about Year 9 literacy and numeracy results and early childhood developmental vulnerabilities."*

*Given the spatial distribution of outcomes on childhood vulnerability, it seems likely that the timeliness of availability is a significant factor here. For Year 9 literacy results and numeracy results, the concerns are more widely distributed across the Region, which suggests the need for a comprehensive assessment of reasons why."*

Northern Horizons

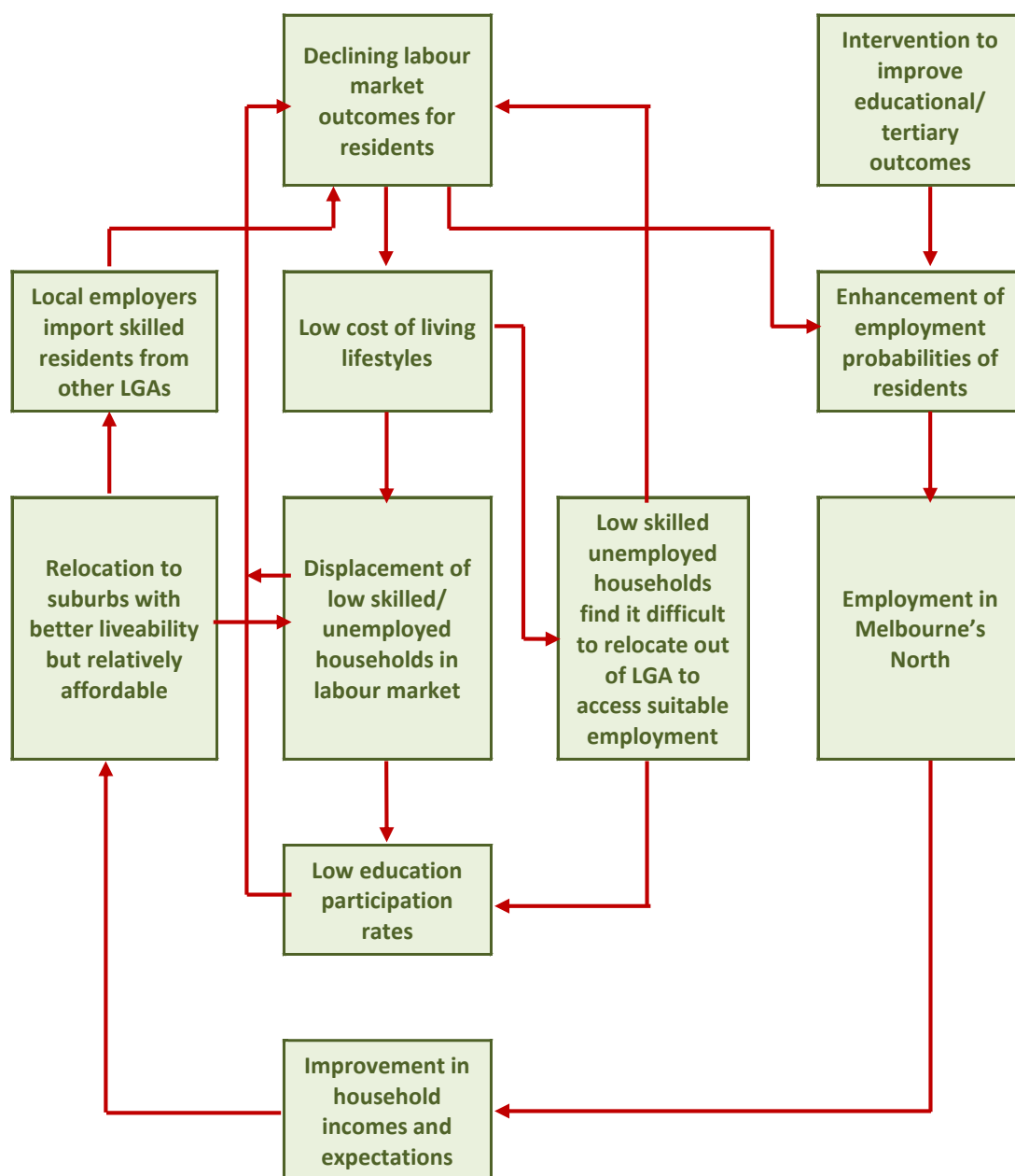
**Figure 7.1: Job Readiness: The skills young people need**



Source: Foundation for Young Australians, *Improving Young Australians' Transition from School to Work – Findings from the Worlds of Work (WOW) evaluation 2014*, December 2014.



**Figure 7.2: The cycle of low skilled resident labour market outcomes**



Source: NIEIR.

## 7.2 The planning context: Northern Horizons

The context in which the economic levers for employment growth and productivity gains are to be applied have been discussed in previous chapters. This report concentrates on the ways in which the education sector can underpin growth, to the benefit of the people and businesses of Melbourne's North. In maximising its positive contribution to employment growth and productivity gains, however,

the sector must consider the strategies being pursued by other decision-makers, especially other public bodies developing region-specific strategies. Many of these were described in the Northern Horizons report (NORTH Link/NIEIR) published in 2021. This report was not intended to be a full regional development strategy. However, it was structured in a way that supported future development of such a strategy. This was because the integrated thinking that a regional development strategy requires will provide the greatest prospect of delivering on the regional vision and goals. Seven strategic development themes were identified.

The two previous Northern Horizons reports were primarily listings of priority infrastructure projects, grouped on a functional basis. As noted above, the latest report took more of a regional development approach, built around building regional competitive strengths and mitigating weaknesses.

The report considered Melbourne's National Employment Clusters including the La Trobe University cluster. *Plan Melbourne* (DTPLI 2014) and *Plan Melbourne 2017-2050* (Victorian Government 2017) both included the concept of a future Melbourne containing a small number of hi-tech/knowledge-based economic clusters, which would provide increased opportunities for locating high productivity jobs throughout the urban area, with good access to the fast growing outer suburbs.

There are now seven National Employment and Innovation Clusters (NEICs), two of which are in the inner area (Parkville and Fishermans Bend), four in the middle suburbs (Monash, La Trobe, Dandenong and Sunshine), plus one in the outer suburbs (East Werribee). The Victorian Planning Authority is preparing development strategies for four of these NEICs, including La Trobe. The NEICs are intended to form the key land use foundation for a more productive, compact poly-centric Melbourne. While 20-minute neighbourhoods are essentially a bottom-up lens through which to approach urban land use planning, the seven National Employment and Innovation Clusters (NEICs) are essentially a top down approach to land use development planning, intended to support urban productivity growth and better sharing of the benefits of this growth among residents across the wider city.

The NEICs are a primary policy direction in *Plan Melbourne 2017-2050* to support achievement of Outcome 1 in the Plan. That Outcome is Melbourne is a productive city that attracts investment, supports innovation and creates jobs (Victorian Government 2017, p. 22), with Policy 1.1.3 being *Facilitate the development of national employment and innovation clusters*. Discussion of that Policy in the Plan includes the following (Victorian Government 2017, p. 29):

*"The national employment and innovation clusters are focused on knowledge-based businesses that locate close to each other for knowledge and resource sharing. The clusters are distributed throughout Melbourne and along high-capacity transport networks to provide greater access to high-productivity jobs.*

*... There are some common requirements. Each cluster will need high levels of amenity to attract businesses and workers—including public transport, and walking and cycling paths..."*

High quality public and active transport remains central to NEIC development and supporting the effective density on which clusters depend. Accessibility to other key activity nodes across the city is also important to support growth in jobs closer to where people live.

In November 2021 the Victorian Government's Victorian Planning Authority released its *Precinct Structure Planning Guidelines for New Communities in Victoria*.

The Victorian Government states that the new guidelines are centred around the 20-minute neighbourhood. The guidelines set out the planning requirements for Victoria's new communities by setting a series of new targets for:

- residential density and diversity around town centres, community facilities and key natural features to make our new communities more walkable and improve housing choice and affordability;
- sustainability measures including a target for 30 per cent tree canopy coverage in the public realm and open space, and a commitment to integrated water management;
- greater recognition of the value of Aboriginal heritage in plan-making, and a commitment to improved processes for collaboration with Traditional Owners; and
- supporting and informing better infrastructure coordination to enable smarter infrastructure investment and an integrated approach to the post-plan delivery of infrastructure and services by Councils, utilities and State agencies.

Underlying these strategies is a concern over land costs. However satisfying rising land values are to landowners, they remain a cost, both to businesses and to most households (either through their contribution to dwelling rents or to mortgage costs). The economic function of land prices is to distribute land to its 'highest and best use', which in urban areas is generally determined by accessibility. The value of residential land is primarily related to the accessibility of jobs and services (with a nod to social status), the value of commercial land depends on its accessibility to customers and the value of industrial land depends on freight transport connectivity and accessibility to potential employees. As a metropolitan area grows, it can best reap the economies of agglomeration by transport investments to maintain accessibility and by the selective dispersion of activities to balance accessibility and agglomeration benefits. If a balance is maintained, land costs will still be higher in high-accessibility locations than in low, but overall land costs will be minimised by expanding the supply of accessible sites.

From this point of view the prime purpose of NEICs, transport investments and urban strategy planning in general is to spread accessibility, adding to the supply industrial and commercial sites with high accessibility from a business point of view and residential sites with high accessibility from a household point of view, all without sacrificing the economies of agglomeration. In this way land costs as a whole can be kept to a minimum.

If accessibility were the only determinant of land prices, recent rapid increases in these prices (felt as declining affordability of land for both residential and business purposes) would indicate that Melbourne's urban strategies have been a total failure. However, there is also a speculative element in land prices. Over the past decade or two, and especially from 2019 to 2022, this has been boosted by the RBA policy of low nominal interest rates

(which imply exceptionally low real interest rates), which has encouraged borrowing for land speculation. Accordingly the current boom in land prices does not indicate the failure of urban strategy policies, but rather the need to hold fast to these policies through any needful correction in land prices.

**Figure 7.3: Northern Horizons Strategy Update: Main themes**



In 2020 the Northern Councils Alliance published a Northern Region Transport Strategy, prepared by GTA Consultants. The strategy concentrated on actions considered possible within the next four or five years. Though it commended improved provision for active transport and the amplification of road capacity to reduce congestion, it concentrated on the deficiencies of public transport and recommended improvements to local bus services, particularly to east-west bus services to complement the region's north-south radial rail lines.

A number of the suggested improvements have already been implemented, increasing the demand for bus drivers and mechanics a bit beyond business as usual. The report mentions safety, particularly at stations, but does not specifically recommend employment of additional PSOs or the like.

In the longer term, the transport sector, like all others, faces the need to eliminate emissions of greenhouse gases. On the long-distance freight side, reductions in emissions per tonne-km have been achieved in road transport by the switch to large trucks with high axle loads.

This switch has been encouraged by government investment in roads capable of carrying such vehicles. The next requirement is to switch to renewable power, expected to be electricity generated from wind or photovoltaics. Electric power can be conveyed to vehicles in three ways:

- from overhead wires, as for Melbourne's suburban trains and trams. Overseas, overhead wires are increasingly employed in conjunction with supercapacitors;
- from batteries, with various re-charging options; and
- by converting renewable electricity to hydrogen, storing it on-vehicle and re-converting it to electricity for traction purposes.

The current position as regards heavy vehicles is:

- overhead line collection is still in contention for trams and trains;
- experiments continue with hydrogen-powered heavy road vehicles, but as yet the hydrogen has not been renewably sourced; and
- experiments continue with battery-powered buses; less so with trucks. The iron ore railways in the Pilbara are experimenting with battery-powered locomotives.

The effect on the logistics sector is difficult to predict. For example, if long-distance trucking adopts a different standard technology from short-distance, the two could become effectively different modes, with increasing emphasis on inter-modal terminals.

For most of the 20<sup>th</sup> Century Melbourne had just one inter-modal freight terminal, located at the port and involving shipping, rail and road transport. With improvements to road transport and the introduction of large trucks the emphasis switched to direct origin-destination transport without the need for intermodal terminals, apart from the port. However, as line-haul trucks increased in size, the proportion of less-than-truckload shipments increased. The logistics industry was already dealing with less-than-container-load shipments, and had developed warehouses for sorting such shipments. Long-haul trucks increasingly ply between these warehouses, leaving distribution to smaller trucks. Some of these warehouses belong to the big-box and supermarket retail chains and some to independent logistics providers. All are dependent on public investment in roads and several have rail connections, notably SCT at Laverton. (Austrak at Somerton is not currently active, at least on the rail side.)

Investment is currently under way in outer suburban intermodal terminals. PortLink rail services are being introduced to convey containers from the Port of Melbourne to outer Melbourne locations, thus reducing congestion at and near the port. The first service is to be to

Dandenong South and it remains to be seen how quickly service is extended to Melbourne's North. As noted, an intermodal terminal already exists at Somerton, but current freight demands between the Port and Melbourne's North are met by trucking direct and it remains to be seen whether the relief of congestion at the port and on the roads justifies a PortLink service. Traffic flows may also be affected by government decisions on road and rail cost recovery.

As electrification proceeds, changes in the relative competitive position of rail and road may result in increased interstate (as distinct from international) traffic through intermodal terminals involving rail. The Victorian government has been supporting plans for a terminal at Beveridge but other investors are interested in sites in the Western Suburbs and indeed half way to Geelong. They argue that the logistics industry is already investing in Melbourne's West rather than in its North, and that this investment should be supported by intermodal capacity.

Air transport was a major growth industry in the 21<sup>st</sup> Century. As with long-distance trucking, it had considerable success in improving its fuel economy, but now faces serious problems in phasing out petroleum in favour of renewable power: batteries are too heavy, hydrogen is too voluminous and the alternative – continued use of petroleum fuel counterbalanced by sequestration – will raise costs. Air freight rates are likely to increase, with the incidental effect of raising natural protection for local producers and warehouse operators who compete against air-freighted products. Passenger fares are likewise likely to increase, which may lead to a revival in long-distance bus and rail passenger operations. Melbourne Airport expects traffic growth to return to previous trends after the COVID interruption and has committed to the construction of a third runway, but this growth is contingent on air transport retaining its 2019-level of cost-competitiveness, not only against road and rail but against other areas of discretionary consumer expenditure and other sources of business inputs (for example, if air freight rates rise it may pay local wholesalers to maintain larger stocks, imported by sea).

Batteries are already cost-competitive for light road vehicles and the switch to battery power is already under way for motor cycles, cars, utes, vans and short-distance buses. There is an optimistic expectation that this switch will proceed smoothly, with petrol and diesel vehicles replaced by battery power as they wear out. However, there are likely to be hitches along the way, and not only from the objections of people with vested interests in existing technologies (not only businesses, but skilled personnel). In particular, two hitches can be foreseen.

- It may be necessary to replace petroleum-powered vehicles before the end of their expected lives. In this case the costs of motoring will rise. In particular, second-hand cars will no longer be available at low prices. This will be particularly

serious for people who currently drive low mileages at low cost – poor reliability is not such a burden when mileages are low and mostly urban. Low-income motorists likely to be impacted will include retirees, second-car drivers and young, low-income drivers.

- The switch to electrically-powered road vehicles will result in the Commonwealth government losing its revenue from fuel taxation. This is likely to precipitate changes in road finance – the Victorian government is already flagging such moves, and electronic toll collection is likely to spread from the various freeways to other roads, perhaps in the form of congestion charges.

The switch to renewably-powered road vehicles will accordingly be accompanied by unpredictable political decisions which will influence the cost of living in different suburbs and the costs of business operations in different locations.

In this context, investment in infrastructure for active transport will not only provide health benefits but holds promise as a way of maintaining mobility for at least some of those affected by rising car costs. Providing infrastructure so that all children can safely walk or cycle to school would reduce the need for second cars in at least some families. Further scope for active transport depends on the existence of satisfying destinations within walking and cycling distance – a challenge for planners accustomed to working with motoring distances and parking requirements in mind. There will be design implications for suburban centres and NEICs.

Future priorities for public transport are less certain. COVID had brought a major experiment as to what extent working at home is compatible with the economies of agglomeration. The level of activity in the city centre depends on the outcome of this experiment, and with it the level of capacity utilisation in the radial transport network. The relationship may not be straightforward: if travel demand shifts from peak-period commuting towards more occasional travel as demanded by networking, there are likely to be opportunities to improve capacity utilisation and improve off-peak services. There are likely to be opportunities for the NEICs to attract activities decentralised from the city centre. There will also be opportunities for local providers of visitor services to find new customers among at-home workers who want to get out of the house, and for planners to encourage the provision of such services at public transport nodes.

Currently a suburban underground rail loop is being promoted as supporting the NEICs, but it is an extraordinarily expensive project with no prospective benefits for Melbourne's North for decades hence.

The electrification of transport will reduce the demand for automotive trades related to internal combustion engines but increase the demand for auto electricians and

probably change the required content of their training. The crash rate is unlikely to change so the demand for panel beaters should remain as in business as usual.

The Northern Horizons report identified a series of competitive strengths in Melbourne's North, the majority of critical importance to future employment in the study region. These were:

- La Trobe NEIC, which is one of only seven such clusters in Melbourne;
- Melbourne Airport;
- the food and beverage industry;
- the established practice of working as a region;
- the region's freight and logistics networks;
- cultural diversity;
- undulating topography with river and creek corridors; and
- location in Melbourne, with access in all directions, to/from the rest of Melbourne, Victoria and interstate.

Region's also have their weaknesses, in the case of Melbourne's North the most serious, with implications for employment and liveability were identified:

- a shortage of major clusters;
- poor connectivity to other parts of Melbourne, especially by circumferential public transport and also within the region, particularly East-West;
- the historically low socio-economic status of much (but not all) of the region. Reflecting this, the region has few elite private schools;
- there is a growing mismatch between resident skills and local job opportunities, resulting in outbound commuting;
- the tourism base is weak; and
- in many parts of the region there is a shortage of open space and canopy cover.

One of Northern Horizon's themes was a **Well Educated North**. The report recommended that there should be:

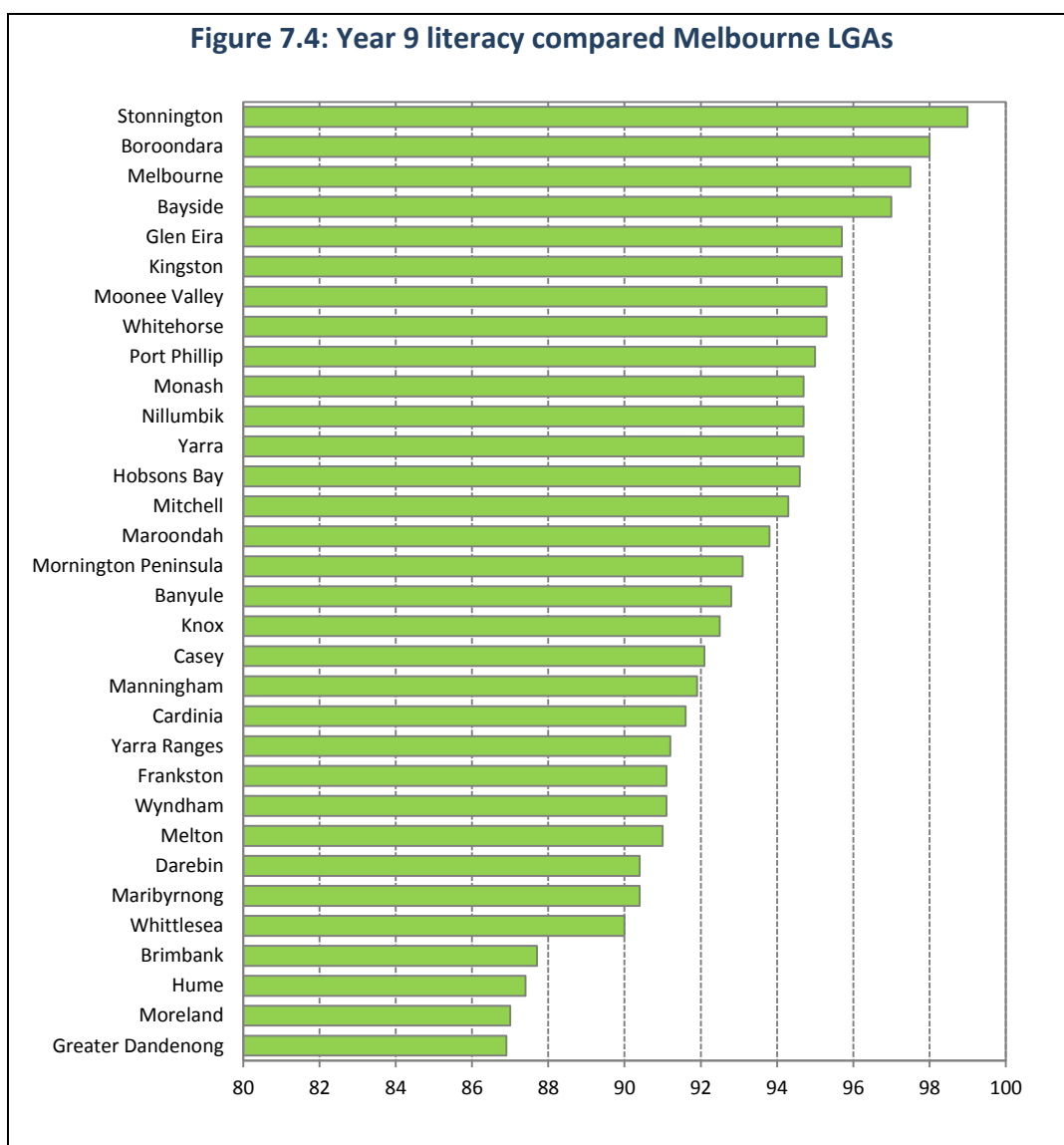
- further development of La Trobe and RMIT Universities and their key specialisations including agriscience and food; health and wellbeing;
- Year 9 literacy and numeracy improvement programs;
- focus on early childhood development; and
- programs to raise skills.

The Northern Horizons report found that rapid population growth and State policy initiatives in relation to kindergarten classes for 3-year old children were creating

substantial increases in the need for supportive infrastructure requirements, particularly (but not only) in the outer growth suburbs.

Demand for primary and secondary education places was also under considerable pressure, as population growth surges. Research for the new Future Workforce report suggests this is particularly the case in the Mitchell LGA.

The Northern Horizons report found that Melbourne's North has a reasonable proportion of tertiary qualified residents but faces challenges in Year 9 literacy (Figure 7.4 and numeracy in several LGAs and in early childhood development and need attention as part of a regional development strategy.



## 7.3 Growing Melbourne's North economy

This section discusses some of the general principles of economic growth and some of the factors that help grow regional prosperity. The future structure of the economy in Melbourne's North will be a major factor in determining its capacity to grow jobs and increase productivity and regional prosperity. The building blocks of regional economic growth include skills of residents and investing in

equipment and infrastructure. Industry structure and how industries perform and build exports to other regions is a driver of wealth and household disposable income, and that process in turn creates opportunities for the economic development of local areas within the region, including the provision of services to households.

Every industry sector has a flow-on impact (multiplier), industry types with the highest flow-on impacts are high-tech industries and this means the greater the concentration of these industries, the higher the economic performance.



## ***Creating opportunities for innovation and cluster growth***

Based at La Trobe's iconic Thomas Cherry Building, the BioInnovation Hub provides start-ups and small companies with access to purpose built PC2 laboratories, currently in limited supply in Victoria, to support the commercialisation of breakthrough research. Housing a range of self-contained PC2 laboratory suites and open plan laboratory benches, shared laboratory equipment including biological safety cabinets, autoclaves, centrifuges and freezers, together with offices, hot desks, a meeting room and shared kitchen. Partners located in the BioInnovation Hub can connect with La Trobe's research expertise, talented students and specialist research infrastructure to further support their development and commercialisation programs (see page 279).

## ***Mapping future prosperity and improving business attraction capacity***

Regions compete for companies they want to attract, particularly these are companies that contribute to cluster strength, value adding and available jobs. As part of the research for this and other projects in the region, the types of strategies discussed with education providers, businesses and governments in Melbourne's North which aim to achieve the maximum benefit for the region, given available resources, include the following.

1. Continual improvement in skills composition: skills are central to the success of any region and the skills available in households within a region's employment catchment are one of the core drivers of the region's economic performance, particularly when they are aligned closely to the industry clusters in Melbourne's North.
2. Continue to strengthen clusters: clusters are immensely important and enable the entry of high-value-adding business which intensify the knowledge economy; so co-location within industry types remains an important objective. Food is one such example. The stronger the clusters, the better for the critical mass and skills the region's education

and training providers need to deliver high quality training.

3. Continually aim to increase the proportion of high-tech companies and high skilled employment.
4. Continual improvement of knowledge infrastructure: high-tech industries require high speed broadband, access to tertiary and research institutions and modern and efficient transport systems.
5. Design is a critically important function. Continually improve amenity to attract skilled households to the region, high-tech companies are locating to regions where high skilled households want to live.
6. Continually improve quality and scope of new energy systems and other climate change mitigation strategies to strengthen regional competitiveness. This includes future proofing built form in Melbourne's North to avoid wasteful use of energy because of poor building standards and compliance. Particularly consider transport including EVs.

## **7.4 The determinants of growth**

NIEIR's extensive research activities, particularly in developing its *State of the regions* LGA economic database of Australia has identified a set of economic development principles, many of which have direct relevance to growing the Melbourne's North economy.

### ***High-income economies, apart from those with a unique and extensive natural resource base, now depend on sustained innovation as the core driver of long-term economic growth***

Knowledge and innovation are the foundation of prosperity in Melbourne's North in the 21<sup>st</sup> Century. Placing innovation as a key driver of economic development in Melbourne's North and as a basic goal of regional development policy becomes increasingly important over the next ten years.

### CASE STUDY 7.1

#### North and West Melbourne Data Analytics Hub: Using data and student skills to grow a business

The current business environment requires quick adaptation to change, a thorough understanding of customer behaviours and best use of systems so that businesses can thrive in the competitive landscape.

The North and West Melbourne Data Analytics Hub, managed by NORTH Link, was formed to help businesses increase their digital capabilities and build solid evidence bases for their decision making. With no data, there is no decision.

The Hub connects tertiary students with businesses that want to take their companies in a new direction. Projects are designed to meet the needs of the host organisations while considering time constraints on staff and student skills.

In its first three years of operation, the Hub placed 446 students into 80 organisations on 171 projects. Many companies have completed multiple projects, sometimes as follow ups to the original projects, others in a completely new area.

NORTH Link Executive Director Chris James noted the diversity of businesses that have hosted projects, from solo yoga instructors to SME manufacturers, councils and major healthcare providers in the north, west and south-east.

***“Every business can benefit from data analytics projects, no matter what size,” said Chris. “This is because all businesses collect data in some form – from sales, product types, marketing and promotional metrics, and internally-focused data such as staff working times, leave and production information.***

***All this information has the potential to grow understanding of markets or how to increase the bottom line. Some businesses look at this data in its raw form and spend hours every month converting it manually into a report. With student projects, reports can be generated automatically, freeing up staff to concentrate on other work.”***

The Hub recently completed a project with IPC Health, a healthcare provider in Melbourne’s west. They operate six sites and employ around 470 staff that serve the rapidly growing areas in Melbourne’s middle and outer west.

The organisation has robust data stores about their staff, from wages and leave to modules completed in their learning management system and more. But this data was disparate and raw, making it difficult to get a single view of a staff member without accessing multiple systems and manual collation.

The Hub student team developed a dashboard in PowerBi that linked with the data systems, bringing all the information into one space and plotting it on graphs. The dashboard has pages for on-boarding, off-boarding, salaries, leave and more. It can call up all information on each employee with security and permission protections that only allow the approved manager to see data.

***“At the student’s final presentation, I couldn’t stop smiling,” said Keith Burnell, Manager of People and Culture at IPC Health. “Our expectations were blown away, and it was very fulfilling for me personally.”***

The Hub will continue to work with businesses to add to their digital capabilities and give students a chance to utilise the skills gained from their tertiary studies.

## **CASE STUDY 7.2**

### **Melbourne Innovation Centre: Business incubators for job creation**

Business incubators provide significant economic benefits for regions through a range of support mechanisms offered to new, emerging and existing SMEs and start-ups. Typically, business incubators provide shared and private working space on flexible terms while providing critical business coaching and mentoring to reduce business failure rates.

Melbourne Innovation Centre (MIC) is a business incubator with locations across Melbourne's north providing support to new and emerging enterprises. The incubator has assisted the establishment of more than 700 businesses onsite across three business incubator locations, delivering mentoring and coaching to more than 10,000 businesses through a range of business support services building digital capability, supporting bushfire affected regions and businesses disrupted by COVID-19.

Emerging start-ups from all industry sectors have been supported. MIC's services are not confined to specific industry sectors with its approach termed 'general purpose' business incubation. MIC sites have supported diverse sectors including but not limited to arts, advanced manufacturing, IT, professional services and eCommerce.

MIC has been a critical vehicle for job creation with more than 2,660 jobs created by its client businesses from 1998-2021. The average business incubator client creates 3.8 jobs at the point of graduation or exit from the incubator program which is typically 3-5 years from inception.

Through its Indigenous Business Incubator, MIC has supported the development of more than 100 First Nations owned and controlled enterprises. This work has included the development of business plans, securing finance and providing ongoing mentoring across several regions in Australia including Victoria, Tasmania, Northern Territory and South Australia.

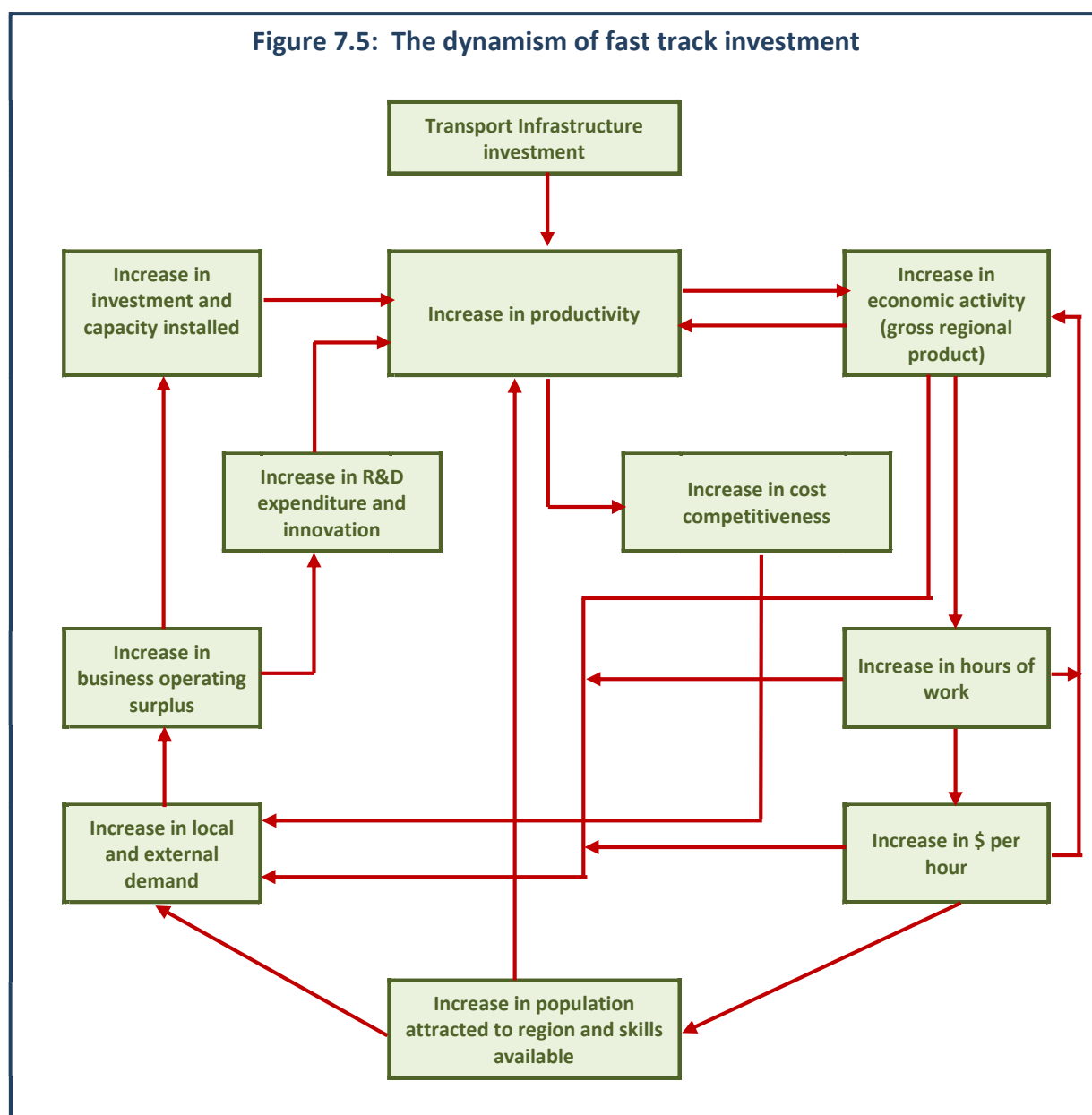
Business Incubators are also a critical tool for regional collaboration. MIC has partnered with several universities, TAFEs and Victorian Government Tech Schools to deliver entrepreneurial education and training placement programs to provide alternate pathways for students into self-employment and to support the development of critical future work skills including problem solving, lean management, design thinking, digital marketing and sales, pitching and public speaking.

Similarly, MIC has been supported the development of several successful local industry development initiatives including the Melbourne's North Food Group and the North and West Melbourne Data Analytics Hub.

It has been MIC's ability to diversify its business model which has led to the development of a long-term self-sustaining business model currently employing 20 people and sub-contracting more than 80 mentors and advisers. The organisation has built several revenue streams through its management consulting arm, facilitation of import and export activities through international relationships, and the delivery of large-scale business SME and start-up business support programs, including niche business accelerators.

Business Incubators will play a critical role in the development of the post-COVID economy to improve employment and job diversification by providing support to emerging industry sectors. MIC has a particular focus on supporting new enterprises in the food and agriculture sector through its new program FOODInc, providing access to commercial kitchen space and critical business networks, mentoring and training. Similarly, MIC is experiencing increasing demand from emerging industry sectors including cyber security, data analytics, advanced manufacturing, sustainable and renewable energy, health and urban agriculture. The future is bright in business incubation.

Figure 7.5: The dynamism of fast track investment



**The capacity to innovate depends on knowledge and networks at the regional level. Most high-income countries that have maintained sustained growth have done so because they have established successful knowledge-based regions.**

*"Action required: A focus on developing the food cluster is now required to get this important initiative underway. Explore if there is an opportunity for the Melbourne Market and the Melbourne's North Food Group (NORTH Link) to jointly promote the cluster to attract food and beverage sector companies and related businesses and organisations to the site. Funding could be*

*sought from the Victorian Government to progress the development work of attracting firms."*

Northern Horizons

Judging by patent applications, Australia's most intensive knowledge-based regions are its metropolitan centres. Most regions are connected to the knowledge economy via a metropolitan city, either as suburbs or as hinterlands. For Melbourne's North the task is to continue to integrate education and training with the needs of local industry through research, growing the skills of residents and continually striving to improve infrastructure, factors that enable improvements in productivity and enhanced global economic participation.

**Successful knowledge-based regions have a high concentration of highly skilled global knowledge workers, such as scientists and engineers. These workers tend to migrate to regions with a wide variety of cultural and lifestyle choices.**

*"In addition to the La Trobe NEIC and Melbourne Airport, Plan Melbourne identifies two existing Major Activity Centres in the Northern Region, Broadmeadows and Epping. Infrastructure priorities for the NEIC, these MACs, and for smaller but sub-regionally significant activity centres like Greensborough, Preston and Coburg, need to encompass both place-based initiatives and improved connectivity."*

Northern Horizons

The economies of agglomeration operate strongly to raise productivity and incomes in knowledge-based production located. The productivity benefits arise from human interaction, not only in offices and laboratories but in cafes, shops and educational and recreation venues. These interactions occur most intensively when workplaces and other venues are within walking distance of each other, and preferably also within walking distance of residential options. Commuter transport systems are also important but should not detract from the walkability, which remains an essential condition of a knowledge-based region.

Not all jobs are suited to location in knowledge-based regions. Broad-acre and freight-intensive industries are particularly unsuitable. However, many such industries depend on knowledge inputs and contribute most to economic growth when they are connected to knowledge-based regions both by telecommunications and by convenient passenger transport.

### CASE STUDY 7.3

#### Hume City Council: Recovery and reactivation in Hume

Hume City Council has activated a COVID-19 Recovery and Reactivation Plan to support its community following the significant impact on Hume City throughout the pandemic.

High numbers of positive cases in Hume has resulted in prolonged lockdowns and a financial, social and psychological toll on individuals, families and businesses. The devastating effect on the local economy has been significant, as many residents were stood down or lost their jobs during the pandemic and some businesses closed their doors permanently.

Hume City Council has worked closely with the Victorian Government to support the community, with \$11.5 million in emergency relief, grants and stimulus. Throughout the pandemic, Council continued to support the community by changing and adapting how they delivered services to the community.

Looking forward at the City's recovery, Hume Mayor Cr Carly Moore explained that, to boost the local economy and get people back to work, Council is delivering the biggest capital works program in its history.

***"As we now enter a new COVID-normal way of life, our COVID-19 Recovery and Reactivation Plan will help drive our community's recovery and respond to local issues, needs and opportunities."***

***Over the next 12 months, we're investing \$108 million to deliver 150 shovel-ready projects, including sporting reserves, parks and playgrounds, roads and footpaths and community centres," she said.***

In addition, a relief and stimulus package provided financial support for residents, ratepayers, local community groups, local sporting groups, local businesses and tenants of Council facilities.

Hume City has experienced ongoing cases of COVID-19 from March 2020. Current estimates indicate that the impact of COVID-19 on local jobs and the local economy will last until late 2021 and may take years to return to pre-COVID levels.

The COVID-19 Recovery and Reactivation Plan outlines how Council will help to reconnect the local community, with the social recovery of individuals, families and communities, seize opportunities to accelerate economic recovery of businesses, employment and local investment, and ensure that the built and natural environments of Hume, including parks and public spaces are COVID-safe and equipped to best support and facilitate community and business recovery.

While the effects of the pandemic are still apparent, Council is taking advantage of this opportunity to reimagine and redefine a better future for Hume. Ongoing recovery efforts will continue into 2022-2023 and beyond.

***There appears to be no limit to the economies of agglomeration, provided that metropolitan built form facilitates the mutual interaction of the whole metropolitan population.***

Pre COVID, productivity and employment were increasing in metropolitan centres more rapidly than in the suburbs, particularly fringe suburbs. Long commute times to jobs concentrated in the inner- metropolitan knowledge-based regions had limited the outward expansion of metropolitan

areas and the knowledge economy; the resulting limited supply of residential land with good job access joined with increasing demand, influenced by financial and tax factors, to increase metropolitan land prices, particularly towards the centres. This has made metropolitan housing less affordable, which in turn has hindered the exploitation of economies of agglomeration. During the COVID years low interest rates have driven house prices higher and done so in most regions. As interest rates rise the financial stress created by will fall hard in outer regions of Melbourne, where household debt ratios to income are already at record levels.

#### **CASE STUDY 7.4**

##### **Naturally Good Products: Industry clusters are a Naturally Good fit**

Like small business owners across every sector, Marketing and Product Development Manager of Naturally Good Products, Connie Manglaviti has found the last two years difficult. But with perseverance, a great team and the assistance of the Melbourne's North Food Group, she's looking forward to a better future.

Naturally Good is a family-owned food manufacturer and supplier of gluten and allergen free products. They use quality ingredients to create a wide range of snacks, cookies and crispbreads, including an extensive range of 'free from' products such as gluten, wheat, dairy, egg free and vegan options.

Connie participates in activities offered by the Melbourne's North Food Group and says that having such a strong local business network continues to play an important role in the company's success. MNFG assists companies to build business capability and facilitates networking and collaboration among more than 600 food, beverage and fibre manufacturers across the region.

***"The benefits to us have been huge. We've made significant savings on energy and micro testing through their buying group. MNFG provided us with regular, up-to-the-minute information on COVID-19 regulations and restrictions throughout the pandemic. They run educative webinars and seminars during the year that are of specific interest to food and beverage manufacturers. And MNFG connected us to students at La Trobe University who helped us produce a marketing video, which generated a great response through social media."***

Connie emphasised the importance of networking to a small business and appreciates the range of opportunities that MNFG presents.

***"People you meet now could be customers or partners in the future. I especially enjoy the creative side of networking, sharing ideas and looking for synergies that could be of mutual benefit," she said. "Most of all I've met great people who've added value to my world, both personally and professionally."***

Connie accepted an invitation to join MNFG's Industry Advisory Group because she was keen to give back to the industry.

***"I know how important it is to have support available for businesses," she said. "Ours is a very competitive sector and with constant changes it can be very stressful. It's important to be always learning and great to have ongoing professional, knowledgeable person at the end of the phone."***

***"As a group, we are looking to the future too, and investigating things like the design thinking and the circular economy, issues that will help our industry continue to thrive."***

Connie explained that, for now, it's one step at a time for Naturally Good.

***"We've survived the last 18 months and are continuing business as usual, producing our full range and trialling new products. We have a loyal customer base, the support of MNFG and a belief in the value of our products. It's a strong basis for a successful future."***



***Regions with high-productivity jobs (or with commuter access to high-productivity jobs) have high household incomes and low unemployment rates.***

Regions have high productivity jobs because of the industry structure – capital-intensive industries report high labour productivity; industries characterised by refuge self-employment report low labour productivity. High productivity is also generated by innovation and efficient systems, characteristic of knowledge-based regions.

***Until the knowledge-economy can be generalised, the young will continue to leave low-income, high-unemployment regions and migrate to high-income, low-unemployment regions.***

Pre COVID, young people are attracted to the income-earning, educational, cultural and entertainment opportunities of the metropolitan centres and can more easily adjust to high housing costs than people with family responsibilities. The same is true of some empty-nest seniors. However, people will continue to desire greater housing space as they form families, hence the problems of appropriate investment in commuting infrastructure. Improving amenity and growing creative and knowledge economy jobs continue to be strategic goals in the development of Melbourne's North.

***Australia's difficulties in adopting the knowledge economy would be eased if knowledge-economy jobs could be decentralised.***

Pre COVID, NIEIR research and modelling had identified links between urban employment density and productivity and examined the empirical relationship between metropolitan-wide productivity and city size, discovering productivity gains towards the high end of expectations. Given the success of these 'clusters' it has been difficult to spread knowledge-economy employment away from the city centres. The changes COVID has forced include the general acceptance of remote working and relocation of professional workers from the city to regional locations. The opportunity for Melbourne's North, particularly the outer parts of Melbourne's North, is to encourage the changes now begun by ensuring that communications infrastructure is of a global standard.

***Infrastructure deficiencies make it difficult for low productivity/high unemployment regions to increase productivity.***

Lifestyle regions, environmental values and lower costs of living assist in attracting knowledge workers. However, such workers must be provided with the means to be productive, and this requires investment in telecommunications and transport. It also requires low-key local investment so that every main street becomes an outpost of the knowledge economy. Without the appropriate capital stock long-term economic growth is unlikely to occur.

***Melbourne's North could better exploit the potential of its existing knowledge-economy by appropriate infrastructure investments.***

The affordability of metropolitan housing could be addressed directly by investment in mass transit to make additional fringe areas available for commuter housing and by investment in local transit to extend pedestrian range and so support the geographic expansion of knowledge-based centres. The better connected Melbourne's North Universities become, the greater the opportunities on the knowledge economy. Yet again this requires investment in improved telecommunications and transport. Commonwealth Government leadership is particularly important here.

***Retirees are leaving high-income, high-cost, low-unemployment regions and migrating to low-income, low-cost, high unemployment regions.***

The flow of older people to retirement regions is encouraged where there are marked differentials in house prices between metropolitan and lifestyle regions. Retirement migration is an important source of income to recipient regions in that it supports construction activity. The question for those parts of Melbourne's North that remain attractive to retirees, is the attributes which attracted them can create the foundations of a growing knowledge economy.

## CASE STUDY 7.5

### Yarra Valley Water: Future Workforce Report, November 2021

Yarra Valley Water provides water and sewerage services to around 2 million people and 60,000 businesses. As an essential service, we needed to manage the challenges brought about by the coronavirus (COVID-19) pandemic, which significantly impacted our customers, community and way of work. We adapted quickly to ensure we could continue to safely deliver our essential services, expand our support to a growing number of customers needing financial assistance and continue to meet our obligations.

#### Preparing and supporting our workforce

Before the pandemic was declared, a working group came together to understand and plan for emerging risks for our workforce and support staff with international plans. This set us up to respond quickly and early when the pandemic hit Australia. We transitioned over 95 per cent of our workforce to safely work remotely from home within a matter of days. An incident management team mobilised to lead a significant change program, responding to Victorian Government public health directions, and creating processes to protect our people and contractors on the frontline. This included ensuring they had access to personal protective equipment and practised COVIDSafe principles to keep them and the broader community safe.

The rapidly changing situation required new ways of working for office-based staff, to ensure they could function remotely. Our Customer Care staff operated effectively from home with significant IT support, and we are continually upgrading online functionality for customer self-service. We recognised the importance of employees staying connected to colleagues, their manager and the business more broadly. We provided guidance for People Leaders to effectively support and connect with their team members and set up new ways for our people to connect with each other. This included quickly introduced Microsoft Teams and a new business-wide social channel through Yammer. We also identified the significant impact on staff juggling the unprecedented demands of home-schooling while working from home and established support including Coronavirus Carers Leave and a virtual parenting team group. Staff have been encouraged to access support through our Employee Assistance Program, including increase access through real time SMS counselling.

#### Changing offerings to support our community

Supporting our staff ensured we maintained service levels and effectively support customers and the broader community too. We responded promptly to both residential and business customers' needs and recognised an emerging issue for businesses whose operations had been impacted.

A new cross-functional team was established to focus on hardship support and promote existing packages and develop new ones. Relief packages included deferred bill payments, flexible payment terms and payment extensions for both residential and commercial customers. Our Finance Team also implemented state government guidelines to support small businesses through faster invoice processing to ensure prompt payments to suppliers. Other responses included waiving trade waste fees for certain businesses such as cafes and restaurants; providing rent relief for tenants with leases or licences over our properties; and pausing standard collection activities while we developed new strategies and products to support vulnerable customers. We also provided training for more staff to manage the changing needs of customers, including many experiencing financial hardship for the first time in their lives.

#### Water sector collaboration

Yarra Valley Water is part of a larger community and has collaborated with international, national and state-based water utilities to share insights and response approaches. We have worked closely with the Victorian water sector, government and regulators to safeguard the supply of water and sewerage services for all Victorians. We have also undertaken extensive testing within our sewerage system to assist government departments with COVID-19 tracing.

### **Welcoming new recruits and new ways of working**

From March 2020, we have recruited and on-boarded our new employees remotely while others have joined a new hybrid workforce. Our People, Performance and Culture Group took a virtual first approach to interviews and inductions and amended programs to ensure new staff are effectively trained and on-boarded. Other training programs and additional workshops have been implemented to continue to develop a high performing workforce and support the wellbeing of our managers and staff.

The move to remote working was necessary to protect our people but has afforded us an opportunity to review how we work to deliver the best outcomes. As part of our People Strategy, we trialled hybrid ways of working this year and have learnt how it can support our award-winning culture, maintain high performance and provide more personal freedom for people. We reopen our Head Office in February 2022, staff will return to hybrid working – not with mandated days in the office or being able to work fully remotely but coming together in the office for key moments that matter. These are moments of connection and collaboration, and those that provide clarity and promote a positive culture.

### ***Low productivity regions are ageing rapidly while high productivity regions are ageing relatively slowly.***

In regions where productivity is low because of high retiree populations, many households depend on transfer payments, either social security payments or returns on financial investments, supplemented by government finance of health facilities. A region with a high proportion of retirees accordingly depends on other regions for much of its income.

Regions may also suffer low productivity because they have specialised in declining industries, usually accompanied by a failure to invest. With the current emphasis on short-period returns, downturns can be remarkably rapid. Much damage can be done, and failure to maintain capacity can result in inability to take advantage of later opportunities.

### ***Australia's capacity to invest for fully-employed participation in the knowledge economy has been curtailed over the past three decades by its accumulation of debt and by failure to prepare for the costs of climate change.***

Post COVID the impact of household debt, Victoria is particularly vulnerable to increasing interest rates, and government debt will have a growing impact on economy and society. The accumulation of debt by households means that households will be prioritise debt servicing, which will reduce their capacity to respond to opportunities.

Since infrastructure by definition requires public provision (either directly or via financial arrangements) any infrastructure backlog is basically a failure of government investment. The next three decades are likely to see continued debate about the role of the three levels of

government providing infrastructure and hence on the financing of infrastructure in Melbourne's North. In Melbourne's North, the Shire of Mitchell needs particular attention.

### ***Income inequality within and between regions is associated with depressed economic growth.***

Economic policy over the past three decades has been founded on the proposition that economies respond to market incentives and that such incentives should accordingly be sharpened. This may be true over short periods but over longer periods of a decade or more there is a cost: the working of the untrammelled market increases inequality of income.

International evidence summarised by the OECD and IMF shows that increases in inequality generate reductions in long-term economic growth rates.

Within Australia, the higher the per-capita disposable income of a region, the higher the growth rate it achieves.

### ***There is increasing inequity in regional economic performance in Melbourne, with fringe urban areas being at an increasing disadvantage.***

Pre COVID the pattern was strong, the greater the distance a sub-region is from the central LGA (of the City of Melbourne or Sydney), the less is productivity compared with the city-centre peak. The historical record shows that growth in Gross Regional Product per hour worked has increased much faster in inner Melbourne municipalities than in the fringes of the city, and that the gap has increased with increasing distance from the centre, suggesting relatively declining access to high productivity employment and, in some cases, declining access to hours of work in outer areas. This is the key reason for increasing inequality.

***Standardising pupil/teacher ratios is a necessary, but not sufficient, condition for education attainment inequalities to be reduced between regions. Another necessary condition is to reduce income inequalities between regions and that requires long term planning.***

Unemployment and income inequalities between regions are an important driver of inequality of outcomes in the literacy and numeracy skills of primary school age children.

***Historical data tells us that tourism exports are an important driver of economic activity and employment in many regions. However, pre COVID and on a net basis, because of the high expenditures on tourism by Australians travelling overseas, the net benefit from tourism for the majority of regions was relatively low.***

The central regions of Australia's major metropolitan cities are generally the major net beneficiaries from tourism. These are regions which, particularly pre COVID were performing well economically. Elsewhere in Melbourne's North local councils are in a position to improve their net benefits from tourism, both by encouraging inbound tourism and by encouraging residents to spend locally instead of in other regions or overseas.

***NIEIR research and data tell us that there is no market driven tendency for inequalities in economic performance between regions to be reduced. High-technology innovation-driven development means that regions which establish a competitive advantage in these activities can increase their relative performance in terms of high incomes and low unemployment rates.***

High dwelling costs have the potential to constrain the supply of labour, limiting the economic potential of a region.

***Since market mechanisms will not reduce inequality of economic performance between regions, public policy has a key role in reducing inequality of economic performance between regions and by so doing maximising overall economic growth.***

The role of policy in promoting economic growth is to maximise the quantum of infrastructure capital including

investments in such things as transport, communication, health and education. The goal in Melbourne's North will be to lay the foundations for the development of new, successful knowledge-intensive clusters, in the context of promoting environmental sustainability. Post COVID and in Melbourne's North, in part because of the skills already available, there will be opportunities to build on the foundations that La Trobe and RMIT universities have delivered. Public policy also has a key role to play, either directly and or indirectly, in infrastructure planning to influence housing affordability and facilitate the increase in population densities necessary to sustain the growth of high-technology knowledge-based regions.

***Neither international immigration nor inter-regional migration can be relied on to reduce regional inequalities.***

Pre COVID, and over the last 20 years or more, the rate of immigration (both domestic and foreign) into the outer regions of Melbourne's North was relatively high and contributed to maintaining, or increasing, excess in the working-age population. Excess working-age population means the proportion of the population that is under-utilised and, if the excess had not existed, would restore the indicators for hours available to the residents and their earnings per hour, to acceptable levels. That is, to reduce inequality.

To mitigate the build-up of an excess working population requires policies to accelerate spending on physical and social infrastructure, to improve the integration of those Melbourne's North outer LGAs with historically excess working populations, with other metropolitan areas. It also requires policies that induce faster job generation rates in outer regions, that is, faster than have been historically the case in Melbourne's North. COVID may have changed current circumstances to some degree but not to act on this issue with appropriate planning and investment will see the problem return once immigration levels begin to rise.

*"Hume City Council is laying the road to a more sustainable city with a continued partnership with Downer, Close the Loop and RED Group. Back in 2018, we set a new benchmark in sustainability and innovation by constructing of Australia's first road using a combination of soft plastics and glass. The product, called Reconophalt, uses soft plastics and glass in asphalt for road construction to create a sustainable, cost-effective solution that has improved performance and longevity of more than 100 roads in Hume City".*

## CASE STUDY 7.6

### Plug-in electric vehicles

There are several vehicle technologies that aim to reduce the emissions generated by the transport sector. These include:

- Hybrid Electric Vehicles (HEV);
- Battery Electric Vehicles (BEV);
- Plug-in Hybrid Electric Vehicles (PHEV); and
- Hydrogen Fuel Cell Electric Vehicles (FCV).

Hybrid electric vehicles have been sold commercially in Australia for some time. They are sold with an internal combustion engine combined with an electric propulsion system and a small battery. HEVs energy is sourced from petrol, with some energy captured by use of regenerative braking and other techniques to charge the battery.

Hydrogen Fuel Cell Electric Vehicles use hydrogen fuel to power an electric engine by reacting hydrogen with oxygen in a fuel cell (creates water). Key barriers for hydrogen cars include the challenges and cost of converting and storing hydrogen, and the lack of re-fuelling infrastructure. Australian access to FCV's is limited with the exception of some trials and selected company use.

The modern electric vehicle market emerged in the 2010s decade beginning with the release of the Nissan Leaf and Mitsubishi iMiev in 2010. These vehicles are examples of Battery Electric Vehicles. BEVs contain an electric engine that is run purely on electricity stored in a large battery. The large battery is charged by plugging in to the car, which can be done anywhere that has electricity available (e.g. home, public charging station, work). Similarly, the Plug-in Hybrid Vehicles also contain an electric engine and a battery that can be charged by plugging in, however they also have an internal combustion engine so that they can be run both on stored electricity and petrol.

Collectively BEVs and PHEVs are referred to as Plug-in Electric Vehicles (PEV) and are the subject of this section. When PEVs are used in conjunction with renewable energy they have the potential to significantly reduce transport sector emissions.

Plug-in electric vehicles benefit the consumer by:

- lower maintenance costs compared to an internal combustion engine;
- lower operating costs per kilometre compared to an internal combustion engine; and
- limited savings are available on registration and on-road costs for select states/territories. Wider benefits to Australian society and economy include:
  - reduction of tailpipe emissions;
  - reduction of CO<sub>2</sub> used in fuel (depending on generation mix of electricity);
  - lower reliance on oil imports; and
  - contributes to meeting government and international climate targets.

In recent years, the market has mostly catered to high income consumers of luxury vehicles. Luxury models (high price) are currently offered by Tesla, BMW, Mercedes, Porsche and Audi. However, in 2019 more affordable models were released by Hyundai, Tesla, Nissan and others which may boost the local market.

The barriers to mass market uptake for electrical vehicles to date include:

- purchasing price premium compared to an equivalent internal combustion engine vehicle;
- lack of government support and incentives;
- effective vehicle range (km);
- access and convenience to public charging infrastructure; and
- effect on government revenue through avoidance of fuel excise and need for road user charging.



The number of registered plug-in electric vehicles is highest around the capital cities, particular, Sydney and Melbourne and to a lesser degree in Perth and Brisbane and with a relatively high number of vehicles registered in the ACT. However, as the market for PEVs becomes more established and more models are released onto the market, the regional distribution of registered PEVs will widen.

Plug-in electric vehicles are one of the leading technologies that will facilitate the transition of Australia's transport fleet to a less carbon-intensive form. The effective carbon reduction of plug-in electric vehicles compared to an internal combustion engine vehicle depends on the fuel source of the electricity that the PEV uses to charge its battery. Plug-in electric vehicles are most likely to be charged from the grid. They could also be charged from solar panels at the premise, or an environmentally conscientious consumer may purchase "green" electricity from a retailer that offers this option. A criticism often used against the uptake of plug-in electric vehicles in the current economy is that Australia's grid electricity generation mix is too concentrated on non-renewable sources to offer any effective carbon emission reduction.

The generation mix and carbon intensity of the electricity consumed is largely going to depend on which state the PEV is charged within (not accounting for electricity imports and exports between states and territories). The highest carbon emission intensity has been within Victoria of 0.94 tonnes per MWh in 2019 from all sources. This has been due to a large supply of electricity from brown coal which is now declining in share.

### ***Continual improvements***

Opportunities to improve business productivity in Melbourne's North are being missed. These missed opportunities include improving customer service standards and processes and to properly make use of analytics to ensure businesses maximise their potential. Management skills in relation to analysis and strategic thinking are important, skilled managers with great data people, make great contemporary businesses. One of the issues is that as well as forcing change, COVID have left some businesses in a holding pattern, not really doing anything new or investing in the future. Sales and marketing activities in some businesses have dropped away so the way things were done in the past, the offline component of sales and marketing, might be changed for the long term.

Businesses that have high degree of automation which is quite specific to each business is an area where enormous improvements could be made to productivity of these types of businesses, but it needs engineers and it needs people with bright ideas.

The knowledge economy and all these techniques that assist businesses, particularly around the digital economy, are incredibly important and we need to think carefully about what is happening to universities, particularly as a result of COVID, including the loss of skilled staff, perhaps to overseas, the cutting of important courses, all of which will have a tremendous impact on the economic benefits that students contribute to the local economy. This is a particularly critical time in which you should keep things going and invest in education.

### **Case study 7.7** **Regional employment initiatives and local government**

Local government can have a significant impact in shaping regional industry and employment strategies. There is a particular role for local government in helping regions to build integrated, sustainable and modern economic structures that include new energy strategies, waste management strategies, applying pressure to ensure that regions have proper and globally appropriate Internet connections and speeds as well as creating the conditions to attract new companies to invest in their LGA, the City of Hume has performed strongly in this regard.

Local governments need to consider the significance of regional industry strategies in helping to shape a regions future. Different industry types have different multipliers (or flow-on impacts) for expansion. High-technology industries have the largest multipliers and therefore the greater the concentration of high-technology industry in a region (clusters) the better the relative economic performance.



## 7.5 The Northern Region

### Transport Strategy: Direct employment effects

The strategy may increase the demand for bus drivers and mechanics a bit beyond business as usual. The report mentions safety, particularly at stations, but does not specifically recommend employment of additional PSOs or the like.

In the long run, construction of the Beveridge Intermodal Terminal may be expected to increase employment in logistics generally (wholesale trade, warehousing, heavy trucking, rail freight). Maybe the conversion of electricity to hydrogen as a heavy vehicle fuel.

Implementation of the recommendations could slightly reduce the demand for car servicing. However, the strategy does not mention the possible effects of the electrification of transport, which will occur primarily to reduce greenhouse gas emission abatement reasons. In so far as it supports active and public transport it is compatible with GHG abatement (buses and trains are more readily electrified than the private car fleet). However, the cost characteristics of electric cars (increased capital cost, reduced per-km cost) have equity and behavioural implications that are not addressed. Unless managed, the reduced marginal cost of driving will counteract the policies being put in place to switch towards public transport. However, there are numerous policies which can affect this choice, of which reductions in required parking provision are the only one mentioned.

The electrification of transport will reduce the demand for automotive trades related to internal combustion engines but increase the demand for auto electricians and probably change the required content of their training. The crash rate is unlikely to change so the demand for panel beaters should remain as in business as usual.

The recommendations on the main concern connectivity and effective speed. Implementation will change the shape of catchments, particularly by public transport. They are pretty similar to the proposals in the BusVic study, which can provide a revised set of catchments for modelling purposes – particularly if the BusVic study includes a scenario with BRT on the major cross-town inter-hub routes recommended in the strategy:

- Heidelberg – La Trobe – Broadmeadows – Melbourne Airport (BRT in advance of the suburban rail loop, available much earlier);
- Airport – Sunbury;
- La Trobe – Epping;
- Epping – Broadmeadows;
- Epping – Craigieburn; and
- Craigieburn – Mernda.

Also improved bus shuttles La Trobe to Macleod, Northland and Reservoir.

## Chapter 8: Pathways to employment: The LLEN story

- For the LLENs the issue is always how can we scale up these programs? This work is very resource heavy if you are going to achieve big impacts.
- LLENs should have a key strategic role in aligning schools with sector partners in Melbourne's North such as Melbourne Airport, CSL, North East Link, major businesses and development sector and the Northern Hospital and Health and Community Services.
- COVID for these disadvantaged groups is going to play very hard on confidence, experience and young people in particular are going to find it really hard to make that transition.
- Neurodiverse young people are really struggling and need more support so they can achieve better outcomes in the transition pathway to employment.
- LLENs and similar organisations, will improve the viability of courses offered by tertiary and TAFE institutions by reducing the high drop-out rates currently experienced in the Victorian system.
- Mitchell Shire: Social and economic pressures are mounting as the predicted employment challenges have come to pass.
- It is one thing for a student to learn skills and demonstrate competencies and capabilities, it is another thing to have the networks and be able to gain employment and industry experience.
- Students are studying allied health and nursing, health and community services and the biggest challenge we have there is trying to get students placements, particularly secondary school students.
- We have had cases during lockdown where there are five children in a household with only one computer between them.
- In relation to the manufacturing, we don't adequately connect school students to that industry and the industry can increase efforts to promote itself.
- Place-based approaches are really important so if we use the caravan manufacturing sector as an example, located around Sydney Road and locality, the schools in the region could be brought into relevant employment projects.
- There has been a problem in that there has been a resistance to talk to younger students about career pathways and types of industries and work opportunities. Career guidance starts early, not late.
- Initiatives such as INLLEN's Vocational Mentoring Exchange could be further supported as a means of addressing vocational disadvantage.
- Career education – young people need a "better line of sight" on current jobs and jobs of the future in the region – little relationship between career information imparted at schools and industries of strength in Melbourne's North, e.g. food manufacturing, aviation, logistics.

## 8. Pathways to employment: The LLEN story

### 8.1 The LLEN story

LLENs have an important strategic role and this should be leveraged. Currently Victorian Government funding for the LLENs is provided to procure services and ‘activities’ instead of supporting the opportunity for higher level planning and collaboration. The LLENs are well positioned to undertake work at the higher level, particularly given the breadth of network connections and the many years of accumulated relationship and the expertise that has been developed across the LLEN regions.

All of Victoria’s LLENs provide a Structured Workplace Learning (SWL) program and are therefore continually enhancing opportunities for students to engage with industry placements relevant to their chosen field of study and all LLENs also provide a range of programs which support school, community, industry and local government engagement. These programs are offered to schools for a range of year levels and reflect local place based needs.

More investment in strengthening the linkages between various components of the pathways through education and training for employment, through career guidance at school and through LLENs and similar organisations, will improve the viability of courses offered by tertiary and TAFE institutions by reducing the high drop-out rates currently experienced in the Victorian system. We know that improved standards of integration and assistance to navigate pathways to employment are helpful because other countries have achieved more stable and integrated systems. These countries include Germany, Singapore and South Korea.

#### ***Discussion with Banyule Nillumbik LLEN, Hume Whittlesea LLEN and Inner Northern LLEN***

The main differences between the regions served by the LLENs across Melbourne’s North are as follows.

- **Inner Northern LLEN** – fewer apprenticeships in our region and we don’t have the culture of students doing a VET program and associated workplace placements. The demographic creates that difference. Even school completion rates are different and around 60 per cent of school leavers go to university which is higher than the state average. Having said that we also have pockets of severe disadvantage.
- **Hume Whittlesea LLEN** – Though Sport and Recreation was the most popular VETDSS in Victoria, Whittlesea had as many, if not slightly more, undertaking VET studies in Construction as in

Sport and Recreation. This is also reflected in the high number of Structured Workplace Learning opportunities consumed by students. We don’t have a specific VET cluster in Hume, some of our schools are in the Northern VET cluster but Sunbury still see themselves as separate. We are a growth area so there is a lot of domestic construction happening as well as infrastructure. So training activities in carpentry, electrical and plumbing are highly sought after. We are really struggling to attract young people into civil construction and engineering, even though a lot of future opportunities are going to be in these areas, particularly when you look at the big infrastructure builds occurring in the outer parts of Melbourne’s North. Allied health, retail and hospitality/tourism also have strong take up, again because the region is growing. With our tech school in Whittlesea we see work that tries to attract young people into that higher level technology workforce and that has been a great platform for schools to introduce students to higher technologies, including advanced manufacturing, food manufacturing and health, science and professional related services. There are an increased number of students wanting to go to university (driven by changing demographics and population growth) but vocational education is still considered to be important in many of our schools and more so than in inner city areas. Schools appear to be more willing, COVID aside, to allow students to participate in structured workplace learning. Schools generally push for a university higher education option, depending on what the young person wants.

- **Banyule Nillumbik LLEN** – there is a school culture of expectation of academia and some of our schools don’t offer a VCAL option, so some of our students don’t have that opportunity. The conundrum for us is that we have a large tradie culture in places like Eltham and Hurstbridge and Outer Nillumbik Shire and we have a huge uptake of school based apprenticeships. About half our schools are making sure that students are doing some form of structured workplace learning which are sought after. The typical construction trades, plumbing, electrical and things like beauty services including hairdressing are important and there is a huge appetite for these. VCAL in some of our schools is quite strong, the larger schools tend to have four or five VET classes running. Some of the challenges we have, in much of Nillumbik for example transport is an issue, is getting students to work placements. So it is not as if opportunities don’t exist, they do and

the issue is getting to them. We want to look at this issue in more detail to see what can be done. Banyule is not such an issue in this regard, transport is good. We do have pockets of disadvantage including the Heidelberg West area. This is demographic and we have to alter the way in which

we work with some of the students. We have the Banyule Nillumbik tech school, year 8 and 9 year students go and do programs which try to promote STEM and what STEM offers. All schools are engaged and find this a positive experience for their students.

### **CASE STUDY 8.1 Central Ranges LLEN**

***“We work with local organisations and networks to improve education, training and employment outcomes for young people within the Mitchell, Murrindindi and Macedon Ranges local government areas.”***

A massive increase in residential development and population is taking place in Mitchell. Social and economic pressures are mounting as the predicted employment challenges have come to pass. We are seeing the impacts of people moving into the area and looking for local work and finding themselves commuting long distances, predominantly to the south but also to the north. In the area we are in, working with young people and their employment pathways we are constantly on the lookout for where those opportunities might be. A big part of our work is trying to influence the conversation in schools and what the vocational opportunities are. We are literally on the door step of Wallan and Beveridge and the southern Mitchell area.

For the LLENs the job is actually getting bigger as the jobs deficit in Melbourne’s North continues to grow. Young people resident in Mitchell are doing conspicuously worse than those living in the inner suburbs. In the Wallan area, despite the presence of a GOTAFE campus and a Secondary College, there are high rates of disengagement and disconnection from employment pathways. We have a low rate of university entry and part of that is young people pursuing a vocational pathway where some local jobs are available. Families moving into the area don’t have the social networks that support students to have a range of options so part of our job, particularly with the most vulnerable students, is to build up their connections and networks so they have better access to the jobs market.

It is one thing for a student to learn skills and demonstrate competencies and capabilities, it is another thing to have the networks and be able to gain employment and industry experience which can actually get them to fulltime employment and through the door to entry points in employment.

If you are a young person towards the end of school, if you don’t have a car or a driver’s licence you are reliant on others to get to employment opportunities, so you need those connections as well. The train service is not particularly good for young people, it will get them to some of the employment precincts down through Craigieburn and Broadmeadows but not along the Upfield line. For most part the transport options are limited. There has been a big focus here on developing a transport strategy (Northern Transport Strategy) between the councils which had a focus on building employment pathways and connections for people. There is a sense that the jobs growth in Southern Mitchell Shire won’t kick on for some time, particularly in terms of the entry level and low skilled jobs for young people and so they are going to continue to look further south for employment opportunities. The LLEN is also looking to build employment pathways for young people further to the north. An example are employment opportunities at Ventia Services Group who provide the non-military services for Puckapunyal such as land management, hospitality services and accommodation.

***“In partnership with Australian Defence Force, Ventia are currently seeking apprentice Chefs to undertake a Certificate III Commercial Cookery, whilst working at Puckapunyal Military Base. As part of the catering and hospitality stream of the Defence contract, this apprenticeship will see you embark on an exciting and rewarding career and give you an incredible platform for you to build your hospitality skills. As an apprentice Chef, you will work directly with the Head Chef and other support staff to gain all the skills necessary to become a qualified Chef. You will also get the opportunity to join a team of highly motivated team and work in good quality kitchens, with large state of art equipment.”***

We have relationships with large businesses and also SMEs. When young people get an opportunity in firms like Ventia that opens up other opportunities with the company. Nestle in Broadford is also an important employer with around 300 jobs, higher skilled jobs in food manufacturing. We are looking in all directions to improve those pathways for young people in Southern Mitchell Shire. We have had some luck with companies that people don't think about like work in quarries where one of our young people now has an apprenticeship. So there are vocational pathways that have not necessarily been sought after, but once you look at them, they can be quite technical and well suited to young people who are interested in living and working in the north but don't know about the jobs on their doorstep.

We are trying to overcome the idea that trades and vocations are not as well paid or secure, and that remains a perception in some parts of our community. There is also a latch key phenomenon in Wallan for example, where both parents work long hours and travel to work, so the students return home after school to an empty house. This can lead to students getting into trouble.

Students are studying allied health and nursing, health and community services and the biggest challenge we have there is trying to get students placements, particularly secondary school students, and there is stiff competition from students from other LGAs. There are no financial incentives for employers in the health sector to take secondary students on placements and that puts them at a disadvantage. It becomes harder to get school students to complete the courses and employment opportunities for high school leavers are also much harder to find.

Young people don't know what they don't know. In Mitchell there is still a trend of around 30 per cent or so that go to university, much lower than the state average, and students going to university might be the first in the family, so they are the exception to the rule. High number of students are interested in trades and there are also a significant number of young people who do not transition to higher education or training taking up retail and hospitality type roles. We see a lot of young people who do not pathway well from schools to employment and young people without a work-life plan. COVID has made this worst for this group of young people, so if they took up employment in hospitality that job is likely not to exist anymore. Retail businesses are shedding staff and sticking to family members first. The young ones are the first to go.

The percentage of families that have Internet connections and computers in the Wallan area is generally low and there are more essential workers and less of a work from home culture. We have had cases during lockdown where there are five children in a household with only one computer between them. They built a roster to manage the workloads, there was a supply issue for sending computers out to students.

Projects are:

- **Project Ready** (Year 10) which includes career goals;
- **100 Ways** which is a 'community campaign to help young people discover their passions and realise their career dreams'; and
- **Structured Workplace Learning** on-the-job training that allows school students to develop their work skills and understand employer expectations.

We have been talking to the Mitchell Shire Council about their role as an important employer in the shire and the opportunity that exists to give young people a taste of workplace experience across a diverse series of roles. The council can step into this space in a way that makes a big difference and connects council back to community. We have started mapping these opportunities and connecting the large employers with each other. If we are going to deliver the social wellbeing outcomes the council are seeking, we need to work up different models that address our particular circumstances.

The funding models for the LLENs are based on a set of historical formulas that need to be reviewed and updated. Funding is to deliver a programmatic school based response to school industry engagement, rather than anything strategic. If you identify special needs in your community this does not translate into any more funding to deliver outcomes. Our funding bears no resemblance to the enormity of the challenge as disengagement of young people continues to grow. So we will never have enough resources to deal with everything we know is going on so we have to focus on those things we know we can do and do well. Spending on infrastructure is not the only solution and we have a number of new builds which are either in the wrong locations to maximise the benefit, so they build the building and not the program. We need to think about how tactically we use infrastructure so that is part of the conversation that is emerging locally. It is about the kinds of networks you create that is also important. The opportunity is to review what exists and then see what can be done with it.

## 8.2 Melbourne's North economy and the LLENS

Melbourne's North VET cluster with 54 schools involved and our LLENS sit on the advisory group. Over the last five or six years there has been a lot of work done to tie this in to the region. We are still under-represented in the health space and community services. Building and construction including carpentry and plumbing is oversubscribed, beauty services are oversubscribed, early childhood services, electrotechnology and automotive are oversubscribed. So there is a very big push on the trades, so in terms of connecting to jobs we are doing something right.

In relation to the manufacturing, we seem to have stopped connecting school students to that industry and the industry has not done a lot either to promote itself. The North-East Link is just beginning to draw in workers and the employment wheels are turning and the tech schools have been connecting to this major infrastructure project and beginning to integrate the project in their programs. Civil construction does not get enough attention in the training space or its pathways. Our focus on health does not reflect the scale of the labour force and we need more VET programs. CSL are very important and growing, interested in STEM training CSL has had a number of discussions with the Jobs and Skills Taskforce in Hume to improve connections, great to reach out and improve those connections and pathways to all industries.

### CASE STUDY 8.2

#### Driving jobs in the caravan industry

*Real Jobs, Right Now*, a joint project between NORTH Link and Caravan Industry Victoria, is assisting the fast-growing caravan manufacturing and service industry to fill permanent vacancies while providing local jobseekers with genuine employment opportunities.

Funded by the Victorian Government, this project offers jobseekers paid training and employment in an industry that is experiencing considerable labour shortages.

Most jobs on offer are full-time but there is also some part-time employment. All jobs are ongoing. And to give participants every chance of success, support and mentoring are provided during and after the program. The process for each intake involves paid pre-employment training, pre-vocational training and paid work placement, along with mentoring. Importantly, the training provided equips jobseekers with transferable skills that are applicable to other areas of manufacturing.

NORTH Link is assisting the caravan industry to recruit 150 employees over 20 months. The first intake commenced on 31 August 2021.

***"It's all about jobs," said Chris James, Executive Director of NORTH Link and Caravan Industry Association CEO Rob Lucas. "The unemployment impacts of COVID-19 have hit Melbourne's north much harder than the rest of Melbourne and Victoria. At the same time, demand for caravans has ballooned because of the region's ageing demographic and the fact that travellers are unable to holiday."***

Caravan Industry Victoria, the peak industry body, focuses on strategically leading job creation for its industry. They are working with NORTH Link and other partners to assist caravan and recreational vehicle manufacturers across the state to meet increasing demand, now and into the future.

Research conducted by Caravan Industry Victoria in late 2020 identified over 200 vacancies across a range of positions. While most vacancies are for caravan assemblers, there are also roles available for trades assistants, service technicians, warehouse and stores, sales and administration. A total of 80 per cent of the organisation's members have committed to participate in this project.

***"The caravan sector needs more workers to handle unprecedented demand for product," added Chris and Rob. "At the same time, there are many people living in Melbourne's north who have lost their connection to work due to the COVID-19 epidemic and need employment. This project is a win-win."***



LLENs are not there doing the linking directly between industry and training and the intermediaries are not as good as they should be because the system is so fragmented with no transparency. Place-based approaches are really important so if we use the caravan manufacturing sector as an example, located around Sydney Road and locality, the schools in the region should be brought into the project in some shape or form and a partnership developed. By developing stronger links with actual place based projects by building partnerships and building the industry into the curriculum, into the school and get a flow of young people into those jobs. We don't do these things well enough. As we know, the caravan industry in the region has a recruitment problem in that it can't get enough workers.

There has been a problem in that there has been a resistance to talk to younger students about career pathways and types of industries and work opportunities. This conversation needs to start early at years 7, 8 and 9 to open that pathway and the thinking around it. We used to have a program called Making Choices, which was all about that and bring in people from industry and taking students on tours. Workplace structured learning has helped but the connections need to start earlier. South Korea is a good example of what can be done and runs major forums to give students exposure to industry.

What is old could be new again, we are putting the emphasis on business to take students in but maybe there needs to be something more in between. A number of years ago we had the World of Work when schools had distinct partnerships with industry partners and pathways that we are discussing today. It is a shame that when governments change, we lose some of those things that worked well in the past. Thinking of CSL specifically, if the surrounding schools could partner with CSL that would be incredible and such an amazing STEM opportunity. We are seeing more and more that businesses wanting to pursue that path. The Airport Industrial Precinct offers another great opportunity. The City of Banyule runs an inclusive employment program that gives locals 16-25 years old from different backgrounds the opportunity for internal placements and many of these interns end up with jobs at the end of that program.

Schools are also making progress in this area and see the importance and value of connecting to community and industry. For the north I have seen huge changes across this space. We do however need school champions to lead these innovations. The Firth Review is applicable here.

### CASE STUDY 8.3

#### Vocational Education and Training in Korea: Recommendations (OECD 2009)

The tertiary VET sector in Korea is highly developed with 32 per cent of tertiary students enrolled in junior colleges and polytechnic colleges.

Just over a decade ago the OECD made public these recommendations to further strengthen Korea's VET sector:

- to provide an institutional framework for enhancing industry participation in VET. Under the framework, permanent bodies should engage industry stakeholders at all levels in the development and implementation of VET policy. All relevant ministries should be represented in these bodies;
- to improve the provision, quality and relevance of initial workplace training by strengthening incentives for partnerships between VET institutions and firms and by developing and implementing quality standards;
- to encourage newly-recruited VET teachers to have relevant prior work experience particularly for high school VET;
- to require all VET institutions to ensure that VET teachers regularly update their skills in the vocational area, including their knowledge of technologies and working practices; and
- to derive the vocational part of the curriculum used by VET institutions from, or at least adapt it to, national technical standards of high quality which are relevant to industry needs. Students should be able to obtain two certificates: a graduation degree from a VET institution; and a technical qualification based on a national technical qualification (NTQ) examination.

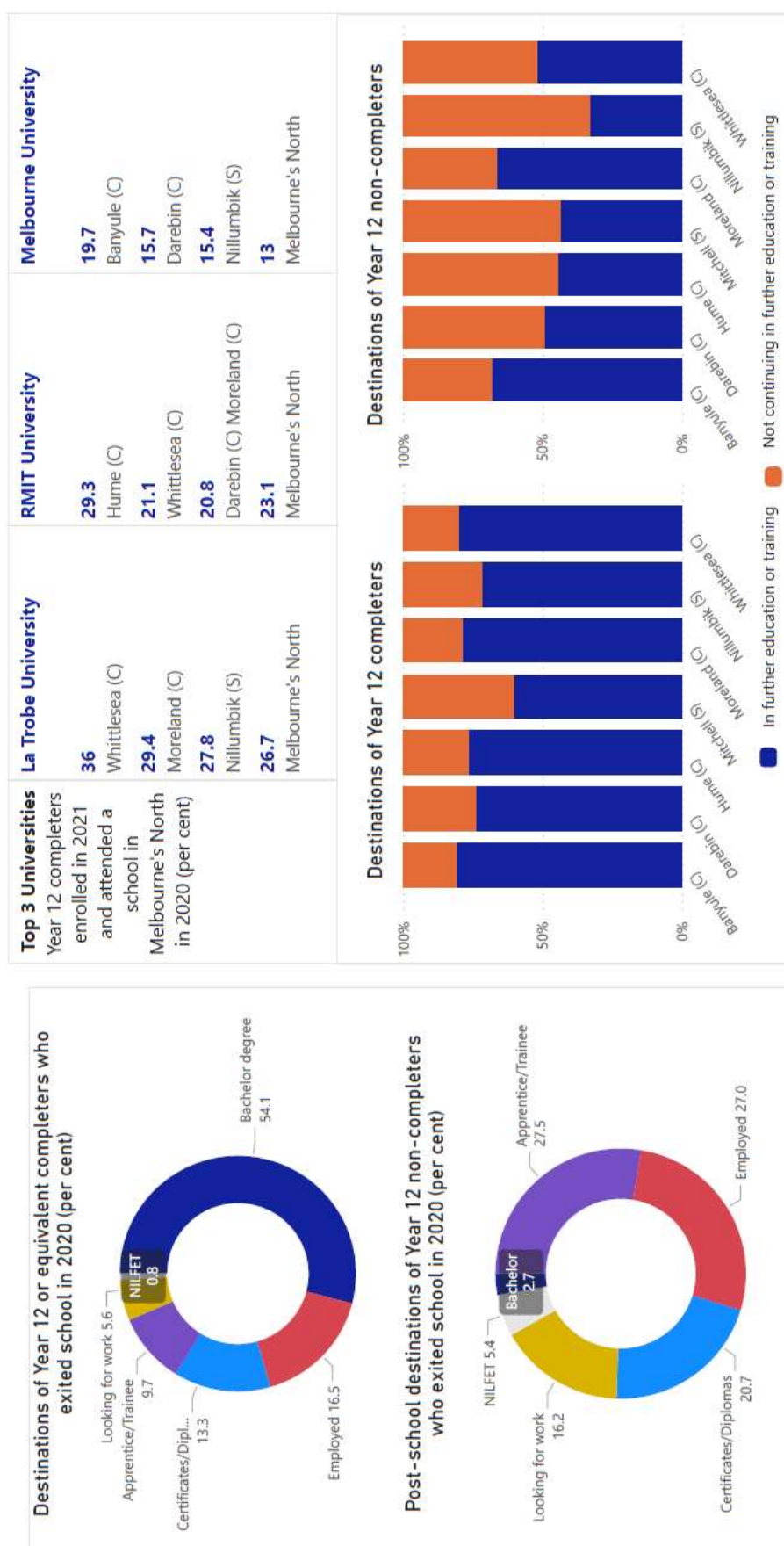
## Firth Review: November 2020

The Firth Review recommended actions to ensure vocational and applied learning in schools were of high quality, highly regarded, relevant to the needs of students and employers, and available to all and that greater access to high quality vocational training that meets their strengths and interests, leads them into further training and education, and employment.

Key recommendations of the Firth Review are:

- Victoria should move to an integrated senior secondary certificate, with vocational education embedded in the VCE. This certificate will replace, and build on the successes of, the existing standalone VCAL certificate;
- Vocational Education and Training (VET) delivered in Secondary Schools should be more closely aligned with Victoria's growth sectors and local industry needs;
- VET should be available to every senior secondary student, enabling students to mix general and vocational education, gain qualifications for all types of employment, and develop specific technical skills they most need for success in work and life with a focus on work-based learning;
- a new foundation pathways certificate should be created to formally recognise the skills and achievements of students who are not ready to complete the VCE. This will support those students to make successful post-school transitions;
- all students who fully or partially complete vocational and applied learning subjects should receive an enhanced Statement of Results to provide a full picture of their strengths, capabilities and achievements when they finish school; and
- schools should receive more support to deliver vocational and applied learning. This can be achieved through improving the capability of teachers and reducing operational and administrative burdens on schools.

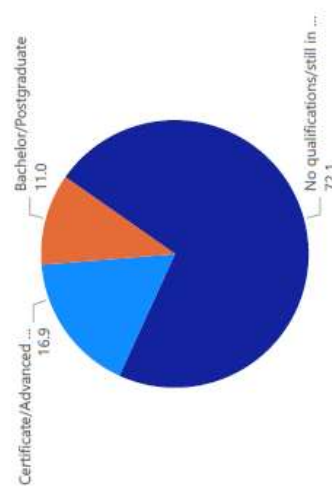
## 8.3 Melbourne's North: Education levels dashboards



## Field of study for residents of Melbourne's North 2016

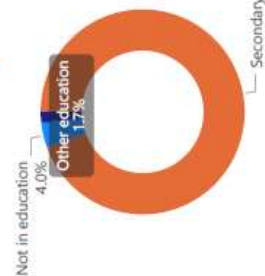
Field of study	%
Management and Commerce	20.4%
Society and Culture	17.2%
Engineering and Related Technologies	10.8%
Creative Arts	9.7%
Food, Hospitality and Personal Services	9.0%
Architecture and Building	8.6%
Health	8.6%
Natural and Physical Sciences	5.7%
Education	4.7%
Information Technology	3.6%
Agriculture, Environmental and Related Studies	1.4%
Mixed Field Programmes	0.4%

## Level of qualification for residents of Melbourne's North 2016

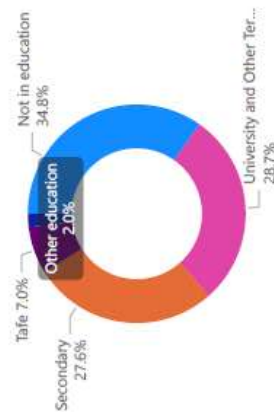


## Education attendance by age group, for students living in Melbourne's North 2016

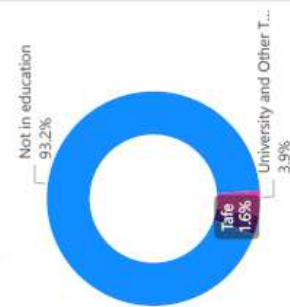
### Less than 15 years



### 15 to 24 years



### 25 years and over



## Education attendance 15 to 24 years by LGA, 2016

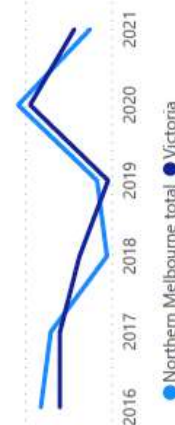
	Banyule (C)	Darebin (C)	Hume (C)	Mitchell (S)	Moreland (C)	Nilumbik (S)	Whittlesea (C)
University and Other Tertiary	31.3	40.4	21.6	9.8	36.8	25.0	25.6
TAFE	6.3	5.7	8.0	8.2	5.9	7.7	7.5
Secondary	31.6	21.9	29.6	34.5	20.7	35.8	28.0
Other education	1.6	1.9	2.3	2.4	2.1	1.2	2.0
Not in education	29.2	30.1	38.5	45.2	34.5	30.2	36.9

Note: Numbers marked in blue are higher than the Melbourne's North total.

## Age distribution (14+) by educational institution 2016

	less than 15 years	15 to 24 years	25 years and over
University and Other Tertiary	0.00	58.60	41.40
TAFE	0.00	45.90	54.10
Secondary	43.20	55.40	1.40
Other education	4.40	22.90	72.70
Not in education	0.20	6.60	93.20

## Northern Melbourne labour force regions, unemployment rate 15-24 years



## Health and Well-being

- Lack of certainty resulting from the pandemic has had a major impact on the mental health of young people, and building capacity to deal with a less certain environment will be a priority.
- Young people have the capacity to meaningfully contribute to a plan for recovery, and the challenge for the wider community is to assist young people to do so while creating the opportunities and supporting the platforms for them to do so.
- Health and well-being are integrally connected to active participation in community through engagement in learning, sports, the arts, and in economic activity, and young people will need support in all those facets.
- Schools have an important role to play in better provision of mental health support, and stronger partnerships with services and local government will be required in school settings to meet the needs that have been identified. Schools currently have neither the expertise, nor resources to adequately meet the need.

COVID-19 RECOVERY SCENARIOS FOR YOUNG PEOPLE IN MELBOURNE'S INNER NORTH REPORT:  
The Inner North Youth Employment Taskforce, November 2020

## 8.4 Strategic issues going forward

For the LLENs the issue is always how can we scale up these programs? This work is very resource heavy if you are going to achieve big impacts. In the last five years we have been moving into the industry engagement space and this is an important part of the puzzle. The older LLEN models were effective because they were staffed appropriately, so resourcing is a critical component. The employment space is a very busy space with lots of state and federal funding supporting the vulnerable groups. It is a busy space but this does not mean it is an effective space. Having job advocates will make a difference, having them focus on young people will absolutely make a difference. The missing piece is that more strategic thinking about where and how we properly line up those opportunities with industries and that is where the LLENs are most effective, in that strategic thinking space. LLENs should have a key strategic role in aligning schools with sector partners in Melbourne's North such as Melbourne Airport, CSL, North East Link, major businesses and development sector and the Northern Hospital and Health and Community Services.

This is an important role for LLENs with the appropriate resourcing. Perhaps the LLENs need to develop a strategic plan about how we LLENs see strategic industry engagements/partnerships working in the future. We would like to see more opportunities for school leavers to move directly into meaningful employment. School based

apprenticeships are useful and they give young people a taste of a particular industry and career. The issues for LLENs, particularly when dealing with a lot of SMEs is how you scale programs up and this needs more work. We are talking about, in today's environment of getting one or two placements per employer, not forty from one employer. The relationships are there, the goodwill for local place based initiatives is there, the schools and the reforms now underway in secondary schools is going to require the approach we are suggesting to achieve the outcomes the government are looking for. There are great opportunities out there and we should note what Banyule are doing also.

## 8.5 Addressing disadvantage

Whittlesea LLEN is embarking on a project with neurodiverse young people supporting better outcomes for the transition pathway for this group of young people, who are really struggling. So this about co-design, working with this group of young people to build their capacity to make transition to work much easier for them. Currently the situation for some neurodiverse people can be described as disastrous. Employers in Melbourne's North and their participation and understanding are going to be critical here. We think that disability generally impacting young people and their employment opportunities needs to be looked at.

CALD communities can also be disadvantaged and is an area we are putting a lot of effort into. Jobs Victoria, mentors and advocates are really concentrating on this

cohort. There are generational pockets of disadvantage in Melbourne's North and we are trying to work on that also.

If you add COVID to the ingredients here then for years to come we are going to have a real issue as all these features come together. So COVID for these disadvantaged groups is going to play very hard on confidence, experience and young people in particular are going to find it really hard to make that transition. Areas that are at greatest risk of long term unemployment are also at risk of higher rates of infection and we think a 'fair few' students in these areas have dropped out of school.

This is again where place based work becomes really important. In the past whole families would work in those large companies like Ford, which were incredibly important to the north and its culture of family and work. Now these companies are gone. So if you take these big

companies out of the equation, then there is disconnection and you have to replace them with something else.

Young people need a line of sight to a job and if it's local that is a really good starting point. So the caravan industry might be one such opportunity but that will be made all the harder because we are not starting the employment pathway for young people early enough. We need to put young students in the driving seat and if they can actually get out there and talk to employers, rather than just having people coming into school to give a quick talk. That is how we will create aspirations in young people and improve the line of sight to meaningful employment, skills development and a career. We have done precisely this with our creative industries work, the students are saying it so much better to be out there rather than listening to guest speakers.



## Chapter 9: Pathways to employment: Networks in research, industry, innovation, creativity and money

- The food sector, including the strengths in bioscience and food science at La Trobe and the RMIT, should be linked to local industry and developments at and surrounding the Melbourne Wholesale Fruit Vegetable and Flower Market.
- The manufacturing sector has been a strong contributor to growth and manufacturing skills remain. Advanced manufacturing will continue to develop and may be linked to such sectors as food and transport or assistive technologies linked to the health sector and the NDIS.
- Health is already important and has potential to grow significantly, particularly in areas of specialisation and research.
- Opportunities to build on the vision of philanthropists - La Trobe University is the beneficiary of one of Australia's largest single donations to a tertiary education provider, receiving \$45 million for its life-changing research into autism. The significant gift was made by the late Olga Tennison – a compassionate Brisbane-born philanthropist with a life-long interest in autism, sparked by a family connection. VC Professor Dewar says, *"If a university's research is impactful enough, and aligns with the passions of a donor – as it did in this case – it can lead to quite extraordinary outcomes"*.
- There is some smart money coming into innovation and our view is that most of it is coming out of the large superannuation funds.
- Melbourne's North now has more highly skilled population, long term trend, low skilled jobs stagnant and vulnerable to disruption. High skilled jobs growing as industry local industry demands tech and digital skills. Universities will have a lot to do.
- The Visitor Economy in Melbourne's North has great potential and requires some of the support that regional tourism areas receive.
- MICE is the term used for the Meetings, Incentives, Conferences and Events sector. Developing the MICE sector attracts visitors to Melbourne's North and helps to improve demand, enabling hotels, cafes and restaurants in the region to invest in growing quality and to scale up.
- It appears that if Israel, which has been a leader in the global start-up culture, can teach us anything, then the lesson is, how to better connect high tech companies with the rest of businesses, so that high tech innovation flows more effectively to other sectors.
- Similar comments apply to design as it is applied to industries in Melbourne's North. Better diffusion of design thinking across industries in Melbourne's North including product design, packaging design and marketing design could have a significant impact on market development for goods produced in Melbourne's North as well enhancing the circular economy and sustainability processes more generally.
- There are other factors that contribute to a changing landscape for the music industry, including the fact that artists can now stay independent and manage their own art. Technology and distribution has changed how artists record and put out their music.
- The role of the Digital Innovation and the Bio Innovation Hubs at La Trobe University is to accelerate research and development by start-ups and Victorian businesses through connecting them with La Trobe researchers, students and infrastructure.
- This process of commercialisation will be improved if we have a greater focus on investing in high end university research and all of it is better co-ordinated. We need to keep working on this aspect as it is critical to the future of universities and also creating the smart and high productivity companies of the future.
- While we're talking about private investment, we should also think about the role of government the investments it makes and how cleverly this is done.

- The Breakthrough Victoria Fund reflects a State Government focus on encouraging innovative organisations to conduct research aimed at building and growing in Victoria.
- The Melbourne Innovation Centre's main focus here is increasing the level of business digital proficiency of business owners and entrepreneurs.
- The Melbourne Innovation Centre now partners with Victorian Government tech schools to deliver entrepreneurial programs.
- The next phase of regional economic development and business support programs from government is going to be looking at new economy opportunities and how we build businesses that are more robust under circumstances we have experienced in relation to COVID and other disruptions, like climate change and during other times of crisis.
- In the COVID period, students have missed out on many of these opportunities and at the same time they are missing out on gaining those skills that will make them more job ready.
- One of the things the Melbourne Innovation Centre is working on, including with NORTH Link, is in the area of developing entrepreneurial skills. So, by working through the skills and thinking required to be a young entrepreneur, students can gain some really useful workforce skills, even if they are not going to set up their own businesses.
- One of the flow-on impacts of a global supply chain that supplies manufacturing equipment, with almost all of those manufacturers overseas, is the capability and capacity of what remains of a specialised engineering workforce to deal with local requirements.

## 9. Pathways to employment: Networks in research, industry, innovation, creativity and money

### 9.1 Melbourne's North: Key features

*"NIEIR research shows that there is an excess in the workforce of hi-tech and hi-income residents in Melbourne's North and that significant numbers of workers travel outside the two regions for employment."*

#### Melbourne's North competitive strengths

The Northern Horizons report identified the competitive strengths of Melbourne's North as being:

- La Trobe National Employment and Innovation Cluster (NEIC), which is one of only seven NEICs in Melbourne;
- Melbourne Airport;
- the food and beverage industry;
- the established practice of working as a region;
- the region's freight and logistics networks;
- industrial land availability and affordability;
- cultural diversity;
- undulating topography with river and creek corridors; and
- location in Melbourne, with access in all directions, to/from the rest of Melbourne, Victoria and interstate.

#### Competitive weaknesses

- A shortage of major clusters.
- Poor connectivity to other parts of Melbourne, especially by circumferential public transport.
- The historically low socio-economic status of much (but not all) of the region. Reflecting this, the region has few elite private schools.
- There is a growing mismatch between resident skills and local job opportunities, resulting in outbound commuting.
- Gaps in regional supply chains, including at the research and innovation end, that lead to loss of regional value adding opportunities.
- The tourism base is weak.

- In many parts of the region, particularly inner areas, there is a shortage of open space and canopy cover.

What a region has to offer to its residents, employment opportunities that match the skills available, educational opportunities, creative and culturally diverse places, environmentally conscious communities and places where design is a strong element in the development of local areas, are the places that have the best possibilities of providing a productive and happy lifestyle for its residents. This chapter discusses the possibilities innovation, creative and experience bring to peoples' lives. So to enhance employment opportunities the strategy will be to build on the competitive strengths and work hard to address the weaknesses.

*"Looking across these competitive advantages and disadvantages, in terms of positioning the region, it is important for regional stakeholders to remind others that the region is changing rapidly in terms of its opportunities, its level of amenity and its capacity to provide local employment across a developing and diverse set of industries. At the same time, the sometimes relatively low value added ratios accruing to Melbourne's North catchment residents requires more activity at a local level that generates local investment in research and innovation, to create greater value adding opportunities and the capacity to retain profits in the region, rather than exporting them (strengthening the regional supply chain). Such considerations are important for shaping a regional development strategy."*

Northern Horizons Report

In Melbourne's North, industry clusters that have potential for growth and strategic innovation processes include:

- the food sector including the strengths in bioscience and food science at La Trobe and the RMIT, linked to local industry and developments at and surrounding the Melbourne Wholesale Fruit Vegetable and Flower Market;
- the manufacturing sector has been a strong contributor to growth and manufacturing skills remain. Advanced manufacturing will continue to develop and may be linked to such sectors as food and transport or assistive technologies linked to the health sector and the NDIS; and
- health is already important and has potential to grow significantly, particularly in areas of specialisation and research.

The Northern Horizons Report identified these strategic goals for Melbourne's North:

- **Increase economic productivity** – Building on the region's competitive strengths, including spatial/industry cluster development, reducing traffic congestion and improving public transport connectivity are substantially about this goal but also have an impact on other goals;
- **Reduce environmental footprint and meet critical environmental constraints** – this covers both local (e.g. greening) and global issues, especially greenhouse gas emission reduction;
- **Increase social inclusion, reduce inequality and provide a decent base level of capabilities for all**, which extends to issues of housing affordability/availability;
- **Improve health and safety outcomes**, which includes issues such as (safe) access to green space and urban cooling; and
- **Engage communities widely.**

The strengths, weaknesses and strategic goals identified here are a good basis on which to frame a dialogue around innovation, education, creativity and the experience economy and their future contribution to Melbourne's North.

## 9.2 What businesses in Melbourne's North say about innovation

*"While we're talking about private investment, we should also think about the role of government the investments it makes and how cleverly this is done. We should recognise just how important governments are in this space. We should also remember that much of the foundation for innovation in the United States was built from government investment programs in various industry sectors."*

- There is some smart money coming into innovation and our view is that most of it is coming out of the large superannuation funds. There are funds being set up around specific industries including sustainable and renewable energy and the next big space in the in Melbourne's North is going to be in pharmaceuticals and health.
- Digital skills coming to the fore, businesses moving online.
- Structural change in the transport industry and the significance of logistics.

- More highly skilled population, long term trend, low skilled jobs stagnant and vulnerable to disruption. High skilled jobs growing. Universities will have a lot to do.
- Melbourne's North businesses can improve productivity include improving customer service standards and processes and make use of data and analytics.
- This is a particularly critical time in which you should keep things going and invest in education.
- At the beginning of pandemic in 2020 there was the big experiment of getting staff to work from home when this was possible and everybody was excited about that. After a few weeks people said we never want to go back to the office fulltime, we want a mix of working from home and going into the office. I don't hear that sentiment any more, I hear people saying we want to go back to the office because they miss the interaction with their colleagues and I think that's paramount in their minds at the moment.

Figures 9.1 shows just how important innovation measures are for the future of Melbourne's North. The figure clearly shows the increase in the number residents of Melbourne's North working in high-tech jobs and the stagnation in the number of high-tech jobs available in Melbourne's North. This situation would have been impacted by the loss of the automotive manufacturing industry in the region, however it remains concerning that, particularly given the rapid increase in high-tech jobs available in Melbourne as a whole, there are no strong signals in the data to suggest growth in the number of high-tech jobs available locally. Industry in Melbourne's North is not keeping pace with the skills of local residents, that is, not fully utilising the local talent now available to it. There has been some growth in the availability of high income jobs in Melbourne's North, but again the gap between the number of residents working in high income jobs compared to the number of high income jobs available in Melbourne's North is still significant. These patterns of employment also require high levels of commuting to work.

Figure 9.2 show high-tech industry employment in Melbourne's North compared to Melbourne's North and West combined and Melbourne as a whole as a time series and for five industry sub-sectors which employ high-tech workers. In Melbourne's North the high-tech employment share in three out of the five sub-sectors has declined, while in Melbourne as a whole the share of high-tech employment in Professional, Scientific and technical sector has declined. The lower set of graphs show six industry subsectors/sectors employing high income workers, in Melbourne's North the share of high income workers within the sectors shown has held, with the exception of the finance sector where the decline is also evident for Melbourne as a whole.

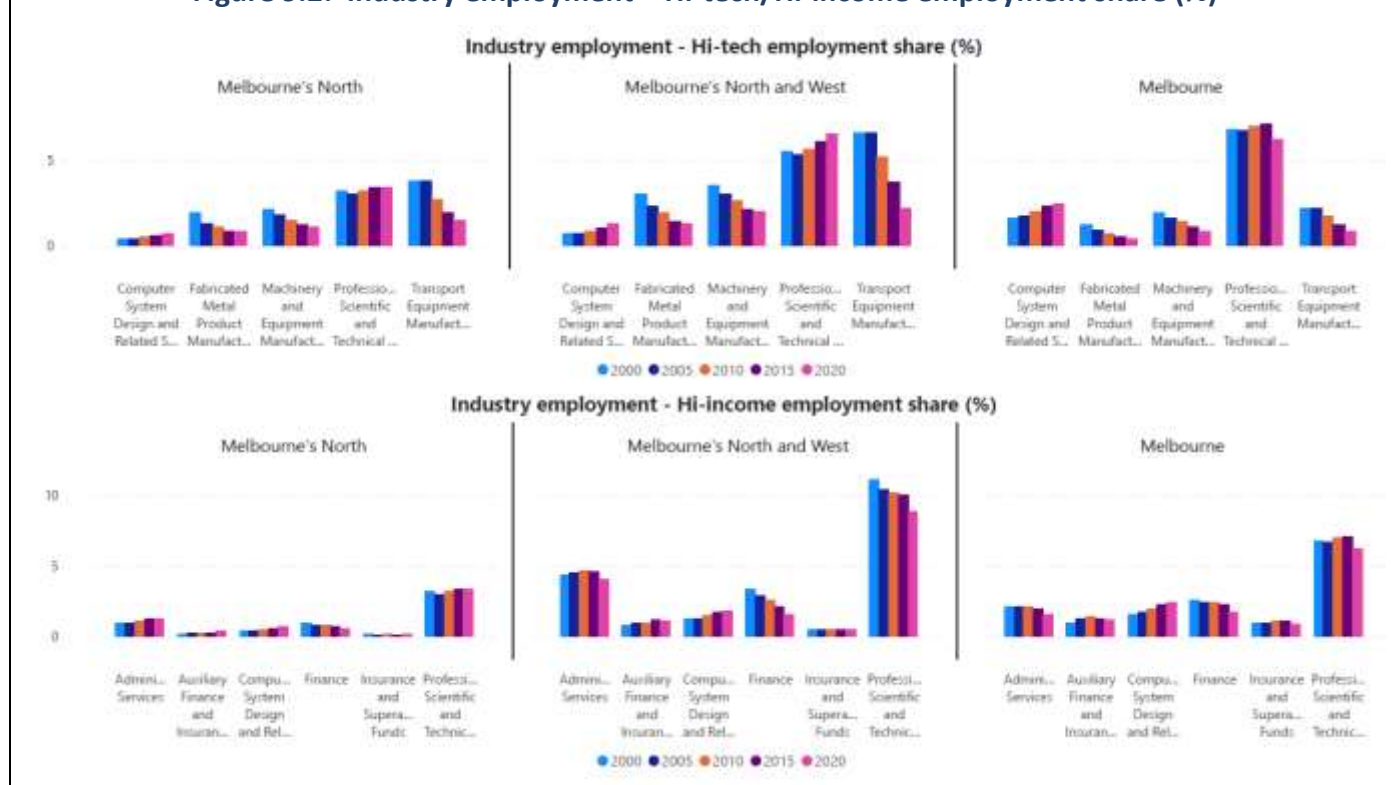
"One of the things that is happening in Melbourne's north of course because there is a process of gentrification the qualifications that people have is improving so you know there's a lot of pent up energy there potentially in terms of skills and all those other things that are probably underutilised

and that makes you think that places like the Melbourne innovation centre are placed quite nicely in that kind of scenario but how they actually leverage off that is an issue."

Figure 9.1: Innovation measure – Hi-tech/Hi-income employment



Figure 9.2: Industry employment – Hi-tech/Hi-income employment share (%)





*“At the beginning of pandemic in 2020 there was the big experiment of getting staff to work from home when this was possible and everybody was excited about that. After a few weeks people said we never want to go back to the office fulltime, we want a mix of working from home and going into the office. I don't hear that sentiment any more, I hear people saying we want to go back to the office because they miss the interaction with their colleagues and I think that's paramount in their minds at the moment.”*

Chris Heysen

There are mixed messages here with some individuals preferring the office and others the home office for their location of work. This was evident in the research for this project. NIEIR's view is that we will get a blend of working from home and attending the office. One of the key issues is about team building and managing staff productivity if employees are scattered around different locations. Another, the quality of the Internet, it appears to have held up, but barely so. So continual improvement of Internet standards is essential. So these changes will require a new set of management skills and the development of best practice models to maximise the productivity and wellbeing of staff working in the blended workplace system.

The impact of working from home and likely ongoing trends will include:

- greater demand from workers for flexible working arrangements;
- less commuting;
- changes in household expenditure patterns;
- possible improvement in diffusion of the knowledge economy away from the CBD;
- new forms of work in Melbourne's North lifestyle regions, including opportunities for workers to move to more rural locations and continue to work;
- highlights shortcomings in communication infrastructure;
- isolation;
- longing for the office and more time with colleagues;
- digital divide;
- investments in home office infrastructure;
- changing function of large office spaces;
- greater reliance on digital working and communications; and
- new management skills to maximise benefit of blended workplaces.

## 9.3 Tourism and events

### 9.3.1 Tourism

The experience economy can be broadly described as tourism and events. In the case of Melbourne's North and tourism, there is scope to develop food, art and culture related events of a smaller scale. Pre-COVID, the restaurant and café sector in the inner parts of the north flourished.

In the pre-COVID period the tourism industry in Melbourne's North relied heavily on part-time workers, typically, many were students from other places. COVID has disrupted the industry and staff shortages are occurring, adding to the difficulties COVID has created for the sector.

**The Northern Horizons Report found that opportunities to develop tourist related activities in Melbourne's North were centred on the region's food culture, its industrial and cultural heritage, diversity and related events, sport and environmental assets, which include river corridors, cycle paths and places of nature in the outer parts of the city.**

### 9.3.2 A note on MICE

MICE is the term used for the Meetings, Incentives, Conferences and Events sector. Pre-COVID Melbourne was known as the major events capital of Australia.

MICE activities typically generate income from:

- event entry fees and other revenue to the event organiser or venue;
- meals, food and drinks;
- entertainment;
- accommodation;
- transport; and
- additional sales by local businesses.

Developing the MICE sector attracts visitors to Melbourne's North and helps to improve demand, enabling hotels, cafés and restaurants in the region to invest in growing quality and to scale up.

The COVID pandemic has had a major impact on the MICE sector. Melbourne has had a large and skilled workforce and these workers are the enablers of putting on major and complex events. The concern is, and this covers a wide range of events and scale, including live music, is that workers in this industry have drifted off into other forms of employment.



## 9.4 Start-ups and scale-ups

Melbourne's North is a great place to establish incubators and accelerators because the skills and education levels of its residents are growing and more and more opportunities will exist in the region to kick off new business ventures. One of the really interesting things here is how the changing demographic in the north and market opportunities intersect.

The process of incubating companies is a longer term engagement, which typically comprises of location, business mentoring and coaching. So a very traditional approach. The accelerator process is typically a short term engagement, targeted at start-ups and scale-ups. So typically that might mean a three to six month engagement. The words incubators and accelerators are used very interchangeably within Victoria and this can cause confusion. There are other terms like pre-accelerator, virtual accelerator etc. There are also a range of industry specific accelerator programs. There is a significant narrative at the moment in terms of the significance of investing in a start-up business against that of a scale-up-business with more mature growth potential and ambitions for growth.

### Israel: Connecting high-tech

It appears that if Israel, which has been a leader in the global start-up culture, can teach us anything, then the lesson is how to better connect high tech companies with the rest of businesses so that high tech innovation flows more effectively to other sectors. Analysis of the Israeli economy shows that the high-tech sector has largely remained insulated and the majority of the economy's other sectors which have yet to benefit from its prosperity. Moreover, despite its high technological innovation intensity, the high-tech industry does not contribute enough to narrowing productivity disparity with the developed economies.

*"We are now standing at the beginning of a new era. This revolution is triggered by two trends: sensors, communication and the ability to transfer and process large amounts of data at a low cost as well as the development of artificial intelligence technologies that enable prediction and produce quality insights in almost each and every field. We believe that Artificial Intelligence will likely be as important an invention as electricity or the steam engine. It will create the infrastructure to support innovative future technologies, such as Smart Transportation, Robotics, 3D Printing and more. Countries that will harness it to their advantage, by applying the machine wisdom to solve crucial*

*problems, will flourish. Those that will fail to do so will lag behind."*

Aharon Aharon,  
CEO, Israel Innovation Authority 2021

## 9.5 La Trobe University: Digital Innovation Hub and the Bio Innovation Hub

*"La Trobe is embedding innovation and entrepreneurship across all facets of the University. The University recognises the critical role of innovation in addressing global challenges and in creating and translating new technologies, knowledge and information that are emerging as the cornerstone of high growth industries."*

Northern Horizons Report

### Methods of learning

*"Students are not all the same, some are happy to sit in a room by themselves and study, the students who need the social aspects of education or are extrovert and need to talk to somebody else to develop and expand on their ideas, they really struggle."*

We try and ensure La Trobe graduates are work ready so they can use the equipment in the lab for example, rather than just understanding theory around their subjects, so a hands-on approach is good.

### La Trobe University: University City of the Future

*"La Trobe University, the region's largest single employer and a pivotal part of the La Trobe NEIC, has established its vision for its University City of the Future, which provides a great opportunity to drive stronger and more diversified growth, both in the Cluster and more widely. The University City of the Future seeks to create a healthy, liveable and sustainable city, with 12,000 residents and an increase in student numbers from 28,000 to around 40,000. This La Trobe University development will provide a new hub for Melbourne's North and its NEIC, with accommodation, retail space and health services. Improved transport connections will be critical to realisation. The vision fulfilled will mean capital investment of \$5 billion, a very significant economic generator."*

Northern Horizons Report

## Research and Innovation Precinct: Co-locating industry on campus to accelerate growth

*“La Trobe’s Research and Innovation Precinct is a nexus of large and small business, world class research institutes and a thriving university culture. All backed by university and state investment into Melbourne’s North to create a thriving University City of the Future.”*

Co-locating in the Precinct gives business partners easy and facilitated access to a wide range of specialist facilities, laboratories and infrastructure.

### Research capabilities and expertise

Partners have access to La Trobe’s world-leading researchers across the domains of:

- Health and wellbeing
- Agriculture, food and environment
- Digital transformation and,
- La Trobe’s Research Themes.

### EXAMPLE

#### *The Digital Innovation Hub*

The Digital Innovation Hub aims to assist businesses in transforming their products, services, and processes through the integration of digital technologies, and support the prototyping, testing and the commercialisation of digital solutions in real-world settings for business growth. The hub will help businesses take innovative technology solutions and implement them.

#### *Workforce development*

Short courses, micro-credentials and programs will be offered by the Hub in areas of data analytics, cybersecurity and telehealth. The hub plays a key role in education and training, these courses are available to individuals, groups and businesses and deliver important digital skills to help upskill and retrain workforce to improve internal capability and adaptability in changing times.

#### *Student learning and support*

The Hub will support the creation of internships, work placements and jobs to kick start and accelerate the development and adoption of digital innovations. It will also provide a talent pipeline connecting industry with the brightest and best minds within technology.



The key focus for the *University City of the Future* is taking research and making research a much more important part of the university's total output. Translating that research and commercialising it by bringing industry as well as industry and university researcher teams together to produce a better outcome than if these things had been separate.

We are focusing on the biotech and La Trobe University now has a digital innovation hub and a biotech innovation hub, these are accelerators for commercialising ideas. The digital hub crosses just about everything we do at the university including agriculture and food, where digital ways of working are increasingly important.

Melbourne's North is a leader in the food process manufacturing and related agriculture, the regions existing expertise and capability can drive that. An agri-bio cluster has been developed on the Bundoora campus and the state's research scientist are located there along with the La Trobe University agricultural research scientists. The university wants to build on that collaboration and there is a real niche of expertise and there is nowhere in Victoria or Australia that has that sort of capability at this time.

La Trobe is also focused on health and wellbeing and we teach everything other than medicine but we do have a pathway program for medicine in the regions. We have the sports park situated at La Trobe of which stages one and two are built and then in May 2021 the Victorian Government committed to the Matildas and Rugby Victoria coming to the sports park. That completes the sports park, and there are research benefits, some of which relate to women's sport.

### ***Digital Innovation Hub and the Bio Innovation Hub at La Trobe's Bundoora campus***

The focus on research is interesting because most of the research needs to be done in a building or in a location with other people and with really expensive equipment. Major companies are thinking that a lot of their people can work from home or can be more mobile. Education is going to be a bit like that there are going to be certain courses that you can be mobile or international and not come to Australia because students can study online. Chinese students are the most likely to be content to engage with online study. Research processes are different and you do need the physical world, labs and equipment and human face-to-face interactions and interventions. Our view is that the focus on research will enhance the attractiveness of the university and having industry partners on site means that we are creating a direct pathway for partner companies to directly employ our students or to do student placements.

*"Our new facilities will utilise the research capabilities and industry engagement expertise for which La Trobe is renowned, particularly in areas of molecular sciences, biotechnology, agriculture and*

*digital technologies. They will also build on the University's deep-rooted connection to businesses and the wider communities of Melbourne's north and regional Victoria, creating a catalyst for innovation and economic growth."*

The role of the Digital Innovation and the Bio Innovation Hubs is to accelerate research and development by start-ups and Victorian businesses through connecting them with La Trobe researchers, students and infrastructure.

*"Our students will also benefit from the Hubs through opportunities for internships and work experience that will lead to future career opportunities."*

The Digital Innovation Hub connects La Trobe and its technology partners with businesses to improve their processes, products and services through the use of digital technologies and development of digital workforce skills. Short courses by La Trobe academics to help industry develop workforce skills in data analytics, cybersecurity and telehealth. Outcomes will include assisting the agri-food industry in developing improved manufacturing processes The Digital Innovation Hub will benefit from La Trobe's partnerships with global technology companies Cisco and Optus, enabling access to their leading expertise and technologies.

These developments create a real industry collaboration opportunity. The labs are designed to be a place where local companies that have a digital challenge can come in and say here is our challenge and how do we solve it? La Trobe University can then work with our partners and our researchers and students to find the solution and then implement it. La Trobe is in one sense unique as we also work with smaller companies.

*"We are trying to create villages of collaboration, putting industry and research together and giving them the infrastructure to do that, and that allows them to collaborate. That is the start, then actively nurturing that collaboration is the most important part."*

The Bio Innovation Hub provides a wet lab space and equipment for biotechnology and agri-technology companies to assist in the commercialisation of research discoveries. The range of possible products may include drugs, such as those improving treatment of fibrotic diseases, as well as diagnostics and development of medicinal agriculture products.

### ***Future relationship with the Melbourne Wholesale Markets***

In terms of agriculture, the university's role is research, for example looking at seeds and plants to enhance their characteristics. The university is also looking at what can be done to turn that plant protein into food that people would be interested in. Then another step is to set up pilot

manufacturing plants to see if we can make that food. That is where the planned food cluster adjoining the wholesale markets could come in by commercially manufacturing the output of the research. The markets are also a transport hub, so produce comes in there and produce leaves from there, and having that product changed in some way to suit different markets is perfect positioning. Alternative proteins are a really good avenue for growth. We are taking about the future of food, the issue is not only an ethical one in relation to not eating animals, but these new foods can also be medicinal, improving health outcomes generally. The move to plant proteins mean that farmers change the way they are doing things and they need to learn about and understand the changes to their industry. Often these are global trends requiring different kinds of transport and storage and include tracking the origins of food that people are eating.

### ***Nursing and allied health at La Trobe University***

In healthcare, particularly nursing or physio, the university could significantly increase enrolments, but the problem is work placements for our students. So when the government are raising the cap to meet future occupational demand, the next requirement would be having the ability to actually place those students into location where they can gain the necessary work experience.

In the health and allied health areas, we are planning to expand the hospital to include age care and to develop an allied health clinic, and that is partly to give students better opportunities for placements. So the university can conduct student lead clinics, as well as research translation and placements in the hospital for all those students. The problem with placements comes when, for example, when it is a specialist in physiotherapy that needs to do a placement in a certain sector, we just can't place them without being in control.

### ***Commercialisation***

The connections and infrastructure that provides investment in commercialising research, start-ups and accelerators in Melbourne is maturing. Organisations that are doing the investing are taking an idea and applying seed capital and investing in early stage companies and then of course there are all the different stages that come after that. This becomes a virtuous circle of development. This process of commercialisation will be improved if we have a greater focus on investing in high end university research and all of it is better co-ordinated. We need to keep working on this aspect as it is critical to the future of universities and also creating the smart and high productivity companies of the future.

The Breakthrough Victoria Fund is really about the State Government pump priming organisations to stay in Victoria and grow in Victoria. The fund (\$2 billion over the

next ten years), in which Bundoora is one target region, intends to invest in these priority Victorian Government sectors:

- health and life sciences;
- advanced manufacturing;
- digital technologies;
- agri-food; and
- clean economies.

## **Melbourne Innovation Centre**

Importantly, and while the Melbourne Innovation Centre has been very focussed on supporting businesses in the incubator, in the last five years we have also delivered business training programs to SMEs. Not only doing this in Victoria, but also South Australia and Tasmania. **The main focus here is increasing the level of business digital proficiency of business owners and entrepreneurs.** These are government funded initiatives, we have also been delivering a number of business recovery programs focussed on bush fire recovery and another on mental health and wellbeing. The scope of this work is about 8,000 business that we have engaged with over that period.

Our business model has changed substantially from around 10 internal fulltime staff, we now have 21 fulltime staff and just over 100 contractors working for us, these are trainers and mentors. Our opportunity to influence, to impact and to support recovery is much more substantial.

There are three sites now and a fourth will open in Collingwood within the next 18 months, at a cost around \$15 million and be located at the Melbourne Polytechnic Campus, Otter Street, Collingwood and will host 30 to 40 incubator clients.

*"The decline of particular sectors in Melbourne's North and beyond should also be considered in the light of future opportunities created by this decline. Renewal and reinventing a local economy, and we see this all over the world, often comes about through the experiencing of pain and the necessity for that renewal."*

The Melbourne Innovation Centre has a focus on priority industry sectors including:

- food and agriculture;
- health; and
- data.

Digital analytics and e-commerce are always an overlay to this work in all sectors and businesses. Internet and broadband speeds are still an issue for our businesses and we need a program of continual improvement. Noting that the professional services market, particularly from a digital



perspective, has evolved significantly, particularly over the last 20 odd years since the centre has been in existence. The type of support we were providing to businesses 20 odd years ago was substantially different to what we do now. So we have moved from very traditional business support, business structure, business planning, establishing systems and processes, long form strategy and rigour around establishing a business.

The work the Melbourne Innovation Centre does today is more about rapid market analysis and the ability to quickly assess the potential of a product or service within any given market. Utilising contemporary start-up methodology the centre helps businesses to analyse market feedback, customer feedback and at earlier stages to investigate customers potential and demand for products and services. The Melbourne Innovation Centre has evolved with the market and have additional capability through our contracted staff networks to undertake this kind of work really efficiently.

By partnering with government we are able to provide government with a lot of insight and feedback in regard to how they should be best supporting SMEs, start-ups and scale-ups. At local government level where we have formalised relationships with just over 40 Victorian LGAs.

The Melbourne Innovation Centre now partners with Victorian Government tech schools to deliver entrepreneurial programs, we have now had around 700 students go through the program over the last 2 years and the number of students is growing. This is all about teaching critical thinking, enterprise and entrepreneurial skills, presentation skills, market research, problem solution methodologies and customer centric design, all of those really critical 21<sup>st</sup> Century skills. Students are excited by this and it gives them some optimism, particularly as they have a lot of data thrown at them about youth unemployment which can create a bleak outlook for them. There is a reality to this also, so the Melbourne Innovation Centre is helping students to be in charge of their own destiny and saying to them you will need to create your own opportunities.

In terms of multiculturalism, including Indigenous people, we have a dedicated advisor for Indigenous businesses and most of that work is regionally. We continue to engage with a range of marginalised groups and we are looking to develop a series of subsidised spaces for CALD communities and Indigenous entrepreneurs in our building concepts and designs. In terms of the CALD work we have just launched a kitchen incubator program with a dedicated manager for that program. We are working with the Melbourne North Food Group on the kitchen incubator program and this means those engaged in the program will get access to a commercial kitchen space and the Melbourne Innovation Centre will provide a range of training and mentoring services.

*"I found that incubated companies grew about 22% more in revenue and 15% more in employment than also-selected but not incubated companies. Here, we're not talking about there being a quality difference between these groups at the time when they were selected, but rather an effect attributable to incubation and the services that incubated businesses received. I also found that entrepreneurs who underwent the incubation process and who were assigned to high-ability mentors were able to translate that knowledge into higher growth in their monthly revenue and higher profitability over the next year after incubation."*

[wharton.upenn.edu/article/incubation-and-mentoring](http://wharton.upenn.edu/article/incubation-and-mentoring)

## COVID and its impact

For SMEs, COVID has been a case of innovate or die and becoming comfortable in the uncomfortable. For the Melbourne Innovation Centre, in terms of workforce need, one of our concerns has been in relation to the high levels of public funding during the initial phases of COVID and what is happening as this support has been reduced? So our question has been, how does the private sector then take over in terms of jobs growth?

We seem to have been through a period where we've had a three speed economy. For any small business, particularly those working with government and in professional services, this is going to be a really tricky time to navigate and to manage the workforce. The peaks and troughs in demand will be the most significant challenge, particularly in terms of managing the workforce. It is how you utilise your workforce during these periods of peaks and troughs that organisations and small companies will need to get used to. So it is about navigating quick shifts in market demand that are going to be hard to navigate and with that, as new opportunities in the economy present themselves, SMEs really have to be agile, particularly in terms of training and professional development.

Finally it is about understanding how micro credentialing can come to the fore, universities and TAFEs have been working on this idea for at least a decade but it is starting to happen now and doing so out of need. The most significant shifts are around the reforms that are required in the way that education intersects with industry needs and it took an event like COVID to force these changes.

For the work the Melbourne Innovation Centre is doing with our partners in our Well-being Initiative, we are seeing demands increasing month on month and particularly in terms of the services the centre is offering. We are seeing different needs from small businesses, some small businesses require assistance with winding-up and dealing with creditors, others require support around the challenges of growth and market demand, others are trying to work out a mode that allows them to go into

hibernation, particularly if their business activities are seasonal.

So companies, particularly with seasonal businesses, hospitality and events are examples, are now asking how we generate revenue at other times of year and are operating or trying to operate new businesses and new ventures which they don't fully understand. So training is important here.

The next phase of regional economic development and business support programs from government is going to be looking at new economy opportunities and how we build businesses that are more robust under circumstances we have experienced in relation to COVID and other disruptions, like climate change and during other times of crisis.

For young people in Melbourne's north, in terms of skills, this is a really interesting time and in terms of pathways for a young person in the region, it might be that they are undertaking their VCE or VCAL or whatever they are doing in those latter years of secondary school. At the same time they are likely to get their first part-time job. So where have those jobs been traditionally? They have been in hospitality and retail and in the COVID period, students have missed out on many of these opportunities and at the same time they are missing out on gaining those skills that will make them more job ready. These skills include, basic customer service skills, communication skills, presentation skills, conflict management skills and resolution skills. These are the kinds of skills that come from young people working in these industries. Whatever the future brings we need to be cognisant of the fact that in the COVID period, this cohort of students have missed out on many of these opportunities. So that highlights the need for training in these getting job ready areas.

The loss of face to face learning during the COVID period has led to a lack of socialisation and the opportunity to communicate with people from different backgrounds and different sectors, and when you are learning in a room at home, you are very limited to access and opportunity. What is required is to upskill people in this age group who have gone through these circumstances by providing specific programs to overcome some of these issues to ensure they do not become a long term problem.

We are looking at issues surrounding disadvantage and diversity and doing so by analysing those issues in relation to the inner and outer north. That line of the inner north has moved further and further out over the last decade. Now that the inner north band is pushing further and further out and the expectation is that will be mirrored by the changing demographic. This process looks as if it is creating the growing gap between the haves-and-have-nots the innovation centre is very keen to explore the equity of opportunity in our incubators and accelerator's and that is why we have been doing a lot of work with Melbourne Polytechnic and Kangan Institute enabling students in the TAFE sector to develop their

entrepreneurial skills. So it is how you frame any training activities to create better pathways to access business opportunities in the region.

The Innovation Centre's recruitment strategy has changed during the COVID period, in that we are now recruiting individuals who have run their own businesses in areas such as marketing, particularly with digital skills, rather than recruiting graduates. The change here reflects the availability of experienced people and by employing them they can hit the ground running rather than us having to provide extensive on the job training. The employment space around digital and particularly data skills is difficult, so data analysts and data scientists are very sought after. Those emerging industries over the last decade are signalling the types of future demand for skills and occupations and Melbourne's North is lagging somewhat in attracting these types of businesses. Data is critical to making strategic business decisions and more and more businesses are beginning to understand this idea so we are still a long way out from being able to meet demand for these kind of digital and data skills. We see businesses encouraging their employees and sponsoring them to undertake further studies in subjects like business analytics or recruiting data science graduates. We are not that far from the start line for that whole market of skills and occupations and it will become critical to have that in-house capability, just as businesses had a bookkeeper, they will now need a data analytics person.

### ***Entrepreneurial skills and investment***

One of the things the Melbourne Innovation Centre is working on, including with NORTH Link, is in the area of developing entrepreneurial skills. So, by working through the skills and thinking required to be a young entrepreneur, students can gain some really useful workforce skills, even if they are not going to set up their own businesses. Students learn soft skills such as negotiation, communication, problem solving and presentation skills. All of those typical entrepreneurial skills which the majority of employers value highly in the current economy and circumstances. These skills will continue to be highly sought after. Businesses know that the industry/job specific skills can be taught internally, but it is these soft skills that are so important.

In Melbourne's North we do have business owners and entrepreneurs who are looking to their next venture and these are the individuals developing intellectual property rights. In our experience this intellectual property development is self-funded by these individuals, sometimes that means many hundreds of thousands of dollars. Often the strategy here is for these new businesses with their intellectual property then to be acquired by international companies within that industry sector. This may put these businesses at risk of offshoring and that creates problems in relation to employment and the workforce and its skills development. Having said that,



there can be a lot of jobs in building businesses, and if a region can create a culture of continually creating new businesses and doing that successfully, that will attract investment.

One of the problems we've had is we're always looking overseas for the ideal model of how these things are done and we ignore our own local expertise and experience. That is, what skills and capabilities that we have in Melbourne's North, and how to nuance a model to benefit from those local assets to build a successful industry.

There is some smart money coming into innovation and our view is that most of it is coming out of the large superannuation funds. There are funds being set up around specific industries including sustainable and renewable energy and the next big space in the in Melbourne's North is going to be in pharmaceuticals and health. So we need to think about attracting more biotech talent to Melbourne's North so we will see some growth in this sector over the next two decades. There will be further activity to develop new medical aids and other medical equipment and components, tests, protective equipment, particularly given recent experience. We can create some big signals to attract more investment to the regions, particularly in these important sectors.

While we're talking about private investment, we should also think about the role of government the investments it makes and how cleverly this is done. We should recognise just how important governments are in this space. We should also remember that much of the foundation for innovation in the United States was built from government investment programs in various industry sectors.

## Manufacturing

In relation to the manufacturing industry, it appears that more and more manufacturing businesses are buying partially bespoke equipment from overseas suppliers. The issue then becomes and it is becoming an issue for the food manufacturing sector in Melbourne's North, how equipment can be engineered to meet local requirements of that specific manufactured item. One of the flow-on impacts of a global supply chain that supplies manufacturing equipment, with almost all of those manufacturers overseas, is the capability and capacity of what remains of a specialised engineering workforce to deal with local requirements. We have seen this issue in the food process manufacturing industry in Melbourne's North because we have been doing a lot of work in a really specific sense as we have been looking to fit out commercial kitchen spaces, the big equipment manufacturers are global players and they own most of the smaller companies as well. One of the issues is that some of these skillsets particularly in specialised engineering are also strategic skills that any country should and must retain. We have learned that particularly because of the COVID pandemic.

We can also say that some skills and occupations within the greater economy are declining while others are growing rapidly. The issue here becomes, of those declining occupations and skills, which then are those strategic skill sets that Melbourne's North should retain? The loss of the automotive industry, the main manufacturers, took with it a whole set of global skills, some very specialised, which may be lost to the region. This has the impact of further weakening the manufacturing sector, its capacities and capabilities. We also need to consider the role of intellectual property and its development within the manufacturing sector as a whole and beyond.

## 9.7 Design matters

*"A couple of areas that NORTH Link is not involved in but I think it is such a critically important area and that is the arts and entertainment and that is good for tourism also. I am mentoring business in the South of Melbourne at the moment and one of the things I keep saying to them is that they should not underestimate the potential in cross pollination as I call it, that is, visiting other industries, visiting other activities and feeding those into your creative mind and using that to improve your business and how you see ideas from somewhere else, that you can translate into your own business."*

Chris Heysen

The comments made by Aharon Aharon, the CEO of the Israel Innovation Authority in 2021 regarding the disappointing rate of high tech diffusion activities to other industries, similar comments apply to design as it is applied to industries in Melbourne's North. Better diffusion of design thinking across industries in Melbourne's North including product design, packaging design and marketing design could have a significant impact on market development for goods produced in Melbourne's North as well enhancing the circular economy and sustainability processes more generally. Diffusion of design standards and how that needs to work across industries in the north needs to be taken seriously and a real design culture, where design standards are an important part of the business conversation across all sectors and particularly in manufacturing. Urban design and architecture also need to be part of this conversation as they are critical to developing the amenity required to attract knowledge economy workers.

The 2015 Future Workforce Report raised the idea of building a design museum in Melbourne's North and integrating that with local industry and education to drive design thinking in the region. The point being a design museum should be integrated with industry and be where that industry is located.

## 9.8 The arts

### CASE STUDY 9.1 Marshall Street Studios

Bennett Ferguson is the founder of Marshall Street Studios. His interest in opening the studios came from his deep involvement in the music industry, and over the past 7 years he has been a member of Hip-Hop crews, The D.Y.E and Otis High.

***“Marshall Street staff pride themselves on constantly upskilling and continuously learning new things to guide artists on their journey. If there is anything we don’t have an answer for, we are confident we will be able to point you in the right direction to obtain the answers you seek.”***

#### Music industry and ongoing change

The pandemic has hit many industries hard but perhaps none more than the music industry. From emerging singer-songwriters through to major international touring acts, the impact has been profound on an industry that now finds itself re-starting in an uncertain landscape.

Bennett Thompson is the founder of Marshall Street Studios in Bundoora, the first 24-hour music studio in the country. He also runs a PR company, a record label and is tour manager for a band. During COVID-19, he’s seen a diverse range of reactions from musicians.

***“I’ve seen artists who embraced the time, undertaking some soul searching and doing the hard work. They’ve really grown and are ready to get their careers off the ground,” he said. “Others went into complete avoidance mode and pretended the pandemic wasn’t happening. Many won’t recover for a long while, personally or professionally.”***

Bennett explained that some industry professionals have been able to pivot, using the skills previously employed in music, in other ways.

***“We found that while live shows have been non-existent, podcasts have flourished. That’s an example of people finding ways to use their skills in a different way. Mixing sound for a live show and mixing sound for a podcast uses the same skillset. It’s about showing clients what you can do.”***

Others don’t have that opportunity. Large touring bands who make their money by being on the road, Australia won’t be a great place for the next 18 months or so and they’ll have to base themselves overseas to make an income. Bennett believes there is also a need to make it more financially viable for international acts to tour here.

***“The fact that it takes \$10,000 to get a band to Australia, without managers or, gear, is a barrier. When bands don’t come here, they don’t engage with fans or the industry. If Australia is a viable touring destination for international acts, our local artists engage with them and touring companies meet in person with management and labels. It makes it easier for our bands to get international recognition.”***

There are other factors that contribute to a changing landscape for the music industry, including the fact that artists can now stay independent and manage their own art. Technology and distribution has changed how they record and put out their music.

***“The power doesn’t belong to major record labels anymore, but I’m finding that artists don’t have the skill set to maximise the benefits,” noted Bennett. “The technology is accessible, but nobody is showing them how to use it. This is a gap in the industry and an opportunity for training providers.”***

One thing that regional decision-makers can do to help the industry is to source suitable space for artists to create.

***“Space is incredibly important. We have 10 studios that artists can rent; they can leave their equipment set up and come in whenever they like. When I started in a band, we’d rent out a storage space until the owners realised we were a band and made us leave. Having those spaces that give artists freedom and time to create is critical.”***

As part of the research for this project NIEIR sent attendees to the Creative Sector Roundtable a follow-up survey. Comments by survey respondents include the following.

- All parts of the creative economy who require an audience have been impacted. The areas that could work independently or online – writers, designers, architects, marketing and advertising agents, visual creators, ceramists, and some makers/co-works spaces have continued their practice.
- For me, it is the visual art sector. Any chance of exhibiting my work, also the shutdown of my studio space in Moreland. Basing my practice at home has affected by output and reduced my exposure as an emerging artist.
- We anticipate a slow and careful return of all activities. Local Government budgets have been adversely impacted by the wide range of community support provided through COVID so some pre-COVID activities may take years to return.
- There seems to be a prevalence for online exhibitions and openings still. The Counihan Gallery Summer Show which I am in had an online opening but the gallery is open. Found this very frustrating and hope this practice stops. Being able to engage with the audience at an opening is part of the creative process.
- There are many co-working shared spaces and studios in Moreland, Brudi at 420 Victoria St Brunswick, Space Tank Studio in Coburg North, Pentridge studios, 33 Saxon St. Brunswick (coming soon), Mycelium in Brunswick East, Brunswick Town Hall (Making Spaces program), School House Studios in Coburg ....
- I am a sole trader and work alone in a studio. No employment except selling my work. Also have a small solo freelance graphic design business which I work from home.
- Need a Melbourne's North inter-active map that identifies spaces and places – and makes it easy for people to know what's available and the activity in the spaces. More funding with targeted objectives to re-activate and support the sector.
- There are no creative spaces available in Hume. I hire studio space in Moreland, the closest I can find. Developing creative spaces in Hume is really needed to attract more artists to the local area.
- Yes, clusters are important ... easier to connect and collaborate. Online/digital connections has proved adequately through COVID but many are tired of this medium and want to get back to 3D – face-to-face.
- Yes, very important for visual artists who work alone. COVID made the isolation worse.
- Affordability is complex as we know ... the provision of some affordable entry level spaces across the north is important. LGAs need to work with developers who have the capacity /desire to build social impact etc. (not just profit).
- No creative spaces in Hume and no creative hub. The Hume Galleries were affected during COVID with exhibitions closing and the cancelling of expressions of interest, and a group exhibition cancelled after lockdown was over. Also the Town Hall Gallery in Broadmeadows shut down completely for the year as the building was used as a vaccination centre once the lockdown lifted, affecting any chance of engagement with the local community for most of 2020/2021. The building is actually not run by the council and there was no momentum for opening up. Highly disappointing year once again in Hume.
- Much easier to get large project groups together – less travel time, more ability to work truly flexibly. Most people will never return to 9-5, 5 days a week in an office/studio/... people have been empowered to create a fit for purpose work environment/schedule.
- I have spent two years basing my studio practice at home and the uncertainty has affected my ways of working. I still have not returned to my studio as I am wary there will be another lockdown and another shift of all my equipment.
- Leaving the arts - Too early to say ... some will have moved on to more 'secure' work and may find it hard to return to their previous careers.
- Review current curriculum and survey/engage with creatives to learn what would actually help them – go directly to them.
- Would be great to offer short-term education that is cost effective for artists whose income is very small or non-existent. Cost is a barrier to further education.
- The pathways have not really changed much since I was at school many years ago. Education in the arts is dire, there is such an emphasis on STEM and little thought or funding for artistic youth. Huge problem and so disappointing if arts are your career choice. I was a graphic designer for 36 years and have seen the lack of development in arts education. I wasn't ready for the workforce after my higher education, nothing has really changed. Employment of practicing artists would be a start – to teach through life experience, but there is little on offer in the education system. The arts curriculum needs work in public schools.
- Yes – it provides for unforeseen approaches and all types of industry/creative outcomes.

## CASE STUDY 9.2

### Moreland City Council

Moreland City Council is dedicated to making Moreland a creative and cultural destination within Melbourne, significantly contributing to local vibrancy, cohesion and inclusion.

The Brunswick Design District (BDD) partnership was formed in 2018 between Moreland City Council, RMIT University and Creative Victoria. The BDD aims to build on Brunswick's long industrial history of textiles and fashion, urban manufacturing, music and performance, artistic activities, and attract new design and technology led opportunities across many sectors.

The purpose of the BDD is to unite the support, infrastructure, people, programs, events and activities of the three partner bodies.

1. RMIT Brunswick campus offers a wide range of educational pathways, including fashion and textiles, industrial design, enterprise and graphic design. Embedded alongside research and industry and community engagement, these courses and programs support a diverse and emerging group of students and graduates – a 'ready to go' population who will continue be a significant part of the district's development.
2. Moreland City Council, through economic development programs and projects, supports enterprise development and employment creation. Council facilitates business investment and builds enterprise capability through tailored programs, along with place activation projects like the Saxon Street Cultural and Community Hub in Brunswick. Council's efforts and projects like Brudi at 420 Victoria Street and the arts and culture festivals and events program shape and support thousands of people and enterprises.
3. Creative Victoria, as the state government body dedicated to championing, growing and supporting Victoria's creative industries, brings sector knowledge and connections, a range of industry development and funding programs, and capacity for infrastructure development.

Arts Moreland supports our creative sector to thrive through a range of activities and initiatives including our funding programs such as the Flourish Arts Grants and development programs like the Festival Moreland Development Fund. We offer a range of residency programs, including the Making Space program, which provides free studio/workspace in collaboration with partner venues. We also provide professional development programs including *Making It In Moreland*, a series of free workshops and discussions for local creative industries, facilitated by industry experts.

In addition, we offer direct support through an Arts Infrastructure Officer, aiding creatives with securing new creative spaces, relationship building and networking and acting as a point of contact for local artists to assist with planning queries, compliance requirements, grant applications and internal advocacy to remove barriers.

The Saxon Street Cultural and Community Hub is now in the final concept plan stage, which will see the site evolve into a creative and community hub and urban park. The plan was created after many years of work and engagement with community and stakeholders. We will now progress to final planning for the \$22.3 million project, which will provide creative industries spaces, affordable arts space, First Nations arts space, community gathering rooms, facilities for the Brunswick Neighbourhood House, maternal and child health rooms and a new park. Construction is expected to start in early 2023 and be completed by 2024. Once developed, this site will accommodate more than 100 employment opportunities.

## 9.9 RMIT and Melbourne's North

University campuses are important as hubs for research and learning and for attracting companies that wish to benefit from the knowledge being generated by these physical localities. Melbourne's North is well served in the sense that it does have a strong physical presence with the campuses of La Trobe University, RMIT University and the

Australian Catholic University. Deakin University is also increasing its presence in Melbourne's North, particularly programs in engineering in association with manufacturing, and has established its Learning Centre in Hume. Victoria University has also established a presence in Melbourne's North with its learning facility in Broadmeadows.

*"Our goal is to bridge the gap between research and impact. RMIT was established, not just to pursue 'knowledge for knowledge's sake' but to apply research and innovation for the benefit of all. Our distinctive capabilities deliver positive change. This is what we mean by passion with purpose."*

Professor Calum Drummond,  
Deputy Vice-Chancellor Research  
and Innovation and Vice-President

A major RMIT Campus in Melbourne's North is located in Bundoora. The Bundoora Campus, with East and West sections on either side of Plenty Road, houses many of RMIT's engineering, health and medical sciences and education programs.

Key learning facilities include:

- Health and medical science laboratory;
- Engineering campus (East);
- Library (West campus); and
- Health sciences teaching clinics.

### **RMIT research collaborations**

RMIT's research collaborations connect researchers from universities, industry and government from Australia and overseas. Table 9.1 lists these collaborations, many of which are extremely valuable to the region's industries and institutions. The goal will be to encourage more engagement through these collaborations with local industry.

<b>RMIT NATIONAL COLLABORATIONS</b>	<b>RMIT INDUSTRIAL TRANSFORMATION COLLABORATIONS</b>	<b>RMIT COOPERATIVE RESEARCH CENTRES (CRCs)</b>	<b>RMIT GLOBAL RESEARCH NODES</b>
ARC Centre of Excellence for Automated Decision-Making and Society	ARC Industrial Transformation Training Centre in Additive Biomanufacturing	Bushfire and Natural Hazards CRC	China-Australia International Research
ARC Centre of Excellence for Environmental Decisions	ARC Research Hub for Advanced Manufacturing of Personalised Medical Devices	CRC for Reliable Affordable Clean Energy for 2030	Centre for Chinese Medicine
ARC Centre of Excellence for Nanoscale BioPhotonics	ARC Research Hub for Australian Steel Manufacturing	Digital Health CRC	
ARC Centre of Excellence for Quantum Computation and Communication Technology	ARC Research Hub for Nanoscience-based Construction Material Manufacturing	Fight Food Waste CRC	
ARC Centre of Excellence in Exciton Science	ARC Training Centre for Surface Engineering for Advanced Materials	Food Agility CRC	
ARC Centre of Excellence in Future Low-Energy Electronics Technologies (FLEET)	ARC Training Centre for the Transformation of Australia's Biosolids Resource	Future Fuels CRC	
Australian Centre for Electromagnetic Bioeffects Research	ARC Training Centre in Cognitive Computing for Medical Technologies	IMove CRC	
Australian Prevention Partnership Centre	ARC Training Centre in Fire Retardant Materials and Safety Technologies	Innovative Manufacturing CRC	
	ARC Training Centre in Lightweight Automotive Structures (ATLAS)	SmartCrete CRC	
		SmartSat CRC	
		Trusted Autonomous Systems CRC	

Source: RMIT University, <https://www.rmit.edu.au/research/centres-collaborations>.



## ***Fashion at the RMIT***

RMIT Fashion and Textiles has become a global leader in fashion and textiles education, much located in Brunswick. The RMIT runs fashion courses at the following levels: certificates, diplomas, associate and bachelor degrees, and postgraduate programs.

*“Informed by global awareness and astute knowledge of industry, we lead in creative and entrepreneurial practices. Our staff are engaged as both practitioners and researchers, and are active as designers, curators, business innovators and leaders of industry.”*

In 2014, RMIT invested \$7 million in its Brunswick campus to create Melbourne’s state-of-the-art fashion hub connecting design and production, engaging learners with practice and advanced digital technologies, and stimulating new applications, methods and modes of thinking.

### **CASE STUDY 9.3**

#### **RMIT University School of Fashion and Textiles – Creative clusters**

***“RMIT is a global leader in fashion and textiles education. Programs are internationally recognised, with graduates making an impact across the world.”***

RMIT University’s Brunswick campus is now home for the School of Fashion and Textiles’ newly redeveloped design studios, production labs, machine rooms, digital facilities and lecture theatre, a refurbishment of \$8 million.

***“The development of new facilities on the Brunswick campus supports the positioning of RMIT Fashion and Textiles in the top 10 global fashion design institutes.”***

In August 2015 the School of Fashion and Textiles was ranked globally number 9 in undergraduate and number 6 in postgraduate. This highlights the capabilities and what the Brunswick campus can do.

Programs for the sector are extensive and include fashion and textiles, and visual and fashion merchandising education studies. Course types are certificates, diplomas, associate and bachelor degrees, and postgraduate programs. Programs at the Brunswick campus cover many aspects of the fashion industry and include: Associate Degree in Fashion Design and Technology; Associate Degree in Fashion and Textile Merchandising; Bachelor of Arts (Textile Design); Bachelor of Fashion (Design Technology); Bachelor of Fashion (Design) (Honours); Bachelor of Fashion (Merchandise Management); Master of Fashion (Entrepreneurship); Master of Design (Fashion & Textiles); Master of Technology (Fashion & Textiles); PhD (Fashion & Textiles); Certificate III in Clothing Production; Certificate III in Dry Cleaning Operations; Certificate III in Laundry Operations; Certificate III in Textile Fabrication; Certificate IV in Custom Made Footwear; Certificate IV in Fashion and Textiles Merchandising; Certificate IV in Textile Design and Development; and Diploma of Textile Design and Development. Merchandising programs are Associate Degree in Fashion and Textile Merchandising; Bachelor of Fashion (Merchandise Management); and Certificate IV in Fashion and Textiles Merchandising.

With the fashion scene in Melbourne’s North, if you look at Moreland and what is happening there, you see that a characteristic of Melbourne practice is that it comprises micro to small enterprises. Areas in the north have small scale manufacturing entities that are a design manufacturing entity or designers working with manufacturers. This is the space that universities and wise local governments can grow – supporting this co-location of university, manufacturing and design. Not everyone wants to go into a large company infrastructure and this is something that is characteristic of Australia. It is very different from the way the fashion industry would operate in Europe, where most employment of graduates is about placement into larger conglomerates. We do not have the large; even our medium size companies are small.



For the region, specialisation in those small micro enterprises provides opportunities. It works at two ends. For advanced manufacturing, at Brunswick we have a centre for advanced materials and performance textiles so the idea of co-location/partnerships with small manufacturers is where we can test the types of materials we are working with and applications into real world usage. At the other end we still have heritage and the reinforcement of quite traditional techniques so that these do not die out. These work in tandem because both heritage and advanced manufacturing are suitable for small enterprises. Advanced manufacturing allows you to limit the numbers you produce because you are using high-tech systems and then with the heritage and bespoke you can use a slow process. Slow and fast methods work together; they are not a choice and they should be complementary. Advanced manufacturing is not always appropriate and when you have a small enterprise you can make that choice. This is difficult in larger enterprises.

The fashion industry global supply chain is complicated. The idea of people designing and manufacturing in one place is rarer and that is where small and micro businesses come in. We do not want to lose the sense of a making economy.

In our programs we set up our students to work globally through virtual studios and we can work with someone internationally without having to go there. So we will hook up with a partner in London or our campus in Vietnam so we can show students how you can work globally without having to go somewhere.

We are looking at the relationship between design and manufacturing in Vietnam. Design exports from Melbourne's North are an opportunity. Fashion students are working with merchandising students and then making in Vietnam. This makes them flexible in a constantly changing industry and there are differences if you are working locally, globally or local/global.

We probably do not know what the jobs will look like in 2025. The fashion and textiles industry has always had a very fast uptake of technology, so things change a lot. We are looking for a much more flexible graduate; the roles are less precise, so industry requires more of a hybrid graduate. You very rarely get the purist job – fashion designer/merchandiser and so on. We are trying to broaden their skills. A lot of our students may end up working in communications, designing websites for a fashion company. Communications is very strong and students are also working in film to promote their work. It really has shifted. Retail is a very big employer too in terms of fashion merchandising. Our students even get offered jobs in second year so there is a lot of potential for our students to develop careers in this fashion sector. We have not really seen that as the grand profession, but that is where there are some really serious opportunities happening.

One of our most popular programs is our Master of Fashion (Entrepreneurship) and businesses send their staff back to us. This is really thinking about lifelong learning and working with universities as these shifts occur, and that is really important.

We now have one of the best centres in the world in terms of supporting the next generation of designers and makers. That is something we can really use in the community out here and that is why we have been talking with the City of Moreland. There is a real commitment in Moreland to get this industry moving to another level and our students love it out here. There is an edginess and capacity for what we can do and industry gives depth. The new building shows that we have confidence in the future. It's a symbol of what next. We also made sure that the building's design puts the makers upfront and we have done this to show that everything has to work together – that is, the relationship between design and making.

You have to have the confidence to invest.

## 9.10 Connecting employment

This section provides four examples of programs that connect young people, the disadvantaged and the longer term unemployed to employment pathways. During the research for this report NIEIR identified that one of the big issues for young people in particular was not having the networks that allow them to access and gain employment. These networks are a critical first phase in the ability of young people to connect with work.

For younger people thinking about career options, programs that connect students to the workplace are valuable because they help clarify the pathway options and industries the student might take. The benefit also flows through to higher completion rates of higher education and training courses.

### 9.10.1 Northern Industry Student Placement Program

NORTH Link's Northern Industry Student Placement Program (NISP) has been developed to connect businesses in Melbourne's North with tertiary students from leading higher education providers. The benefit is two way, students are able to gain work experience and the businesses benefit from the knowledge and skills students have acquired while completing their study. Students bring new ideas to businesses and student business programs of this type can also create longer term benefits such as the opportunity for the individual undertaking the student placement to become a permanent staff member after they graduate.

NORTH Link describe the benefits of NISP as follows:

- motivated, knowledgeable students;
- access to the latest ideas and practices;
- flexible timeframes;
- short or longer-term projects;
- broad range of study areas;
- suitable for businesses of all sizes;
- low-risk way to assess future employees; and
- productive people with the latest skills.

### 9.10.2 Jobs Victoria Employment Network (JVEN)

The Jobs Victoria Employment Network was established by the Victorian Government to assist the most vulnerable and disadvantaged living in places of general disadvantage to improve their employment outcomes, and to assist individuals on their pathway to employment, by better connecting support services to navigate the barriers faced by the most disadvantaged when seeking employment.

*"The program connects jobseekers with the opportunities they need to gain employment, as well as supporting them in sustaining employment."*

The JVEN program is place based, targeting job seekers in locations that are generally disadvantaged and require both social and economic assistance. The disadvantaged places where the program operates typically have higher levels of unemployment which may well be intergenerational, where young people are disconnected from study or work and have poor connections to pathways to employment.

The program design and delivery allow the organisations delivering JVEN to assist particular cohorts, the CALD community and people suffering disabilities are examples. JVEN creates long term benefits for both community and government and these include reducing the longer term costs by breaking the cycle of disengagement, that may include violent or criminal behaviours and drug use, and by offering people the opportunity to grow their work skills, assists in breaking the vicious cycle of disengagement and unemployment.

### 9.10.3 Vocational Mentoring Exchange (VME)

The Vocational Mentoring Exchange is described as a unique resource for the inner north of Melbourne which brings together a pool of volunteers with diverse and wide-ranging working lives and lived experience to support young people aged 16 to 25 years old to transition to further education, training or employment.

*"Vocational mentoring can help young people with limited social capital learn about the workplace, clarify their aspirations, extend their networks, and help find work opportunities."*

INLLEN

The program provides young people with the opportunity to connect to local industry and the vocational mentoring they receive from volunteers helps those engaged in the program to explore career options and possibilities.

VME has been built using two streams:

- the school-based stream of VME Mentoring Matters and the Youth Enterprise Hub's Micro-Enterprise Project; and
- the Community Partnerships stream, enabling community partners to access Exchange mentors to support vocational programs and the VME Northern Youth Mentoring Network.

### 9.10.4 Structured Workplace Learning (SWL)

Structured Workplace Learning provides a formal framework and the pathway for VCAL student to undertake on-the-job training during their VET program. Participation is not compulsory in most cases but comes highly recommended by practitioners. The LLENs in Melbourne's North participate in the program. SWL is available to both VCE and VCAL students over 15 years old, depending on their course of study and is delivered as part of VET, VCE Industry and Enterprise, or VCAL courses.

*"The role of the 31 organisations that comprise the LLEN is to work with employers and schools to identify and facilitate access to appropriate school-employer engagement activities that helps school students find work placements and promotes opportunities for them to learn more about the world of work."*

Victorian Government

The Victorian Government describes the benefits to host employers as:

- participating in the education, career development and the training of young people in your community;
- talking to students about your industry, its career paths and future directions;
- promoting the attitudes and skills required in the workforce and identifying young people with potential;
- strengthening links with the community and raising the profile of the host business; and
- benefiting the supervisory, training and mentoring skills of staff.

For students SWL provides:

- the opportunity to enhance their skill development;
- to gain from the practical application of industry knowledge;
- to inform the student about work in a particular industry sector;
- to achieve learning outcomes for VCAL units;
- to enhanced future employment opportunities;
- join accredited programs which are linked to post-school qualifications;
- matching students' skills and interests with structured training;
- a non-discriminatory and harassment free environment in which to learn at work; and
- appropriate training and instruction in occupational health and safety.

## Chapter 10: Pathways to employment: TAFEs in Melbourne's North

- The publicly funded TAFE system is critical to Victoria's education and training system and, particularly so, in aiding the recovery following the enduring COVID pandemic.
- TAFEs need, above all, certainty and consistency in long term funding models and the policies that accompany these.
- Requires a fairer funding model that takes into account the wraparound services and supports public TAFEs provide and policy change which supports the TAFE network to operate more nimbly and collaboratively.
- Digital literacy support for TAFE teachers who have had to adapt their delivery throughout COVID-19 and for many of whom a blended delivery model will now become the "new normal".
- Access to more frequent and granular (regional) employment data and projections so that TAFEs can better align their course offering to demand and growth.
- Curriculum designed and delivered in concert with industry.
- Investing in up-to-date campus facilities.
- Enterprise analytics and data science important factors in defining TAFE markets and demand for future education and training strategies and this includes tracking outcomes for graduating TAFE students.
- It may be the case that TAFEs have caught up with universities in developing a blended learning approach and there is a real hunger to keep doing more.
- Beyond the disadvantage for those students who had limited access to technology, the introduction of blended learning revealed that there were significant disparities in the capability of students, highlighting the importance of things like well- developed relationship skills which enable a better engagement online.
- Among the cohorts who were disproportionately impacted by COVID, young people and women migrants were particularly vulnerable.
- As a cohort, young people have not responded well to online learning, as much as we think they live in this space on their phones and social media, this has not translated to engagement with online learning, particularly for those marginalised groups.
- COVID has amplified the challenges around finding opportunities for students to complete their practical placements, this has caused bottlenecks and delays in the training system. Inability to change the structure of training packages had added to the difficulties. There are a lot of course extensions in the system because of a host of inflexibilities.
- There was already a big skills gap and now there is going to be an even greater one because of the disruption to the training pipeline.
- Vulnerability of employment in some industry sectors means that workers are leaving certain industries and retraining to work in others.
- Partnerships are important and a way of better connecting VET training to organisations and industry. Encourage greater partnerships between TAFE and industry organisations such as NORTH Link.
- More work needs to be done in relation to building pathways between TAFEs and universities, but it takes time to understand the value of these things, particularly from the university's perspective.
- From a policy perspective, apprenticeships are central; the industry internship model and the industry integrated model of learning are going to be more preferred; Skills need to be contextualised and different industries have different nuances around skills development.

- As much as the digital and online space is part of the future, if that is forced on people as the only way to learn, people react to that.
- We should not look at the TAFE sector in isolation, but as very much part of the education sector, into secondary schools as well as a more elegant integration between higher education and vocational education. This applies especially in Melbourne's North.
- We are just starting to see the results of the Macklin review of TAFE.
- Government recognises the public TAFE offering is incredibly significant that TAFEs in Victoria operate as a network, as opposed to the twelve competitive entities.

## 10. Pathways to employment: TAFEs in Melbourne's North

The publicly funded TAFE system is critical to Victoria's education and training system and, particularly so, in aiding the recovery following the enduring COVID pandemic. TAFEs, given their historic contribution to training and industry in Melbourne's North, remain central to the region's training system, providing the skills industries need, as well as the opportunities for residents in Melbourne's North to learn new skills and in new

industry sectors. So TAFEs are critically important in providing the knowledge infrastructure that enables flexibility and adaptability in the region's workforce, in what are uncertain and rapidly changing circumstances, creating both difficulties and opportunities for businesses and the supply of the occupations and skills required for future prosperity of the region and the wellbeing of the people who live there.

**In a speech on 4 September 2019, Productivity Commission Chair, Michael Brennan, made the following observations (in the national context) in relation to Future markets and TAFE**

*"But my other main contention is that when we look back over the last decade, the really big changes, disruptions and discontinuities in the vocational education and training industry are not about the labour market at all. They have all been about public policy, and specifically the big 3; the move to national training entitlements, introduction and cessation of VET fee help and the demand driven system of university funding."*

*Concluding "So the lessons are something like this: move cautiously; understand the industry, its players, its drivers and its norms of behaviour; know the limits of markets – some services just aren't amenable to competition; if you still proceed, think hard about market design; and most importantly, learn from history."*

TAFEs need, above all, certainty and consistency in long term funding models and the policies that accompany these, which recognise their long-term strategic role in enabling economic development through the provision of high quality integrated training and learning in Melbourne's North. We should also recognise that TAFEs are adapting to changing circumstances and have evolved to meet future challenges and training opportunities.

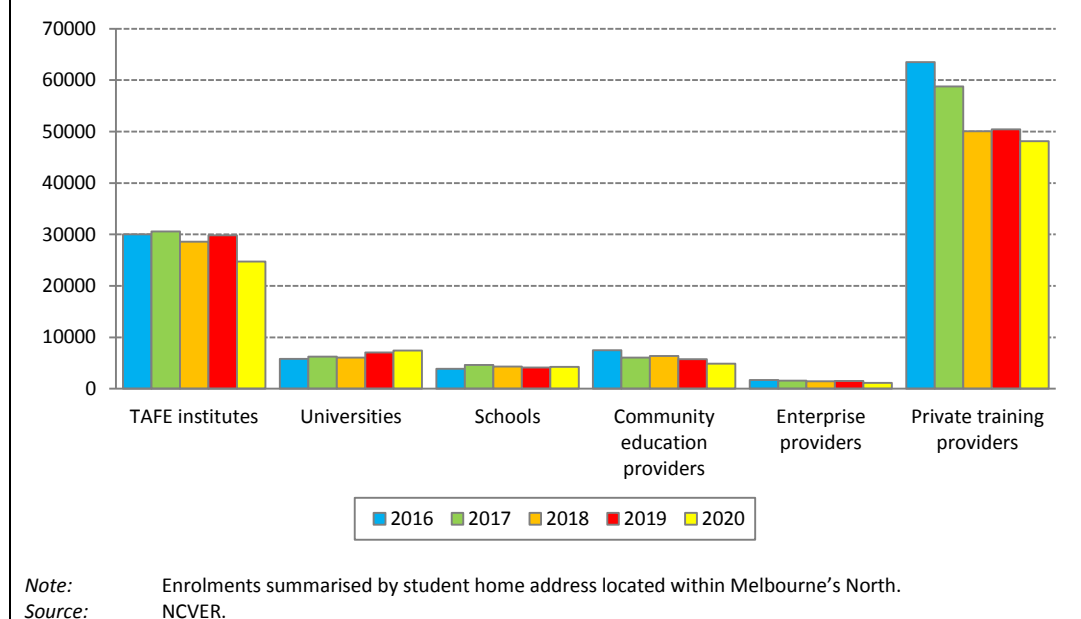
In 2020 and during the first waves of COVID, the number of individuals enrolled in Australia's VET training system had declined by 6.4 per cent, when compared to 2019. The importance of VET described by NCVER in that 21.7 per cent of the Australian resident population aged 15 to 64 years had participated in nationally recognised VET in Australia.

Key messages regarding TAFE:

- requires a fairer funding model that takes into account the wraparound services and supports public TAFEs provide and policy change which supports the TAFE network to operate more nimbly and collaboratively;
- digital literacy support for TAFE teachers who have had to adapt their delivery throughout COVID-19 and for many of whom a blended delivery model will now become the "new normal";
- access to more frequent and granular (regional) employment data and projections so that TAFEs can better align their course offering to demand and growth;
- curriculum designed and delivered in concert with industry; and
- investing in up-to-date campus facilities.



**Figure 10.1: Melbourne's North TAFE enrolments by provider type, 2016 to 2020**



## 10.1 Melbourne Polytechnic

### 10.1.1 Recent history

The contemporary entity that became NMIT, was formed in 1988 through the amalgamation of Preston College of TAFE and Collingwood College of TAFE, to which was attached the Parkville horticulture campus. The new entity, originally called Northern Metropolitan College of TAFE, developed campuses at Heidelberg, Greensborough and Epping to add to those existing at Preston, Collingwood and Parkville. In 1996 the name was changed to Northern Melbourne Institute of TAFE. In 1999, the acronym NMIT was adopted.

Melbourne Polytechnic has been accredited to deliver over 300 nationally recognised qualifications and more than 400 Institute accredited courses. These study programs are delivered across seven campuses and additional specialist training centres throughout metropolitan Melbourne and country Victoria.

The campuses are:

- Preston;
- Fairfield;
- Epping;
- Heidelberg;
- Greensborough;

- Prahran; and
- Collingwood.

Melbourne Polytechnic programs include pre-apprenticeships, apprenticeships, certificates, diplomas, advanced diplomas, associate degrees, bachelor degrees and master's degrees. There are also articulated pathways to university studies.

Currently departments are:

- Agriculture;
- Bridging and Preparatory Studies;
- Business, Management and Finance;
- Creative arts;
- Education;
- Foundation Studies;
- Health and Community;
- Horticulture and Landscaping;
- Hospitality, Conference Centre, Restaurant and Café;
- Performing Arts;
- Professional Practice;
- Construction;
- Visual Arts; and
- Work Education.

### 10.1.2 Future challenges

Melbourne Polytechnic has considered the role of physical infrastructure and its importance in education because of the key requirement for practical learning, and those enterprise soft skills that face-to-face engagement between people contributes. COVID has made Melbourne Polytechnic rethink our Masterplan, how we will be using physical infrastructure moving forward and what will remain in a blended learning environment? The shifting expectations of staff, students and community about education, about learning, about shifting expectations about place and teaching, where that happens and how it happens, form significant elements of future strategies.

Melbourne Polytechnic have now established an enterprise analytics and data science group to help understand our region and our market and make more sophisticated evidence based decisions.

A paradigm shift occurred because the COVID pandemic moved a predominantly face-to-face training model to online learning, very quickly uplifting the capability of staff and systems to deal with the changes.

Changing the mode of delivery is not a straightforward process and changing the organisation of courses, supporting people through that process and so on. These changes gave Melbourne Polytechnic a broad insight as to where our capabilities lay in delivering that new model, but also it gave us insight into the inequities in our community when we had to shift to that technology and online learning. There were significant disparities in capability, highlighting the importance of things like well-developed relationship skills which enable a better engagement online.

The changes brought about by COVID have caused Melbourne Polytechnic to think about how we use infrastructure, the modalities we use deliver education and training, those things that will change, versus those things that will change only for the pandemic and will go back to what happened before once the pandemic ends.

Pre-pandemic Melbourne Polytechnic were wearing our 100 years of existence as an organisation pretty well. About 30 per cent of our courses had a digital presence, and of those 30 per cent, ten per cent were strong online offerings. Melbourne Polytechnic had to flip that model quite rapidly, for universities that process was not such a stretch because they were already offering courses online. For TAFEs and VET much of what we teach is hands-on applied learning and the move online was quite a big shift culturally for our people.

What Melbourne Polytechnic did find was that staff were incredibly responsive to these changes. We did some incredibly rapid capability development work with our staff and in some really key areas, particularly with their digital capability and this really highlighted the gaps that existed

in our staffing profile. Many of the staff had come through the trades and vocational pathways and have a ticket to teach, staff were suddenly in a position where they had to get content into an online space. The physicality of their teaching was removed in a training environment where so much of what trainers do, is about being able to see and do and touch, and then be able to make the switch to operate the technology at the same time. Certain areas created real challenges, Auslan, for example.

The model of what education looks like has opened up, transition is challenging but also presents opportunities. The Melbourne Polytechnic traditional way of working was that we had a timetable, students attend, they go to a teacher, there is a ratio in the classroom and the time is locked in. That model was broken apart very quickly, because in an online space there are limitless classrooms and you can have big classes as well as small classes that do not have to be locked in, so students do not have to go to class and they can work in different ways. This has opened up a different frame of thinking. In our view we have caught up with universities in developing a blended learning approach and there is a real hunger to keep doing more. Part of that is to offer more capability development workshops to our staff. Staff are doing this in their discretionary time, so there are challenges, but Melbourne Polytechnic looks very different to what it was just two years ago.

Our market place is still looking very similar geographically, change was mainly the shift in modality. Sixty per cent of our students live in Melbourne's North and we are now moving to a catchment based training system in Victoria. It will be interesting to see how this plays out and how that will be reconciled with the expectations that learners have to be able to do things flexibly and then to choose whatever training provider they wish. The realisation of public sector training, which is which is happening online, is in some ways is a new demographic. This has been the realisation of a project that was happening before COVID and getting the courses up in that digital space and having the capability to do that has made the project more effective.

#### *Disadvantage*

One of the interesting aspects of the change to blended learning has been the disadvantage of young people through this process. They have not responded well to online learning, so as much as we think they live in this space on their phones and social media, this has not translated to engagement, particularly for those marginalised groups, to embracing remote ways of learning. So the process of moving online appears to marginalise disadvantaged young people further. These issues are shaped by access to technology and the home environment, which for some can be extremely disruptive to learning. Poor quality Internet, all these things reinforce the inequity. We have learned that there are some groups

who do not manage well and the sooner we can get them back to face-to-face learning, the better. The more students gain the soft skills the better off they are in this mode of learning. In the classroom, teachers can structure a group of students and teach people to learn in a group and support them. Without that, it is harder for young students to hang in there. We should recognise that group resilience is really important.

### **Work placements**

One of the other challenges has been in finding opportunities for practical placements, which was difficult before the pandemic. During the pandemic, because many of the businesses have been closed, it has been quite hard on students. Placements are important because students come back from their placements with knowledge, skills and expertise that suddenly give their course context and meaning. So the strategy Melbourne Polytechnic has used is to frontload the aspects of any course that can be done online and then do the more practical work when this becomes possible, but that means the sequencing can sometimes be a little bit out. All these problems have been pushing courses out in terms of their end dates, so it becomes harder to completely qualify for a course. This is partly due to the current circumstances and also the inability to get a shift in the structure of training packages, so a work placement must be a work placement, so it cannot be a simulated placement, nor can it be deleted off in any other way. So the inflexibility in the system is likely to exacerbate the situation and cause course extensions. There are a lot of course extensions in the system because of a host of inflexibilities.

### **Staff: ways of working**

The interesting thing that has happened is in the recruiting staff. We would never have recruited a staff member in a senior role if we had not met them. Melbourne Polytechnic have staff working for us who never came to Melbourne during the pandemic. However this is working quite well, even leading teams. Some applicants we did meet at an interview, but there were others that we did not meet. This means colleagues have not met each other, but that does not seem to matter. We think this is interesting in relation to how we think about building that relationship with people, experience now tells us that this does not always require a physical presence, although there is a different quality to the relationships.

### **Studying and training**

People have made changes in what they wanted to do because they do not want to be vulnerable to disasters again. So workers are leaving certain industries and retraining to work in others. TAFEs typically do not follow students in terms of outcomes so there is no formalised destination, the system itself picks up some of that. TAFEs

will now need to consider tracking student outcomes, because we are going to be measured much more now on outcomes. So that will have to drive some investment into this space.

The stand outs in terms of courses that students are wanting to take include; cyber security, horticulture was and is still really popular, engineering, some of the human services programs, which have a high demand, have been impacted by lack of placement opportunities, so again students can't complete the course. In construction, plumbing heads the list. Health related courses cover mental health, aged care, allied health and pathology. We do not run nursing programs.

In terms of the creative arts, Melbourne Polytechnic runs courses in music, including music production, song writing, then theatre arts and photography. Courses in visual arts are popular and fit a niche market, students are generally people who studied in the visual arts and are looking to extend and go further in the arts. We run a course in architectural glass and glazing, which is one of a kind and very industry focussed. Traditionally Melbourne Polytechnic have had a large footprint in the creative arts. The creative arts suffer from a couple of things, in the creative industries one of these issues is how the industry is measured in terms of job outcomes. It is not seen in the same light as applying for jobs in engineering and training to become an engineer, and then getting a job as an engineer. That pathway is clearer.

The creative arts are challenged in their funding rates, so from the point of view of making these courses viable, while the cost to run them, which in some specialised areas are high, has been challenging. The situation is being revolutionised to some degree by technologies in the creative process. But that does not change the outcome for employment. The benefits of the creative arts to society might be intangible, but they are real.

One of the things that is exciting for us is Collingwood and the Collingwood Yards. The Melbourne Polytechnic campus is being redeveloped and we have some of our creative industries offerings there. What we have got in that geographical location is industry next door and a whole variety of creative arts practitioners. To have a training provider right next door in that precinct, in that area, in that demographic, all that in one location, is really unique. This is really the last stand of the creative arts in the inner north as it gets pushed further out. So we must foster that.

It is interesting to think about the creative process at this particular point in time and its potential role in recovery and healing for the community through this last two years, and particularly so in Victoria. We should consider the role of the artist in the community in supporting place based performance, in supporting expression and supporting mental health, there are plenty of opportunities, if we choose to fund those, as we did many decades ago when it would not be uncommon to have an artist in resident in

say, a migrant program to support that the process of expression and healing and give a voice to people. We are going to need that amongst our young people, there are a lot of opportunities where governments could look towards the creative arts, not only to help the industry recover, but also to help all of us recover.

### **Partnerships**

Melbourne Polytechnic's partnerships are also important and a way of better connecting VET training to organisations and industry. These partnerships include Forensic Care in Fairfield and we are working together to increase provision for mental health beds and to look at Melbourne Polytechnic's role as an education and training provider, so that is a mental health care example. At Preston we are doing work with a health collaboration and innovation group that is looking at technology, supporting the experiences of students in health and human services.

### **Pathways in education and training**

Melbourne Polytechnic are also a higher education provider running both vocational and higher education courses. We have relationships with universities in the sense that they are articulation agreements for students who are finishing diploma courses or who are using their credits for other degrees. From a sector perspective, the boundaries blur a little bit as the requirements around education and industry change. Universities are now talking more about employability and working with industry more closely. The Minister for Education in Victoria has a view that it should be a joined up and seamless system between schools and TAFEs and universities, so the expectation is that there will be pathways and dialogue between these education and training providers. More work needs to be done in relation to building pathways. Melbourne Polytechnic has a relationship with La Trobe University in particular, but it takes time to understand the value of these things, particularly from the university's perspective.

It is easier to get a place at university at the moment because of the reduction of international students. So young people who may not have done so in the past, are now taking up study at university. Some of this group really struggle at university and come back to TAFE, looking for another pathway. This process is disruptive for the student and could be better resolved with more strategically considered career guidance at school level. The process as described is wasteful of educational resources.

The TAFE brand around being aligned to vocational outcomes and jobs and then making those pathways really open to future employment is really important as is the career counselling that happens, particularly for school leavers. The majority of school leavers generally follow a university pathway. Melbourne Polytechnic do not see many students through the Australian Tertiary Admission

Rank (ATAR) pathway. Our students are more likely to be the people who are coming back after a couple of years in the workforce, who may have been driving taxis or doing lower level jobs, and are looking to up skill and change their pathway and career.

### **Competition**

There has been a reduction in the number of Registered Training Organisations (RTOs) because of the tightening and managing of the system. TAFE is being taken out of the competitive space and has a defined role through legislation as a public provider. That does not mean there is not any competition, competition policy has not gone, but it gives TAFEs a particular role which is funded in a particular way. Good enterprise RTOs have always existed and alongside TAFEs, it is just that plethora of RTOs that blew up under competition policy are hopefully now declining in number.

### **Apprenticeship model**

From a policy perspective, apprenticeships are really central. We are likely to see the apprenticeship model shift to higher levels and more professional traineeships. The industry internship model and the industry integrated model of learning are going to be more preferred. That means that Melbourne Polytechnic's relationships with industry need to start very early and we have done some work on how we get industry engagement in developing courses. The integrated learning model, whether it is called apprenticeships and/or something else, will become even more pronounced than it is now. The European models for vocational education work well because industry is integrated in actually formulating the structure and the content of the courses. That is now the difference between TAFEs and universities, in that Melbourne Polytechnic, when we develop the core units which we have to do, but with the course design we bring in industry to select the electives. So what industry wants is what they should get.

### **Skills**

Employers are always saying they want soft skills, but these can be quite specific to a particular industry. The split between technical skills and enterprise skills is roughly a 50/50 split. To date we have been talking about the C skills; creativity, collaboration and critical thinking, but just by themselves, these types of skills are not enough. They need to be contextualised and different industries have different nuances around skills development and that is the challenge.

As examples, engineering is actually about making and breaking things and there are certain skills around this, such as analytical thinking and problem solving. In the clinical professions creativity is not necessarily the thing you want on the operating table, there is a deeper layer

that sits next to those technical skills. You can have all the critical thinking ability in the world, but without the technical knowledge to support that, then you are not going to be able to do the job.

It will be interesting to see how the workforce settles down after COVID and the shifts that people make, either in their own work, or in shifting their capability, and then thinking about the workforce, and about those skills that are transferable and whether some sectors are better at that, than others.

## 10.2 GOTAFE

GOTAFE was established in 1996 and has a number of campuses across Northern Victoria, including in Shepparton, Wangaratta, Seymour, Benalla and Wallan, the latter is in the Melbourne's North Mitchell Shire and a newly welcome addition to the North's training infrastructure. The Wallan campus provides training courses in Health & Community Services, Education, Animal Studies and Technical Trades.

### 10.2.1 TAFEs and VCAL and VETDSS

Like other TAFEs, GOTAFE works with local high schools to provide pathways for students looking for practical career solutions, other than an academic pathway. As a practical alternative to VCE, the Victorian Certificate of Applied Learning, the Victorian Certificate of Applied Learning (VCAL) is a hands-on, practical alternative qualification to VCE (Year 11 and 12). Each of the three VCAL courses available at GOTAFE take a minimum of one year to complete.

The Vocational Education and Training in Schools (VETDSS) program gives school students the opportunity to study a nationally recognised TAFE qualification alongside their Year 10, VCAL, or VCE studies, and provide students with the opportunity to gain new skills in the industries and careers that interest them.

### 10.2.2 Training and the impacts of COVID

In relation to the training of the workforce, part of the challenge from COVID is that there is now a real backlog in getting students through some types of courses, say we had anticipated that there would be the usual number of new nurses completing training in 2021 and 2022, there is now backlog of completions as we have had to push out the timing of some training courses. Some training can be done totally online and some needs a practical component and that includes nursing and the trades like plumbing. So

what GOTAFE have been doing when we have gone into lockdown is to bring forward all of the theoretical training that can be done remotely and online.

Then that leaves a component of practical training that still needs to be done, and given the last two years, there are significant flow-on-effects from the delays in completion, which have now rolled over into 2022. This clogs up the system and GOTAFE cannot bring in as many new students into the course types impacted in this way by COVID as was originally planned. So from a workforce point of view and out there in the businesses and organisations in the region, there are people retiring at the end of their careers, so this is creating a risk that there will be a workforce shortage for some occupations now in demand and as a result of the COVID backlog. The best way we can support employers is to identify what are the demands and priorities that have changed and to respond to those and do so promptly.

There are technical skills of the particular field of study, more broadly and this is where education needs to adapt and respond, there are those other skills that are now important including the ability to respond, being agile and resilient. Employment readiness is not a new thing that needs to be a focus as part of the training effort.

From a learning perspective GOTAFE has had a range of students drop out because this is not the way they want to learn, sitting in front of a computer screen, learning remotely is not for them and specifically they want hands on experience.

From our own workforce point of view we are finding a reticence for people to leave existing jobs and move to a new one, preferring to stay with the employer they know and who has supported them during COVID. So staffing is an issue.

The main driver for us around course offerings is viability because government expects that to occur. COVID has influenced which courses students take, so pre COVID they might have considered hospitality and have now shifted to construction. This is not having much of an impact in switching gender roles in the regions. We are stereotypical when it comes to gender and we are trying to do some work on this. The females go into nursing and then males go into trades, which is still very much the pattern. There have always been a handful of women in trades but we certainly have not yet seen any sort of divergence from that.

Businesses are reacting to all the lockdowns and this is taking a greater toll, for example, an electrical business that would ordinarily have been flexible with releasing their apprentices to attend TAFE courses are now less comfortable in doing so. So even if we opened up to allow the trades to attend campus to learn, the employer might be delaying that because of the workloads and general uncertainty of the COVID period.



When we think about different modes of learning, one of the barriers can be the Internet. We have a number of examples where students have not had access to appropriate Internet speeds or they have not been in a home environment conducive to learning. In relation to domestic violence for example, normally those students would have come to the campus and use that safe space to access technology and therefore have a safe physical space to work in.

So pathways to employment are being disrupted in a number of ways, students changing what they want to do, lack of opportunities for student placements, impact of online learning, greater reluctance from employers, all these factors are having an impact on pathways that once would have been far more straightforward. The greater levels of disengagement of young people are around two issues, access to the learning environment and the impact of COVID and all that goes with it in terms of the wellbeing of the students.

Staff, increasingly find this environment challenging and GOTAFE introduced a wellbeing program in the midst of the pandemic because of the types of challenges were ones we had not seen before. The changes for our workforce include greater workforce flexibility, we also now employ people from interstate, so we now have employees that live interstate and work interstate. GOTAFE uses organisational psychologists who give wellbeing resilience talks to our staff. There is a multitude of strategies.

From a government point of view we should consider the range of regulatory and milestone requirements, for example, in terms of the payment approach by government, we have to report on students within a certain time frame or we do not get funded for training them. These kinds of rules and under the circumstances created by COVID, where we are dealing with so many different sorts of competing demands and issues, need to be relaxed, so more flexibility is required in the system.

## 10.3 Kangan Institute

Kangan Institute is comprised of five campuses; Broadmeadows in Melbourne's North and Essendon, Moonee Ponds, Cremorne and Docklands. Kangan Institute merged with Bendigo TAFE in 2014 and Bendigo Kangan Institute was formed which also comprises VETASSESS and eWORKS.

Students typically come from a 15 kilometre radius from our campuses but there are exceptions, the Automotive Centre takes students from all over Victoria. Location is also getting a bit blurred, in that, increasingly what Kangan Institute are delivering is training at the workplace, so for most of our big clients we actually go out on site.

### 10.3.1 Trades and Skills Centre: Broadmeadows

*"The new Trades and Skills Centre enables Kangan Institute to strengthen its course offerings to support Melbourne's growing northern corridor – particularly across the plumbing trade which is experiencing a national skills shortage."*

Plumbing training will be offered for the first time at Broadmeadows at the new Kangan Institute's Trades and Skills Centre.

*"The facility can accommodate 3,500 students each year and provides the facilities for Kangan Institute's trades students as well as 300 new plumbing students, who can now complete Certificate II, III and IV courses at the new centre. The centre incorporates a plumbing tower, that simulates plumbing and sewer systems to give students of different disciplines the chance to apply their skills in a real-life situation, and a supersized sandpit for domestic and commercial drainage and pipework training. There are also refurbished learning spaces, new workshop spaces and classrooms, pneumatics and hydraulics facilities and specialist gas equipment fitting training room."*

### 10.3.2 Kangan Institute and COVID

Short term impacts of COVID include that Kangan Institute very quickly made the move to accommodate learning that was not on campus. This probably brought forward by about three years the introduction of a more blended and online learning methodology. In doing so this process uncovered some opportunities to understand the impact of these changes. While we were able to get online learning into a state where it was usable, we identified it was not necessarily the kind of training that you want to keep providing for long periods of time and that the demand from staff and students is for a more blended form of learning. So the longer term impact in relation to that was our teachers are now far more confident that they can handle these changes and they can more easily accommodate the mix of face-to-face and online and remote training.

The resources that Kangan Institute provide to staff, that is the technology, the setting and the content, these required changes which were fast tracked and that enabled Kangan Institute to effectively manage change. In terms of content development, the skills required to put digital content together are different. The other element to this is that, when it comes to producing content for online delivery, we did not have the facilities to produce really high quality online materials, such as sound rooms and decent video and editing facilities, which are required



for the extent of online production now needed because of the significant shift to online delivery. In some instances we were pretty well equipped in terms of practical training, such as having overhead cameras that are designed specifically for this purpose, so students can watch what the teacher is doing. From the teaching and learning perspective the delivery that people would expect in the way that our training is presented, not just the delivery of it, but also the content covered and the skills we are training people in, has had a bit of a kick start too.

We do not think anyone could have predicted the need for digital literacy across every organisation, while in the past digital was used more to do a special subject on computers and ICT, we can see that requirement increasingly bleeding into pretty much every other course that we deliver, while also providing an opportunity for Kangan Institute, this is a sector wide thing, to go back to the people we have trained and bring them up to a level of digital literacy that allows them to work in the environment they are now in.

Courses are taking longer than usual at the moment to complete. COVID has created a situation for training providers that is double the effort for quarter of the return. Partly this is caused social distancing requirements, so a class that should have had 30 students at a practical, now has just 15 students. There are also higher levels of non-attendance.

The bit that is less predictable, and we are still feeling the impact from, even from the first round of lockdowns, is a critical part of the training that we provide our students, many of whom are required to complete work placements. We have significant backlog of students who are either looking to finish their placements, so they can complete, or finish a placement so they can continue. As we are moving into a world of on-again-off-again, this is the unpredictable bit, as a sector generally, and as Kangan Institute, it is how we relate to industry generally in the future. We are going to need to come up with some different models of placements. The reliance on a 1970s model of placements is going to have to shift. Anything that impacts the economy and jobs in the economy is going to have a downstream impact on us.

Some of the early indications from people finishing school and what they are saying about their intent to study further, is that students in year 12 are saying there is no way that they are going on to study further, either in TAFE or university. They do not trust that the study is going to be face-to-face but instead will be mainly online and students are after a social experience, so depending on the cohort, potentially there is going to be a gap in the training pathway. There has been quite enough displacement as it is because of COVID and then we would expect further displacement in the battle for talent. The danger with these circumstances is that we are not going to have those students in the pipeline learning essential skills, because students are tired of the online option. As much as the digital and online space is part of the future, if that is

forced on people as the only way to learn, people react to that. There was already a big skills gap and now there is going to be an even greater one because of the disruption to the training pipeline.

### 10.3.3 Broadmeadows

Our major campus in the heart of Melbourne's North is Broadmeadows and Kangan Institute have a significant offering of courses there. The new Trades and Skills Centre at the campus is part of the government stimulus program so we are really doubling down on trades training, trades are huge. Young people finishing school are saying I am not going to sit in front of a screen anymore, I am going to do something and apprenticeships are very attractive to this cohort. This is likely to mean that Kangan Institute will not be able to meet the demand, even with the new facility. We can now offer plumbing as we have the right facilities

The move to everyone getting pets during the pandemic has also grown the demand for vet nursing and animal studies, so we have created and revised an area to develop a vet clinic, it is an operating vet clinic and also provides placement opportunities our students. These are examples of how a campus that was built and created in 1986 and how we have made tactical and logical changes to meet current demand. Kangan Institute have also secured \$60 million to build a Health Centre of Excellence and that will be delivered by 2025. Not far away in Essendon is the location for the Kangan Institute specialist health training facility.

The strongest offerings in Broadmeadows, delivered by Kangan Institute, are currently trades courses and what we call foundation studies. So the courses that are in the greatest demand are a mix of trades and foundation studies, so carpentry, spoken and written English, auto electrician, electrician, construction, waterproofing and concreting courses are among the most sought after. The big gap and big opportunity for which we are building the \$60 million building and campus extension is for healthcare and community care. That is the big gap in the north at the vocational level, in particular serving the need for health community age disability care. There will be an evolution of occupations, for example trades are more likely to overlap into areas which support advanced manufacturing, adding to the more traditional trades such as plumbing.

### 10.3.4 Cremorne

The Kangan Institute campus in Cremorne is smack bang in the middle of the digital sector, historically it was engineering, then a move to fashion. Increasingly we are seeing creative skill sets and moving very quickly into digital skill sets that are reflecting the environment that

the campus is in. The way we are designing, especially the digital offerings there, is such that they can very easily be dragged and dropped onto other campuses. So we have been having discussions with NORTH Link over a long time, regarding how we can bring some of those foundation digital skill sets into the north. Kangan Institute have a close relationship with La Trobe University, so whenever we develop collectively in Cremorne, at the epicentre of this digital world, we will take to Bendigo and to Broadmeadows.

### 10.3.5 Addressing disadvantage

We have had to expand our offering in Craigieburn connected with the spoken and written English. The drivers for this were when the Federal Government reduced the caps for migrants and did not limit that at all, and this is probably one of the missed stories with a silver lining, in that the people who came and perhaps did not complete their original English course because they were trying to make a life, find a house or get a job, were able to come back and complete. Now there has been no limit for them to really perfect and develop the foundation skills and that has been a great catch up. There has been huge demand, someone once told me we teach more people English at Broadmeadows than any other place in the state, removing that cap has allowed people to catch up and really develop those skills.

Disadvantage has been highlighted in the COVID period, those people who were disproportionately impacted by COVID, young people and women migrants were particularly vulnerable. What Kangan Institute witnessed was the digital divide. The have and have not students. We saw how many did not have Internet and how many did not have a computer of their own. Kangan Institute had to provide computers, we felt it was our duty to not disadvantage people, so we sent out laptops and dongles to enable people to stay in the program they were studying. The computers were provided free of charge on the basis that students gave them back at the end of the course.

There is a language and confidence disadvantage and we find that a lot of the students who attend campus, especially new migrants, find this daunting. Firstly because of language and also because it is an institute. Some of our best advocates are exactly those students who come to the campus and realise this is actually a safe place. Attending to this issue of confidence on a one-on-one basis and relying on these students to tell others is good, but it would be very positive to find a bigger more global solution that would make this cohort of students feel far more comfortable. Campus is not a confronting environment and Kangan Institute provide a whole range of different services to help people settle in and find the right course for them.

Geographically Broadmeadows has been disproportionately disadvantaged by COVID, both from the initial outbreak and in the various waves that have occurred since. What does that mean for Kangan Institute as we support the community to recover? How Kangan Institute leapfrog and cut through and wrap ourselves around this community is our duty bound challenge as we come out of the pandemic. So as much as there is general list of things to be achieved, like responding to skills needs and industry, there is also a community to consider. A community that needs to be supported and developed and helped to build confidence in its people. The business case for why governments should be investing in Broadmeadows is compelling and that is occurring on the campus.

### 10.3.6 Integration

We should not look at the TAFE sector in isolation, but as very much part of the education sector. This applies especially in the north where we can integrate ourselves backwards into secondary schools with initiatives like the modern tech school, which are a perfect link between secondary school or whether it is vocational or higher education, at the post school end a more elegant integration between higher education and vocational education is required. We are finding the movement of students both ways between TAFE and university is actually quite surprising. For long time people believed that TAFE was a pathway to an apprenticeship. There are a lot of instances now where people complete a degree at university and then move across to TAFE. It is about the continuum of education especially for people who need to re-enter training and do so multiple times throughout their career. It helps Kangan Institute to be seen as part of the continuum rather than just an option.

### 10.3.7 Models of development

*"World-class vehicle and engine testing facilities, new workshop spaces and a purpose-built auto electrical lab, this facility is one of the best pathways into the automotive industry."*

Kangan Institute has the Automotive Centre in Docklands and that is a centre of excellence and the institute also runs automotive courses in Bendigo, the Automotive Centre serves national key clients. The Automotive Centre that was built in Docklands was originally built to service those major companies that were manufacturing cars in Melbourne and is probably one of the earliest examples of a TAFE pivoting its offerings at a large scale. The Automotive Centre has been completely retooled to train those people who work on the cars that are produced elsewhere in the world. Anything you can think of around a car or a truck that involves human intervention can have a

training course developed for it. The Automotive Centre is training people. The training extends beyond cars up the line to trucks and down the line to the smallest engine, a whipper snipper. The focus now is the evolution of hybrid vehicles and that extends from standard hybrid cars to driverless electric vehicles, we can see the use of electric cars really gathering pace. We are putting courses on for servicing electric vehicles, including simple things like safely disconnecting the battery, because these are obviously powerful and dangerous batteries.

The Automotive Centre is great example of how Kangan Institute's offerings have evolved as the industry and technology has evolved. This transition was possible because Kangan Institute has strong ties to industry, the industry associations and really strong connections with most of the big car brands, with whom we co-deliver training, both onsite and offsite.

The advantages of having relationships with the car companies include, for example, BMW supplied seven of their most recent cars onto the campus and Renault have just replaced all their cars on the campus. It is in the interest of the car companies to have people trained to service their vehicles and do that well. Kangan Institute employs technical trainers who not only train apprentices but they go back on site and train the experience workers in the evolution of the technology. What Kangan Institute have been able to demonstrate to some of the big car companies is that it makes sense for the TAFE to manage those technical trainers because we can consult for an industry, rather than each car company trying to train up and keep their own technical trainers.

Kangan Institute are exporting our auto skills to India and staff have visited India and they are now taking our auto centre of excellence model and replicating that in India and that all happened through COVID. We are now training their trainers.

Recently for China we have done something similar for marine technology, so outboard engines for inland watercraft which represents a large proportion of Chinese domestic boats. Kangan Institute helped develop the course. Kangan Institute helped set the guidelines around what sort of equipment the Chinese institute needed to buy and helped to facilitate partnerships and to train their teachers. There is now a second cohort of students and we do some elements of delivery remotely, but we prefer to have our teachers there to do it, based on the feedback from that institute that that model is working quite well.

### 10.3.8 Future skills

Kangan Institute are engaging with the tech giants at the moment with a pilot for traineeships and part of the process has been workshopping with these companies to find out which core skills they are looking for. You would expect these skills to be in data science and coding and so

on, however, the top two skills they appear to be seeking are communication and problem solving skills. This demand is at the entry level, especially in the technology sector.

We are finding that in the heavier blue collar areas within manufacturing in particular, the need is for frontline leadership skills. So if a person goes to TAFE and then does a great job on the factory floor and gets promoted to supervisor, that person is suddenly confronted with a completely different set of challenges. Kangan Institute are launching a program called Mates to Managers, which is focusing specifically on blue collar workers and helping those first time supervisors gain the skills they need. Testing the market has revealed what is probably the biggest skill gap in manufacturing organisations, which are the supervisory leadership skills.

We need information that gives us an insight into the jobs in demand and the elements that have a training requirement in those jobs in order to understand what Kangan Institute should be building into the courses for the future. In particular in the north, for the Health and Community Centre Building, which is at stage one of three stages, and by the time we get to stage three, we are addressing a workforce that is currently in junior school.

### 10.3.9 Structural issues

There is a more settled environment now for TAFEs but it is not perfect yet. Private RTOs are still far nimbler than we are. They have more freedoms around how they recruit an employee and they also have an advantage that comes from specialisation, so the hardest RTOs for us to compete with are the ones that have a single focus. The brand of TAFE is recognised for its consistency of delivery, but the situation is still precarious from a financial perspective. Over the COVID period we have definitely benefited from being connected with government helping us to get through some of the harder patches over the last couple of years, which would have been very difficult for some of the RTOs.

We are just starting to see the results of the Macklin review of TAFE, and there is also the Firth Review of VCE and VCAL and further reviews at Federal level. It is the perfect storm for reforming TAFE at the moment. Outcomes include, forming the Victorian Skills Authority and the Higher Education Skills Group which facilitates participation and achievement in senior secondary and tertiary education and training by supporting partnerships between providers, employers and the community, advising on public funding as well as regulation. The Higher Education Skills Group manages the Government-funded training market, public provider governance and accountability, and the apprenticeship system. The outcome of which is likely to be strengthening and growing public TAFE. We believe that the government recognises

the public TAFE offering is incredibly significant and important and we want the TAFEs to operate as a network as opposed to the 12 competitive entities.

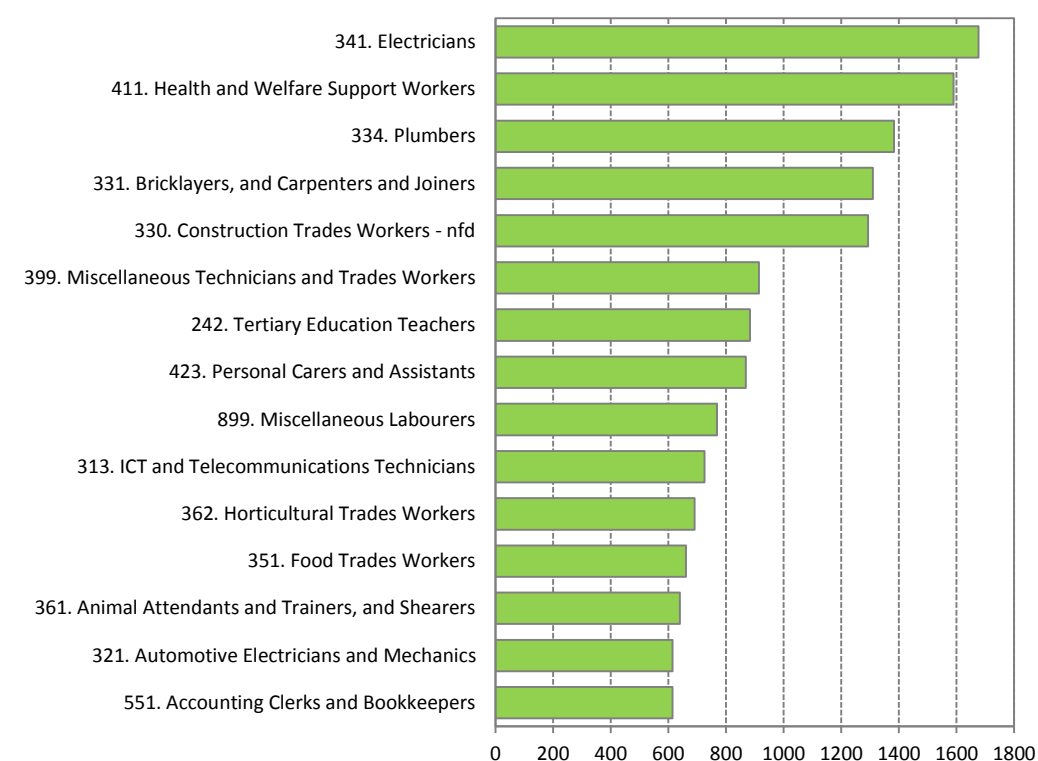
So the changes represent a flip to a coordinated network and sharing of resources, which ought to be a far better solution. We think the public would be horrified to understand that under the old system, Kangan Institute would have paid to develop a curriculum in plumbing for example, and each of the other TAFEs in Victoria might have been doing the same thing, so duplication, possibly twelve times over, all of which had to be paid for. Queensland TAFE is one organisation covering the whole state and they are innovating and are now the sector leaders having got their house in order. They are able to be really responsive. For these reforms to be happening at the same time as COVID, in some ways that positions you to be ready for change and to be on your toes. We are all on our toes, and just not missing the moment and to contribute and lead through the change is really important for us.

Everyone appears to have agreed that the pricing is not right for public TAFE because of all those other wrap-around services and other things that public TAFE offer.

We think the government will come up with a new funding model for public TAFE. There is another element to the funding, and that is, it is relatively straightforward for Kangan Institute to create a new course, but it is very hard for us to exit a particular course. So we find ourselves in the typical scenario for this sector where 80 per cent of our margin comes from 20 per cent of our courses, and where 50 per cent of our margin comes from just 5 per cent of our courses.

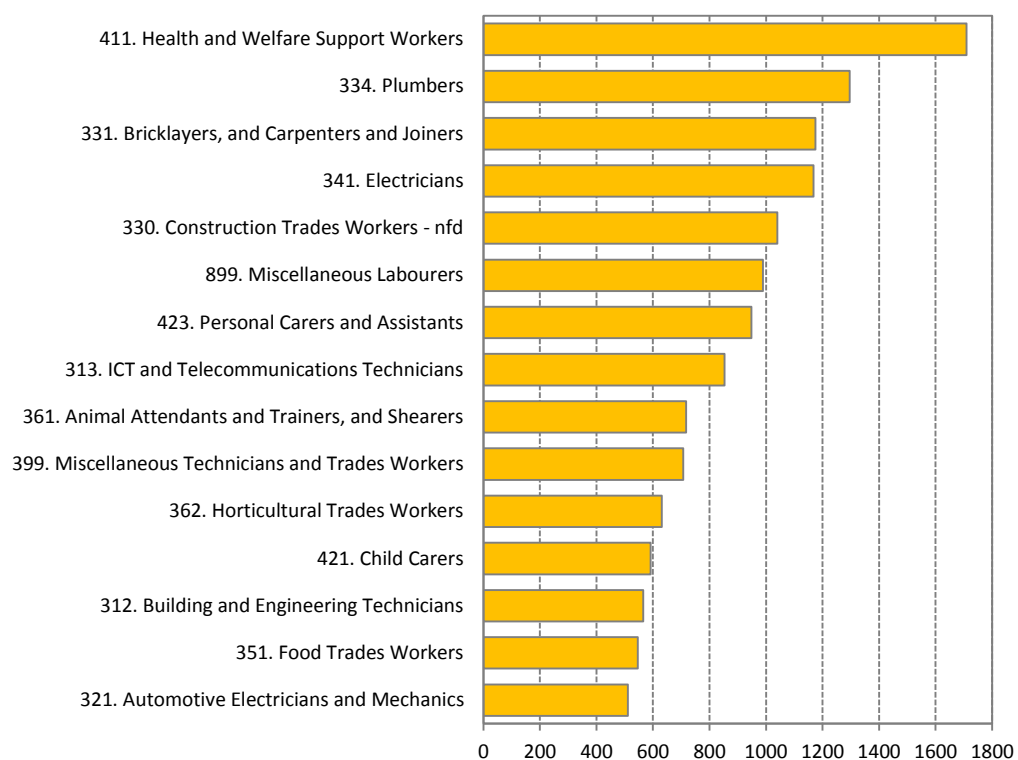
Even with changes to funding at the student contact level just the number of students in a course can mean that it is still not viable because it is not possible to increase the funding enough to compensate for low demand courses. It is almost a pincer movement of allowing us to consolidate more quickly to what is important and ensuring that we are compensated for delivery of what is important. There are low demand courses that are not important. The other extreme is where courses are important but have low demand and you might have five TAFEs delivering that course and competing for those students. Hopefully the new policies will help resolve this type of problem.

**Figure 10.2: Melbourne's North TAFE enrolments by program occupation, 2019**



*Note:* Enrolments summarised by student home address located within Melbourne's North.  
*Source:* NCVET.

**Figure 10.3: Melbourne's North TAFE enrolments by program occupation, 2020**



*Note:* Enrolments summarised by student home address located within Melbourne's North.  
*Source:* NCVER.

## Chapter 11: Pathways to employment: Networks, partners, MACs and NEICs

- To maximise employment outcomes, these activity clusters, and future clusters, should expect good quality public transport services.
- An inescapable conclusion is that the Victorian Government and Melbourne's North needs to devote considerable effort to promoting the future development of its La Trobe NEIC.
- Development of strong activity centres that sit at a lower level is also important.
- In Australia, and typically so, outer urban areas of our cities are being left behind.
- A future Melbourne Food Hub, which could be developed on vacant state-owned land immediately to the east of the Market, is a major opportunity.
- Melbourne's North becomes the food hub with all the necessary services, research and education, that will enable future growth of the industry. That is the big picture play.
- Melbourne Airport has an enormous land bank, what is now occurring on this land is continuing development, but not necessarily development that relies on aviation, new developments include an advanced manufacturing operation. So for the region the airport land offers diversity, including diversity of jobs and skills.
- The risk for Melbourne is the consolidation of flights into Sydney, so fewer flights, higher prices and less choice for Melbourne passengers.
- Western Sydney International (Nancy-Bird Walton) Airport will not be subject to a curfew so that increases pressure further.
- Inevitably, given the scale and scope of the pandemic, COVID has highlighted the fragility of the Health and Community Services sector.
- A critical action is that the Health and Community Services sector in Melbourne's North, particularly in terms of major infrastructure developments, requires long term planning.
- For Health and Community Services, digital innovation remains essential in improving services as well as reducing costs.
- At the time of researching this report there was still uncertainty about the location in Melbourne's North of the new public hospital.
- Particularly in the case on the new Northern Hospital, planning is required in terms of workforce development.



## 11. Pathways to employment: Networks, partners, MACs and NEICs

The growth of employment in Melbourne's North is influenced by a variety of government policies, most obviously by Commonwealth macroeconomic policies but also by Commonwealth policies on the finance of services such as education, aged care and disability support and by Commonwealth regulation of telecommunications. Macroeconomic and trade policies, especially as they affect industries prominent in Melbourne's North, are discussed in Section 3 of this report. Commonwealth policies on service delivery are discussed briefly at the end of this chapter and the importance of telecommunications is emphasised when discussing industry prospects. The Victorian government influences employment growth through its administration of the major area services (chiefly school education, health and welfare services and justice services including police) and through its controls over infrastructure investment and its direct investments in roads and public transport. The State endeavours to coordinate public sector infrastructure investment with private sector location-specific investment through strategic plans, which are in part implemented through decisions on State investment and in part by incorporation into land-use planning administered primarily by local government.

Strategy planning assumes the general principle that landowners are free to use their properties as they wish, subject to restrictions imposed in the common interest. It also assumes that State infrastructure investments will be made in the common interest. Conflict can arise in that landowners benefit from increases in land value whereas there is a long-term common interest in minimising land values as a way of containing business and housing costs. Strategic planning can assist employment development in many ways, for example:

- by reserving land for long-term high-value use;
- by providing for the co-location of activities which benefit from proximity one to another; and
- by providing transport networks which complement long-term land use.

From the point of view of employment generation, it is important to ensure that the land requirements of economic-base industries are met. In Chapter 1 it was shown that the major industries which generate income for Melbourne's North through sales to customers located outside the region include manufacturing, logistics, tertiary education and high-order hospital services.

In manufacturing producers are independent businesses who own or lease premises. Though manufacturing

premises may be built as parts of industrial estates, once the estate is developed its management devolves to the individual businesses. Needless to say, manufacturing businesses vary in their locational requirements. Some are able to fit into ready-made accommodation and on this account can shift premises at low cost, while others commit to particular locations for decades at a time – this is particularly true when environmental rectification costs are a major disincentive to change of location. Some manufacturers put high value on proximity to customers, suppliers or to sources of intellectual capital; others are willing to trade proximity for the availability of large flat sites with reasonable road access, both for freight and employees, at reasonable cost. The art of strategy planning is to ensure that manufacturers are supported by the ready availability of all relevant types of premises and also of broad-acre sites.

By contrast, logistics, tertiary education and hospitals are dominated by major institutions which have built and continue to operate significant facilities. Each major institution attracts smaller, complementary businesses, sometimes to premises owned by the institution and sometimes to separate but nearby properties. In logistics, the major institutions are Melbourne Airport and the wholesale markets; in tertiary education La Trobe University (with the RMIT having a significant presence not far away) and in hospitals the group centred on the Austin in Heidelberg.

In *Plan Melbourne* the Victorian government has recognised the La Trobe Employment and Innovation Cluster (NEIC) as an activity centre of national significance. In addition to La Trobe University, this cluster includes the RMIT at Bundoora and the Heidelberg hospitals. Melbourne Airport is ranked as a Major Activity Centre but the wholesale market is not ranked, presumably because it is regarded as a specialised facility.

*Plan Melbourne* defines a Major Activity Centre as a higher-order centre which provides a diverse range of jobs, activities and housing for a regional catchment which is well served by public transport. In addition to the La Trobe NEIC and Melbourne Airport, Epping and Broadmeadows have been identified as Major Activity Centres within the Northern Region. Activity centres of this order are crucial to the efficient and equitable delivery of local-demand services including retail, visitor services and area services. They are also crucial to the attraction of centralised office-based services – activities which tend to gravitate to the Melbourne city centre but which can easily be performed in suburban centres if the required infrastructure and transport connections are available. COVIC experience

with decentralised working in these industries provides an immediate opportunity for their transfer, at least in part, from the city centre to suburban centres, with the Major Activity Centres likely to play a crucial role.

## 11.1 Clusters and access to employment nodes

Plan Melbourne (DTPLI 2014) and Plan Melbourne 2017-2050 (Victorian Government 2017) both included the concept of a future Melbourne containing a small number of high tech/knowledge-based economic clusters, which will provide increased opportunities for locating high productivity jobs throughout the urban area, with good access to the fast growing outer suburbs. There are now seven National Employment and Innovation Clusters, two of which are in the inner area (Parkville and Fishermans Bend), four in the middle suburbs (Monash, La Trobe, Dandenong and Sunshine), plus one in the outer suburbs (East Werribee). The Victorian Planning Authority is preparing development strategies for four of these NEICs, including La Trobe.

A number of specific Northern Region activity clusters are noted in Plan Melbourne 2017-2050, additional to La Trobe NEIC: University Hill (including RMIT Bundoora campuses), Melbourne Airport, Beveridge Interstate Freight Terminal, Northern Industrial Precinct, a number of Metropolitan Activity Centres (Broadmeadows, Epping, Cloverton – future), a number of **Major Activity Centres** that are places that provide a suburban focal point for services, employment, housing, public transport and social interaction. Plan Melbourne identifies 121 existing and future Major Activity Centres across Melbourne. The northern region Major Activity Centres are: Beveridge (future), Brunswick, Coburg, Craigieburn, Craigieburn Town Centre, Diamond Creek, Eltham, Gladstone Park, Glenroy, Greensborough, Heidelberg, Ivanhoe, Mernda, Mickleham (future), Northcote, Preston-High Street, Preston-Northland, Reservoir, Roxburgh Park, South Morang, Sunbury, Sunbury South (future), Wallan (future), Wollert (future).

To maximise employment outcomes, these activity clusters, and future clusters, should expect good quality public transport services, both radial (mainly rail) and circumferential (mainly bus-based in outer suburbs, tram in inner suburbs and tram or bus in middle suburbs).

The Northern Horizons Report stressed the importance of the Heidelberg/La Trobe University precincts functioning efficiently, that is, if the Northern Region's residents are to share more equitably in the benefits of Melbourne's future economic development and that public transport accessibility was critical as a means of supporting the effective density on which high-tech/knowledge-based clusters depend. Given the expected importance of growth

in high-tech/knowledge-based activities for Melbourne's future prosperity, an inescapable conclusion is that the Victorian Government and Melbourne's north needs to devote considerable effort to promoting the future development of its La Trobe NEIC, encompassing the Heidelberg and La Trobe components plus Northland and Heidelberg West employment areas, as the only current major activity cluster within the Northern Region. Development of strong activity centres that sit at a lower level is also important.

Infrastructure Australia highlights the general scale of the improvement task that is needed, particularly for Melbourne, including its north. The report undertakes comparative analysis of public transport service levels across Australian mainland capital cities, looking at service coverage and frequency as its indicators of service standard. A key finding is that outer urban areas of our cities are being left behind. The report finds that public transport disadvantage in outer suburbs is significant. Access to public transport services and service frequencies are lower, while travel times and distances to major employment centres are longer in outer suburbs.

The comparative analysis shows Melbourne's urban public transport service levels in poor light, particularly in outer areas (loosely defined as areas that are >20 kilometres from the CBD). Infrastructure Australia finds that about 1.4 million people in Melbourne's outer suburbs are not within walking distance of reasonable quality public transport, comprising a high 62 per cent of the resident population of these areas. This large Melbourne resident population without access to reasonable quality public transport is 400,000 more than in each of Sydney and Brisbane, which ranked equal second worst in terms of outer urban walkable access to reasonable quality public transport services. Reasonable quality public transport is defined as a medium- to high-frequency service (four or more services during weekday AM) peak within 800 metres for heavy rail stations and 400 metres for all other services.

Trends for Melbourne's North without the significant infrastructure investments recommended in the *Northern Horizons* report are lower GRP growth than for Melbourne metro and, because of a higher rate of population growth than for Melbourne metro as a whole, this means a growing gap between the size of the resident workforce and the actual jobs available in Melbourne's North, which is what is occurring. This is because of a slower rate of growth in industry employment in Melbourne's North than is the case for Melbourne metro as a whole.

NIEIR research finds that the Melbourne's North economy would benefit from the development of a hi-tech industry cluster to the north of the La Trobe campus and its knowledge economy developments. A possible location for such a hi-tech cluster would be in Whittlesea, particularly as it has a growing number of high skilled households.



## 11.2 La Trobe National employment and innovation cluster

Given that Melbourne's North fares relatively poorly in terms of the regional presence of major activity clusters and given the expected importance of growth in knowledge-based/high-tech activities for Melbourne's North future prosperity, an inescapable conclusion is that Melbourne's North needs to devote considerable effort to promoting the future development of its La Trobe NEIC, encompassing the Heidelberg and La Trobe components as well as the Northland and Heidelberg West employment area, as the only current major cluster within the Northern Region.

La Trobe University is the anchor tenant of the La Trobe National Employment and Innovation Cluster (NEIC) and the single largest employer in Melbourne's north. At 235 hectares, it is **the largest university campus in Australia**. Pre COVID La Trobe University had about 28,000 students per year at its Bundoora campus (9,000 international) and employed over 3,000 staff across its campuses, spending around \$70 million per annum on research. La Trobe University's '*University City of the Future*' vision will fundamentally change the Bundoora campus. This change will create many opportunities for Melbourne's North. This La Trobe University development will provide a new hub for Melbourne's North and its NEIC, with accommodation, retail space, health services. Improved transport connections will be critical to realisation. The vision fulfilled will mean investment of \$5 billion in capital

expenditure and this investment is a significant economic generator in its own right.

Ensuring the transition to a knowledge economy will provide the jobs of tomorrow and will provide better and stronger services to our local and wider Victorian economy. La Trobe University is co-locating industry on campus to inform both teaching and research to create a strong innovation framework and culture. This approach goes beyond knowledge transfer and is being integrated with learning, teaching, employability and research to become a community asset and flagship for University engagement and the productive growth of the northern Melbourne economy.

If the RMIT Bundoora is included, the La Trobe NEIC measures nearly ten kilometres from south to north. Even if the RMIT is excluded the cluster measures five kilometres south to north, with Northland two kilometres west of the direct line from Heidelberg to La Trobe. Though there are bus services, internal transport within the cluster is largely by car, for many trips involving the use of large car parks. The internal coherence of the cluster is thus in doubt. There are plans for improvements to the internal public transport in the cluster, though proposed underground railway, with a single station in Heidelberg and one at the university, will not be much help since for most intra-cluster trips station-access times will be substantial. What seems to be required is a frequent on-surface public transport service, on right-of-way guaranteed immune from traffic congestion, connecting Heidelberg station, the hospitals, Northlands and the different parts of La Trobe University. This would perform a similar task to the CBD tram route from St Kilda Rd to Melbourne University, or the Bourke St route from Docklands to St Vincent's Hospital.



Not only is there a need to provide the physical infrastructure for the development of the cluster. There will also be important to develop complementary social and business networks. As was said at one of the roundtables:

*“There is an ongoing role for NORTH Link to link up supply chains in Melbourne’s North to bring together our health sector with local advanced manufacturers to make bespoke equipment for medical needs and to encourage medical research in this area in conjunction with the universities.”*

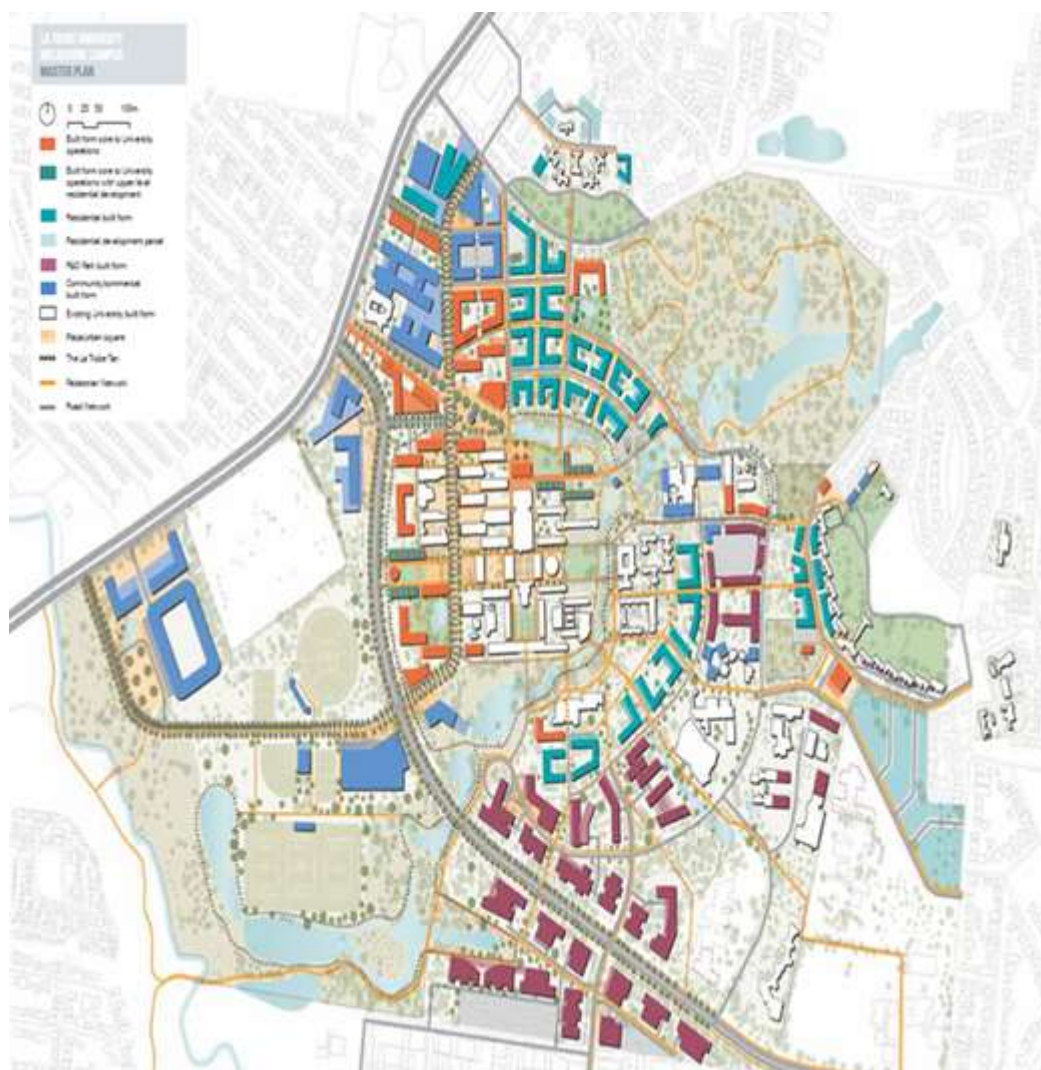
The health cluster at Heidelberg includes the significantly important Austin Health, comprising the Austin Hospital, Heidelberg Repatriation Hospital, Royal Talbot Rehabilitation Centre and the Olivia Newton-John Cancer Wellness & Research Centre. Specialisation and innovation in health, centre around cancer, infectious diseases, obesity, sleep medicine, intensive care medicine, neurology, endocrinology, mental health and rehabilitation.

The Mercy Hospital for Women, located at Heidelberg, is a renowned public hospital providing services, which include maternity, neonatology and paediatrics, perioperative, gynaecology and other women’s health services.

The cluster is the largest Victorian trainer of specialist physicians and surgeons and provides state-wide services covering a range of specialities including the Victorian Spinal Cord Service and the Acquired Brain Injury Unit. Austin LifeSciences partners with La Trobe University, Melbourne University, the Mercy Hospital for Women and other research institutes, bringing together 1,000 researchers.

If its internal coherence can be assured, the La Trobe NEIC promises to become greater than the sum of its parts. Its role in Melbourne’s North will be further enhanced if, as planned, public transport, connecting it with suburbs to its north-west and to its south-east can be substantially improved.

**Figure 11.1: La Trobe University Melbourne Campus – Master Plan**



Source: NORTH Link, Northern Horizons 2020, Evidence Report.

## 11.3 The Melbourne Wholesale Fruit, Vegetable and Flower Market

The Melbourne Wholesale Fruit, Vegetable and Flower Market relocated to Epping in Melbourne's North in August 2015. The original Melbourne Wholesale Market was opened in 1969. More than 5,000 businesses use the Market as a base, buying and selling fresh produce in the early hours of the morning for distribution across Victoria and Australia.

The 70-hectare Epping site has more than 120,000 square metres of warehousing space. Importantly, a separate but adjoining 60-hectare site means that there is space to develop a 21<sup>st</sup> Century food cluster adjacent to the Melbourne Market, a huge opportunity to enhance a key regional competitive strength.

The Melbourne Market Authority (MMA) is landlord for the Melbourne Market at Epping. Estimated annual turnover of product through the market is \$2 billion, with over 3,000 vehicles accessing the site annually. The food and beverage industry has been identified as a distinctive regional competitive strength of the Northern Region. Market relocation from West Melbourne was a contentious issue for some but the MMA notes that well over half the product coming into the site comes from further north, the Epping location reducing traffic flows through the city. This, the business opportunities provided by a much larger site and room for growth, together with the nearby freeway network are important location considerations, among others.

The Market Authority is actively pursuing strengthening of the region's competitive strengths in food/beverages, recognising that this will benefit not only the Northern Region but also Victoria and Australia more broadly, partly because of the opportunities to promote synergies in the sector, which will help drive export growth opportunities. In this regard, the Authority's proposal for a future Melbourne Food Hub, which could be developed on vacant state-owned land immediately to the east of the Market, is a major opportunity.

Six Guiding Principles have been established for this initiative:

1. complement the market;
2. facilitate food and beverage industry cluster;
3. create value with a commercial incubator;
4. establish integrated education, research and business development supporting infrastructure;
5. invest in enabling infrastructure; and
6. adopt a co-ordinated development approach.

One of Melbourne's North core strengths is food process manufacturing production, the Melbourne's North Food Group and NORTH Link. From the big picture point of view it is the development of the land next door which is earmarked to become Melbourne's Food and Innovation Export Hub which is still going through government business case development approvals etc. The development of land with the innovation centre attached to create an environment for food processing manufacturing and export innovation does not cut across what the universities in Melbourne's North are doing which is more directed at the farm and innovations there but complements these research activities.

So Melbourne's North becomes the food hub with all the necessary services, research and education that will enable future growth of the industry. That is the big picture play. Investing in these ideas and speeding up the development is going to help economic recovery from COVID.

The Victorian Government should fast track pursuit of this initiative, under MMA leadership. A focus on developing the food cluster is now required to get this important initiative underway and explore if there is an opportunity for the Melbourne Market and the Melbourne's North Food Group to jointly promote the cluster to attract food and beverage sector companies and related businesses and organisations to the site. Funding could be sought from the Victorian Government to progress the development work of attracting firms.

### 11.3.1 COVID and the markets

During the COVID period the markets have continued to operate, not quite as before, and without too many problems. There are exceptions, if a business is based around restaurants and for example selling micro herbs to upmarket restaurants in Melbourne, then that business would have been impacted in a significant way. If a business was selling to suppliers of cafes, restaurants and the events industry that would also be hit hard by COVID. However if a business was supplying greengrocers, certainly up until the latest lockdowns, sales would have been very good. So the situation has impacted different kinds of businesses in different ways. The market community is entrepreneurial and businesses at the markets have where possible adapted and changed what they do and changed to find new ways of making money around their skills sets.

The flower market is almost at capacity in terms of stands. There are more potted plants, for example, that are being sold through the flower market now, than when there were previously so there is a broader range of what they are now selling. People in the industry have found a way to survive and adapt. The events industry was a very large customer and businesses supplying the events industry have had to adapt to survive. Market personnel get



feedback that the people who worked in the events industry are now doing other things and wonder if the knowledge and IP will survive. It will certainly be harder to bring it all back again and that will continue to impact the suppliers.

The expression of interest for additional warehousing space which the market put out in 2020 was over-subscribed, so the industry is hoping to expand. Not all these hopes will be realised, but expectations are reasonably buoyant. The hard part has been the recent series of lockdowns, going in and out of lockdowns has been disruptive, the absolute level of uncertainty about what is happening tomorrow so how am I supposed to plan. This has hurt the industry. During this period of lockdowns wholesalers have had returns from green grocers and restaurants that have all returned product because they could not sell it.

The market now has an online trading platform that has had some take-up and that will evolve over time. There is a lot more pre-ordering done when compared to 18 months ago, so less walking around eyeballing produce. The supply chains are more integrated now. Pre COVID around 10 per cent of all transactions were done using some form of web-based software, we estimate this is now around 20 per cent. While it has doubled that is off a very low base but is more pre-ordering and more acceptance of this is where it is going to go moving forward. The industry cannot be regarded as early adopters of technology. The

growing trend towards online trading type arrangements will not eliminate the need for the wholesale markets but the role of the people here will change slowly but online trading is inevitable in some way, shape or form. So the market can become more focussed on logistics and moving product more efficiently. COVID has accelerated this process to a small degree.

### 11.3.2 Training

The market has been working with Melbourne Polytechnic to put together a certificate 2 and 3 in green grocery which touches on a lot of the work that the wholesalers and the retailers do and has been promoting these courses through the industry.

In an industry composed of small self-employed businesses succession is becoming an important issue, since not all of its children wish to follow their parents. There is a need for a new generation to build careers in the industry, based on a sophisticated understanding of how it operates, particularly its logistic requirements. The market, TAFE and industry representatives are coming together to upskill employment and professionalise the industry.

**(Note:** NIEIR wishes to express its gratitude to the Melbourne Market Authority for providing the photographs in this section.)



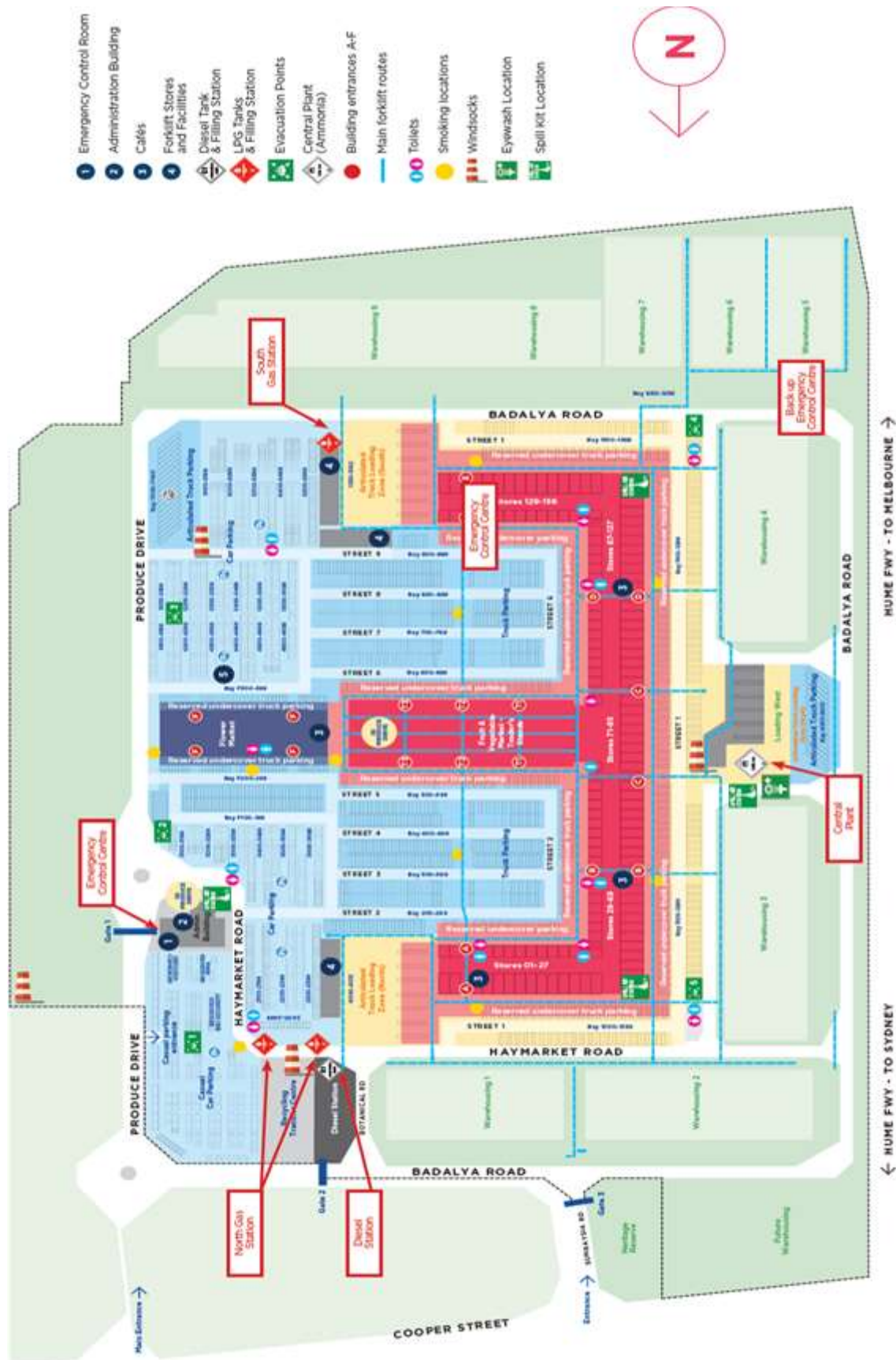








Figure 11.2: Melbourne Wholesale Markets



Source: NORTH Link.



## 11.4 The Melbourne Airport cluster

Employment growth in the region and beyond has benefitted from Melbourne Airport's curfew free designation and it remains extremely important that Melbourne Airport continues to grow without the restrictions of a curfew. In the plans adopted in the 1950s, flight paths were protected, mainly by green wedges, thus providing an important competitive advantage over other major airports and contributing to the significant growth achieved over the past 60 years. It is important that any developments under the flight paths (including the flight paths for future runways) should not endanger the curfew-free status of the airport. Effectively this means that the flight paths are unavailable for residential development but may be suitable for logistics and other commercial development.

Melbourne Airport has an enormous land bank and development has included logistic warehouses and industry aligned with aviation. What is now occurring is continuing development, but not necessarily development that relies solely on aviation, new developments include the site for an advanced manufacturing operation. So for the region the airport land offers diversity, including diversity of jobs and skills.

COVID has been devastating for global aviation, in round figures Melbourne Airport would normally process 100,000 passengers each day. During the various phases of COVID, there have been months at a time, when the airport has had 1,000 or 2,000 passengers a day, so a 98 per cent downturn in traffic volume. There were brief windows where domestic flights were operational and in those periods those periods domestic travel rebounded quite strongly. This occurred before the really high numbers of infections in the later waves and before vaccines had reached high numbers of the population.

*"In November 2021, Melbourne – Sydney was Australia's busiest public transport route with 241,300 passengers, followed by Brisbane – Cairns with 87,900 passengers and Ballina – Sydney with 58,200 passengers. Brisbane was Australia's busiest domestic airport with 501,400 passenger movements in November 2021, followed by Sydney with 410,400 passenger movements and Melbourne with 335,400 passenger movements."*

Australian Government

Revenues for the airport are largely composed of a per passenger fee so COVID has had a major impact on airport revenues. Arriving flights, both international and domestic, during much of the COVID period, had fewer passengers but the fixed costs remain in servicing those aircraft.

The structure of the airport community is important, the management company of the airport employs about 350 people, who run the airport services through a number of major contracts, including facilities management, cleaning and security. On airport there would normally be about 20,000 workers, so this is how the airport community is structured. There is also a significant community of partners across the airport and they include the airlines, car rental operators and Skybus. While these are all individual businesses, they were also impacted by COVID.

Why this structure is important is that almost all of the businesses at the airport have taken a significant hit from COVID and this had job impacts ranging from, as a last resort, redundancies, and various stand downs of the contract based workforce. The industry will ramp back up and those jobs will have to be filled again, there is a challenge here as some of those workers will have left the industry in search of more secure work. Some of those contract jobs might be harder than others to fill, as some of the occupations require specific training and accreditation. This situation is both very challenging for the people involved and also a real challenge for the airport. Security in aviation is a very skilled occupation and it is also about understanding emerging threats and adjusting security methods, including screening to be able to deal with those threats. It is also very challenging for the airlines to have their pilots up and ready to resume flying. Also to continue to maintain their training schedule to maintain skills, and that scenario is not confined to Australia but is a global issue. Training at the airport is conducted through partnership models with sector experts, so engineering expertise at the RMIT, economics at Victoria University and aviation with Swinburne are examples.

It is likely that post COVID, the domestic space will be fairly well served, but for the international airlines the story might be different, fewer and perhaps smaller airlines using smaller aircraft, so it is likely there is going to be less capacity over the next few years. The risk for Melbourne is the consolidation of flights into Sydney, so fewer flights, higher prices and less choice for Melbourne passengers and that could have significant implications to the broader economy if this is what eventually happens. Western Sydney International (Nancy-Bird Walton) Airport will not be subject to a curfew so that increases pressure further. Once the main impact of the pandemic is over, we are going to have to fight for our share of the aviation market.

### Western Sydney International (Nancy-Bird Walton) Airport

*“Construction of Western Sydney International (Nancy-Bird Walton) Airport is underway and on track to begin operations in 2026. The airport is a transformational infrastructure project that will generate economic activity, provide employment opportunities closer to home for people in the Western Sydney region, and meet Sydney's growing aviation needs. The Australian Government is investing up to \$5.3 billion in equity to deliver the airport through a government-owned company, ‘Western Sydney Airport’.*

*The airport will be a full service airport **operating curfew free**, delivering international, domestic and freight services. Thousands of jobs and opportunities for local businesses will be created. The airport is expected to support almost 28,000 direct and indirect jobs by 2031, five years after the airport opens.*

*An innovative partnership with **TAFE NSW** will provide **first-class training opportunities for the construction workers** building Western Sydney International (Nancy-Bird Walton) Airport.”*

**Figure 11.3: Melbourne Airport with third runway**



Source: Melbourne Airport Master Plan 2018, Preliminary Draft.

## 11.5 The role of major activity centres

The major activity centres in Melbourne's North are important in their own right as major employment nodes and also as centres which support the more dispersed economic base industries of the region. Infrastructure and planning support for the major activity centres is one of the means by which governments, particularly the state government but also local government, can underwrite the growth of high-value employment. Other means include creating attractive and affordable residential environments, balancing residential areas and employment opportunities to ensure that they journey to work is not excessively demanding, and forming a supportive business climate, including (as the main subject of this report) local supply of appropriate skilled labour. Strategic planning in the broad sense is accordingly a major government responsibility and applies broadly across all the region's industries, both its economic base and the various service industries.

## 11.6 Area services

Governments have additional responsibilities in the area services, particularly education, health and community services, since they are mainly responsible for financing employment in these industries. This employment may be in public sector undertakings, or in businesses contracting to the public sector, or in non-profit and other organisations dependent on government grants and tax concessions. Levels of service provision, and hence not only levels of employment but wages and conditions, reflect the perennial tussle between demands for services and resistance to taxation. Proponents of low taxation argue that citizens should self-provide or buy commercially, while the advocates for service provision argue that many people are not in a position to self-provide and that reliance on commercial provision would under-provide, or provide inequitably, or unduly stress the capacity of families and neighbours to provide. The literature on public finance refers to these services as merit goods.

### 11.6.1 Responsibility for area services

In Australia, government responsibility for the area services is complicated by the fiscal imbalance between the Commonwealth and state and local governments. Standing back from the fiscal imbalance, the argument for Commonwealth responsibility for the main area services, including education, health and welfare, is that services should be equally available to all Australian citizens no

matter what state or municipality they live in, or what ethnic community they belong to. This argument leads to a one-size-fits-all approach, which is arguably appropriate for entitlements such as the Age Pension but less so for services which depend on interpersonal relationships. It is commonly argued that services which require personal interaction should be provided by small organisational units that allow the development of rapport, so that service becomes a transaction between friends. It is no accident that voluntary, non-profit agencies are active in the provision of area services and that many service providers have a religious or ethnic base. Reliance on small agencies for service provision has two dangers:

- well-organised social groups will gain and poorly-organised groups miss out; and
- service provision will favour old-established suburbs and fail to extend promptly to new areas.

The balance between centralised and dispersed administration has been struck differently in several area services. In Victoria the state government is responsible for justice services including police and does its best to distribute police personnel across the state according to the need for their services. Again, the state takes basic responsibility for school education and the education department has a reputation for enrolling and teaching children irrespective of their social group, and for advance planning to serve new suburbs. The state government is also responsible for health services. At the roundtables the health administration was criticised for dithering over the location of the new major hospital deemed necessary to meet the needs of the growing population of Northern Melbourne. As stated at one of the roundtables:

*"A new major public hospital is required in the short-term to address high demand in the outer north. Broadmeadows has been suggested as a potential location. A new hospital needs to be able to attract a qualified workforce. Attracting more private hospitals to the north may appeal to experienced staff. Private hospitals are also lacking in the north."*

A particular problem in Melbourne's North is that the residents are culturally and linguistically diverse (CALD). This limits their capacity to engage in the politics of service provision, and arguably leads to the under-provision of services, or to the provision of culturally inappropriate services. Similarly Melbourne's North faces the problems inherent in the extension of services into new suburbs where interpersonal networks are not yet fully formed.

During the post-war period many Victorian local governments undertook responsibility for community services, on the grounds that they best knew what local people needed and what local resources could be marshalled to meet those needs. There was always the councils would neglect locally-unpopular groups, though today's professionalised councils are arguably as diligent as



the state and Commonwealth governments in guaranteeing service coverage. The services are largely Commonwealth-funded according to all-Australia rules which do not give any particular role to local government, and which have lately tended to favour (or at least, not to disfavour) for-profit providers. Argument continues as to whether there should be specific local-government responsibilities and as to the relative treatment of for-profit and not-for-profit providers. One has only to look at the visitor services to know that for-profit providers can excel at the provision of services which require the development of interpersonal relationships, but distant bureaucrats are not generally in a position to distinguish these providers from those who provide services as an adjunct to land speculation.

The National Disability Insurance Scheme (NDIS) is a recent endeavour by the Commonwealth to address these issues. The Scheme involves assessment of disability, the award of a budget to each disabled person, the provision of an advocate to advise that person on how to use that budget to purchase services, and the availability of services to purchase. At its inauguration in 2020 the NDIS was applauded for its emphasis on empowering disabled people, but the inevitable problems have arisen.

- degree of disability is difficult to assess;
- budgets are restricted;
- advocates have been of varying competence and independence;
- desired services are not necessarily available at reasonable price; and
- the hazy boundary between the NDIS and related services, particularly aged care and mental health, creates gaps and confusions.

Similar problems arise in aged care, though without the interpolation of advocates between the Commonwealth and the service providers, but with additional financial complications concerning the extent to which service recipients should be expected to pay out of their accumulated assets.

To the extent that the deficiencies of community services are due to Commonwealth under-funding, the argument is essentially about national priorities. However there is much that regional administrations can do to ensure that they receive their fair share of national funds, and also to ensure that Commonwealth regulations are implemented within their region so as best to meet the needs of residents.

Across the area services as a whole it is important for those responsible for service delivery to keep up to date with government initiatives and to make sure that they have input to infrastructure planning.

## 11.6.2 Northern Health

In Melbourne's North the main responsibility for hospital services to the regional residents lies with Northern Health.

Inevitably, given the scale and scope of the pandemic, COVID has highlighted the fragility of the Health and Community Services sector. For Melbourne's North an increase in the depth and scope of services, given the rapid population growth, is significantly important. This requires a major training effort as well as providing employment opportunities for the residents of Melbourne's North across a range of occupations and specialisations. Education and training providers have stated that COVID has slowed the completion of some courses, particularly those courses requiring practical on-the-job training and this is likely to add to the difficulties these sectors face in the next two or three years.

*"We've always had systemic issues attracting GPs to outer suburban areas. Demand well exceeds supply and doctors are aware of this, so they charge top dollar to work in outer Melbourne locations. That causes significant sustainability issues."*

Most workers are employed as either Health Professionals or Carers and Aides. Many are also employed as Health and Support Workers, Inquiry Clerks or Receptionist or Legal, Social and Welfare Professionals with each occupation having between 2,000 and 3,000 workers each. Other occupations that make up the top 20 include administrators supporting the health professionals, and food workers.

*"There are two elements to training: new entrants and workforce upskilling. Most training and education providers focus on new entrants but there is a real need for upskilling."*

A critical action is that the Health and Community Services sector in Melbourne's North, particularly in terms of major infrastructure developments, requires long term planning, including that of land use. Not to do so increases costs and consequently slows outcomes.

*"It would be great to have a working group that included education and major health providers across the region and that could be managed by NORTH Link."*

*"The NDIS rollout overlaps with mental health and aged care. Because some services that previously came under health are now NDIS. DHHS is now a step away from these services and no longer has data nor a deep understanding of what is happening in that space."*

*“Articulation between TAFE and universities is an issue. Sometimes pathways from university to TAFE are what people need, for example for a health professional to pick up admin skills. It should be easier to move from one to the other.”*

Northern Health is the major provider of acute, maternity, sub-acute and specialist services in Melbourne’s rapidly growing outer north. Services are provided through four main campuses. These are the Northern Hospital Epping, Broadmeadows Hospital, Bundoora Centre and Craigieburn Centre and the catchment includes three of Victoria’s six growth areas, Hume, Whittlesea and Mitchell. The Northern Hospital operates one of the state’s busiest emergency departments, treating more than 100,000 patients each year, delivering an average of 120 emergency surgeries and receiving 450 ambulance arrivals per week.

The second stage of the Northern Hospital expansion includes three new operating theatres, including one hybrid theatre, adding 96 acute inpatient beds, a 28-bed pandemic ward, an 18-bed intensive care unit, and a 10-bed cardiac care unit. However, a second hospital in Melbourne’s North is required to serve the Hume corridor as current facilities at the existing hospital are at capacity. At the time of researching this report there was still uncertainty about the location of the new hospital.

Northern Health faces a number of challenges in opportunities in coming years. These include:

- continued high demand for services: Activity at Northern Health has grown considerably recently with 8 per cent per annum Emergency Department growth and 11 per cent inpatient admission growth. These trends are expected to continue;
- increasing patient acuity: Increasing patient acuity, combined with a range of other factors, is also driving increased patient complexity at Northern Health. Patients are presenting with a more complex and diverse range of health and psychosocial issues. Increasing patient complexity has been observed by Northern Health staff across acute, subacute and community settings. The impacts of this trend include patients needing longer consultation times, an increased number of referrals to other agencies, or additional support with coordinating their care. A multi-pronged approach will be needed to ensure ongoing responsiveness to this issue;
- progression of transition from generalist to specialist service provision: Northern Health has commenced a transition from a generalist (secondary-level) health service to a specialist service provider. As patient numbers have increased, so has the demand for subspecialty services, requiring Northern Health to develop a broader range of clinical specialties over time.

Northern Health will continue this transition in order to meet the service demands of our catchment;

- key infrastructure and patient flow considerations: the delivery of an additional 96 beds at the Northern Hospital will relieve some of the demand pressures across the Northern Health system. However, it is not expected that this additional infrastructure will provide a lasting improvement in self-sufficiency for the Northern Growth Corridor catchment;
- Northern Health will continue to work with the Department of Health and Human Services to explore capital and model of care options to increase available capacity over time; and
- exploring different ways of working and a focus on ‘staying well’: To ensure we can meet community demand, Northern Health will continue implementation of targeted initiatives to assist our patients to remain well at home; contributing to overall greater community wellness.

### 11.6.3 Labour demand in the health and community services

Inevitably, given the scale and scope of the pandemic, COVID has highlighted the fragility of the Health and Community Services sector. For Melbourne’s North an increase in the depth and scope of services, given the rapid population growth, is significantly important. This requires a major training effort as well as providing employment opportunities for the residents of Melbourne’s North across a range of occupations and specialisations. Education and training providers have stated that COVID has slowed the completion of some courses, particularly those courses requiring practical on-the-job training and this is likely to add to the difficulties these sectors face in the next two or three years.

Most workers are employed as either Health Professionals or Carers and Aides. Many are also employed as Health and Support Workers, Inquiry Clerks or Receptionist or Legal, Social and Welfare Professionals with each occupation having between 2,000 and 3,000 workers each. Other occupations that make up the top 20 include administrators supporting the health professionals, and food workers.

A critical action is that the Health and Community Services sector in Melbourne’s North, particularly in terms of major infrastructure developments, requires long term planning, including that of land use. Not to do so increases costs and consequently slows outcomes.

Roundtable participants suggested that it would be great to have a working group that included education and major health providers across the region and that could be managed by NORTH Link.

Infrastructure planning needs to be complemented by workforce planning. Representatives of the health authorities observed that they had always had systematic issues attracting GPs to outer suburban areas. Demand well exceeds supply and doctors are aware of this, so they charge top dollar to work in outer Melbourne locations. That causes significant sustainability issues.

Occupations in the health sector are highly stratified by qualification, which raises the question of the role of in-service training. In discussion it was suggested that there is a real need for upskilling and for skill augmentation. For example, professional people with health qualifications may benefit from training in administrative skills – probably better acquired at TAFE than at a university. It was suggested that it should be easier to move between the TAFE and university systems.

Digital innovation remains essential in improving services as well as reducing costs. Key factors driving cost increases include issues relating to workforce supply and issues surrounding job specifications (which may not be optimal across different occupations), the increasing costs of medical technologies and patient expectations, and the ageing population and consequent increase in chronic disease. Physical co-location with universities is important and needs to be leveraged where this is possible.

The research for NORTH Link's Northern Horizons report identified a range of infrastructure requirements and these are also an indicator of increasing workforce demand. Developments were identified for Community hospitals and Super Clinics for Whittlesea, Hume, Nillumbik; an

increase hospital beds in existing facilities for Whittlesea, Banyule; a major public hospital in outer north; increased mental health support across Melbourne's North and the expansion of aged care facilities in Melbourne's North.

Section 3 of this report identifies the number of health service jobs, by occupation, likely to be generated within the region over the next decade, on the assumption that there is sufficient infrastructure investment to maintain services at current standards.

#### **11.6.4 Key 2022 Federal Budget commitments for Melbourne's North**

Key 2022 Federal Budget commitments for Melbourne's North include:

- \$3.1 billion in new commitments to deliver the \$3.6 billion Melbourne Intermodal Terminal Package including \$1.2 billion for the Beveridge Interstate Freight Terminal in Beveridge;
- \$280 million for Road Connections, including Camerons Lane Interchange, to the Beveridge Interstate Freight Terminal; and
- \$109.5 million for the Mickleham Road Upgrade.

The funding package for the Beveridge Interstate Freight Terminal is a significant step in creating additional employment opportunities for residents in Mitchell and Whittlesea in particular.

## Chapter 12: Pathways to employment: Making things

- NORTH Link has established the Melbourne's North Advanced Manufacturing Group to assist all manufacturers across northern metropolitan Melbourne, supplemented by the Melbourne's North Food Group.
- Comparing the 2019 caravan production numbers to 2021, the local industry is looking at about a 30 per cent increase of built product.
- Predominantly employees in the caravan industry are placed based employees, they live locally.
- The caravan manufacturing sector have struggled to get enough workers, particularly so, given recent growth in sales.
- Caravan Industry Victoria are in partnership with NORTH Link and Jobs Victoria to help find workers in a labour market intervention.
- A long-term consequence for the advanced manufacturing sector from the loss of the automotive manufacturing industry, is the loss of access to new methods and technologies in automotive for the manufacturing sector as a whole through knowledge diffusion activities.
- Knowledge diffusion in the automotive sector now comes mainly from repair and maintenance activities using components manufactured in other countries.
- Energy innovations and the circular economy as a strong focus of business development and product design.
- Advanced manufacturing skills are required to drive Victorian Government priority industry sectors, so STEM skills are essential to the future economic prosperity of the region.
- Melbourne's North has the capacity to attract a greater cluster of food process manufacturing companies because it has all the key features required by this industry.
- The work undertaken by NORTH Link and Melbourne's North Food Group in pulling together various strands of this important sub-sector of the manufacturing industry points to opportunities in other industry sectors.
- The Northern Melbourne AgriFood Precinct, an alliance between La Trobe University, RMIT University and CSIRO that will bring together significant research and innovation capacity to benefit industry.
- Getting jobs to the outer regions of Melbourne's North becomes more pressing as housing developments continue to expand outwards.
- Successful regions market themselves, while no amount of skilful marketing can counter strong negative evidence of a region's general prospects.
- The construction sector has played an important role as an employer of young people, in particular allowing young people to choose a career in the region in which they grew up, and is also an increasingly important employer of young people as opportunities in manufacturing decline.
- Ongoing training across the construction supply chain in design, tools, materials and construction techniques is required to ensure the best possible outcome in providing energy efficiency for Melbourne's North new housing developments.
- Occupations involved in creating improved amenity, sustainability and lower costs for householders over time include; urban planners, architects, designers, engineers, horticulturalists, construction workers, energy specialists, administrator (including in local and state government) and the suppliers of construction materials.
- The work of the region's universities provides important clues about new and more efficient ways of construction, use of materials, reducing waste in construction activities and sustainability and the opportunities for commercialisation of research and future employment in the construction sector.
- The time has come to really get behind the implementation of the circular economy for the environmental and financial benefits the developing sectors brings to regions.

## 12. Pathways to employment: Making things

### 12.1 Caravan Industry Victoria

The caravan industry in Victoria has distinct sectors, these are manufacturing, service and repair, retail and sales and dealers in selling caravans, which also covers logistics. COVID has had an interesting impact on industry in that demand for new product and used product has gone off the scale. Comparing the 2019 caravan production numbers to 2021, the local industry is looking at about a 30 per cent increase of built product. The industry has not seen these types of numbers since the 1970s. The production numbers have been extraordinary, as of course have sales. The impact of COVID in growing our market has been the lack of international travel and people are looking for the Australian experience at the moment.

The product breakdown includes motorhomes, fifth wheelers, campervans, caravans, pop-tops, hybrid caravans, camper trailers and tent trailers. Very few customers switch over to other products so for example caravan owners stick to caravans. Imported caravans will get access to market and to the industry marketing only if they are compliant so Caravan Industry Victoria has helped to drive the quality requirements for imports to a higher standard. The vast majority of imported product in Australia is now not caravans, it is it is camper trailers, campers and hybrid caravans. In 2020 the caravan manufacturing industry made around 21,000 caravans and imported around 10,500 units. Local production is trending to 27,000 to 28,000 units and imports are also trending up to around 13,000 units.

Our forecasts for 2022 continue to show growth, and we see this continuing for at least another two years. The industry has grown each year in the decade prior to COVID and the pandemic has accelerated that growth. In 2021, customers were buying caravans off the Internet, sight unseen. This situation fuelled a large volume of sales which are still in the pipeline. One of our luxury dealers sold 18 caravans over the Internet in a two week period.

Against that background the caravan industry's service and repair companies also had a very strong year because people were travelling. The repair sector is however impacted by COVID related border closures. The retail and sales sector of the caravan industry is struggling to get product, so that has been an issue. Demand is higher than the capacity of the industry to produce caravans.

#### 12.1.1 Jobs and pathways in the caravan manufacturing industry

Predominantly employees in the caravan industry are place-based employees they live close to where the work is. So workers in the industry live through the northern suburbs into the west of Melbourne, so councils like Hume and Wyndham. The southeast is also an important region including Dandenong. Most employees live within a couple of suburbs or a suburb from where they work.

In 2018, Caravan Industry Victoria released a report called the Caravan Industry Jobs, Careers and Training Strategy, because we had identified what a significant issue the labour market would have on the industry in the longer term. The strategy was around what we called the jigsaw puzzle, so every piece of that puzzle had to be interdependent on something else, so since 2018 we have been looking at how we can do a couple of things. One of those we are currently undertaking in partnership with NORTH Link and that is almost a labour market intervention. The caravan manufacturing sector have struggled to get enough people, particularly so given recent growth in sales, and there are a number of reasons for that. Most of that issue sits around, even though we're a \$2.3 billion industry employing 7,500 people in full-time jobs, nobody knows about us. Not only is this lack of knowledge an issue for the young people coming through schools, but it is also generally a broad lack of understanding about the industry. Two things that we are doing right now; one is a major promotion of the industry, and the second is an intervention in the labour market. NORTH Link and Caravan Industry Victoria have received significant funding from the Victorian government to place 150 people into our industry over the next two years. This is a strategic approach to tackling each of the caravan sectors, so through the project we have recruited some long-term unemployed people, putting them through a getting ready for work program, a vocational program for the caravan industry and putting these individuals through work placements. This is a five week program aimed at caravan manufacturers who are the ones with the greatest need at the moment. Three to four intakes will take us to 60 people who could be employed by our manufacturers, so it is a real intervention into the market. Having a single focusing and single purpose in this way seems to be producing some very good results.



### 12.1.2 Occupations in caravan manufacturing

From an occupational perspective caravan assemblers or makers, the caravan assemblers and makers are made up of a couple of different categories, the first category are production line assemblers, then more specialised skills in machining so these employees are making the furniture. There are also electricians, welders and plumbers. These types of jobs are all in a mix of the shopfloor caravan workers. There are seven or eight different types of occupations in the hands on manufacturing of caravans. There are also designers, CAD drawing, engineers, HR, occupational health and safety, sales, office administration and logistics. In other words a broad range of occupations make up the manufacturing part of the industry. Our focus is production as we need to get caravans made and at the moment the majority of the caravan industry's job opportunities are in manufacturing.

### 12.1.3 Schools and training

We have a clear strategy about getting into schools and are reviewing all our national training qualifications and trying to make them a little less complicated. We are well down the path of designing a CERT 2 program that can be delivered in schools, which gives students a taster of different parts of our industry after which they can specialise off into other parts of the caravan manufacturing sector and other higher level qualifications. We are in the early stages of a big journey. In 2015 we opened up the first ever training division and we created the national caravan industry training college and this will become a legal entity and will drive all of these strategies and will become the centre for recreational vehicle training and will be based in Melbourne's North.

## 12.2 Advanced manufacturing

The trend for the manufacturing sector in Australia is towards advanced manufacturing, which is a knowledge intensive industry, and this includes relatively low run bespoke manufacturing. The structure of the industry is also changing with the blending of occupations and changes to the relationships with customers and supply chain companies. These changes include the blending of traditional processes of design, engineering, planning, manufacturing with marketing and distribution and ownership intellectual property rights. Research and development and intellectual property rights will become increasingly important.

A long-term consequence from the loss of the automotive manufacturing industry is the loss of access to new methods and technologies for the manufacturing sector as a whole through knowledge diffusion activities. The consequential hollowing out of supply chains will create more complexity in the process of gathering knowledge to develop new manufacturing opportunities. Knowledge diffusion in this sector now comes mainly from repair and maintenance activities using components manufactured in other countries.

*"To compete internationally Australia must close its innovation gap with competing nations. That means bring more research and development projects to market in this high-tech sector. This will require venture capital and close collaboration between industry and research organisations."*

Because advanced manufacturing is a knowledge intensive industry requiring research and development, advanced materials, advanced processes and excellence in design, these types of businesses are likely to be part of a sophisticated supply chain. The COVID pandemic has disrupted supply chains, and for some industries this will require repair of supply chains and many of these will be global in nature.

The knowledge chain for advanced manufacturing includes digital technology, bespoke engineering and design skills, skilled employees with both tacit and technical knowledge, global knowledge workers with distribution, marketing and sales skills, close relationships with the providers of education and training and a skilled management team.

*"We need highly skilled toolmakers, engineers, high level salespeople and engineering project managers. Most of these jobs would need university qualifications. We've put all our factory staff through Certificates III and IV in lean."*

Advanced manufacturing opportunities in Melbourne's North from leveraging manufacturing that already exists or financing new opportunities include:

- highly customised or bespoke product manufacturing and hence a low level of competition from international suppliers because of scale;
- strategically important manufactures where product manufactures should be retained in Australia because of the products importance and the new uncertainty in global supply chains; and
- high value products at greater scale where the IP rights reside with the manufacturer (although these manufactures may still be offshored).

*“Within the space of three months, from May to July, Softmed relocated from Broadmeadows to a larger warehouse premises in Campbellfield and rapidly transformed the empty space into a \$30 million state-of-the-art PPE manufacturing facility and testing laboratory. By the end of July, the first disposable surgical face masks were rolling off the factory’s medical-grade production lines.”*

Hume City

Scale can be really important as it drives the capacity to train employees and innovate.

Issues for the advanced manufacturing sector in Melbourne’s North include:

- access to sufficiently skilled workers (and over multiple shifts if that is required);
- access to specialist engineers to adapt and maintain equipment;
- knowledge links to training and smart finance providers;
- the significance and role of locally developed intellectual property in developing production processes and products; and
- energy innovations and the circular economy as a strong focus of business development and product design.

In manufacturing as a whole, the largest employing industry sub-sectors in Melbourne’s North during the COVID period were:

- Food Product Manufacturing;
- Transport Equipment Manufacturing;
- Furniture and Other Manufacturing; and
- Machinery and Equipment Manufacturing.

The industries that have been the most adversely impacted by the pandemic and restrictions have been:

- Transport Equipment Manufacturing; and
- Food Product Manufacturing (depending on which market sector is being supplied).

While other industries have benefitted:

- Pulp, Paper and Converted Paper Product Manufacturing; and
- Basic Chemical and Chemical Product Manufacturing.

*“Advanced manufacturing skills are required to drive a number of Victorian Government priority industry sectors so these STEM skills are essential to the future economic prosperity of the region.”*

## 12.3 Food and Beverage Manufacturing

Food and Beverage Manufacturing businesses within the North employed 9,566 people during 2019, while there is a resident workforce of 10,439 people at the same time. Both the resident and industry workforces are relatively similar in size, which implies that most industry needs are met by local workers.

Melbourne’s North has the capacity to attract a greater cluster of food process manufacturing companies because it has all the key features required by this industry which include:

- a sector already regarded as a priority and which has a significant focus in Melbourne’s North, where an industry cluster is developing;
- a pool of experienced manufacturing workers living locally;
- proximity to Melbourne Vegetable, Fruit and Flower market;
- high quality industry training providers, existing or required across a range of related disciplines; and
- proximity to freight hubs and Melbourne Airport.

The work undertaken by NORTH Link and Melbourne’s North Food Group in pulling together various strands of this important sub-sector of the manufacturing industry points to opportunities in other industry sectors.

*“The mission of Melbourne’s North Food Group is to drive productivity, competitiveness and opportunities – and to build business capability – across this important industry. Advocacy is key to its role and it provides a single contact point between partners and all levels of government, experts and education to maximise opportunities. Consultation and networking are central to Melbourne’s North Food Group activities.”*

Melbourne’s North Food Group provide the following services to food process manufacturers and other supply companies in the region:

- strategic business reviews;
- employment programs, workshops and training activities;
- government grants assistance;
- group buying, joint purchasing;
- trade shows and missions; and
- connecting to education and training providers, training and skills development activities.

*"We're keen to become more digitally capable and are interested in hosting a student project in the digital space. As a medium sized business we can't find an affordable, effective system suitable for us. Products seem to be designed for big companies or for start-ups. Mid-market businesses like ours miss out."*

A newer development is the Northern Melbourne AgriFood Precinct, an alliance between La Trobe University, RMIT University and CSIRO that will bring together significant research and innovation capacity to benefit industry. It will involve researchers and agri-food businesses, including food manufacturers and partners across the whole supply chain, to help businesses to innovate, diversify, upskill and expand.

The AgriFood precinct will deliver four outcomes for the region:

- create foods of the future;
- build a sustainable and resilient agri-food value chain;
- advance innovation and innovate the food digital technology environment; and
- foster innovation, commercialisation and business capability.

### 12.3.1 Food and Beverage Manufacturing and employees

The general decline of manufacturing over the last 30 years provides an important reason for the difficulty of supplying new, affordable housing. The reason is that manufacturing tends to seek outer suburban and provincial locations and hence to raise job accessibility from locations where residential land is relatively low-priced. Manufacturing is not the only industry to prefer outer suburban land – warehousing and logistics is another – but its decline has made it harder to generate jobs in locations where greenfield residential land is readily available. By contrast, businesses operating in the knowledge economy (including finance as well as business services, architecture and design) tend to seek CBD and inner suburban locations. As these industries have grown, job opportunities in the centres of the metropolitan areas have increased.

The reason why purchasers of new housing on the metropolitan fringes do not have enough income to pay the prices asked are very similar to the reasons why the prices of nearby existing dwellings are generally less than those of new construction. The main reason is poor job accessibility. This can be attributed to two causes, the first is the failure to encourage job provision on the metropolitan fringes, and the second is the failure to provide fast transport to link the new residential areas

with employment nodes. In some cases failure to extend provision of education, health and entertainment services to the fringe has also contributed.

Getting jobs to the outer regions of Melbourne's North becomes more pressing as housing developments continue to expand outwards. At city edge, skilful marketing can kick-start a region in the early stages of its suburban development. However, as evidence builds up as to the success or otherwise of recent developments (as indicated by the prices of recently-completed dwellings on-sold to second owners) and as impressions develop as to the general economic performance of the region, marketing recedes in importance. Successful regions market themselves, while no amount of skilful marketing can counter strong negative evidence of a region's general prospects.

## 12.4 Construction in Melbourne's North

Construction is a broad category with ill-defined edges where construction firms compete with construction and maintenance carried out by home owners and by commercial building owners primarily engaged in other industries. It can be subdivided various ways, but from an economic point of view the most helpful classification distinguishes residential construction, construction of commercial buildings, civil works and maintenance. The accumulation of residential capital has very little direct effect on the production of traded goods and services, whatever its benefits for the value of in-household production. At the opposite extreme, civil works are more or less synonymous with infrastructure. Housing represents a down-payment on a future stream of consumption benefits without any recorded increase in production while civil works and commercial construction represent investment in capital which enhances productive capacity. A burst of construction can change the economic structure of a region permanently if it leaves a legacy of productive assets leading to increased employment in other industries.

The construction sector has played an important role as an employer of young people, in particular allowing young people to choose a career in the region in which they grew up. The construction sector is becoming an increasingly important employer of young people as opportunities in manufacturing decline. The construction sector also provides the opportunity for tradespeople to establish their own businesses for which they require, not only construction related skills, but also business and management skills.

The construction sector plays an important role in facilitating the development of more environmentally and greenhouse friendly buildings. There appears to be an

emerging problem in relation to the availability of engineers and tradespeople to work on green star projects because there are not enough skilled workers to cope with higher technical specifications in this type of construction. This emerging skills shortage could become an issue, particularly with the imperative to build highly energy efficient buildings using new technologies and new materials in their construction.

### 12.4.1 Housing, energy efficiency, amenity and jobs

The Victorian Government requires that new homes and some renovations, alterations and additions comply with the energy efficiency requirements as stated in the Building Code of Australia. The purpose of these efficiency requirements is to reduce the environmental impacts of energy consumption and water usage. Standards are met by the use of insulation, external glazing, sealing, services and ventilation, all of which require a skilled construction workforce to ensure total requirements are met. The Nationwide House Energy Rating Scheme (NatHERS) measures a home's energy efficiency to generate a star rating. It was first introduced in 1993. The higher the star rating, the less energy needed to heat and cool a house. The star rating (star rating out of 10) measures a house's thermal performance, given its structure, design and materials. A star rating of 6 or above is required in most parts of Australia for detached homes. The rating requirements rise over time and a star rating requirement of 6 is being transitioned to a rating of 7.

Ongoing training across the construction supply chain in design, tools, materials and construction techniques is required to ensure the best possible outcome in providing energy efficiency for Melbourne's North new housing developments. Sustainability Victoria is preparing training courses that allow design and construction workers and assessors in the sector to learn the skills to transition house construction to a star rating of 7.

*"To support designers and assessors in adopting whole-of-home thinking, Sustainability Victoria has developed an extension to the FirstRate5 House Energy Rating Software called the Whole of Home Pilot Tool. Whole-of-home energy assessments are anticipated to be included in the upcoming changes to the National Construction Code.*

*This analysis indicates that adding canopy cover should form an important focus for Melbourne's Northern Region in coming years, for improved mental and physical health and wellbeing, better environmental outcomes, and spill-over to improved productivity."*

Northern Horizons report

Amenity, in areas where new housing predominates, can be improved by design and orientation of the new housing stock, retaining tree cover and new plantings, colour choice of housing, particularly roofs, all of which moderate the likelihood of creating urban heat islands. It is worth making the point that once buildings and estates are developed they will be there for a long period of time and getting these efficiency and environmental standards correct is enormously beneficial to long term amenity and the general efficiency and attractiveness of a suburb.

Choice of quality materials is important in ensuring that houses do not lose their energy efficiency rating over time and concern remains regarding this matter. A study by the CSIRO (new 5 star houses in Melbourne, Brisbane and Adelaide in 2013-14) found that 60 per cent of houses did not comply with the 5-star code. The implications for house owners were that their houses had higher space heating and cooling bills and GHG emissions than if their houses were code compliant. The report went on to identify training needs to improve skills as a way of improving compliance standards to the code requirements:

- improved training of builders, and insulation/air sealing installers;
- improved training and auditing of building inspectors; and
- training and certification of independent building thermal performance auditors.

In Australia insufficient attention is paid to thermal bridging and improvements in the installation of, and advice on, renewable energy using photovoltaic and wind systems and storage (particularly batteries) can be based on sound training in these areas.

*"Plan Melbourne identified benefits of making Melbourne a greener city, listing cooling to reduce heat and UV impacts, reduced air pollution and energy costs, enhanced liveability, improved physical and mental wellbeing, protected biodiversity and enhanced visitor appeal (DTPLI 2014). Plan Melbourne 2017-2050 then included Action 91, a whole-of-government approach to cooling and greening Melbourne, aiming to create urban forests throughout the metropolitan area (Victorian Government 2017)."*

Northern Horizons report

Occupations involved in creating improved amenity, sustainability and lower costs for householders over time include; urban planners, architects, designers, engineers, horticulturalists, construction workers, energy specialists, administrator (including in local and state government) and the suppliers of construction materials.

### CASE STUDY 12.1

#### Creativity, amenity, digital technology, virtual worlds and commercial spaces

CapitaSpring is a 280-meter, 51-story skyscraper located in Singapore's prime Raffles Place Central Business District. The new building incorporates a digital work Proliferating immense life – Sunrise and Sunset by Tokyo based company teamLab.

The work is formed by a computer program that continuously renders the work in real time, changing constantly, influence by people who move through the building, and no two moments are ever the same.

teamLab has 250 employees in Tokyo and more staff at an affiliate company in Shanghai. There are no internal walls in the Tokyo office that divide rooms, divisions that divide the works in progress and teamLab uses formulas that define the complex working process.

teamLab staff have a wide range of specialist occupations whose collaborative practice seeks to navigate the confluence of art, science, technology, and the natural world. Staff occupations include programmers, network engineers, designers, robot engineers, architects, CG animators, mathematicians and more. In each project, the appropriate person becomes the chief director, choosing two to ten people for their project team. This way of building project teams creates vibrant new ideas. teamLab's founder Inoko Toshiyuki, believes that from now on the merging of technology and creativity becomes crucial factor in the future survival of every company and that it is a hard thing in the new business environment to work in a company that has operating divisions that are completely separated, that represents a company with an old system.

### A note on Manufacturing employment

Under current trends employment in the manufacturing sector is forecast to decline. The reasons for this include:

- the decline in sub-sectors of manufacturing, particularly as a result of long term impacts of the closure of the Automotive Manufacturing industry (employment in the Food Processing and Manufacturing sub-sector is growing);
- rising land prices impacting establishment costs of lower value manufacturing operations;
- rising value of the AUD making Australian manufacturing less competitive because of a forecast mining boom. The situation is likely to be a repeat of what happened during the most recent mining boom;
- the continued impact on employment of automation and artificial Intelligence; and
- shift of employment classification out of the Manufacturing sector due to outsourcing of occupational types, including to the Professional Services sector.

The decline in employment will continue without remedial action by groups such as NORTH Link and respective State and Federal Government purchasing policies to ensure more manufactured goods are produced locally.

These declines can also be further offset by a focus on high value, high tech manufacturing, by encouraging increased business investment in the manufacturing sector in Melbourne's North that is strategically required to reduce sovereign risk and by focussing on identified manufacturing sub-sectors such as Food Processing, Caravan industry manufacturing, Health related and circular economy manufactures. The strategy includes increased investment in research and development, continual improvement of design and engineering standards (including product design) and embracing new economy manufacturing opportunities as they become evident.



## 12.4.2 Manufacturing of new construction materials

Universities in Melbourne are engaged in research that includes materials and methods of construction for both housing and infrastructure. The work of the universities gives important clues about new and more efficient ways of construction, use of materials, reducing waste in construction activities and sustainability and the opportunities for commercialisation of research and future employment in the construction sector.

Melbourne University's Structures and Materials Group works in the areas of design, modelling and development of advanced materials and structural systems for construction and infrastructure including:

- major developments in the application of innovative prefabricated construction via advanced offsite manufacturing techniques;
- protective engineering developing novel materials and innovative structural systems against structures at high risk of extreme loads;
- advanced digital engineering including finite element analysis, computational fluid dynamics, building information modelling and industry standard software for structural design, manufacturing and assembly;
- development of high performance lightweight, durable, and sustainable materials including concrete and polymers, steel and timber;
- fire performance of structures including developing fire resistant materials and composite systems;
- life cycle performance, structural health monitoring and retrofitting of the existing built environment including ageing infrastructure; and
- service life and durability of materials for regular and aggressive environmental conditions.

RMIT's Civil and infrastructure engineering research focuses on delivering materials, structures, design and construction technologies including:

- advanced materials technology;
- innovative structures; and
- sustainable construction including lower carbon construction, green buildings and benchmarking of green construction practices, life-cycle analysis, prefabrication and construction and demolition waste management.

RMIT Centre for Urban Research is using a circular economy framing to investigate use and waste in material supply chains to contribute knowledge so that the housing construction sector can reduce, reuse, recycle and recover resources and rely much less on virgin material.

*"The core problem is that there are insufficient capabilities, models, practices, policies and incentives available to establish a building materials circular economy at a sufficient pace."*

*Circular approaches can reduce the flow and impact of materials through long-lasting design, maintenance, repair, reuse, remanufacturing/repurposing, refurbishing, and recycling."*

RMIT Centre for Urban Research

Opportunities to consider include the following.

- There are significant opportunities for Melbourne's North in the construction sector for both research and development of new technologies and for local high-tech manufacture of construction materials and technologies.
- There are more opportunities in measurement systems and governance standards, particularly in relation to building construction performance.
- There are opportunities for factory based construction of passive housing (energy neutral) and opportunities for design and architectural services to this sector. The latter is particularly an export opportunity.
- Battery storage systems will revolutionise functionality of off grid systems and require new skill sets.
- Many new and high-tech skills are required by the construction sector, just the type of high value adding, high-tech industry development that could absorb the manufacturing skills of Melbourne's North residents.

## 12.5 The circular economy

In the report *Potential economic pay-off of a circular economy for Australia KPMG/CSIRO, April 2020* the authors estimate that a future circular economy in Food, Transport and the Built Environment together represents a potential economic benefit of \$23 billion in present value GDP by 2025. By 2047-48, the report estimates that the benefit of a circular economy will likely rise to a present value of \$210 billion in GDP and an additional 17,000 full-time equivalent jobs for Australia.

*"The time to act is now! The successful adoption of circular economy principles offers individuals and organisations tangible pathways to put resources to work in the most effective manner to deliver enhance social outcomes through provisioning systems that are regenerative by design."*

Circular Economy Victoria

The Victorian Government describes the essential elements for building a circular economy include:

- the design and manufacture products that are made from recycled materials (rather than virgin resources), that can be repaired and/or recycled back into the system;
- need to establish repair centres as part of this design and manufacture process, so that items can be repaired;
- need to establish collection systems so that items unable to be repaired are collected, rather than disposed of in landfill;
- to ensure that there is adequate and appropriate recycling facility infrastructure considering location and sorting capacity; and
- to encourage manufacturers to purchase recycled materials, thereby closing the production loop.

### 12.5.1 Local Government and the circular economy

The City of Hume has been an enthusiastic participant in encouraging the circular economy and with the City of and Kingston participated in the new Circular Advantage™ Program in 2020, developing circular economy roadmaps to guide the future.

*“Circular Advantage™ helps organisations examine the way they operate through a strategic lens, guiding them through a process of reviewing their supply chains, manufacturing and production processes, and use of resources: people, energy and*

*water. The program applies kaizen, the Japanese concept of continuous improvement, to achieving circular economy outcomes. The circular economy aims to minimise waste and keep materials and products in circulation for as long as possible. It replaces the traditional linear business model, which is based on a ‘take-make-dispose’ system and has led to an unsustainable overuse of resources worldwide. During the program, each business develops a costed and prioritised roadmap that helps them uncover the hidden profits within the circular economy approach.”*

Hume City

### 12.5.2 International perspectives: European Union

The European Union estimates that 50 per cent total greenhouse gas emissions and more than 90 per cent of biodiversity loss and water stress are the result of resource extraction and processing. Scaling up the circular economy is seen as a decisive contribution to achieving climate neutrality by 2050 and decoupling economic growth from resource use.

The European Union states that, “for business, working together on creating the framework for sustainable products will provide new opportunities in the European Union and beyond and that applying circular economy principles across the EU economy has the potential to increase European Union GDP by an additional 0.5 per cent by 2030 creating around 700,000 new jobs in the process”.

#### Roads of the future

The circular economy offers significant opportunities. Hume City Council is working towards Hume as a circular city. There are a lot of different ways that policy can be applied, for example reducing waste to landfill and repair cafes.

A practical and potentially large scale example of the circular economy in action in the Hume City Council LGA is a partnership with Downer, Close the Loop and RED Group, in 2018, by constructing Australia’s first road using a combination of soft plastics and glass. The road surfacing product, called Reconophalt, uses soft plastics and glass in asphalt for road construction to create a sustainable, cost-effective solution that has improved performance and longevity of currently more than 100 roads in Hume City.

*Every 1km of road uses approximately:*

- 530,000 plastic bag and packaging equivalents;
- 168,000 glass bottle equivalents;
- toners from 12,500 used printer cartridges; and
- 134 tonnes of reclaimed road (asphalt) re-used, with the inclusion of 20 per cent Reclaimed Asphalt Pavement (RAP).

## Chapter 13: Pathways to employment: The role of Local Government

- Local Government can and does make a significant contribution to shaping the region's local industry and employment strategies.
- An important role for Local Government, probably more important since COVID, is connecting community with local industry.
- Rapid change means a life-long learning approach to employment and career development. Local Government can help promote these ideas within their communities.
- The research found that the extra capacity created by productivity growth should be utilised to increase export production requiring a careful assessment of export market prospects as part of regional economic strategy development.
- Local Government can help drive investment and this is a particularly important lever.
- Local Governments in Melbourne's North have played an important role in mitigating the impacts of the COVID pandemic and there are numerous examples of innovative, creative and thoughtful actions.
- Four pillars of regional growth are the skills base, non-dwelling capital, knowledge creation capacity and supply chain strength.
- The circular economy provides new opportunities and more jobs.
- Liveable and smart cities create a rich opportunity for employment as new approaches to these matters are introduced.
- Victoria has an extremely poor track record when it comes biodiversity conservation and the situation becomes more dire as each year passes. Local Government has a role in ensuring the decline of biodiversity is slowed at the local level. This requires local investment and skilled workers.
- In the new paradigm councils are front and centre in the important task of creating local resilience, advocacy, climate mitigation, employment, wellbeing.

Local Government and employment development opportunities may include the following.

- Local Government is ideally placed to observe the efforts of local not-for-profits and perhaps build on them.
- Local Government has the authority to experiment with various policies and projects as the chapter clearly shows.
- Local Government can readily work with local business, NGOs and possibly unions.
- Local Government should also look around, adapt and adopt what has worked elsewhere and in places with similar problems and opportunities.

## 13. Pathways to employment: The role of Local Government

### 13.1 The regional dimension: Shaping the local economy

*“More co-operation across all levels of government is needed to address the issues faced by communities to align top-down major projects and infrastructure initiatives and community led bottom-up approaches towards establishing intelligent communities. Setting the transformation path, as aforementioned, requires public policy makers to have a more comprehensive evidence base to optimise their investments in addressing immediate and long terms issues.”*

*State of the Regions: Smart Cities*  
NIEIR/ALGA/SAP Institute for  
Digital Government

Local Government can and does contribute to shaping its local industry and employment strategies. This is achieved by ensuring those things under direct council control, including planning, land use, open spaces, amenity, sustainability of built form and contemporary waste management strategies, contribute to helping industry grow and to access an increasingly skilled local workforce. Advocating for things not under the direct control of Local Governments is also important and these include major transport systems, education infrastructure, particularly schools, major infrastructure developments (and locally nuancing them) and global standards in telecommunications infrastructure. Shaping clusters of industry development through planning and marketing, while a longer term initiative, is significantly important in growing local prosperity. Closer links and access to Victorian Government departments where knowledge is shared will also help regional development planning.

Local Government continues to have an interest in the reliability of electricity supply and in the local layout of the grid, including modifications required to meet the needs of technology or supply demands. Local Government interests in energy efficiency include the local promotion of cogeneration, capturing energy which would otherwise have gone to waste that has considerable potential for greenhouse gas emission abatement. The numerous changes to policy of the last decade or more, which have resulted in an inconsistent approach to energy policy, and the confusion that has created, has neither been good for industry or households and has increased uncertainty for Local Government.

*“A new narrative for an intelligent community is proposed which brings the focus back to the interlocking domains of social, economic, environmental and governance. An intelligent community leverages its resources, including data, to promote innovation for building community capacity.”*

*State of the Regions: Smart Cities*  
NIEIR/ALGA/SAP Institute for  
Digital Government

An important role for Local Government, probably more important since COVID, is connecting community and industry. This is a particularly important role when it comes to working with young people in the community and minority or disadvantaged groups. Targeting areas of local disadvantage for special projects does and can help to break the generational cycle of disadvantage. Local Governments can help direct other agencies to those places in need and to help residents untangle often complex bureaucracies and pathways when they engage with governments.

*“There is cause for continuing concern about the capacity of the school education sector to minimise the number of students who leave school unequipped for participation in the world of work as it now faces them, and for concern about the capacity of the post-school education sector to keep up with the requirements of a rapidly changing economy. Local Government should be watching closely to ensure that its local post-school education providers are integrated into local economic development strategies.”*

*State of the Regions report, 2017-18*

Rapid advances in technology, particularly digital technology, are changing industry and changing the types of skills needed by industry. These changes mean that education is more important than ever in shaping employment opportunities and digital literacy sits alongside the fundamental importance of literacy and numeracy skills. Rapid change means a life-long learning approach to employment and career development. Local Government can help promote these ideas within their communities.

*“The place based perspective of communities presents challenges from a governance perspective – what body is accountable and responsible for making a community intelligent? Governance within a smart cities framework is often focused around a*

*city council. The council, along with state and federal agencies, considers investments in smart technology and social capital for the city as a whole."*

*State of the Regions: Smart Cities*  
NIEIR/ALGA/SAP Institute for  
Digital Government

For Melbourne as a whole, the city has developed its knowledge economy, adopting a similar strategy to Sydney by emphasising transport investment and inner suburban redevelopment. Melbourne's advantage of a relatively accessible urban fringe in which to build greenfield housing is not quite the competitive edge that it once was.

While each Local Government has to deal with the economic and social history that has laid its foundations, as the government closest to its residents, Local Government can shape industry policy in its local area and particularly as it relates to land use and associated infrastructure. High-technology industries have the highest multipliers and therefore, the greater the concentration of high-technology industry in a region, the better the relative economic performance and the greater capacity to export out of a region.

*"The term smart cities is often aligned to the deployment of smart technology such as Internet of Things (IoT) devices such as sensors to improve efficiency, leading to improvements in overall liveability. Real-time traffic management, real-time energy consumption management, integrated public transport networks and data collecting sensors are examples of smart technology contributing to the efficiency of a modern city. These technology based networks generate large volumes of data which is analysed and leveraged in real-time decision making."*

*State of the Regions: Smart Cities*  
NIEIR/ALGA/SAP Institute for  
Digital Government

As a general rule in Australia and prior to the COVID Pandemic, regional labour markets outside the major cities were in balance, for many this was at the cost of particularly low rates of pay and population flight. This has changed somewhat since COVID because of the impacts of the pandemic discussed in this report and for example brings both opportunities and problems for Mitchell Shire and its managers. Conversely labour markets were tight in the core metro regions and slack in the outer metro regions. A rebalancing of where people work and a greater diffusion of the knowledge economy have to be central to planning as Melbourne's spreads north.

*"Increasingly cities start to understand that they are facing the brunt of the social and economic issues and therefore are developing new policies and strategies to address this, often referred to as 'smart city' policies. Communication is the most critical element in any smart city plan as it enables a range of developments such as creation of new jobs and businesses, e-commerce, automated vehicles and other transport developments but also e-health, e-education and so on. Cities that are the most advanced in these new policies and strategies rapidly come to the conclusion that the current version of the National Broadband Network is not good enough for their developments and many of them- internationally and in Australia – are now developing their own gigabit networks in order to provide their organisations with the right infrastructure for the future. This is based on all fibre optic infrastructure and associated hardware and software technologies."*

Paul Budde: *State of the Regions* report, 2019-20

Disposable household income in a particular place helps shape local economic development, the higher the disposable income, the more likely it is that more will be spent on local services. Income distribution shapes this and pre-COVID, income distribution across the Melbourne LGAs looked something like this:

- one high-income LGA, Nillumbik, on the urban fringe;
- 27 middle-income LGAs; and
- three low-income LGAs, Hume in Melbourne's North, Greater Dandenong and Brimbank, all three had been affected by the decline of manufacturing.

In the period leading up to the 2016 Census (2011 and 2016) NIEIR identified that at the level of median individual income, two pronounced redistributions of income had taken place:

- from men to women. Though the proportion of women receiving incomes below the minimum wage was greater than the proportion of men, the differential diminished for all age groups up to 65; and
- from the young to the old: the proportion of individuals receiving less than the minimum wage increased among individuals aged less than 35 (and especially among men aged 20-24) while the proportion receiving such incomes decreased among women aged over 35 and among men aged 65-84.



The causes for these shifts in income likely included:

- growing difficulties for young people entering the labour-market, including lengthened periods of education and employer resort to casual work and unpaid internships;
- growing availability of women aged 30 and over for work, partly due to the increased social acceptability of child care;
- growing availability of men aged over 65 for work, reversing the trend to early retirement evident in the previous generation; and
- maturing of superannuation schemes, particularly as they add to the incomes of men aged 65 and over.

Historically, Melbourne depended on manufacturing exports and as a result has not generated such high incomes as Sydney. The manufacturing industry has shown signs of reviving, but in Melbourne the revival has been hindered by the collapse of the motor vehicle industry, offset in part so far by strategies to develop food processing manufactures.

Understanding the changes that are occurring, what has happened in the immediate past in terms of the shifts and megatrends discussed here, help councils to navigate the future. One key question for councils is how can councils best assist business in their LGA to increase productivity? The 2017-18 *State of the Regions* report (NIEIR/ALGA) identified four pillars of growth:

1. the skills base;
2. non-dwelling capital;
3. knowledge creation capacity; and
4. supply chain strength.

Addressing the levers of productivity growth, Local Governments should continue to:

- encourage residents to improve their skills and to be adaptable while navigating the workplace;
- Local Government should help drive investment and this is a particularly important lever;
- encourage a concentration of knowledge-based employment within the labour catchment which will then support the attraction of high-productivity industries; and
- help build inter-business relationships both within the region as well as connecting the region and other regions.

As council economic development staff are aware, each industry has its location factors and requirements and much of the skill in regional economic strategy development lies in matching local assets with industry requirements and market demands.

NIEIR's research found that realised growth frequently falls short of potential growth and that one of the major reasons for shortfalls was the lack of demand. Also noteworthy was the finding that concentrating on productivity growth alone may mean that a given level of production can be sustained with less labour and as a result, if substitute jobs were not found for the displaced workers, two unwanted results were likely:

- the resulting increase in incomes is offset by a decline in resource utilisation; and
- the increase in incomes is concentrated on those who provide capital and those who remain in employment, thus generating an increase in inequality.

The research found that the extra capacity created by productivity growth should be utilised to increase export production requiring a careful assessment of export market prospects as part of regional economic strategy development.

*"OECD research from 2012 on "Promoting Growth in All Regions," found that "broader-based inclusive growth brings other benefits to countries in terms of equity, resilience and fiscal health." Focusing investment on thriving communities and regions and ignoring those which are struggling to figure out what they contribute to the ecosystem is an error of judgement. "When policy makers focus only on the leading regions, they miss a crucial opportunity to improve aggregate performance." If we accept the OECD point of view, public policy makers must address capability gaps within non-thriving communities to help make them resilient and mutually sustainable."*

*State of the Regions: Smart Cities*  
NIEIR/ALGA/SAP Institute for  
Digital Government

Given what we have learned from the impacts of COVID Australia's Productivity Commission's pre-COVID pandemic concerns, as expressed in the paper *Transitioning Regional Economies*, April 2017, about regional adaptive capacity to deal with significant disruptive events are worth noting.

*"The Commission believes that place-based policies are likely to be more effective than subsidy-based policies, though the latter remains (sic) a significant part of government policy. Guided by this way of thinking, strategies to support regional transition and development should:*

- *take a coordinated, strategic approach led by the regional community;*
- *build on a region's relative strengths (comparative advantage);*

- *invest in the capacity of people in regional communities and the region's connections with other regions and markets; and*
- *promote sustainability, so that projects and programs are viable without long-term government financial support."*

## 13.2 Council actions

This section highlights some of the actions taken by councils in Melbourne's North to offset the impact of COVID and adjust for longer term circumstances.

### 13.2.1 City of Hume: Job futures

*"Unlike other recessions, the economic effects related to COVID-19 are rooted in the service sector, with Hume feeling the impact of the near cessation of passenger activity at Melbourne Airport. Investing in major infrastructure projects and slashing taxes to encourage job growth and business expansion will not work alone. Fundamentally, Victoria's economic DNA is being challenged, and all levels of government will need to need to focus different support measures, on building a more resilient and diverse job mix and supporting quality future employment opportunities".*

Hume City Council  
COVID 19 Economic Recovery Action Plan – 2021

The Economic Recovery Action Plan was a three-part plan.

- **Targeted Investment Attraction.** New businesses bring new jobs in the construction phase and ongoing employment. The focus will be on manufacturing, the circular economy and professional services/white collar.
- **Targeted Support** to existing business and the start-up sector. Across all sectors with an initial focus on online services and the Visitor Economy (hospitality). StartNorth is driving support to the start-up sector through a series of pre-accelerator and accelerator programs.
- **Targeted Labour Market Support** for unemployed residents and local businesses including an expanded role for the Hume multiversity to improve residents' level of job skills and qualifications. Research opportunities to support business initiatives will be investigated with Hume multiversity partners.

In Hume the initial phase of COVID had a significant impact on employment, the unemployment recovering since April 2021. The impact of COVID was particularly bad in the service sector which includes Melbourne Airport with its air and land side services, cafes and retail shops. Transport, logistics and manufacturing, after an initial wobble recovered strongly. Construction also played its role in helping resilience in the City of Hume. Resident employment and unemployment has always been Hume's challenge, particularly so for disadvantaged groups. A large share of Hume jobs are taken by people travelling into the municipality. Council has been working hard to address that issue, running programs that include an engineering program with La Trobe University, working with around 20 overseas trained and qualified engineers from our CALD community to make them more job ready in the Australian context. Council also run the Overseas Qualification Program (OQP) with Melbourne Polytechnic which takes a broader look at overseas qualified professionals to match them with their chosen profession locally. Council runs a residents scholarship program where we help fund residents to undertake tertiary education and training with our multiversity partners and this is about raising skills and qualifications to improve career prospects of residents. Council has also run a fast track program for people in the childcare sector, again to raise the level of qualification. Council also adopted a business employment grants program with the strategy of placing 100 residents in meaningful jobs. There are three streams, apprenticeship type trade stream, and industry skills stream and a disadvantaged workers stream particularly for people with a disability. For the growth industries council is working with a number of businesses to help them to establish in the LGA bringing substantial investment and jobs to the region. Council is seeing industry acting to shorten supply lines and diffuse the risk of international supply chains. In conjunction with the other stimulus packages from state and commonwealth government, these policies have made a very substantial and positive contribution to the residents of Hume. Kangan Institute is part of council's multiversity and council has been supporting Kangan Institute through its capital works programs and relationships with educational providers are extremely important.

In terms of manufacturing, food and caravan manufacturing have been strong and are doing well. Advanced manufacturers are locating to Hume, as are businesses operating in the circular economy. Towards Hume as a circular city is a program about educating businesses about ways in which they can better integrate into the circular economy. Hume is also looking to attract advanced manufacturing businesses that use reprocessing techniques to make their products including in plastics. Hume as now overcome the loss of automotive manufacturing jobs, the old Ford site is being redeveloped and when this is complete there will be more jobs on the site than ever before. The difference is we do not have a sovereign capability which we once had to manufacture

motor vehicles and this is a strategic risk. There are also issues in relation to knowledge diffusion and changing technologies in automotive manufacturing, now not part of local manufactures.

In Hume there are two areas of substantial focus over the next ten years, one is Broadmeadows, and the other is north of Craigieburn in the Kalkallo area, particularly the Cloverton and Merrifield developments. Merrifield South with its smaller industrial lots have all been taken up. The larger business park with its larger lots continues to fill with manufacturing and transport logistics firms. The Cloverton development is also huge. We are going to see more office building in the various developments occurring in Hume. All these developments will provide a substantial number of jobs.

**A critical thing in high growth areas when it comes to job creation is enabling infrastructure including roads, rail, railway stations, services and upgrades of road junctions. Council can handle planning and attract businesses and work with and support the business community and run programs in the support of our community. What council cannot provide is those game changing and enabling infrastructure components that have to come from State or sometimes from Federal Government.**

### 13.2.2 City of Whittlesea: Job futures

*"In 2040 the City of Whittlesea is the smart choice for innovation, business growth and industry investment. People of all ages have opportunities to learn and develop skills locally. There are many opportunities to gain employment and build careers not too far from home. Residents support local business, and we are renowned for our successful local economy."*

Whittlesea 2040: A place for all

Councils are significant and important employers. During the initial phase of the pandemic council had put into place a flexible working arrangement policy so council was not expecting people to come back to the office five days a week. COVID showed that staff could still fulfil their roles working remotely from home. Working from home does have its challenges, for example when you're engaged and around people there are those water cooler conversations where people share information and ideas which would not happen when staff are sitting at home behind a computer screen. The danger is when staff start to feel disconnected just sitting at home with no one else around them and this is a challenge for managers and team leaders and how you engage people and keep productivity high.

The two most impacted sectors in Whittlesea were retail which employed a large number of our residents in entry positions, and the hospitality sector. In manufacturing with reduced number of workers this hindered productivity and the capacity to fill orders. The food distributors in the LGA lost customers as restaurants and cafes closed. In contrast the health sector grew.

Council works continually to advocate for education and to ensure there are adequate facilities at all levels of education including higher education. The City of Whittlesea tends to work closely with Hume because of the similarities and proximity including an industrial land review co-ordinated by NORTH Link. Plus we have our strategic futures department working with Hume and Mitchell on the Cloverton development and we want to see more of that cohesive work on shaping how council delivers its precincts. Let's make this work for all parties regardless of where it sits and what can each of us do to make this work.

Council has developed the Strong Local Economy strategy and investment attraction plan The Strong Local Economy Strategy charts a course to building a prosperous and inclusive economy. The Strategy has three parts:

- the Strong Local Economy Strategy 2022–2026 (this document) – outlines Council's strategic direction toward strengthening our local economy;
- the Strong Local Economy Action Plan 2022–2023 – A Year One Action Plan which sets out Council's commitments to deliver on the Strategy. The Action Plan will be reviewed annually; and
- the Strong Local Economy Discussion Paper (October 2021) – detailed supporting evidence including consultation outcomes and an in-depth analysis on each of the trends, challenges and opportunities explored in the Strategy.

Health and food are key drivers of the economy and council wants to focus on what we are good at as a strategy to grow future employment. Council wants to ensure we bridge the gap between the skills of our residents and what industry in the LGA needs. We also want to attract more companies that require highly skilled workers. One of the key questions is how can council help to keep as many of our increasingly qualified workforce working locally or in adjoining LGAs, rather than making the journey to the CBD? This is about developing professional clusters and innovative areas within the LGA so that residents have the opportunity to work locally. Large employers include Northern Health, the council and some large food sector companies including the Costa Group, one of Australia's largest horticulture companies, which has a mushroom farm in the LGA, and Bertocchi Smallgoods.

The four priorities for action as described by council are as follows.

- **Investment attraction** – attracting new investment to the city and supporting further investment by existing businesses to create more local job opportunities for local residents.
- **Agriculture today** – agribusiness related opportunities have been identified to take advantage of the region's productive and viable farming land, proximity to major regional transport and infrastructure and access to recycled water.
- **Diverse natural, cultural and landscape values** – future opportunities have been identified to harness our diverse natural and cultural assets and promote representation of these assets in our visitor economy. These include the Regional Sports and Aquatic Facility at Mernda, and the Quarry Hills Regional Parkland and proposed Aboriginal Gathering Place.
- **Community Wealth Building** – celebrating benefits of local employment. Opportunities exist for large institutions such as Council to promote positive employment and enterprise practices. Council directly supports more inclusive economic participation outcomes through our social procurement practices and our Inclusive Employment Program. By encouraging other large employers and businesses in the municipality to adopt the same approach, developing an economic participation plan and supporting the Victorian Government's Job Advocates program, council can also help to enrich opportunities for disadvantaged groups identified in the LGA.

Council is looking closely at how it can assist in encouraging local businesses to purchase inputs from the local catchment as a way of building community wealth.

As a highly multicultural society our Community Wellbeing team is looking at issues surrounding gender equality and our CALD community when it comes to barriers to employment. A particular challenge is for those who have recently arrived in the municipality seeking employment. We work with the Job Advocates program which helps people find employment while on the flipside we have business trying to find workers so the task is to address the skills gap between residents and local employers. It is not just a question of unemployment but also one of under employment. There are highly qualified female residents who are working in low paid jobs because they are not able to meet employer requirements for family reasons, particularly working hours and times.

Young people in Whittlesea face difficulties and COVID has had the impact of disengaging more young people and cause them to leave school early. There are more schools offering VCAL but there is still a lot to do and businesses are telling council that what is being taught in schools is

not how we do it now. Bridging the gap between industry and education and training is very important in improving employment prospects for young people. Council has a role in closing the gap. The LLENs are doing a brilliant job in informing young people about employment opportunities.

What can councils do to facilitate a process that closes the gap between available skills of residents and what industry wants? Whittlesea has endorsed a Business Advisory Panel which is now meeting and includes ten of our business leaders and council staff to help us understand what the issues are and strengthen that relationship between council and industry. The feedback from initial meetings was about finding staff with the right skills and this was particularly an issue with school leavers. Industry wants to know how we can all let the future employees know what industry has to offer and what kinds of jobs are available so we get the pathways to higher education right and to ensure the choices school leavers make are in their best interest. Do we go on a roadshow and visit schools and let career advisors and students know what is on offer locally in terms of employment? Those are the kinds of initiatives we need. Part of this is managing expectation, there are lots of jobs out there that do not sound particularly exciting but in reality, are great. Council wants to look at the creative sector but not much work has been done so far, but there is potential and council has a culture and arts portfolio.

### 13.2.3 Mitchell Shire: Job futures for young people

*"Young people studying at primary, secondary and tertiary levels experienced significant disruptions to their learning which will in turn delay their entry into the workforce. With backlogs in work experience, placements and qualifying, young people face delayed benefits from employment. We know from previous crises that young people bear the brunt of economic downturns, delaying their career path and financial security. The measures to re-engage and support this generation will need to begin soon and look at the effects of delayed social development and fine motor skills for children in crucial developmental stages."*

Mitchell Shire Council  
COVID-19 Community Recovery Plan 2021

The Mitchell Shire Recovery Plan describes the impact of the pandemic on its young people in education:

*"Young people across Mitchell Shire reported significant disruption to education. While learning from home many disengaged from learning and for some this continued when they returned to school". A more general comment is included "People studying vocational and tertiary education report*



*delayed qualifications and working experience 60 per cent of year 12 students who applied for university said that remote learning adversely affected their learning.”*

In August 2020, 41.5 per cent of local businesses had applied for JobKeeper. The Shire’s COVID impact survey of local businesses, as reported in the recovery plan, gives the decline in revenues by industry sector as follows (survey respondents):

- Accommodation and Food Services businesses: -54 per cent;
- Retail sector businesses: -26 per cent;
- Agricultural businesses: -25 per cent;
- Health care and social assistance businesses: -28 per cent; and
- Construction businesses: -19 per cent.

These declines will have had a significant impact on the job opportunities for young people in the LGA. A focus on getting young people back to work in these sectors can be something in which the council can facilitate.

Rapid population growth in the Shire over the last decade has meant the gap between local jobs and the resident working population has continued to increase. The Shire also has very real pockets of disadvantage and the pandemic will tend to exacerbate these conditions. Planning remains a major issue and the Shire of Mitchell needs a special focus from the Victorian Government. The planning phase is not keeping up with the delivery phase. Young people are at particular risk from these factors.

*“We have been talking to the Mitchell Shire Council about their role as an important employer in the shire and the opportunity that exists to give young people a taste of workplace experience across a diverse series of roles. The council can step into this space in a way that makes a big difference and connects council back to community. We have started mapping these opportunities and connecting the large employers with each other. If we are going to deliver the social wellbeing outcomes the council are seeking, we need to work up different models that address our particular circumstances.”*

Central Ranges LLEN

During COVID, government stimulus packages for housing construction had the effect of increasing the rate of housing construction in growth areas, so the risk is that the housing is built, families move in, and the other things discussed here, like amenity, lag behind. So despite what we know we end up with the same problems we had in the past. High growth areas like the Mitchell Shire tend to have workforces that have been far more exposed to the pandemic because of the higher proportion of the workforce that are essential workers, in the case of the

Mitchell Shire, commuting to other LGAs to access employment.

Working from home in growth areas stimulates the need for improved amenity including footpaths and open spaces. Co-working spaces are important and council can play a role in developing these spaces. Place based initiatives, particularly the idea of delivering council services in communities and the facilities required locally, childcare, cultural and creative places and spaces, telecommunications and broadband are important as are the places and spaces which can accommodate modern forms of remote working.

Accessibility issues for young people in the Shire are a major issue and there is nothing to ground young people in their local area, so they are disconnected. There are no or few employment opportunities for young people and they have nowhere to go so they tend to congregate in shopping centres. High Schools are an issue and government needs to think differently in relation to growth areas and plan for these earlier than what is now occurring.

In the report *Making the most of our opportunities 2019* (NIEIR/MAV) research and modelling conducted by NIEIR found that:

*“While there have been higher per capita growth rates in GDP than would have eventuated with lower levels of migration, our analysis suggests that productivity benefits from this rapid population growth have been largely illusory and need to be offset against significant environmental and social costs. Productivity growth can only be ensured if adequate resources are provided to the increased population, a condition that has not occurred since 1992, particularly for the outer metropolitan LGAs.”*

The report went on to find that in the outer Melbourne LGAs, and this very much points to the dilemmas facing the Mitchell Shire at this time which are now compounded by COVID, that underinvestment was most marked in the following areas and a pointer to what needs to occur in the Mitchell Shire to keep up with the rate of population growth:

- transport infrastructure capital stock;
- commercial capital stock;
- community capital stock (e.g. hospitals and schools);
- industrial development;
- skills development; and
- knowledge creation investment.



### 13.2.4 Moreland City Council: Job futures, creative spaces and places

*"On 11 March 2020, the World Health Organization (WHO) declared the novel coronavirus (COVID-19) outbreak a global pandemic. Since then, the Moreland community has faced extraordinary challenges. The pandemic has affected businesses, led to a rise in unemployment, and has increased demand for food relief in the community. It has also revealed great resilience across Moreland and a strong sense of community. Community facilities, services, and local centres will continue to be important in the face of the pandemic. While we do not yet know the long-term impacts of COVID-19, we know that Moreland will continue to feel the effects of the pandemic for many years."*

Moreland City Council Plan 2021-2025

#### Arts and culture in Moreland

Moreland City Council has invested significant resources investigating and supporting the role of Arts Infrastructure in the creative ecology. The conditions that have made Moreland an attractive place for artists to establish and thrive include affordable rents, small-scale premises and disused industrial spaces, but these conditions are increasingly vulnerable as the inner urban areas of Melbourne's North continue to gentrify. In looking to address this issue, Moreland City Council commissioned an extensive Arts Infrastructure Plan to support and deliver arts infrastructure in Moreland to ensure the ongoing livelihood of the arts sector and the health of the creative ecology of our cities.

The arts sector, so badly impacted by the pandemic, will continue to play an important role in the recovery from COVID and the health and wellbeing of the community. Moreland's *Creative Capital Arts and Culture Strategy 2017-22* aims to "enhance the capacity of Moreland's creative sector to maintain and grow creative practice in the municipality and to increase access to, and engagement of, community in Council's Arts and Culture program as both participants and audiences".

Considerations in the planning included:

- taking a pro-active role in maximising the opportunities for retention of existing arts spaces and the creation of new spaces;
- contributing to the ongoing success of the Brunswick arts cluster by leveraging off the concentration of Council-owned buildings in the Brunswick Civic and Cultural Precinct;

- protecting existing arts uses and enhance opportunities for the emerging Coburg North Arts Hub to grow;
- introducing an arts leadership program focused on mentoring new arts sector leaders and improving opportunities for less advantaged and minority groups to participate in the arts;
- designing and delivering new infrastructure in the public realm to support outdoor performances; and
- including artists in the delivery of significant Council funded infrastructure projects.

Moreland describes its role in facilitating arts sector activity in the LGA as:

- a **Producer** where council initiate, coordinate and deliver events, festivals, programs, and exhibitions;
- a **Supporter** where council encourage a thriving creative sector through investment, facilitation, and advocacy; and
- a **Cultivator** where council employ various strategies to engage with the community and build arts audiences across our community.

#### *The Brunswick Design District (BDD) Partnerships/Platforms/Places/People/ Pathways and Proficiencies*

Among the creative events and creative spaces in Moreland the BDD has a strong commercial application and provides employment opportunities in the Creative Sector. BDD was created through a partnership between RMIT University, Moreland City Council and Creative Victoria and is a pre-eminent cluster of the creative economy and provides a model that describes how collaborations of this type have the potential to accelerate the creative economy and build exciting precincts to learn in, work in and visit. Almost 10 per cent of employment in Brunswick is now in the Creative Sector and as opportunities for exports grow so will employment prospects in the sector and in the precinct. This has been achieved by pulling together education infrastructure and knowledge, creative workers and businesses and their knowledge and skills base and the buildings and land that make up the assets in the physical precinct.

*"We are building upon Brunswick's creative heritage, to position the district as a nationally and globally recognised hub for innovation, creativity and design, that supports the growth of local creative industries, and as a result, other businesses in the district."*

Brunswick Design District

### 13.2.5 Nillumbik Shire Council: Young people in community

*“Nillumbik’s places and spaces make an important contribution to health, wellbeing, culture, the environment, biodiversity and economic success. We continue to strengthen the Shire’s identity through reinforcing existing natural and built form, improving accessibility and connectivity, protecting the environment, and enhancing both the Green Wedge and tree canopy in urban areas.”*

Community Vision – Nillumbik 2040

In Nillumbik, like many places in Victoria, lockdowns five and six had a significant impact and people are doing their best but are not as engaged as they were in previous lockdowns. People are missing the opportunity to go to work and work together with other people.

Nillumbik has a thriving working from home culture and a niche artisan type workforce and professionals. These are creative or service industry type businesses which residents are running from their homes. Nillumbik also has a lot of trades people who live in parts of the Shire including truck and trailer type businesses. Other residents are employed by council, schools and major supermarkets. Most professionals leave Nillumbik every day (70 per cent of the working population) to go to work in the CBD or other LGAs. Council would like to attract more visitors to Nillumbik’s spaces and places, so outdoor tourism is an opportunity for the Shire and would provide more job opportunities for young people in hospitality. Amenity is very important in Nillumbik. There has been a lot of transport related, mostly roads, development going on and a number of new buildings that will serve the community for years to come.

The shire is well off for schools. The 3-year-old kindergarten rollout begins in 2022 with 5 hours a week per child, building to 15 hours per week in 2029. Nillumbik already has a high take-up of 3-year-old kindergarten. Council has identified the need to expand two centres to meet future requirements.

Nillumbik has a Youth Council and the biggest issue for them is mental health. So for young people in the 15 to 25 year old age group, accessing mental health service can be very difficult. A number of providers have closed their books as they can’t accommodate more referrals. Local employment opportunities for young people in Nillumbik not good.

Young people can access the city fairly easily by train, as they do to attend university, but the issue is likely to be where the jobs are so young people are often catching buses to get to work and this can be time consuming and services seem to get less frequent and reliable the further they are from the centre. Getting to work is still an issue. Opportunities for employment for young people locally

could be in the climate change space and other environmental type roles and in the arts. Trades also provide significant opportunities.

The Nillumbik Arts and Cultural Plan 2018-2022 contains a section on growing creative and cultural industries. The range of council actions include:

- support and facilitation the development of Nillumbik’s creative industries, including the performing arts and music sector, alongside Nillumbik’s established visual and literary arts sector;
- launch and implementation of a new residency program and lucrative bi-annual prize models that invest in professional practice and innovation;
- innovative opportunities for engagement with the Nillumbik Shire Art Collection, alongside major bi-annual exhibitions; and
- development of gallery and theatre Master Plan.

The Nillumbik Youth Strategy 2022-2026 identifies five priorities for youth in the Shire.

1. Healthy and well.
2. Empowered and engaged.
3. Access to safe spaces and places.
4. Equipped and employed.
5. Welcomed and connected.

*“While COVID-19 affects everyone in a different way, the social and economic impact on young people have been substantial; young people have experienced high rates of psychological distress, loneliness, educational disruption, unemployment, housing stress and domestic violence.”*

The strategy set out how council will address the needs of young people in the shire over the next four years. The strategy finds that pre COVID there was a lower percentage of disengaged young people living in the Shire when compared to the rest of Melbourne while youth unemployment, while still high, was lower than for Melbourne as a whole. However the respondents aged 15-25 completing the Young Minds: Your Voice, Our Future youth survey, reported that 44 per cent were unemployed, far higher than results from the 2016 Census.

Strategies to address priority four, Equipped and employed, are:

- help young people recover from the impacts of COVID-19 by providing opportunities for young people to gain volunteering and work experience, internships and employment through Council and other local industries;

- partner with schools and organisations to provide career pathway advice and access to information about employment opportunities;
- provide a range of vocational learning opportunities to connect young people to meaningful pathways to employment;
- partner with our stakeholders to deliver a range of events and programs that aim to enhance young people's job readiness, employability and life skills;
- connect young people to available services that provide individual support with training and employment;
- ensure young people in Nillumbik have access to information and resources to support them to feel financially well;
- provide paid opportunities for young people at Council in areas such as consultation, music, arts, photography/videography, and delivery of events/programs; and
- deliver initiatives that enhance young people's education and skills to support financial wellbeing.

### 13.2.6 Darebin City Council: Love local and building resilience

*"Darebin City Council has introduced a raft of initiatives to help our community and local businesses cope with the negative impacts the pandemic has caused."*

City of Darebin

The City of Darebin introduced a range of local resilience initiatives during the COVID pandemic which included the COVID-19 Community and Local Business Resilience and Recovery Package designed to complement other initiatives from State and Federal Government and the COVID-19 Financial Hardship Policy to assist individuals and businesses with financial relief to help them survive the

COVID pandemic and its economic impacts.

*"Love Local Card – a new initiative to support the retail, hospitality, health, fitness and beauty businesses that make Darebin a great place to live, work and play."*

City of Darebin

The Love Local campaign was designed to support local businesses, encouraging locals to dine out and shop locally. The council launched its Love Local Card program with pre-paid Love Local Cards to the value of \$30 and \$50 being given to residential property homeowners and residential pensioner property homeowners once they had registered with the scheme. Job seekers living in Darebin who were registered with Job Active or a disability services provider were also eligible to receive a \$50 pre-paid Love Local Card.

The scheme attracted around 400 participating local businesses and more than 20,000 Love Local Cards were distributed, a substantial stimulus for the local business community. The council also developed an online Darebin business map as part of the program.

#### Every local job matters

*"The LGAs most severely affected by slower recovery in average quarterly GRP growth are the inner regions of Banyule City Council (1.3 per cent) Moreland City Council (1.1 per cent) and Darebin City Council (1.1 per cent)."*

NIEIR

Council has spearheaded local employment initiatives including providing funding to the local hospitality

association to help with job matching locals with local businesses looking for staff. The local cafes relied heavily on international students. Various lockdowns have disrupted this program. Darebin has pockets of disadvantage and long-term unemployed and when libraries and other facilities are closed because of COVID the more disadvantaged unemployed have no way to access computers to allow



them to apply for jobs. So their lives are badly disrupted and this is an example of how the disadvantaged really suffer under these circumstances. There are many layers to this and to get to employment you have to have certain things, including networks. Councils help where they can.

Council has also been helping workers to ensure they know their rights in relation to JobKeeper. Many businesses struggled on during the COVID pandemic, those who adapted did best and an online presence helped. Other businesses that could not adapt closed their doors. We have seen wholesale business now offering online retail and many small business owners are driven to succeed as they need to protect the financial wellbeing of their families. Some businesses have built their own communities so get regular customers including Facebook groups. Darebin's retail sectors and precincts are going to become work centres as patterns of work change. People love their local precincts and it may be that more people choose to arrange their lives around working locally, rather than commuting every day.

We have been looking at how businesses have been set up, whether they were registered for GST so they were eligible for government support programs. Those sorts of things are extremely important. So linking local businesses with professional business services is essential.

*"The worst impacted regions for unemployment in the initial stages of the COVID pandemic include Hume, where the unemployment rate reached 14.5 per cent in the September 2020 quarter. While Moreland, Whittlesea and Darebin have all reached unemployment rates during the pandemic that have exceeded 8.0 per cent. Banyule and Nillumbik have maintained relatively low levels of unemployment throughout the pandemic with some increases during the worse periods."*

NIEIR

## Arts and creativity in Darebin

The city of Darebin is home to a substantial community of creatives including songwriters, musicians, singers, makers, visual artists and designers providing a rich foundation for ongoing and future development of the creative sector in Darebin.

The creative sector was hit hard by the pandemic and Darebin is proud of its creative output of music, the visual arts and events. So creatives have gone to find other work including the people who make live events possible. So we are at risk of losing the commercial aspects of the industry. Council has helped creatives where possible, including advocating with other levels of government, but the funding mostly goes to large operators and not to individual artists.

*"Investigating the race between local employment growth and resident workforce growth, in the case of Darebin, in 1994 the excess of the resident workforce when compared to local jobs was only 12 per cent but rose to 31.8 per cent by 2019, about the same level as in Banyule, thanks largely to population growth."*

NIEIR

Darebin Cultural and Creative Industries Framework (2018) states that:

- around 40 per cent of all businesses registered in Darebin were within the creative and cultural industries sector;
- 52 per cent of businesses registered in Darebin were sole traders; and
- 58 per cent of registered businesses, operate from home.

*"The increasing numbers of people attending publicly and privately owned arts and entertainment venues leads to increased trade in hospitality, retail and local services sectors."*

City of Darebin

Darebin has aligned its Creative and Cultural Infrastructure Framework with its tourism strategy to create the ecosystem, visitation and dynamism the arts and creative industries need to help them flourish.

*"The arts support social cohesion through opportunities to explore and understand diverse cultures and backgrounds."*

City of Darebin

Darebin describe the pillars of their arts strategy as:

- **Inclusive** – Increase access and meaningful participation in the arts for priority communities;
- **Enterprising** – Make Darebin the home of choice for artists and creative industries;
- **Regenerative** – Develop creative spaces and places;
- **Connected** – Create connections across communities and between generations; and
- **Vibrant and visionary** – lead by example and commit to best practice principles.

## 13.2.7 Banyule City Council: Social capital

The impact of the COVID pandemic as it related to council business was that some areas such as aged services and child care services which are those frontline mandated services that need to continue regardless. Parks services



and compliance also continued operating under COVID rules. Other areas in which council operates were impacted and included council's leisure centres which were closed for long periods, events services and generally community engagement. As a council we managed to keep going in most areas and the shift to working at home was successful in terms of assisting the delivery of services and the ongoing nature of what council is responsible for. The pressure on staff meant that people were stressed by the impacts of COVID and the sometimes difficult issues being faced. For new staff the issue was building relationships with colleagues and navigating their way around the organisation. New staff were inducted online.

*"The pandemic emphasised the important role Council plays in supporting people at all ages and life stages. During COVID-19 restrictions, programs were provided online and via telephone, from Maternal and Child Health, kindergartens, Banyule Youth Services, through to our Older Adults' support, teams demonstrated their flexibility and commitment to supporting the community."*

Engaging with council's advisory committees was more difficult and difficulties with engaging with the community influences the effectiveness of the work council does. Working in the emergency management space has also meant that workloads for many of our council staff have increased significantly. Council has been running a big immunisation service and that has added complexity. The community are becoming more and more aware about how public spaces can be utilised to support them.

*"Youth Projects teamed up with Banyule City Council to help bring the cafe to life in their local community. Banyule is supporting our latest venture with the café fit-out and rent subsidies whilst we (Youth Projects) continues doing what we do best – providing training and employment opportunities for young people."*

A focus for council is social enterprises and council would like to see Banyule become the social enterprise capital of Australia. Council's role is in helping to activate opportunities in the area including the Little Social kiosk at Rosanna Station. Council looks for opportunities to incorporate a social enterprise in council developments.

The Banyule Social Enterprise Action Plan 2020-2025 lists the priority actions for achieving its strategic goals:

- support a culture of social enterprise innovation to thrive in Banyule;
- lead the Local Government sector on using social enterprise as a strategy to boost social innovation;
- support emerging social enterprises to develop a feasible business model;
- enable strategic social enterprise partnerships and innovation;

- embed a whole-of- council procurement framework that leverages Council purchasing to support social and economic outcomes;
- connect social enterprises with buyers and supply chain opportunities; and
- support the local community to learn about and actively engage with social enterprise.

Young people in Banyule are under greater pressure because of the impact of COVID and they are probably less connected. Council runs an inclusive employment program for local residents who face barriers to employment and offer six months employment to give people experience. Council describes the benefits of the program pre-COVID as being:

- making a difference in your local community;
- gaining local government work experience and references;
- building on your strengths and skills in a role designed for you;
- being supported by an inclusive supervisor and team;
- receiving individual coaching to set and achieve job and life goals; and
- growing your social and professional connections.

COVID has disrupted work pathways for so many young people. COVID has also created problems for older workers, particularly if they lose a job, getting back into employment can be very difficult. So it is about connecting the older groups with jobs that need their particular skill sets. Our Aged Advisory Committee has raised concerns about this issue.

Links between education providers and the council tend to be partnerships on specific projects and council needs to develop a broader strategy in this important area. Having that higher lens and working with NORTH Link is helpful. There appear to be problems in the aged care industry in relation to accessing enough workers and that appears increasingly to be problematic.

### **Employment in Banyule**

Banyule has a large Health Sector and large scale employment in that sector and work continues with the additional pressures that COVID created for staff and the organisations themselves. Some retail businesses, the ones that adapted to the impacts of COVID, did quite well, while others closed. Personal services businesses were among the worst hit. COVID tends to hit the smaller stores hardest and particularly those that rely on impulse purchases. Council helped some of the smaller businesses to develop a web presence by providing grants. So this process has had a longer term benefit for many businesses and the



grants to help businesses to develop their web presence were popular. COVID has changed the culture in some businesses.

Service industries are developing in Banyule, perhaps connecting themselves to a medical precinct. The business park in West Heidelberg appears to be re-inventing itself, with niche operators including small breweries and glass blowing, replacing the more traditional manufacturing companies.

Retail strips are also changing in terms of the mix of business, so changes include service type businesses like tax and law instead of retail. So that has an impact on vibrancy of the strip as there are fewer visitors. Long term impacts of COVID include more working from home.

### Knowledge, arts and culture

*"During 2020/2021, Council's major capital works projects and initiatives included the Ivanhoe Library and Cultural Hub Construction of the new Ivanhoe Library and Cultural Hub was completed and its doors opened to the public in March 2021."*

Banyule City Council

### Banyule's Arts and Culture Strategic Plan 2017-2021

*"Arts facilities operated by Banyule Council include Hatch Contemporary Arts Space and Jets Studio, and Council is custodian of an art collection of more than 500 artworks valued at over \$1.5 million. The Ivanhoe Library and Cultural Hub project is an exciting new development."*

Banyule City Council

The Plan sets out a series of strategic themes.

#### CULTURAL PLACES AND SPACES

- Develop a 10-year Arts and Cultural Facilities report.
- Contribute to the design and delivery of the Ivanhoe Library and Cultural Hub.
- Investigate greater use of community halls and other Council owned facilities.
- Strengthen networks and partnerships with neighbourhood houses and libraries.

*"Through a partnership with Woolworths, we are delivering a new Rosanna library, double the size of the existing library with a much needed expansion to the children's area as well as co-working and study spaces, community meeting rooms, reading areas, quiet spaces and much more. The new library is proposed to be a two storey, 1,300sqm building*

*that incorporates indoor and outdoor spaces in the heart of Rosanna."*

Banyule City Council

#### FACILITATION OF PARTNERSHIPS

- Partner with one of Banyule Council's advisory committees and their corresponding communities each year over the next four years.
- Identify opportunities for collaboration with Yarra Plenty Regional Library.
- Develop enhanced sponsorship procedures.
- Establish and strengthen relationships with trader associations.

#### SUPPORTING CREATIVE PRACTISE

- Create a Cultural Activity Location Map.
- Establish Pinpoint Artist Network.
- Develop a new Public Art Policy.

#### BETTER MARKETING AND COMMUNICATIONS

- Create marketing plans for major programs.
- Banyule website development.
- Develop Pinpoint as a marketing tool.

## 13.3 Local Government: Biodiversity, tourism and innovation

Local Government is central to directing the development of a 'future' Melbourne which combines innovation (creating a sustainable city – energy/water/waste/circular economy/other climate change mitigation and urban planning/transport/amenity) while protecting the natural world and rewilding where this is possible, including the native species that live in what remains. These things in combination create vastly improved the wellbeing of local communities and are far better environments in which to bring up children. In creating these changes new opportunities are created for both work and leisure. Not to do these things, given what has occurred in Queensland and New South Wales is no longer an option. There is a rich opportunity for employment as new approaches to these matters are introduced.

*"Creating accessible, safe and attractive local areas where people can access most of their everyday needs within a 20-minute walk, cycle or local public transport trip, will make Melbourne healthier and more inclusive. Due to the specialised and diverse nature of work, many people will still need to travel*

*outside of this 20-minute neighbourhood for their jobs.”*

Plan Melbourne 2017-2050

The Northern Horizons Report reported that *Plan Melbourne 2017-2050* then included Action 91, a whole-of-government approach to cooling and greening Melbourne, aiming to create urban forests throughout the metropolitan area and that Infrastructure Victoria expands the list of benefits of urban greening to include:

- creating space for physical activity to address obesity and diabetes rates and reduced fitness, particularly in young children;
- creating inclusive community spaces to address social exclusion, noting the ageing population and the increasing importance of positive mental health;
- opportunities for walking and cycling for transport;
- providing shade to mitigate the ‘heat island effect’ to address the challenges of climate change, heat-related death and increasing urban densities;
- protecting and enhancing natural environments and supporting biodiversity by providing the critical connections within and between ecosystems;
- reducing emissions and addressing air quality, including acting as a carbon sink;
- providing a more efficient and effective means of managing stormwater to protect against flooding; and
- delivering energy savings through natural temperature regulation.

*“Time spent with nature makes us healthier, happier, and better connected to what each one of us is born a part of – life on earth.”*

People and Parks Foundation

### **Victorian Auditor-General’s Office (VAGO) audit Protecting Victoria’s Biodiversity, October 2021**

The latest of a series of audits into the ‘management’ of biodiversity and biodiversity loss in Victoria found that:

- Victoria’s biodiversity provides the foundations of healthy ecosystems, such as clean air and water, productive soils, natural pest control, pollination and flood mitigation. Threatened species and their habitats are critical to our biodiversity; and
- Victoria’s biodiversity continues to decline. The State of the Environment 2018 report states that a third of all of Victoria’s terrestrial plants, birds, reptiles, amphibians, mammals, invertebrates and ecological communities are threatened with extinction.

Since European settlement Victoria has lost 81 native plant and animal species while the number of threatened species is also increasing as threatened species continue to decline in number and geography. Two thousand species, that is, between one quarter and a third of all of Victoria’s terrestrial plants, birds, reptiles, amphibians, mammals and invertebrates and ecological communities, are considered to be at threat of extinction.

*“Biodiversity is the variety of all living things on Earth—all the creatures, plants, fungi and microorganisms, as well as their genetic information. These all work together in ecosystems like an intricate web, maintaining balance and supporting life and wellbeing, including for humans.”*

VAGO

Victoria has an extremely poor track record when it comes to biodiversity conservation and the situation becomes more dire as each year passes. Local Government has a role in ensuring the decline of biodiversity is slowed at the local level.

*“Local governments and major institutions in Melbourne’s North have a significant role to play in offsetting biodiversity loss. The region’s schools and tertiary institutions have a key role in educating local populations to appreciate native plants and wildlife. Thriving areas of biodiversity also bring tourism and recreational benefits to a region. The proposed regional Urban Forest Strategy should include an important focus on biodiversity conservation.”*

Northern Horizons Report

## **13.4 Young people: Connection and disconnection, a local government perspective**

This section discusses participation rates, employment/unemployment in Melbourne’s North at the SA4 level and compares Melbourne regions as well as comparing rates of youth allowance. The data used is from the ABS Detailed Labour Force Survey, November 2021 and DSS demographic data.

Table 13.1 shows that in Hume, the participation of 15-24 year olds in the workforce fell sharply in 2020 to 58.4 per cent as a result of the pandemic. The unemployment rate in Hume also rose as a direct consequence of the pandemic, falling again in 2021 as the participation rate fell and more job opportunities for young people returned. Much of the work would have been part-time or casual.

The participation rate of 15-24 year olds in the workforce for Melbourne's North as a whole fell in 2020 but rose again in 2021 to a level higher than it was in the years 2016 to 2019.

Table 13.2 compares Melbourne's North (composite SA4 regions) with Victoria in terms of unemployment and participation in the workforce for the 15 to 24 year old age group and the total working aged population.

Table 13.1 Unemployment rate and participation rate Northern regions of Melbourne (average of year ended November)								
SA4	2016	2017	2018	2019	2020	2021	Average annual change (%)	
							2016 to 2019	2019 to 2021
15 to 24 year olds – unemployment rate (%)								
Hume	12.3	7.8	9.9	10.1	12.7	8.0	-0.7	-1.1
Melbourne – Inner	13.0	9.8	9.3	12.9	15.1	10.7	-0.1	-1.1
Melbourne – North East	13.6	15.9	8.8	10.1	15.1	11.1	-1.2	0.5
Melbourne – North West	17.0	18.3	14.1	8.7	16.6	13.4	-2.8	2.4
Northern Melbourne total	14.1	13.5	10.3	10.8	15.4	11.2	-1.1	0.2
Victoria	13.0	13.0	11.8	10.2	14.7	12.1	-0.9	1.0
15 to 24 year olds – participation rate (%)								
Hume	73.7	73.9	66.7	75.6	58.4	68.0	0.6	-3.8
Melbourne – Inner	56.6	55.3	57.7	57.4	57.5	60.6	0.2	1.6
Melbourne – North East	64.7	68.3	71.1	71.2	62.4	68.0	2.2	-1.6
Melbourne – North West	68.8	68.0	61.8	63.6	69.5	66.4	-1.7	1.4
Northern Melbourne total	63.4	63.4	62.8	63.7	62.1	64.7	0.1	0.5
Victoria	65.9	65.4	64.8	66.0	62.4	65.5	0.0	-0.2

Source: ABS Detailed Labour Force Survey, November 2021.

Table 13.2 Northern Melbourne Labour Force regions, participation rate and unemployment rate (average of year ended November)								
SA4	2016	2017	2018	2019	2020	2021	Average annual change (%)	
							2016 to 2019	2019 to 2021
15 to 24 year olds – unemployment rate (%)								
Northern Melbourne total	14.1	13.5	10.3	10.8	15.4	11.2	-1.1	0.2
Victoria	13.0	13.0	11.8	10.2	14.7	12.1	-0.9	1.0
Total working age population – unemployment rate (%)								
Northern Melbourne total	5.3	5.8	4.7	4.8	6.4	5.6	-0.2	0.4
Victoria	5.8	5.9	5.1	4.7	6.3	5.2	-0.4	0.3
15 to 24 year olds – participation rate (%)								
Northern Melbourne total	63.4	63.4	62.8	63.7	62.1	64.7	0.1	0.5
Victoria	65.9	65.4	64.8	66.0	62.4	65.5	0.0	-0.2
Total working age population – participation rate (%)								
Northern Melbourne total	65.2	66.1	65.7	66.2	65.1	66.3	0.3	0.0
Victoria	63.4	63.4	62.8	63.7	62.1	64.7	0.1	0.5

Source: ABS Labour Force Survey, November 2021, based on SA4 regions.

Table 13.3 gives youth allowance data for those not in education or training and searching for work.

Youth Allowance is defined as being for young people who need financial support while studying, training or looking for a job. The allowance is subject to an income and assets test.

Eligible youth are:

- a full-time student or apprentice aged 16 to 24;
- aged 16 to 21 looking for a full-time job or combining part-time study with looking for work;
- a full-time student or apprentice over age 25 who was receiving Youth Allowance; before they turned 25 and are still in the same course of study or apprenticeship; and
- a student aged 22 to 24 who is temporarily incapacitated for full-time study.

For Melbourne's North as a whole the number of recipients rose sharply in 2020, falling again in 2021 to levels below those in 2016. Hume and Whittlesea had the highest number of young people accessing the allowance in 2020 and Nillumbik had the lowest number. The pattern was maintained in 2021, although at a much lower level.

Table 13.4 gives the youth allowance data for those in education or training as an apprentice. In 2020 the number of recipients in Hume had risen to 2,879, up from 2,114 in 2019, then declined again in 2021 suggesting that at least some of the participants had dropped out of training activities because of difficulties experienced during the pandemic while studying. In 2021 for Melbourne's North as a whole, the number of recipients had fallen to a level below that in 2016. Mitchell had the lowest number of recipients in 2021.

<b>Table 13.3 Youth Allowance (other) recipients in Melbourne's North</b>						
	<b>Dec-16</b>	<b>Dec-17</b>	<b>Dec-18</b>	<b>Dec-19</b>	<b>Dec-20</b>	<b>Dec-21</b>
<b>Number</b>						
Banyule (C)	278	260	199	153	384	181
Darebin (C)	408	374	331	277	570	313
Hume (C)	1234	1115	915	891	1968	1079
Mitchell (S)	229	170	135	156	310	176
Moreland (C)	491	447	371	309	699	384
Nillumbik (S)	87	67	74	54	136	76
Whittlesea (C)	746	681	567	537	1327	666
<b>Melbourne's North</b>	<b>3473</b>	<b>3114</b>	<b>2592</b>	<b>2377</b>	<b>5394</b>	<b>2875</b>
<b>Victoria</b>	<b>20735</b>	<b>19406</b>	<b>16824</b>	<b>15252</b>	<b>31406</b>	<b>17034</b>
<b>Per cent of age 16-24 on Youth Allowance (other)</b>						
Banyule (C)	2.0	1.9	1.4	1.1	2.9	1.4
Darebin (C)	2.2	2.0	1.7	1.4	3.1	1.9
Hume (C)	4.5	3.9	3.2	3.0	6.8	3.9
Mitchell (S)	4.6	3.3	2.6	2.9	5.6	3.3
Moreland (C)	2.4	2.2	1.8	1.5	3.5	2.1
Nillumbik (S)	1.1	0.8	0.9	0.6	1.6	1.0
Whittlesea (C)	3.0	2.7	2.2	2.0	5.1	2.6
<b>Melbourne's North</b>	<b>2.9</b>	<b>2.6</b>	<b>2.1</b>	<b>1.9</b>	<b>4.5</b>	<b>2.5</b>
<b>Victoria</b>	<b>2.8</b>	<b>2.5</b>	<b>2.1</b>	<b>1.9</b>	<b>4.1</b>	<b>2.3</b>

Source: DSS demographic data.

Table 13.4 Youth Allowance (student and apprentice)						
	Dec-16	Dec-17	Dec-18	Dec-19	Dec-20	Dec-21
<b>Number</b>						
Banyule (C)	1015	944	813	958	1092	802
Darebin (C)	1809	1682	1621	1520	1725	1366
Hume (C)	2071	2089	1970	2114	2879	2314
Mitchell (S)	204	179	171	166	228	169
Moreland (C)	1944	1884	1769	1772	2111	1735
Nillumbik (S)	328	319	251	235	349	271
Whittlesea (C)	1915	1829	1734	1619	2160	1684
<b>Melbourne's North</b>	<b>9286</b>	<b>8926</b>	<b>8329</b>	<b>8384</b>	<b>10544</b>	<b>8341</b>
<b>Victoria</b>	<b>48536</b>	<b>45103</b>	<b>41088</b>	<b>41207</b>	<b>53985</b>	<b>43104</b>
<b>Per cent of age 16-24 on Youth Allowance (student and apprentice)</b>						
Banyule (C)	7.3	6.8	5.8	6.9	8.2	6.4
Darebin (C)	9.7	8.9	8.4	8.0	9.5	8.1
Hume (C)	7.5	7.4	6.8	7.2	10.0	8.4
Mitchell (S)	4.1	3.4	3.3	3.1	4.2	3.2
Moreland (C)	9.5	9.1	8.4	8.4	10.5	9.4
Nillumbik (S)	4.0	3.9	3.0	2.8	4.2	3.5
Whittlesea (C)	7.7	7.2	6.7	6.1	8.3	6.7
<b>Melbourne's North</b>	<b>7.8</b>	<b>7.4</b>	<b>6.8</b>	<b>6.8</b>	<b>8.8</b>	<b>7.3</b>
<b>Victoria</b>	<b>6.5</b>	<b>5.9</b>	<b>5.2</b>	<b>5.2</b>	<b>7.0</b>	<b>5.8</b>

Source: DSS demographic data.





## **SECTION THREE:**

### **WHAT WOULD IT LOOK LIKE?**

## Chapter 14: Industry and occupation forecasts by region

- Melbourne's North will need another 33,900 workers by 2026, and 66,250 by 2031 compared to place-of-work employment levels as of 2021.
- Forecast population growth over the next ten years is expected to be under half that of the previous ten years across most Victorian regions.
- Melbourne's North has less jobs than workers living within the region. This outflow of workers is forecast to continue. For the gap between local jobs and resident workers to be closed, a further 182,000 local jobs would be required by 2031.
- The industry divisions within Melbourne's North that are expected to be in high employment demand include Health Care and Social Assistance; Transport, Postal and Warehousing; Professional, Scientific and Technical Services; and Education and Training.
- Manufacturing will continue to decline while the Construction industry will be stagnant or in decline as a result of slow population growth and falling residential investment.
- Melbourne's North workforce will become more Professional as demand for health-related occupations, professional service and education occupations increase.
- Job demand for Technicians and Trades is expected to plateau and fall on the back of weaker Manufacturing and Construction sectors.

## 14. Industry and occupation forecasts by region

The overall Australian economic outlook for the next ten years is one of weaker growth compared to the previous decade, as the shock brought on by the COVID-19 pandemic hangs over the next ten years. Industry aligned skills training is critical here to minimise any labour shortages that might further constrain growth. The next five years will see the Australian economy require another 1,131,000 jobs compared to 2021, while the number of jobs required will increase to 2,206,000 by 2031. Melbourne's North will need another 33,900 workers by 2026, and 66,250 by 2031 compared to place-of-work employment levels as of 2021.

The primary focus of the economic forecasts is to produce employment forecasts by industry and occupation for Melbourne's North. The evidence report summarises these forecasts for the next ten years out to 2031 focusing on Melbourne's North. NIEIR have also forecast indicators for other regions to provide a comparison to Melbourne's North. Section 14.1 summarises the economic outlook for Melbourne's North compared to other sub-regions within Greater Melbourne, State, and National economies. These regions are:

- Melbourne's North;
- Melbourne's South;
- Melbourne's East;
- Melbourne's West;
- Central Melbourne;
- Greater Melbourne;
- Regional Victoria;
- Victoria; and
- Australia.

Section 14.2 contains employment forecasts at the industry division levels for all regions, and by the industry sub-division level by industry for Melbourne's North compared to Greater Melbourne.

Section 14.3 presents detailed occupation forecasts by industry division for Melbourne's North. These are presented on both a place-of-work and resident basis.

### 14.1 Key economic indicators by region

Table 14.1 shows the key economic indicators for Melbourne's North compared to the other sub-regions of Greater Melbourne, Victoria, Regional Victoria, and the National economies for the 2021 to 2031 forecasting period. Over the next ten years, Melbourne's North economy is expected to grow by an average of 2.8 per cent per annum. The rate of GRP growth is slightly above the other suburban regions of the South, East and West within Greater Melbourne. However, growth within the Central region of Melbourne is expected to remain much weaker over the next ten years compared to the outer regions with average annual growth of only 1.1 per cent per annum.

The reduction in population growth compared to the pre-COVID period will be a major negative factor for reducing Australia's economic outlook. This will be caused by the fall off in immigration intakes in the three years since 2019 stemming directly from the pandemic. Reduced rates of migration will likely continue given the likelihood that COVID-19 and successor mutations will not be eradicated until 2023 or beyond.

**Table 14.1 Summary of economic indicators 2021 to 2031 by region (average annual growth)**

	GRP	Population	Resident employment	Place-of-work employment	Business and public investment	Residential investment
North	2.8	1.1	1.5	1.6	3.6	-2.4
South	2.5	0.9	1.5	1.8	3.4	-1.8
East	2.3	0.5	1.2	1.4	3.0	-0.8
West	2.6	1.4	2.0	2.1	3.0	-3.6
Central	1.1	1.1	1.5	0.7	1.7	-1.6
<b>Greater Melbourne</b>	<b>2.1</b>	<b>1.0</b>	<b>1.5</b>	<b>1.4</b>	<b>2.9</b>	<b>-2.1</b>
<b>Rest of Victoria</b>	<b>1.5</b>	<b>0.6</b>	<b>1.5</b>	<b>1.6</b>	<b>2.1</b>	<b>-2.9</b>
<b>Victoria</b>	<b>2.0</b>	<b>0.9</b>	<b>1.5</b>	<b>1.5</b>	<b>2.7</b>	<b>-2.2</b>
<b>Australia</b>	<b>2.4</b>	<b>1.0</b>	<b>1.6</b>	<b>1.6</b>	<b>2.7</b>	<b>3.2</b>

Source: NIEIR.

Melbourne's North and West will continue to lead population growth over the next ten years; however, the rate of growth will be much slower than migration lead pre-COVID rates. Melbourne's North will grow by 1.1 per cent per annum until 2031, while Melbourne's West will lead population growth at 1.4 per cent per annum. This compares to an average rate of 1.0 per cent across both Greater Melbourne and Australia.

Employment outcomes are expected to be better for the Melbourne regions outside of the CBD as industry and work practices look to decentralise after experiencing years of disruption from lockdowns and working from home. Place-of-work employment for Melbourne's North will grow at around 1.6 per cent per annum over the next ten years, compared to 1.4 per cent on average for Greater Melbourne. While resident employment will grow by 1.5 per cent, which is comparable to the Greater Melbourne average.

### 14.1.1 Gross Regional Product

The following tables show total GRP and productivity (GRP per hour worked) out to 2031 by region. Economic growth across all Greater Melbourne regions outside of the Central region are expected to be slightly above historical rates. This includes economic recovery from the dip brought on by COVID-19, and a shift in activity away from the CBD to the inner to middle regions of Melbourne. Melbourne's North is expected to grow by an average of 2.8 per cent per annum from 2021 to 2031, compared to an average across all of Greater Melbourne of 2.1 per cent. The Central region has the slowest GRP growth rate within Greater Melbourne of 1.1 per cent per annum.

Victorian state total GRP growth is expected to be 2.0 per cent per annum from 2021 to 2031, while Australian national GRP growth will be 2.4 per cent per annum.

Much of the growth in economic activity in the Greater Melbourne regions outside of Central Melbourne will be realised as productivity gains, that is, higher GRP per hour worked, rather than translate directly into the same rate of growth in employment. In contrast, productivity growth in regional Victoria and Central Melbourne will be stagnate over the next ten years, as shown in Table 14.3.

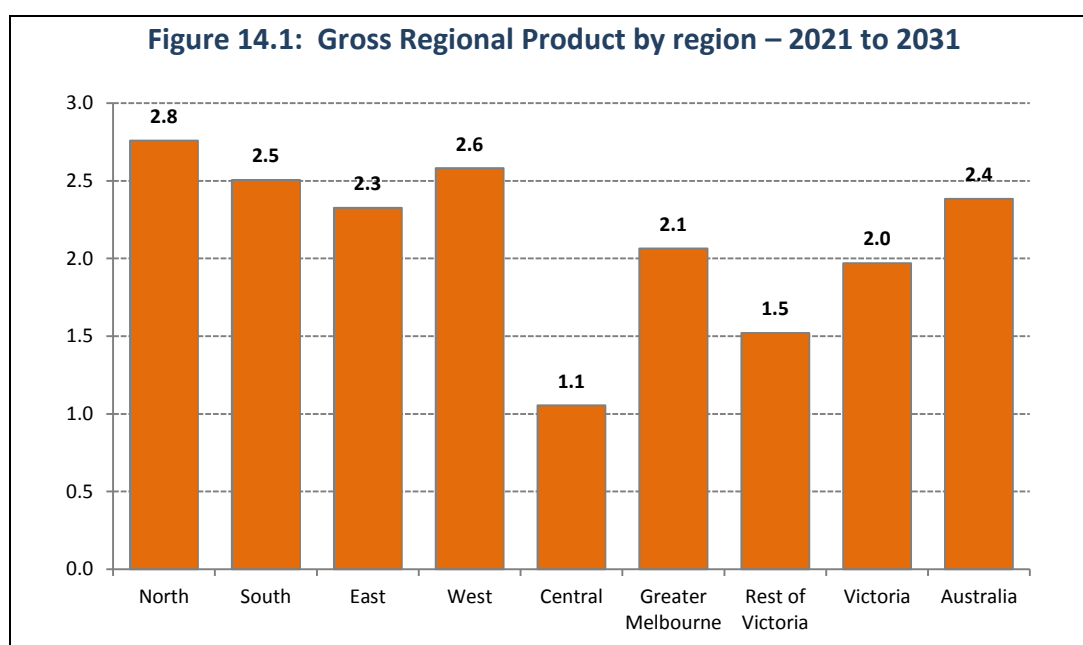
	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (per cent)	Annual growth 2021 – 2031 (per cent)
North	29.7	34.6	40.1	45.7	49.3	56.4	64.7	2.1	2.8
South	61.5	71.9	77.8	87.6	93.5	104.7	119.8	1.9	2.5
East	50.3	56.4	61.0	67.0	68.3	77.8	86.0	1.1	2.3
West	25.0	31.3	36.9	41.7	47.1	52.0	60.8	2.5	2.6
Central	50.5	66.3	85.5	102.9	124.3	135.8	138.0	3.8	1.1
<b>Greater Melbourne</b>	<b>217.0</b>	<b>260.5</b>	<b>301.3</b>	<b>344.9</b>	<b>382.5</b>	<b>426.7</b>	<b>469.3</b>	<b>2.4</b>	<b>2.1</b>
<b>Rest of Victoria</b>	<b>71.5</b>	<b>78.1</b>	<b>78.5</b>	<b>79.6</b>	<b>83.2</b>	<b>87.7</b>	<b>96.7</b>	<b>0.6</b>	<b>1.5</b>
<b>Victoria</b>	<b>288.6</b>	<b>338.6</b>	<b>379.7</b>	<b>424.5</b>	<b>465.7</b>	<b>514.3</b>	<b>566.0</b>	<b>2.1</b>	<b>2.0</b>
<b>Australia</b>	<b>1198.1</b>	<b>1414.1</b>	<b>1613.4</b>	<b>1845.4</b>	<b>2006.2</b>	<b>2230.1</b>	<b>2539.3</b>	<b>2.2</b>	<b>2.4</b>

Source: NIEIR.



	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (per cent)	Annual growth 2021 – 2031 (per cent)
North	65.7	74.1	77.3	82.2	82.6	85.6	91.9	0.7	1.1
South	73.2	79.6	79.5	84.1	84.9	85.5	90.6	0.7	0.7
East	69.9	76.9	78.6	84.1	84.5	86.6	92.6	0.7	0.9
West	72.3	80.5	82.6	84.6	87.2	85.4	90.5	0.5	0.4
Central	77.6	85.8	88.9	97.0	98.6	100.5	102.0	1.0	0.3
Greater Melbourne	72.1	79.8	81.8	87.3	88.8	90.0	94.3	0.8	0.6
Rest of Victoria	82.7	84.1	79.0	78.8	81.4	76.6	80.1	0.3	-0.2
Victoria	74.5	80.8	81.2	85.6	87.4	87.4	91.5	0.7	0.5
Australia	76.7	83.1	85.9	93.9	95.8	97.7	103.1	1.1	0.7

Source: NIEIR.



### 14.1.2 Population and households

The following tables summarise total population growth, working age population growth and total households by region. Over the next ten years Victoria is expected to add another 615,100 people to the state. Around 124,000 of these people will be living within Melbourne's North. Total population in Victoria will be 7,273,400 by 2031 and 1,197,800 in Melbourne's North. These forecasts have been heavily impacted by the disruptions to migration caused by the ongoing effects of the COVID-19 pandemic. Had population growth continued at the same trend rate as between 2016 and 2019, there would be around an additional 1,000,000 people living in Victoria by 2031. This includes around another 200,000 that would have lived within Melbourne's North.

Forecast population growth over the next ten years is expected to be under half that of the previous ten years across most Victorian regions. Melbourne's North will grow at 1.1 per cent, compared to 1.0 per cent across Greater Melbourne. Growth in the working age population of those between 18 and 70 years of age is also expected to be below that of total population growth. In the previous decade, working age population has made up around 66 per cent of the total population within Melbourne's North. The proportion of working age population is expected to decline to 64 per cent. This is partly due to long-term aging trends in the population continuing out to 2031 without the same immigration levels of the previous decade to fill gaps in the labour force.

Table 14.4 Total population by region ('000)									
	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (per cent)	Annual growth 2021 – 2031 (per cent)
North	717.8	760.4	847.0	963.5	1073.6	1129.1	1197.8	2.4	1.1
South	1106.2	1201.3	1329.8	1486.8	1617.7	1684.9	1763.9	2.0	0.9
East	962.8	982.3	1028.0	1086.5	1128.0	1156.0	1191.2	0.9	0.5
West	550.7	618.8	737.0	864.7	993.8	1059.4	1141.6	3.0	1.4
Central	122.8	151.0	177.9	234.3	283.5	295.6	316.9	4.8	1.1
Greater Melbourne	3460.3	3713.8	4119.8	4635.8	5096.5	5325.1	5611.4	2.2	1.0
Rest of Victoria	1281.3	1320.9	1388.4	1479.8	1561.9	1607.1	1662.2	1.2	0.6
Victoria	4741.7	5034.7	5508.2	6115.6	6658.5	6932.2	7273.6	1.9	0.9
Australia	19179.2	20349.0	22218.3	24042.5	25693.9	26861.6	28270.9	1.5	1.0

Source: NIEIR.

Table 14.5 Working age population 18 to 70 ('000)									
	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (per cent)	Annual growth 2021 – 2031 (per cent)
North	465.4	496.6	562.0	635.3	707.7	732.3	772.5	2.3	0.9
South	718.3	787.0	874.8	967.5	1046.5	1074.6	1120.0	1.8	0.7
East	626.5	639.5	670.8	699.5	729.1	740.9	761.8	0.8	0.4
West	359.3	408.4	493.5	570.6	646.9	678.9	731.0	2.7	1.2
Central	95.5	122.7	145.1	191.3	234.6	244.7	261.5	4.9	1.1
Greater Melbourne	2265.0	2454.2	2746.3	3064.3	3364.9	3471.5	3646.7	2.1	0.8
Rest of Victoria	776.5	810.5	855.2	900.3	937.7	947.6	973.7	0.9	0.4
Victoria	3041.6	3264.6	3601.4	3964.6	4302.5	4419.1	4620.4	1.8	0.7
Australia	12241.5	13130.2	14405.0	15434.5	16339.0	17136.3	18424.7	1.3	1.2

Source: NIEIR.

Table 14.6 Households ('000)									
	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (per cent)	Annual growth 2021 – 2031 (per cent)
North	246.4	266.2	292.6	331.8	376.1	393.3	413.5	2.5	1.0
South	414.6	451.2	485.7	530.8	589.6	613.2	639.4	2.0	0.8
East	335.9	348.6	360.3	381.4	406.5	419.1	432.0	1.2	0.6
West	189.2	216.5	252.3	289.7	340.4	360.2	384.8	3.0	1.2
Central	55.4	68.9	78.6	106.9	130.5	140.4	150.8	5.2	1.5
Greater Melbourne	1241.5	1351.3	1469.4	1640.6	1843.0	1926.2	2020.5	2.3	0.9
Rest of Victoria	469.4	497.9	534.8	571.6	618.3	640.3	663.4	1.5	0.7
Victoria	1710.9	1849.2	2004.2	2212.2	2461.3	2566.5	2683.9	2.1	0.9
Australia	6923.7	7449.2	8028.4	8714.9	9490.8	9944.5	10645.7	1.7	1.2

Source: NIEIR.

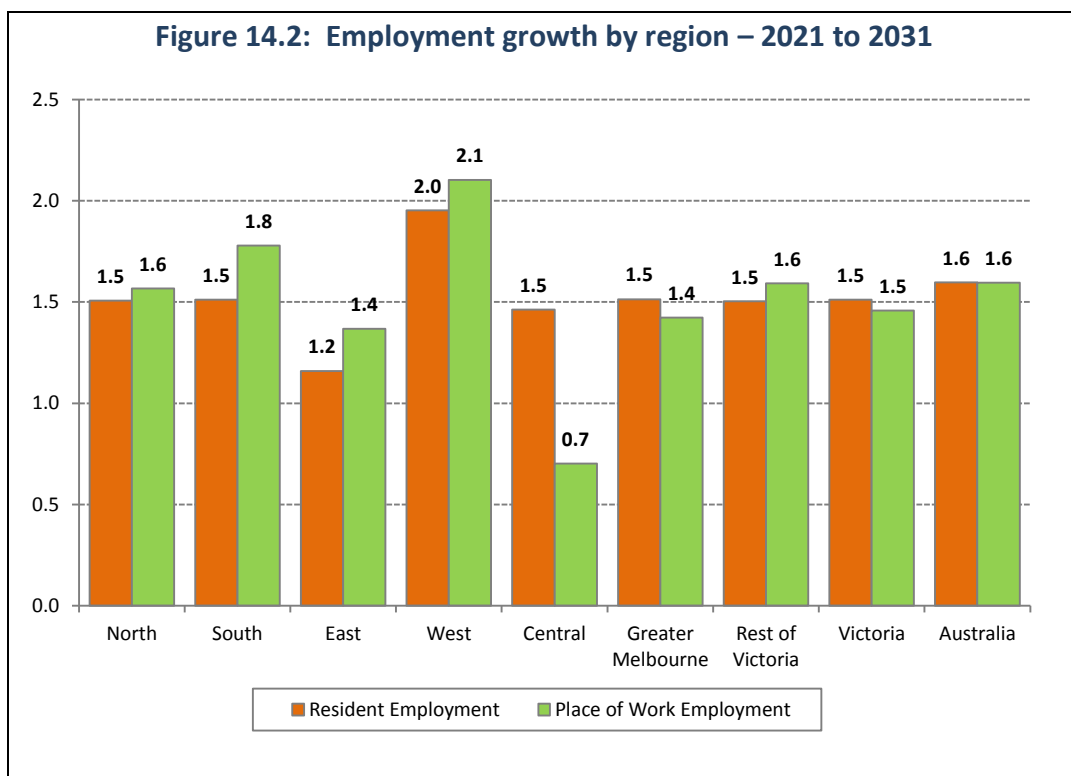
### 14.1.3 Employment

Melbourne's North has long had a structural gap between the number of workers employed within the North, and the number of workers living within the North and commuting to jobs outside of the region. As of 2021, there was a net outflow of 159,000 workers. While the gap between resident and place-of-work employment will persist over the forecasts, with more workers living within Melbourne's North than there are jobs, the gap is expected to stabilise somewhat under lower overall employment growth.

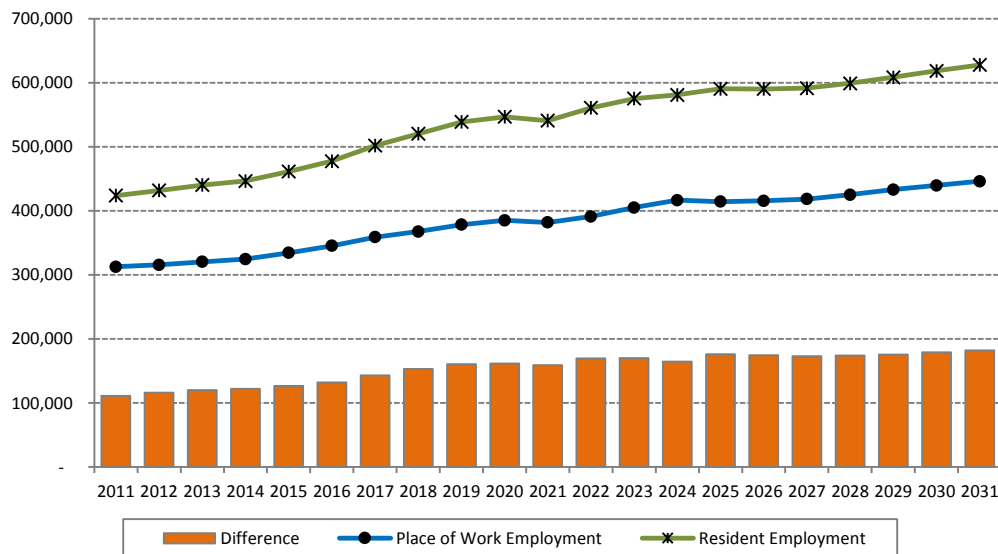
Average place-of-work growth in employment from 2011 to 2019 was 2.3 per cent while resident employment grew by 2.9 per cent in the years unaffected by the pandemic. This means the gap between the two series grew by an average of 4.3 per cent per annum. Going forward, there is expected to be slower employment growth in the Central

Melbourne region, and a slight trend toward decentralising employment to the middle to outer suburbs. This leads to faster growth in place-of-work employment (1.6 per cent per year) within Melbourne's North compared to resident employment (1.5 per cent per year). The growth in the employment gap between the two series is forecasts to grow by only 1.4 per cent per annum, at a much slower rate than recent history, but the net outflow of jobs is unlikely to reverse without heavy policy or industry intervention.

For the gap to be closed between local jobs and resident workers, a further 182,000 jobs would be required by 2031. This would mean that the net outflow of workers would be zero, with as many workers commuting to jobs outside the region as there are workers from outside Melbourne's North working in local jobs. The forecast employment gap will increase by a further 10,000 jobs to 192,000 by 2036.



**Figure 14.3: Melbourne's North employment – 2011 to 2036**



**Table 14.7 Resident employment ('000)**

	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (per cent)	Annual growth 2021 – 2031 (per cent)
North	332.0	363.8	423.8	477.6	540.8	590.4	628.0	2.5	1.5
South	540.9	601.1	687.3	757.4	847.5	932.1	984.7	2.1	1.5
East	492.5	509.1	544.5	555.9	585.3	638.2	656.7	0.7	1.2
West	252.4	295.8	365.2	422.7	488.0	549.9	592.2	2.9	2.0
Central	67.2	84.6	103.5	129.2	160.1	175.9	185.1	4.5	1.5
<b>Greater Melbourne</b>	1685.1	1854.4	2124.3	2342.7	2621.6	2886.4	3046.7	2.1	1.5
<b>Rest of Victoria</b>	559.0	619.2	671.8	692.3	732.0	805.4	849.8	0.9	1.5
<b>Victoria</b>	2244.2	2473.6	2796.2	3035.1	3353.6	3691.8	3896.4	1.8	1.5
<b>Australia</b>	8973.0	9984.5	11146.0	11882.6	12864.8	13997.8	15072.7	1.4	1.6

Source: NIEIR.

	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (per cent)	Annual growth 2021 – 2031 (per cent)
North	260.3	275.5	312.6	345.3	381.9	415.8	446.2	2.0	1.6
South	487.5	534.7	589.4	643.9	698.0	771.9	832.6	1.7	1.8
East	421.4	438.6	471.2	496.8	513.0	568.2	587.7	0.9	1.4
West	196.0	227.3	267.2	303.3	341.4	382.0	420.4	2.5	2.1
Central	366.8	428.4	540.7	612.9	739.5	791.4	793.1	3.2	0.7
<b>Greater Melbourne</b>	1732.0	1904.6	2181.1	2402.2	2673.9	2929.4	3079.9	2.1	1.4
<b>Rest of Victoria</b>	507.6	564.2	608.7	628.8	656.6	725.8	769.0	0.8	1.6
<b>Victoria</b>	2239.6	2468.8	2789.8	3031.0	3330.5	3655.3	3848.9	1.8	1.5
<b>Australia</b>	<b>8973.0</b>	<b>9984.4</b>	<b>11145.9</b>	<b>11882.6</b>	<b>12864.7</b>	<b>13995.7</b>	<b>15070.7</b>	<b>1.4</b>	<b>1.6</b>

Source: NIEIR.

### 14.1.4 Investment

The construction of new dwellings and renovations is expected to fall away in the medium-term in Victoria as population growth over the next ten years remains subdued. However, in the short-term new dwelling approvals will likely continue at relatively high rates as interest rates remain at very low levels and first home buyer incentives continue to attract demand. The impacts

of reduced population growth will be more prevalent in the medium-term as the current housing cycle reduces already pent-up demand for housing. Increasing interest rates will also decrease housing affordability over the coming years.

The following tables show both business and public investment, as well as total residential investment by region.

	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (per cent)	Annual growth 2021 – 2031 (per cent)
North	4.0	6.2	7.4	7.6	10.2	12.2	14.5	3.3	3.6
South	7.9	12.3	13.0	13.7	16.0	18.6	22.3	2.1	3.4
East	7.1	10.7	11.6	11.7	14.1	17.3	18.9	2.0	3.0
West	3.5	5.8	6.8	7.8	9.4	10.0	12.7	3.4	3.0
Central	5.7	9.7	11.4	13.8	16.5	21.5	19.6	3.8	1.7
<b>Greater Melbourne</b>	28.1	44.7	50.1	54.6	66.2	79.5	88.0	2.8	2.9
<b>Rest of Victoria</b>	11.0	15.7	18.1	17.1	19.8	21.0	24.4	0.9	2.1
<b>Victoria</b>	39.2	60.4	68.2	71.7	86.0	100.5	112.4	2.3	2.7
<b>Australia</b>	<b>164.9</b>	<b>261.9</b>	<b>334.8</b>	<b>335.9</b>	<b>355.6</b>	<b>403.9</b>	<b>462.1</b>	<b>0.6</b>	<b>2.7</b>

Note: Includes non-residential construction investment and equipment investment.

Source: NIEIR.



**Table 14.10 Total residential investment**

	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (per cent)	Annual growth 2021 – 2031 (per cent)
North	1.9	2.4	3.6	4.3	4.5	3.6	3.5	2.3	-2.4
South	4.6	5.2	6.3	7.6	7.3	6.3	6.1	1.4	-1.8
East	2.6	2.9	3.8	5.1	4.4	4.4	4.1	1.6	-0.8
West	1.9	2.6	3.8	3.9	5.3	3.6	3.7	3.2	-3.6
Central	1.3	1.1	1.9	3.7	2.5	2.7	2.1	3.0	-1.6
<b>Greater Melbourne</b>	12.4	14.2	19.4	24.6	24.0	20.6	19.5	2.2	-2.1
<b>Rest of Victoria</b>	3.1	5.2	5.7	5.7	7.3	5.9	5.5	2.6	-2.9
<b>Victoria</b>	15.5	19.5	25.1	30.3	31.4	26.4	25.0	2.3	-2.2
<b>Australia</b>	61.7	87.0	89.2	108.0	105.3	125.0	144.8	1.7	3.2

*Note:* Includes new residential construction and renovations.

*Source:* NIEIR.

## 14.2 Employment by industry

This section presents employment forecasts by industry division (19 industries) for all of the sub-regions of Melbourne on a resident basis, that is, by where people live, and by place-of-work, where the industry/business is located.

Employment forecasts by industry subdivision (86 industries) for Melbourne's North are also presented in Sections 14.2.3 and 14.2.4. These provide a more detailed outlook for each industry.

The industry divisions that are expected to be in high demand for employment within Melbourne's North include:

- Health Care and Social Assistance;
- Transport, Postal and Warehousing;
- Professional, Scientific and Technical Services; and;
- Education and Training.

Historically, both Manufacturing and Construction have been strong employment industries within Melbourne's North. Most sectors of manufacturing are expected to continue declining over the next ten years, with those that had been most exposed to the exit of the motor vehicle industry the worst impacted by employment losses. Construction employment will decline as lower migration and population growth affects the residential housing market. Non-residential construction investment will remain at historically high levels within Melbourne's North, including major project investment, but this will not be enough to offset employment losses from the residential construction sector.

### 14.2.1 Place-of-work employment by industry division and region

This section presents employment place-of-work employment forecasts by industry subdivision for the regions and sub-regions of Greater Melbourne. Figure 14.4 shows the 19 industries within Melbourne's North over the next ten years, while 14.5 shows the same industries across all of Greater Melbourne.

Melbourne's North will require a net total of 74,525 new jobs within the region from 2021 to 2031, which is comprised of both growth industries and industries that are in decline.

Health Care and Social Assistance are expected to require the greatest number of new jobs over the next ten years. Melbourne's North alone will require another 21,100 trained health care workers out of a total 118,247 for the Greater Melbourne region.

Other key industries within Melbourne's North that are expected to experience growth out to 2031 include:

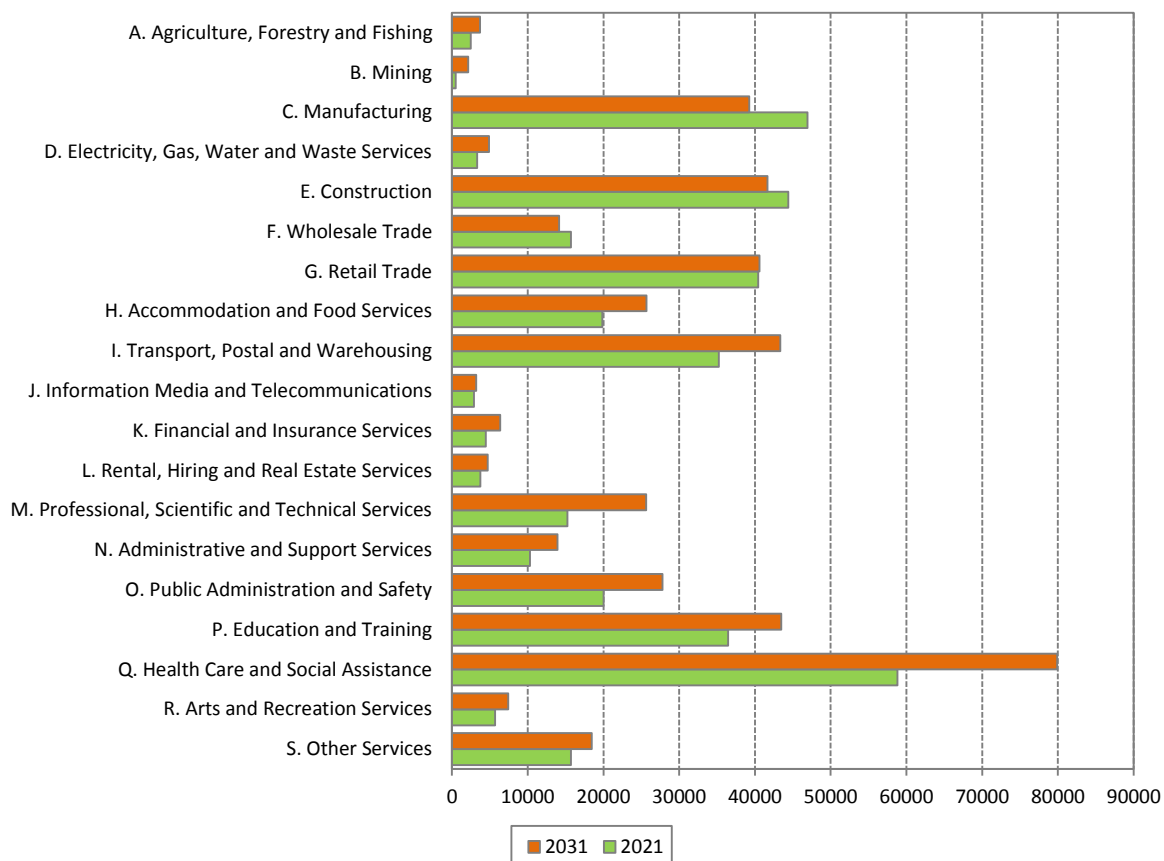
- Transport, Postal and Warehousing will require a further 8,138 workers;
- Professional, Scientific and Technical Services need a further 10,395 workers;
- Public Administration and Safety will employ another 7,783; and
- Education and Training will have another 7,014.

Employment levels in the following industries are expected to fall or remain stagnant from 2021 to 2031:

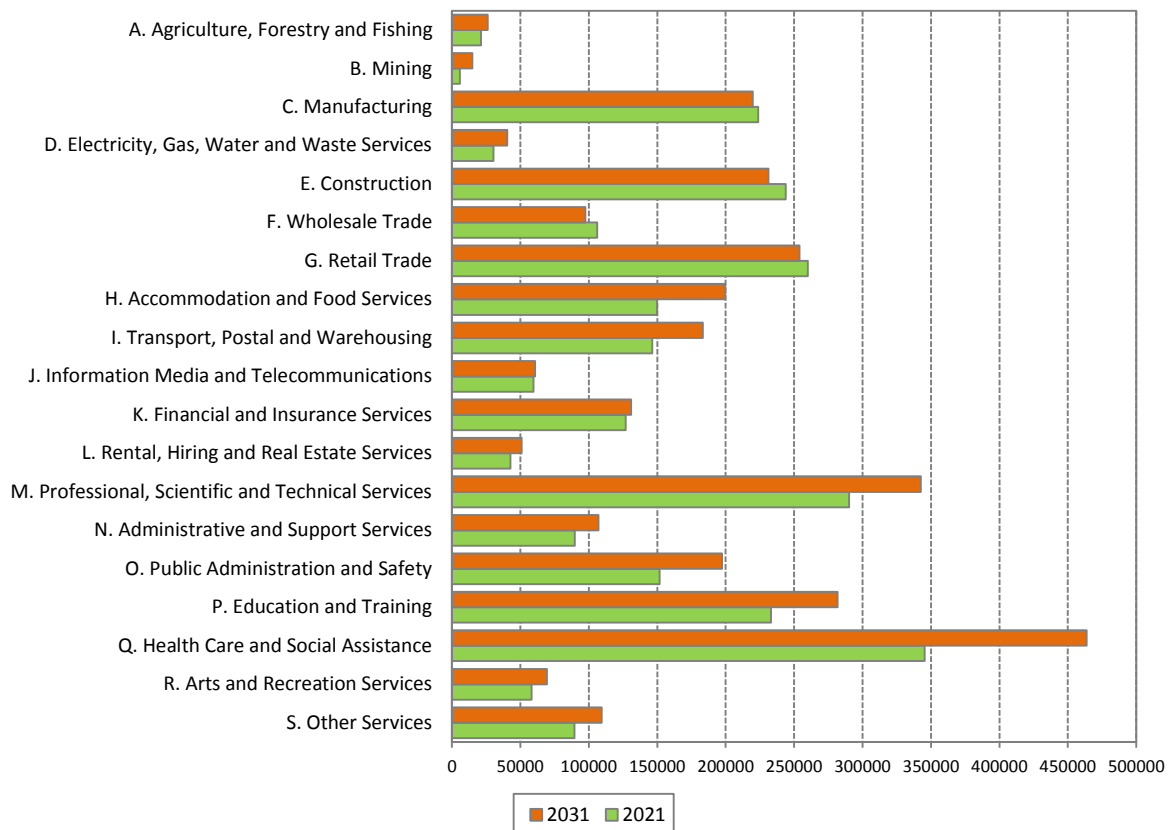
- Manufacturing will continue contracting by losing 7,715 workers;
- Construction will require less 2,771 workers with falls in investment and sluggish population growth; and

■ Retail Trade and Wholesale Trade will remain relatively stagnant in employment growth.

**Figure 14.4: Place-of-work employment by industry subdivision – Melbourne's North**



**Figure 14.5: Place-of-work employment by industry subdivision – Greater Melbourne**



**Table 14.11 Place-of-work employment by industry subdivision – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1,886	2,668	2,490	2,721	3,698	2.8	4.0
B	Mining	749	522	507	2,193	2,134	-3.8	15.5
C	Manufacturing	46,888	41,065	46,955	40,950	39,240	0.0	-1.8
D	Electricity, Gas, Water and Waste Services	2,534	3,092	3,342	4,103	4,872	2.8	3.8
E	Construction	35,841	38,692	44,414	40,721	41,643	2.2	-0.6
F	Wholesale Trade	15,060	13,119	15,711	14,982	14,161	0.4	-1.0
G	Retail Trade	34,569	37,628	40,436	40,872	40,581	1.6	0.0
H	Accommodation and Food Services	17,941	21,996	19,854	22,844	25,678	1.0	2.6
I	Transport, Postal and Warehousing	27,281	30,749	35,228	44,114	43,366	2.6	2.1
J	Information Media and Telecommunications	2,703	2,831	2,922	2,803	3,193	0.8	0.9
K	Financial and Insurance Services	3,832	3,963	4,477	4,869	6,373	1.6	3.6
L	Rental, Hiring and Real Estate Services	3,841	4,437	3,757	4,160	4,729	-0.2	2.3
M	Professional, Scientific and Technical Services	11,750	13,753	15,237	19,531	25,632	2.6	5.3
N	Administrative and Support Services	8,665	10,741	10,280	12,759	13,911	1.7	3.1
O	Public Administration and Safety	15,593	17,835	20,020	24,599	27,803	2.5	3.3
P	Education and Training	28,606	35,194	36,452	39,217	43,466	2.5	1.8
Q	Health Care and Social Assistance	38,389	48,010	58,814	70,436	79,914	4.4	3.1
R	Arts and Recreation Services	4,050	5,233	5,681	6,520	7,410	3.4	2.7
S	Other Services	12,425	13,831	15,709	17,495	18,442	2.4	1.6
<b>Total</b>		<b>312,603</b>	<b>345,358</b>	<b>382,284</b>	<b>415,891</b>	<b>446,248</b>		

Source: NIEIR.

**Table 14.12 Place-of-work employment by industry subdivision – Melbourne's South**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	6,396	6,570	9,578	7,962	10,126	4.1	0.6
B	Mining	1,210	1,494	1,526	1,976	2,685	2.3	5.8
C	Manufacturing	74,493	71,055	74,775	74,921	75,213	0.0	0.1
D	Electricity, Gas, Water and Waste Services	5,342	5,473	7,297	7,445	8,645	3.2	1.7
E	Construction	61,186	64,030	67,717	64,140	71,535	1.0	0.5
F	Wholesale Trade	33,685	29,015	34,690	32,606	31,611	0.3	-0.9
G	Retail Trade	72,174	78,741	79,738	80,483	79,537	1.0	0.0
H	Accommodation and Food Services	38,222	45,087	41,249	54,141	58,733	0.8	3.6
I	Transport, Postal and Warehousing	25,708	26,310	31,151	36,824	41,062	1.9	2.8
J	Information Media and Telecommunications	10,199	10,342	9,830	11,585	11,742	-0.4	1.8
K	Financial and Insurance Services	16,170	16,259	17,403	18,577	20,526	0.7	1.7
L	Rental, Hiring and Real Estate Services	10,669	12,977	11,945	13,172	14,024	1.1	1.6
M	Professional, Scientific and Technical Services	45,567	50,296	56,973	65,702	75,974	2.3	2.9
N	Administrative and Support Services	21,096	24,798	22,541	26,059	28,243	0.7	2.3
O	Public Administration and Safety	20,450	22,408	22,254	31,901	38,546	0.8	5.6
P	Education and Training	44,058	54,765	62,480	66,780	71,627	3.6	1.4
Q	Health Care and Social Assistance	65,624	81,929	103,185	123,239	136,359	4.6	2.8
R	Arts and Recreation Services	11,123	13,298	16,373	20,267	21,827	3.9	2.9
S	Other Services	26,029	29,050	27,342	34,167	34,619	0.5	2.4
	<b>Total</b>	<b>589,398</b>	<b>643,898</b>	<b>698,046</b>	<b>771,947</b>	<b>832,634</b>	<b>1.7</b>	<b>1.8</b>

Source: NIEIR.

**Table 14.13 Place-of-work employment by industry subdivision – Melbourne's East**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	2,445	3,249	5,112	4,188	5,419	7.7	0.6
B	Mining	671	519	726	1,632	1,995	0.8	10.6
C	Manufacturing	53,390	48,169	47,160	46,622	45,921	-1.2	-0.3
D	Electricity, Gas, Water and Waste Services	3,951	3,655	3,772	4,844	6,073	-0.5	4.9
E	Construction	46,969	48,899	47,928	49,398	45,333	0.2	-0.6
F	Wholesale Trade	30,747	25,204	24,836	24,251	23,007	-2.1	-0.8
G	Retail Trade	58,653	60,799	62,565	59,691	57,069	0.6	-0.9
H	Accommodation and Food Services	26,008	29,941	25,737	32,580	33,900	-0.1	2.8
I	Transport, Postal and Warehousing	15,820	15,314	17,395	21,185	24,391	1.0	3.4
J	Information Media and Telecommunications	8,551	7,973	7,179	7,208	7,298	-1.7	0.2
K	Financial and Insurance Services	12,136	11,775	12,956	12,785	13,116	0.7	0.1
L	Rental, Hiring and Real Estate Services	6,973	8,743	7,812	9,010	9,490	1.1	2.0
M	Professional, Scientific and Technical Services	37,157	40,203	46,184	51,479	55,877	2.2	1.9
N	Administrative and Support Services	16,861	18,934	17,335	20,553	22,381	0.3	2.6
O	Public Administration and Safety	15,953	16,699	17,149	21,593	24,817	0.7	3.8
P	Education and Training	48,743	56,643	58,689	66,037	68,409	1.9	1.5
Q	Health Care and Social Assistance	59,468	71,392	82,465	101,271	108,782	3.3	2.8
R	Arts and Recreation Services	6,221	7,389	7,551	9,103	10,023	2.0	2.9
S	Other Services	20,449	21,301	20,490	24,781	24,355	0.0	1.7
	<b>Total</b>	<b>471,165</b>	<b>496,800</b>	<b>513,039</b>	<b>568,211</b>	<b>587,654</b>	<b>0.9</b>	<b>1.4</b>

Source: NIEIR.

**Table 14.14 Place-of-work employment by industry subdivision – Melbourne's West**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1,083	1,835	2,572	2,861	4,099	9.0	4.8
B	Mining	357	431	399	2,597	2,832	1.1	21.7
C	Manufacturing	38,430	35,317	35,128	35,938	35,881	-0.9	0.2
D	Electricity, Gas, Water and Waste Services	2,021	2,911	3,131	3,823	4,800	4.5	4.4
E	Construction	29,506	30,491	37,767	29,413	36,225	2.5	-0.4
F	Wholesale Trade	14,050	13,653	20,165	18,829	18,131	3.7	-1.1
G	Retail Trade	33,231	38,818	41,208	41,684	41,865	2.2	0.2
H	Accommodation and Food Services	14,969	19,291	17,805	24,335	26,256	1.7	4.0
I	Transport, Postal and Warehousing	29,204	31,316	37,153	43,284	42,306	2.4	1.3
J	Information Media and Telecommunications	2,671	2,471	2,807	2,818	3,135	0.5	1.1
K	Financial and Insurance Services	3,331	3,898	5,143	5,310	6,711	4.4	2.7
L	Rental, Hiring and Real Estate Services	3,791	4,393	4,061	4,581	5,104	0.7	2.3
M	Professional, Scientific and Technical Services	8,845	11,295	15,503	17,209	21,960	5.8	3.5
N	Administrative and Support Services	8,489	9,681	10,282	11,448	12,567	1.9	2.0
O	Public Administration and Safety	13,748	15,868	20,789	23,788	27,515	4.2	2.8
P	Education and Training	23,179	29,951	29,399	36,073	40,434	2.4	3.2
Q	Health Care and Social Assistance	26,088	34,833	39,815	55,459	66,101	4.3	5.2
R	Arts and Recreation Services	3,958	4,598	5,696	6,701	7,548	3.7	2.9
S	Other Services	10,290	12,228	12,556	15,875	16,895	2.0	3.0
	<b>Total</b>	<b>267,242</b>	<b>303,280</b>	<b>341,379</b>	<b>382,029</b>	<b>420,365</b>	<b>2.5</b>	<b>2.1</b>

Source: NIEIR.

**Table 14.15 Place-of-work employment by industry subdivision – Central Melbourne**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	709	1,198	1,377	1,687	2,661	6.9	6.8
B	Mining	2,847	3,352	2,522	4,888	5,140	-1.2	7.4
C	Manufacturing	21,251	19,602	19,796	23,491	23,630	-0.7	1.8
D	Electricity, Gas, Water and Waste Services	8,956	12,432	12,850	15,668	16,014	3.7	2.2
E	Construction	20,418	28,295	46,150	43,685	36,417	8.5	-2.3
F	Wholesale Trade	15,982	12,999	10,794	11,838	10,444	-3.8	-0.3
G	Retail Trade	27,335	32,700	36,067	35,968	34,842	2.8	-0.3
H	Accommodation and Food Services	32,044	39,039	45,294	50,413	55,057	3.5	2.0
I	Transport, Postal and Warehousing	21,997	24,717	25,337	30,401	32,197	1.4	2.4
J	Information Media and Telecommunications	32,389	34,263	36,912	37,889	35,298	1.3	-0.4
K	Financial and Insurance Services	70,776	75,786	87,032	87,319	84,241	2.1	-0.3
L	Rental, Hiring and Real Estate Services	8,939	11,617	15,049	16,933	17,495	5.3	1.5
M	Professional, Scientific and Technical Services	96,654	111,035	156,200	165,676	163,244	4.9	0.4
N	Administrative and Support Services	24,582	24,934	29,180	29,340	30,035	1.7	0.3
O	Public Administration and Safety	49,779	53,388	71,519	76,442	78,553	3.7	0.9
P	Education and Training	28,366	37,062	46,099	53,100	57,712	5.0	2.3
Q	Health Care and Social Assistance	46,910	55,694	61,145	69,109	72,515	2.7	1.7
R	Arts and Recreation Services	17,990	21,003	22,812	23,096	22,499	2.4	-0.1
S	Other Services	12,752	13,749	13,351	14,479	15,057	0.5	1.2
	<b>Total</b>	<b>540,675</b>	<b>612,866</b>	<b>739,484</b>	<b>791,421</b>	<b>793,051</b>	<b>3.2</b>	<b>0.7</b>

Source: NIEIR.



**Table 14.16 Place-of-work employment by industry subdivision – Greater Melbourne**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	12,519	15,520	21,130	19,419	26,002	5.4	2.1
B	Mining	5,835	6,319	5,679	13,287	14,786	-0.3	10.0
C	Manufacturing	234,451	215,207	223,814	221,922	219,885	-0.5	-0.2
D	Electricity, Gas, Water and Waste Services	22,803	27,562	30,391	35,884	40,404	2.9	2.9
E	Construction	193,920	210,406	243,976	227,357	231,153	2.3	-0.5
F	Wholesale Trade	109,525	93,990	106,195	102,506	97,354	-0.3	-0.9
G	Retail Trade	225,962	248,687	260,014	258,698	253,894	1.4	-0.2
H	Accommodation and Food Services	129,184	155,354	149,938	184,312	199,624	1.5	2.9
I	Transport, Postal and Warehousing	120,009	128,407	146,264	175,809	183,322	2.0	2.3
J	Information Media and Telecommunications	56,513	57,881	59,650	62,303	60,665	0.5	0.2
K	Financial and Insurance Services	106,245	111,681	127,009	128,860	130,967	1.8	0.3
L	Rental, Hiring and Real Estate Services	34,213	42,167	42,624	47,856	50,842	2.2	1.8
M	Professional, Scientific and Technical Services	199,973	226,581	290,097	319,597	342,687	3.8	1.7
N	Administrative and Support Services	79,693	89,088	89,618	100,159	107,137	1.2	1.8
O	Public Administration and Safety	115,522	126,199	151,731	178,324	197,235	2.8	2.7
P	Education and Training	172,951	213,614	233,120	261,207	281,647	3.0	1.9
Q	Health Care and Social Assistance	236,479	291,858	345,424	419,514	463,671	3.9	3.0
R	Arts and Recreation Services	43,342	51,521	58,113	65,688	69,308	3.0	1.8
S	Other Services	81,943	90,159	89,447	106,797	109,368	0.9	2.0
	<b>Total</b>	<b>2,181,083</b>	<b>2,402,201</b>	<b>2,674,233</b>	<b>2,929,500</b>	<b>3,079,952</b>	<b>2.1</b>	<b>1.4</b>

Source: NIEIR.

### 14.2.2 Resident employment by industry division and region

Resident employment forecasts by industry subdivision are presented in the following tables for all of the sub-regions within Greater Melbourne out to 2031.

Melbourne's North currently houses 540,898 workers as of 2021, and this is expected to grow by 1.6 per cent each year out to a total of 627,899 workers by 2031.

Melbourne's North will continue to have a large resident workforce employed in Health and Social Assistance and will reach over 100,000 workers by 2031. This industry accounts for 14.4 of resident workers in 2021 and increases to 16.4 per cent by 2031. This highlights how important this industry will continue to be in the future.

**Table 14.17 Resident employment by industry subdivision – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1,964	2,702	2,415	2,594	3,534	2.1	3.9
B	Mining	1,297	1,084	553	2,179	2,246	-8.2	15.0
C	Manufacturing	45,406	40,665	44,334	41,310	40,124	-0.2	-1.0
D	Electricity, Gas, Water and Waste Services	4,211	5,277	4,268	5,667	6,655	0.1	4.5
E	Construction	40,388	47,677	55,442	51,644	54,665	3.2	-0.1
F	Wholesale Trade	17,997	15,698	18,312	17,724	16,698	0.2	-0.9
G	Retail Trade	43,054	48,073	50,605	50,793	50,132	1.6	-0.1
H	Accommodation and Food Services	25,632	31,090	31,860	36,944	40,654	2.2	2.5
I	Transport, Postal and Warehousing	26,711	30,058	35,825	43,377	44,320	3.0	2.2
J	Information Media and Telecommunications	10,042	10,555	11,437	11,799	11,673	1.3	0.2
K	Financial and Insurance Services	18,093	18,871	22,614	23,099	24,158	2.3	0.7
L	Rental, Hiring and Real Estate Services	5,506	6,787	5,603	6,350	6,980	0.2	2.2
M	Professional, Scientific and Technical Services	32,021	37,439	45,294	51,365	57,081	3.5	2.3
N	Administrative and Support Services	14,881	17,107	16,705	19,561	21,336	1.2	2.5
O	Public Administration and Safety	26,922	30,004	36,352	42,354	46,382	3.0	2.5
P	Education and Training	36,433	45,801	50,403	55,882	61,065	3.3	1.9
Q	Health Care and Social Assistance	48,607	60,452	77,907	92,604	102,943	4.8	2.8
R	Arts and Recreation Services	8,004	10,031	9,052	10,318	11,218	1.2	2.2
S	Other Services	16,626	18,186	21,917	24,832	26,035	2.8	1.7
	<b>Total</b>	<b>423,795</b>	<b>477,557</b>	<b>540,898</b>	<b>590,397</b>	<b>627,899</b>	<b>2.0</b>	<b>1.6</b>

Source: NIEIR.

**Table 14.18 Resident employment by industry subdivision – Melbourne's South**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	6,591	6,752	9,426	7,914	10,279	3.6	0.9
B	Mining	2,018	2,399	2,109	3,671	4,424	0.4	7.7
C	Manufacturing	80,248	76,253	84,552	85,149	85,122	0.5	0.1
D	Electricity, Gas, Water and Waste Services	7,120	8,143	11,047	12,211	13,562	4.5	2.1
E	Construction	63,214	66,230	72,550	70,355	75,875	1.4	0.4
F	Wholesale Trade	37,426	32,488	36,644	35,197	33,686	-0.2	-0.8
G	Retail Trade	74,242	82,285	88,932	89,056	87,537	1.8	-0.2
H	Accommodation and Food Services	39,063	46,357	43,893	55,815	60,250	1.2	3.2
I	Transport, Postal and Warehousing	29,985	32,369	36,185	43,749	48,033	1.9	2.9
J	Information Media and Telecommunications	18,001	16,974	17,866	19,024	18,391	-0.1	0.3
K	Financial and Insurance Services	32,480	34,519	38,680	39,445	39,869	1.8	0.3
L	Rental, Hiring and Real Estate Services	12,101	14,713	17,482	19,176	20,043	3.7	1.4
M	Professional, Scientific and Technical Services	63,822	71,606	89,604	99,315	106,686	3.5	1.8
N	Administrative and Support Services	25,678	29,125	28,530	32,731	35,161	1.1	2.1
O	Public Administration and Safety	30,458	33,877	36,174	46,090	52,573	1.7	3.8
P	Education and Training	50,271	63,415	72,503	78,817	83,979	3.7	1.5
Q	Health Care and Social Assistance	75,032	94,058	116,498	139,529	152,797	4.5	2.7
R	Arts and Recreation Services	13,534	16,414	17,786	21,260	22,457	2.8	2.4
S	Other Services	26,060	29,412	27,030	33,555	33,946	0.4	2.3
	<b>Total</b>	<b>687,344</b>	<b>757,389</b>	<b>847,489</b>	<b>932,059</b>	<b>984,669</b>	<b>2.1</b>	<b>1.5</b>

Source: NIEIR.

**Table 14.19 Resident employment by industry subdivision – Melbourne's East**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	2,807	3,586	5,677	4,848	6,152	7.3	0.8
B	Mining	1,653	1,266	1,577	2,892	3,366	-0.5	7.9
C	Manufacturing	53,007	46,391	50,358	49,913	49,155	-0.5	-0.2
D	Electricity, Gas, Water and Waste Services	5,539	5,879	6,176	7,429	8,469	1.1	3.2
E	Construction	47,304	47,517	47,786	47,172	45,776	0.1	-0.4
F	Wholesale Trade	30,241	24,175	25,844	24,802	23,210	-1.6	-1.1
G	Retail Trade	60,388	61,114	61,066	58,567	55,912	0.1	-0.9
H	Accommodation and Food Services	31,922	34,618	28,331	35,578	37,516	-1.2	2.8
I	Transport, Postal and Warehousing	18,909	18,425	19,408	23,831	26,278	0.3	3.1
J	Information Media and Telecommunications	13,433	13,835	12,669	12,746	12,020	-0.6	-0.5
K	Financial and Insurance Services	27,787	27,039	29,546	29,152	28,640	0.6	-0.3
L	Rental, Hiring and Real Estate Services	8,615	10,457	9,994	11,335	11,826	1.5	1.7
M	Professional, Scientific and Technical Services	55,423	57,809	67,920	73,764	77,092	2.1	1.3
N	Administrative and Support Services	19,004	19,601	17,809	20,861	22,525	-0.6	2.4
O	Public Administration and Safety	24,958	24,953	28,386	33,279	36,341	1.3	2.5
P	Education and Training	48,604	53,981	58,075	64,546	67,409	1.8	1.5
Q	Health Care and Social Assistance	64,614	73,539	83,982	101,238	108,422	2.7	2.6
R	Arts and Recreation Services	8,997	10,456	10,739	12,246	12,930	1.8	1.9
S	Other Services	21,321	21,247	19,934	23,959	23,693	-0.7	1.7
	<b>Total</b>	<b>544,525</b>	<b>555,888</b>	<b>585,278</b>	<b>638,158</b>	<b>656,732</b>	<b>0.7</b>	<b>1.2</b>

Source: NIEIR.

**Table 14.20 Resident employment by industry subdivision – Melbourne's West**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1,309	2,380	2,041	2,416	3,801	4.5	6.4
B	Mining	714	1,137	723	3,113	3,400	0.1	16.7
C	Manufacturing	42,679	39,985	43,244	43,698	43,569	0.1	0.1
D	Electricity, Gas, Water and Waste Services	3,528	5,312	5,497	6,905	7,951	4.5	3.8
E	Construction	32,417	34,249	45,266	40,391	44,612	3.4	-0.1
F	Wholesale Trade	16,730	15,363	17,113	16,507	15,736	0.2	-0.8
G	Retail Trade	37,405	44,153	44,964	46,019	46,173	1.9	0.3
H	Accommodation and Food Services	22,374	28,629	27,768	35,701	39,054	2.2	3.5
I	Transport, Postal and Warehousing	35,455	38,637	48,441	58,366	59,028	3.2	2.0
J	Information Media and Telecommunications	8,507	9,267	11,215	11,605	11,546	2.8	0.3
K	Financial and Insurance Services	17,795	20,102	26,939	27,864	29,039	4.2	0.8
L	Rental, Hiring and Real Estate Services	5,440	6,704	5,941	6,911	7,634	0.9	2.5
M	Professional, Scientific and Technical Services	25,544	31,301	44,723	49,702	55,268	5.8	2.1
N	Administrative and Support Services	14,446	16,958	18,120	20,719	22,906	2.3	2.4
O	Public Administration and Safety	21,066	24,291	31,899	36,698	40,947	4.2	2.5
P	Education and Training	24,922	33,400	36,284	43,573	48,554	3.8	3.0
Q	Health Care and Social Assistance	34,180	45,838	53,336	70,246	81,515	4.6	4.3
R	Arts and Recreation Services	7,727	9,330	9,140	10,240	10,936	1.7	1.8
S	Other Services	12,976	15,676	15,393	19,264	20,509	1.7	2.9
	<b>Total</b>	<b>365,214</b>	<b>422,710</b>	<b>488,048</b>	<b>549,937</b>	<b>592,179</b>	<b>2.9</b>	<b>2.0</b>

Source: NIEIR.

**Table 14.21 Resident employment by industry subdivision – Central Melbourne**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	310	568	1,045	1,117	1,360	12.9	2.7
B	Mining	400	535	306	586	653	-2.6	7.9
C	Manufacturing	4,830	4,872	5,971	6,386	6,567	2.1	1.0
D	Electricity, Gas, Water and Waste Services	955	1,221	1,411	1,705	1,842	4.0	2.7
E	Construction	3,623	4,345	7,862	7,500	7,321	8.1	-0.7
F	Wholesale Trade	3,579	3,188	4,211	4,275	4,084	1.6	-0.3
G	Retail Trade	7,701	10,208	10,043	10,223	10,196	2.7	0.2
H	Accommodation and Food Services	9,589	14,663	12,071	14,481	16,385	2.3	3.1
I	Transport, Postal and Warehousing	2,972	3,478	3,739	4,656	4,938	2.3	2.8
J	Information Media and Telecommunications	4,645	5,377	6,056	6,582	6,414	2.7	0.6
K	Financial and Insurance Services	7,605	8,685	10,088	10,279	10,317	2.9	0.2
L	Rental, Hiring and Real Estate Services	1,765	2,549	2,592	3,060	3,310	3.9	2.5
M	Professional, Scientific and Technical Services	18,640	23,457	36,305	39,281	40,724	6.9	1.2
N	Administrative and Support Services	3,669	4,544	4,438	4,742	5,114	1.9	1.4
O	Public Administration and Safety	5,751	6,548	10,165	11,114	11,879	5.9	1.6
P	Education and Training	9,249	12,419	13,224	15,392	17,190	3.6	2.7
Q	Health Care and Social Assistance	11,295	14,595	20,006	23,174	25,254	5.9	2.4
R	Arts and Recreation Services	4,137	4,447	6,975	7,301	7,431	5.4	0.6
S	Other Services	2,754	3,473	3,550	3,998	4,078	2.6	1.4
	<b>Total</b>	<b>103,468</b>	<b>129,172</b>	<b>160,059</b>	<b>175,853</b>	<b>185,057</b>	<b>4.5</b>	<b>1.5</b>

Source: NIEIR.

**Table 14.22 Resident employment by industry subdivision – Greater Melbourne**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	12,981	15,989	20,603	18,888	25,128	4.7	2.0
B	Mining	6,081	6,420	5,269	12,441	14,088	-1.4	10.3
C	Manufacturing	226,171	208,166	228,460	226,456	224,536	0.1	-0.2
D	Electricity, Gas, Water and Waste Services	21,354	25,832	28,400	33,917	38,479	2.9	3.1
E	Construction	186,945	200,018	228,907	217,062	228,250	2.0	0.0
F	Wholesale Trade	105,973	90,911	102,124	98,505	93,415	-0.4	-0.9
G	Retail Trade	222,789	245,835	255,609	254,658	249,951	1.4	-0.2
H	Accommodation and Food Services	128,580	155,357	143,923	178,519	193,859	1.1	3.0
I	Transport, Postal and Warehousing	114,031	122,967	143,598	173,979	182,596	2.3	2.4
J	Information Media and Telecommunications	54,628	56,008	59,243	61,756	60,044	0.8	0.1
K	Financial and Insurance Services	103,760	109,215	127,868	129,839	132,023	2.1	0.3
L	Rental, Hiring and Real Estate Services	33,427	41,210	41,612	46,833	49,793	2.2	1.8
M	Professional, Scientific and Technical Services	195,450	221,612	283,845	313,427	336,851	3.8	1.7
N	Administrative and Support Services	77,678	87,336	85,602	98,614	107,043	1.0	2.3
O	Public Administration and Safety	109,155	119,673	142,977	169,536	188,122	2.7	2.8
P	Education and Training	169,479	209,015	230,489	258,209	278,196	3.1	1.9
Q	Health Care and Social Assistance	233,728	288,482	351,729	426,791	470,931	4.2	3.0
R	Arts and Recreation Services	42,399	50,678	53,691	61,365	64,972	2.4	1.9
S	Other Services	79,736	87,993	87,824	105,608	108,260	1.0	2.1
	<b>Total</b>	<b>2,124,346</b>	<b>2,342,716</b>	<b>2,621,772</b>	<b>2,886,403</b>	<b>3,046,536</b>	<b>2.1</b>	<b>1.5</b>

Source: NIEIR.

### 14.2.3 Melbourne's North – Place-of-work employment by industry subdivision

The following tables contain forecasts by industry subdivision for Melbourne's North for place-of-work employment. The second table shows Melbourne's North share of place-of-work employment within Greater Melbourne from 2011 to 2031, this can also be interpreted as change in Melbourne's North industry comparative advantage against all of Greater Melbourne.

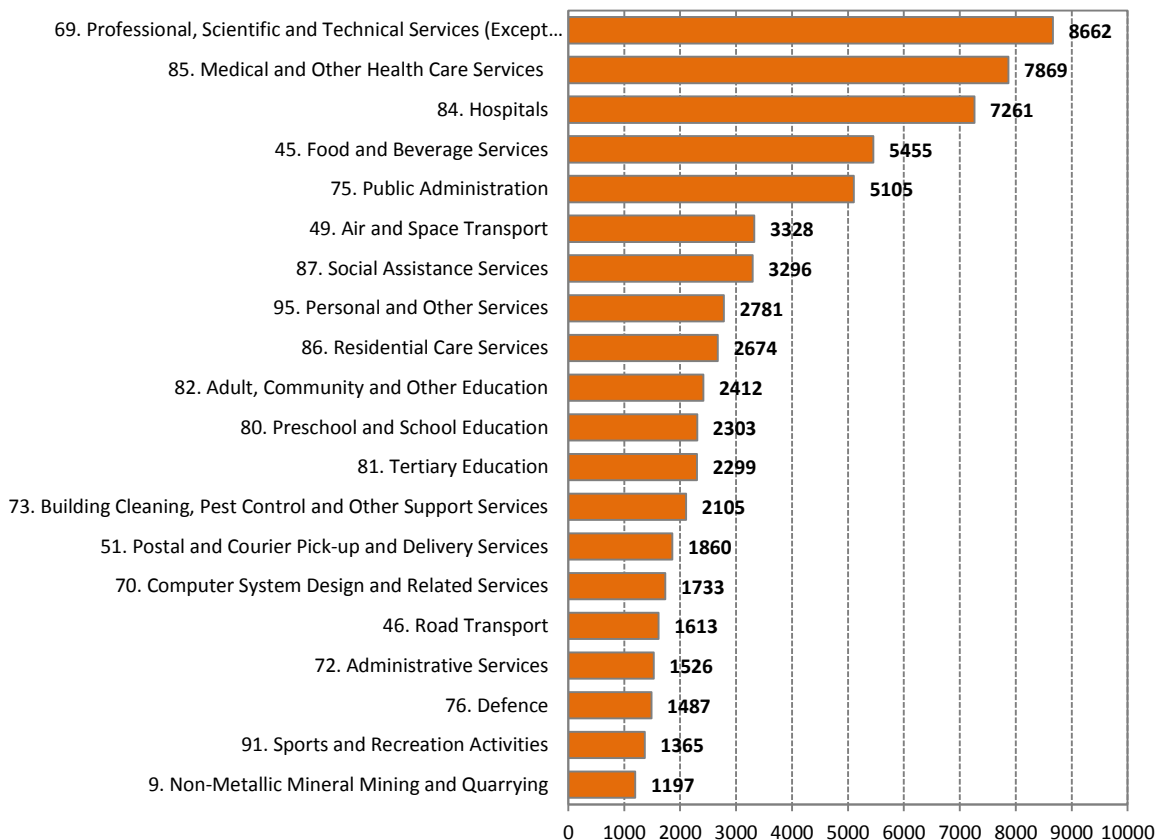
Figure 14.6 and 14.7 show the top 20 and bottom 20 industries as measured by the total change in the number of employed between 2021 and 2031. Professional, Scientific and Technical Services are expected to need another 8,662 employed within Melbourne's North over the next ten years. While the next two industries are both related to Health with 7,869 more employed in Medical and Other Health Care Services, and another 7,261 employed in Hospitals within Melbourne's North.

Industries that have been significantly impacted by the pandemic are expected to bounce back from current low levels. This includes Food and Beverage Services and Air and Space Transport. This means that part of this growth is in returning employed, rather than significant new growth. In addition, Transport and Logistics related industries are expected to continue to grow over the next ten years, which follows on from high industry demand during the pandemic.

Manufacturing industries will continue to weaken over the next ten years, in particular Transport Equipment Manufacturing will lose a further 1,777 employed, which continues on from losses associated with the exit of the motor vehicle manufacturing industry within Melbourne's North. The notable exceptions to declining manufacturing employment include the combined Food Product Manufacturing and Beverage and Tobacco Manufacturing sectors, which are expected to employ another 1,042 combined.

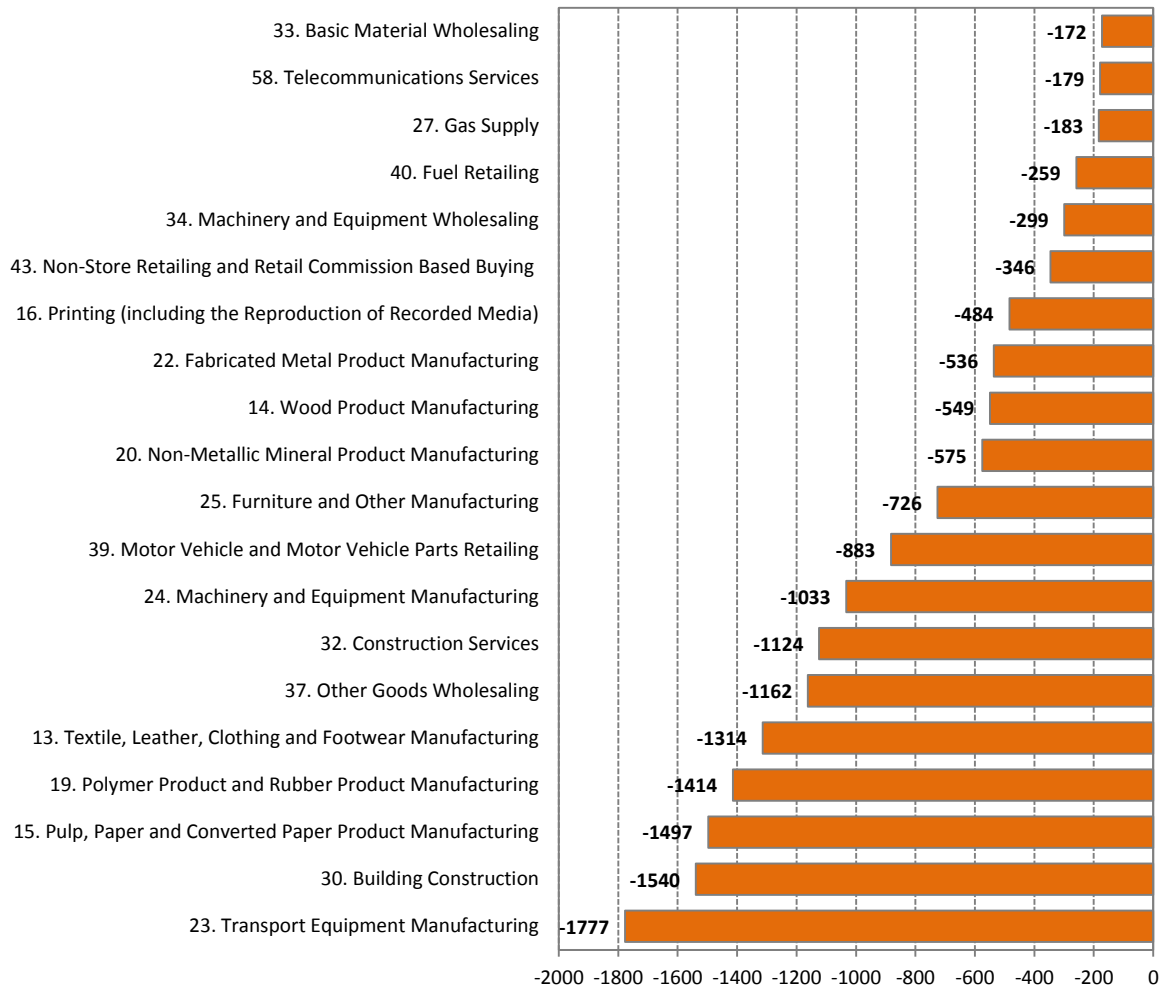
Employment in Building construction and Construction services are expected to slow down over the next five years as the housing market cools down with declines of 1,540 and 1,124 employed respectively. Construction employment will start to improve in the last five years of the forecasts, but will not return to levels seen today.

**Figure 14.6: Top 20 industries change in place-of-work employment – 2021 to 2031 – Melbourne's North**





**Figure 14.7: Bottom 20 industries change in place-of-work employment – 2021 to 2031 – Melbourne's North**



**Table 14.23 Place-of-work employment by industry subdivision – Melbourne's North**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	1632	2247	2278	2437	3308	3.4	3.8
		2	Aquaculture	10	0	23	5	15	8.8	-4.5
		3	Forestry and Logging	33	60	38	95	88	1.7	8.7
		4	Fishing, Hunting and Trapping	46	75	3	7	13	-23.2	14.5
		5	Agriculture, Forestry and Fishing Support Services	166	286	147	176	275	-1.2	6.4
B	Mining	6	Coal Mining	2	19	6	6	6	13.3	0.3
		7	Oil and Gas Extraction	32	26	12	26	39	-9.3	12.5
		8	Metal Ore Mining	92	99	86	77	86	-0.7	0.0
		9	Non-Metallic Mineral Mining and Quarrying	250	210	143	1446	1340	-5.4	25.1
		10	Exploration and Other Mining Support Services	374	168	260	638	663	-3.6	9.8
C	Manufacturing	11	Food Product Manufacturing	7773	8267	8982	9192	9771	1.5	0.8
		12	Beverage and Tobacco Product Manufacturing	284	343	332	503	584	1.6	5.8
		13	Textile, Leather, Clothing and Footwear Manufacturing	3731	2941	2866	1792	1551	-2.6	-6.0
		14	Wood Product Manufacturing	1697	1352	1847	1534	1297	0.8	-3.5
		15	Pulp, Paper and Converted Paper Product Manufacturing	2709	2211	3919	3055	2421	3.8	-4.7
		16	Printing (including the Reproduction of Recorded Media)	2190	2103	2498	2236	2014	1.3	-2.1
		17	Petroleum and Coal Product Manufacturing	119	34	40	36	49	-10.5	2.1
		18	Basic Chemical and Chemical Product Manufacturing	1829	2188	3317	3397	3967	6.1	1.8
		19	Polymer Product and Rubber Product Manufacturing	3358	2713	3504	2584	2090	0.4	-5.0
		20	Non-Metallic Mineral Product Manufacturing	1798	1396	1834	1624	1258	0.2	-3.7
		21	Primary Metal and Metal Product Manufacturing	2487	1932	2024	2528	2516	-2.0	2.2
		22	Fabricated Metal Product Manufacturing	3086	2741	3156	2909	2619	0.2	-1.8
		23	Transport Equipment Manufacturing	7764	6135	4989	3717	3212	-4.3	-4.3
		24	Machinery and Equipment Manufacturing	4585	3763	3678	2635	2645	-2.2	-3.2
		25	Furniture and Other Manufacturing	3478	2947	3971	3209	3245	1.3	-2.0
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	782	866	892	1451	1788	1.3	7.2
		27	Gas Supply	356	280	581	357	398	5.0	-3.7
		28	Water Supply, Sewerage and Drainage Services	357	450	476	555	725	2.9	4.3
		29	Waste Collection, Treatment and Disposal Services	1038	1497	1393	1741	1961	3.0	3.5
E	Construction	30	Building Construction	8196	8174	10813	8977	9273	2.8	-1.5
		31	Heavy and Civil Engineering Construction	2181	2272	3959	3700	3852	6.1	-0.3
		32	Construction Services	25464	28246	29643	28044	28518	1.5	-0.4

**Table 14.23 Place-of-work employment by industry subdivision – Melbourne's North (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	2897	2498	2425	2384	2253	-1.8	-0.7
		34	Machinery and Equipment Wholesaling	3153	2397	2570	2423	2271	-2.0	-1.2
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	1444	1404	1790	1960	1954	2.2	0.9
		36	Grocery, Liquor and Tobacco Product Wholesaling	2943	3264	3807	3783	3708	2.6	-0.3
		37	Other Goods Wholesaling	4468	3437	4954	4253	3792	1.0	-2.6
		38	Commission-Based Wholesaling	156	119	165	178	183	0.5	1.1
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	2348	2832	3078	1976	2196	2.7	-3.3
		40	Fuel Retailing	799	858	986	804	727	2.1	-3.0
		41	Food Retailing	12417	13970	13765	14603	14931	1.0	0.8
		42	Other Store-Based Retailing	18637	19701	21636	22896	22104	1.5	0.2
		43	Non-Store Retailing and Retail Commission Based Buying	367	266	970	593	624	10.2	-4.3
H	Accommodation and Food Services	44	Accommodation	1276	1260	1002	1148	1371	-2.4	3.2
		45	Food and Beverage Services	16666	20736	18851	21696	24307	1.2	2.6
I	Transport, Postal and Warehousing	46	Road Transport	10572	10598	13175	14723	14789	2.2	1.2
		47	Rail Transport	352	578	830	1073	1326	9.0	4.8
		48	Water Transport	125	117	100	138	153	-2.2	4.3
		49	Air and Space Transport	6711	7529	5551	10050	8878	-1.9	4.8
		50	Other Transport	229	235	388	462	242	5.4	-4.6
		51	Postal and Courier Pick-up and Delivery Services	2708	3197	4530	6023	6390	5.3	3.5
		52	Transport Support Services	4525	6183	6627	7408	7234	3.9	0.9
		53	Warehousing and Storage Services	2059	2313	4026	4237	4354	6.9	0.8
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	710	401	327	332	357	-7.4	0.9
		55	Motion Picture and Sound Recording Activities	507	776	731	785	757	3.7	0.4
		56	Broadcasting (except Internet)	116	112	126	188	292	0.9	8.7
		57	Internet Publishing and Broadcasting	96	50	10	14	40	-20.6	15.4
		58	Telecommunications Services	808	1012	1163	837	984	3.7	-1.7
		59	Internet Service Providers, Web Search Portals and Data Processing Services	120	164	150	172	224	2.2	4.1
		60	Library and Other Information Services	346	316	415	476	539	1.8	2.6
K	Financial and Insurance Services	62	Finance	2408	2316	2499	2627	3167	0.4	2.4
		63	Insurance and Superannuation Funds	485	447	647	667	1066	2.9	5.1
		64	Auxiliary Finance and Insurance Services	939	1200	1331	1575	2140	3.5	4.9
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	1235	1170	942	849	839	-2.7	-1.2
		67	Property Operators and Real Estate Services	2606	3267	2815	3311	3891	0.8	3.3

**Table 14.23 Place-of-work employment by industry subdivision – Melbourne's North (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	10146	11702	12479	16128	21141	2.1	5.4
		70	Computer System Design and Related Services	1603	2051	2758	3403	4491	5.6	5.0
N	Administrative and Support Services	72	Administrative Services	3501	4507	3994	5133	5520	1.3	3.3
		73	Building Cleaning, Pest Control and Other Support Services	5164	6233	6286	7626	8391	2.0	2.9
O	Public Administration and Safety	75	Public Administration	8829	10045	11429	14088	16535	2.6	3.8
		76	Defence	1959	1933	1784	2795	3271	-0.9	6.2
		77	Public Order, Safety and Regulatory Services	4805	5858	6807	7716	7997	3.5	1.6
P	Education and Training	80	Preschool and School Education	18791	23917	23552	24702	25855	2.3	0.9
		81	Tertiary Education	6420	6737	7103	8241	9402	1.0	2.8
		82	Adult, Community and Other Education	3395	4540	5798	6274	8210	5.5	3.5
Q	Health Care and Social Assistance	84	Hospitals	12270	14007	17367	22361	24628	3.5	3.6
		85	Medical and Other Health Care Services	11226	14673	17084	20504	24954	4.3	3.9
		86	Residential Care Services	5482	7225	7257	8805	9931	2.8	3.2
		87	Social Assistance Services	9411	12105	17106	18765	20402	6.2	1.8
R	Arts and Recreation Services	89	Heritage Activities	204	208	264	346	606	2.6	8.7
		90	Creative and Performing Arts Activities	1287	1536	1602	1640	1752	2.2	0.9
		91	Sports and Recreation Activities	2307	3257	3366	4275	4731	3.8	3.5
		92	Gambling Activities	251	232	449	260	321	6.0	-3.3
S	Other Services	94	Repair and Maintenance	6766	6900	8820	9010	8737	2.7	-0.1
		95	Personal and Other Services	5558	6692	6529	8025	9309	1.6	3.6
		96	Private Households Employing Staff and Undifferentiated Goods	100	238	360	459	396	13.6	1.0

Source: NIEIR.

**Table 14.24 Share of place-of-work employment in Greater Melbourne by industry subdivision – Melbourne's North**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	15.1	17.2	12.6	15.2	15.3	-1.8	1.9
		2	Aquaculture	12.4	0.0	6.8	2.0	4.0	-5.9	-5.1
		3	Forestry and Logging	9.6	14.6	10.9	17.6	13.3	1.2	2.0
		4	Fishing, Hunting and Trapping	20.6	23.0	3.4	12.4	17.3	-16.5	17.7
		5	Agriculture, Forestry and Fishing Support Services	15.6	19.1	6.5	6.9	8.5	-8.3	2.6
B	Mining	6	Coal Mining	1.1	9.4	3.7	3.6	3.7	12.7	-0.1
		7	Oil and Gas Extraction	2.1	2.0	1.2	1.8	2.3	-5.7	7.1
		8	Metal Ore Mining	8.1	5.3	4.3	6.1	5.0	-6.2	1.5
		9	Non-Metallic Mineral Mining and Quarrying	23.7	22.1	16.4	26.5	24.2	-3.7	4.0
		10	Exploration and Other Mining Support Services	18.9	8.4	16.2	12.7	11.7	-1.5	-3.2
C	Manufacturing	11	Food Product Manufacturing	21.3	20.3	22.6	21.3	21.4	0.6	-0.5
		12	Beverage and Tobacco Product Manufacturing	4.6	5.4	5.1	5.9	6.3	1.2	2.2
		13	Textile, Leather, Clothing and Footwear Manufacturing	26.3	24.4	27.0	18.4	18.5	0.3	-3.7
		14	Wood Product Manufacturing	21.1	19.6	23.3	20.6	18.4	1.0	-2.3
		15	Pulp, Paper and Converted Paper Product Manufacturing	32.4	35.5	44.1	40.4	37.8	3.1	-1.5
		16	Printing (including the Reproduction of Recorded Media)	15.6	15.4	16.7	16.0	15.0	0.7	-1.1
		17	Petroleum and Coal Product Manufacturing	6.2	2.1	1.5	1.8	2.1	-13.1	3.3
		18	Basic Chemical and Chemical Product Manufacturing	12.7	14.3	17.8	17.2	18.2	3.4	0.3
		19	Polymer Product and Rubber Product Manufacturing	21.0	20.5	23.9	20.5	18.1	1.3	-2.8
		20	Non-Metallic Mineral Product Manufacturing	19.2	18.1	21.9	20.1	17.8	1.4	-2.1
		21	Primary Metal and Metal Product Manufacturing	18.4	17.4	19.6	19.2	19.1	0.6	-0.3
		22	Fabricated Metal Product Manufacturing	21.8	21.8	23.9	22.4	21.5	0.9	-1.0
		23	Transport Equipment Manufacturing	22.7	22.0	20.5	18.6	18.1	-1.0	-1.2
		24	Machinery and Equipment Manufacturing	15.7	14.1	14.6	10.5	10.4	-0.7	-3.4
		25	Furniture and Other Manufacturing	24.3	22.5	22.1	18.2	17.6	-0.9	-2.3
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	8.0	6.6	5.9	7.5	8.3	-3.1	3.5
		27	Gas Supply	11.4	12.0	21.7	14.9	13.4	6.6	-4.7
		28	Water Supply, Sewerage and Drainage Services	7.4	8.5	9.1	10.1	11.1	2.1	2.0
		29	Waste Collection, Treatment and Disposal Services	20.2	22.1	19.0	20.4	21.0	-0.6	1.0
E	Construction	30	Building Construction	16.1	13.8	14.0	13.6	14.0	-1.4	0.0
		31	Heavy and Civil Engineering Construction	18.3	17.3	15.0	15.7	16.1	-2.0	0.8
		32	Construction Services	19.4	20.4	21.1	20.3	20.2	0.9	-0.4



**Table 14.24 Share of place-of-work employment in Greater Melbourne by industry subdivision – Melbourne's North (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	14.1	13.3	11.5	11.7	11.4	-2.0	-0.1
		34	Machinery and Equipment Wholesaling	11.2	9.8	10.2	10.3	10.3	-1.0	0.1
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	15.7	15.8	17.2	16.7	16.5	0.9	-0.4
		36	Grocery, Liquor and Tobacco Product Wholesaling	17.4	22.0	23.5	22.3	22.8	3.0	-0.3
		37	Other Goods Wholesaling	13.6	13.5	15.8	15.4	14.9	1.5	-0.6
		38	Commission-Based Wholesaling	8.2	7.9	9.1	8.4	9.3	1.0	0.3
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	14.4	14.4	14.5	13.6	13.8	0.1	-0.5
		40	Fuel Retailing	14.7	16.5	23.3	18.8	19.2	4.7	-1.9
		41	Food Retailing	17.9	18.1	18.8	18.1	18.6	0.5	-0.1
		42	Other Store-Based Retailing	14.1	13.7	14.1	15.0	14.9	0.0	0.5
		43	Non-Store Retailing and Retail Commission Based Buying	12.3	8.8	12.9	9.8	11.7	0.5	-1.0
H	Accommodation and Food Services	44	Accommodation	8.1	7.8	7.4	7.1	7.1	-1.0	-0.4
		45	Food and Beverage Services	14.7	14.9	13.8	12.9	13.5	-0.6	-0.3
I	Transport, Postal and Warehousing	46	Road Transport	20.5	21.2	22.4	20.8	20.0	0.9	-1.1
		47	Rail Transport	5.2	7.2	8.3	9.6	10.4	4.9	2.2
		48	Water Transport	6.5	5.9	4.7	6.0	6.6	-3.2	3.4
		49	Air and Space Transport	70.5	68.0	68.7	75.5	75.1	-0.3	0.9
		50	Other Transport	16.6	17.8	24.6	24.2	14.2	4.0	-5.3
		51	Postal and Courier Pick-up and Delivery Services	13.7	14.6	19.1	18.0	16.8	3.3	-1.3
		52	Transport Support Services	30.3	32.2	34.1	36.8	36.4	1.2	0.7
		53	Warehousing and Storage Services	14.5	15.4	18.0	18.5	19.2	2.1	0.7
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	5.8	4.6	3.9	3.2	3.5	-3.9	-0.9
		55	Motion Picture and Sound Recording Activities	7.8	9.2	8.3	7.6	7.7	0.7	-0.7
		56	Broadcasting (except Internet)	2.2	2.2	2.2	3.0	4.7	-0.3	8.1
		57	Internet Publishing and Broadcasting	10.7	5.4	0.9	0.9	2.3	-21.6	9.6
		58	Telecommunications Services	3.1	3.7	4.7	3.8	4.7	4.2	0.0
		59	Internet Service Providers, Web Search Portals and Data Processing Services	3.8	3.2	2.4	2.7	3.7	-4.5	4.4
		60	Library and Other Information Services	14.4	13.3	8.9	9.1	8.9	-4.6	0.0
K	Financial and Insurance Services	62	Finance	4.5	4.2	4.5	4.7	5.8	-0.1	2.6
		63	Insurance and Superannuation Funds	2.0	1.7	2.1	2.1	3.2	0.4	4.2
		64	Auxiliary Finance and Insurance Services	3.2	3.8	3.3	3.8	5.0	0.2	4.3
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	14.9	14.9	12.7	12.9	13.0	-1.6	0.3
		67	Property Operators and Real Estate Services	10.1	9.5	8.0	8.0	8.8	-2.3	0.9

**Table 14.24 Share of place-of-work employment in Greater Melbourne by industry subdivision – Melbourne's North (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	6.5	6.8	5.9	6.8	8.2	-0.9	3.2
		70	Computer System Design and Related Services	3.6	3.7	3.4	4.2	5.4	-0.4	4.6
N	Administrative and Support Services	72	Administrative Services	7.6	9.4	8.9	10.9	11.7	1.6	2.8
		73	Building Cleaning, Pest Control and Other Support Services	15.4	15.2	14.0	14.3	14.0	-0.9	-0.1
O	Public Administration and Safety	75	Public Administration	12.0	12.8	11.8	12.5	13.2	-0.1	1.2
		76	Defence	21.6	21.5	18.8	20.4	19.4	-1.4	0.3
		77	Public Order, Safety and Regulatory Services	14.7	15.2	15.0	14.8	14.4	0.2	-0.4
P	Education and Training	80	Preschool and School Education	18.9	19.1	17.8	17.6	17.8	-0.6	0.0
		81	Tertiary Education	12.5	11.4	11.2	10.9	11.2	-1.1	0.0
		82	Adult, Community and Other Education	15.3	15.7	15.5	13.9	15.8	0.1	0.2
Q	Health Care and Social Assistance	84	Hospitals	15.7	15.2	15.4	16.3	16.0	-0.2	0.4
		85	Medical and Other Health Care Services	15.3	15.7	16.3	15.5	16.6	0.6	0.2
		86	Residential Care Services	17.1	16.4	17.0	16.7	17.2	0.0	0.1
		87	Social Assistance Services	17.8	19.3	20.0	19.4	20.0	1.2	0.0
R	Arts and Recreation Services	89	Heritage Activities	4.3	3.7	3.7	4.1	6.2	-1.5	5.4
		90	Creative and Performing Arts Activities	13.6	15.8	10.2	10.5	11.3	-2.8	1.0
		91	Sports and Recreation Activities	11.2	12.5	13.4	13.2	13.4	1.8	0.0
		92	Gambling Activities	3.0	2.3	4.5	2.8	3.7	4.2	-1.8
S	Other Services	94	Repair and Maintenance	18.7	18.3	21.4	19.5	18.1	1.4	-1.7
		95	Personal and Other Services	12.5	13.2	14.0	13.9	16.0	1.2	1.3
		96	Private Households Employing Staff and Undifferentiated Goods	8.3	14.1	20.5	18.0	14.6	9.4	-3.3

Source: NIEIR.

#### 14.2.4 Melbourne's North – Resident employment by industry subdivision

Table 14.25 shows detailed resident employment forecasts by industry sub-division for Melbourne's North and for the Greater Melbourne region.

Similarly to place-of-work employment, all Health related industry subdivisions are expected to gain steadily over the next ten years with close to another 10,000 workers in each of Hospital and Medical and Other Health Care Services industries by 2031. While most manufacturing industry workforces will continue to decline over the forecasts with the notable exception of Food Product Manufacturing and Beverage and Tobacco Manufacturing resident workers.

Melbourne's North will remain an attractive place to live for Professional, Scientific and Technical Services (Except Computer System Design and Related Services) with the workforce adding just over 10,000 resident workers, or growing in total size by 32 per cent from 2021 to 2031. Already in 2021, this industry has one of the highest number workforces with 33,209 living within Melbourne's North, just behind Construction Services with 34,866. By 2031 it will have the greatest number of workers with a resident workforce of 43,786. In comparison, growth in Construction Service workers will remain stagnant over the next ten years growing to only 36,478.

Employment growth in Administration and Safety industries is mainly driven by increased demand for cleaning services as shown by an increase in the Building Cleaning, Pest Control and Other Support Services industry of 3,811 resident workers.

**Table 14.25 Resident employment by industry subdivision – Melbourne's North**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	1646	2204	2231	2304	3143	3.1	3.5
		2	Aquaculture	35	55	31	60	78	-1.1	9.6
		3	Forestry and Logging	73	83	34	87	83	-7.4	9.3
		4	Fishing, Hunting and Trapping	25	82	23	21	21	-1.1	-0.6
		5	Agriculture, Forestry and Fishing Support Services	185	277	96	121	208	-6.3	8.0
B	Mining	6	Coal Mining	25	58	96	89	95	14.5	-0.1
		7	Oil and Gas Extraction	263	169	122	158	185	-7.4	4.2
		8	Metal Ore Mining	349	362	137	59	164	-8.9	1.8
		9	Non-Metallic Mineral Mining and Quarrying	183	182	142	1195	1159	-2.5	23.3
		10	Exploration and Other Mining Support Services	477	312	56	678	643	-19.3	27.6
C	Manufacturing	11	Food Product Manufacturing	7139	7990	8556	8967	9521	1.8	1.1
		12	Beverage and Tobacco Product Manufacturing	1025	1126	1075	1483	1632	0.5	4.3
		13	Textile, Leather, Clothing and Footwear Manufacturing	3499	2941	3009	2303	2024	-1.5	-3.9
		14	Wood Product Manufacturing	1601	1202	1653	1519	1338	0.3	-2.1
		15	Pulp, Paper and Converted Paper Product Manufacturing	2186	1664	2416	1823	1368	1.0	-5.5
		16	Printing (including the Reproduction of Recorded Media)	2553	2257	2585	2392	2209	0.1	-1.6
		17	Petroleum and Coal Product Manufacturing	216	229	333	279	338	4.4	0.2
		18	Basic Chemical and Chemical Product Manufacturing	2361	2506	2786	3000	3472	1.7	2.2
		19	Polymer Product and Rubber Product Manufacturing	2838	2254	2819	2228	1902	-0.1	-3.9
		20	Non-Metallic Mineral Product Manufacturing	1795	1461	1802	1645	1326	0.0	-3.0
		21	Primary Metal and Metal Product Manufacturing	2179	1660	1579	2040	2018	-3.2	2.5
		22	Fabricated Metal Product Manufacturing	2721	2427	2399	2237	1992	-1.3	-1.8
		23	Transport Equipment Manufacturing	6896	5452	6038	5079	4591	-1.3	-2.7
		24	Machinery and Equipment Manufacturing	4820	4447	3706	3191	3209	-2.6	-1.4
		25	Furniture and Other Manufacturing	3576	3050	3579	3122	3183	0.0	-1.2
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	2016	2666	2212	3210	3622	0.9	5.1
		27	Gas Supply	538	452	697	568	650	2.6	-0.7
		28	Water Supply, Sewerage and Drainage Services	615	729	570	683	899	-0.8	4.7
		29	Waste Collection, Treatment and Disposal Services	1043	1430	789	1205	1484	-2.7	6.5
E	Construction	30	Building Construction	10330	11982	15655	13190	13731	4.2	-1.3
		31	Heavy and Civil Engineering Construction	2402	2632	4921	4120	4456	7.4	-1.0
		32	Construction Services	27656	33063	34866	34334	36478	2.3	0.5

**Table 14.25 Resident employment by industry subdivision – Melbourne's North (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	3255	3337	3187	3139	2966	-0.2	-0.7
		34	Machinery and Equipment Wholesaling	4340	3648	3812	3583	3365	-1.3	-1.2
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	1643	1638	2286	2493	2486	3.4	0.8
		36	Grocery, Liquor and Tobacco Product Wholesaling	3148	2752	3070	3182	3076	-0.3	0.0
		37	Other Goods Wholesaling	5373	4109	5721	5057	4545	0.6	-2.3
		38	Commission-Based Wholesaling	238	214	235	269	261	-0.2	1.0
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	2902	3624	3876	2521	2787	2.9	-3.2
		40	Fuel Retailing	1088	975	1183	1027	941	0.8	-2.3
		41	Food Retailing	13716	15785	15304	16551	16759	1.1	0.9
		42	Other Store-Based Retailing	24833	27308	28640	29493	28448	1.4	-0.1
		43	Non-Store Retailing and Retail Commission Based Buying	515	382	1601	1201	1197	12.0	-2.9
H	Accommodation and Food Services	44	Accommodation	2881	3083	2232	2691	3329	-2.5	4.1
		45	Food and Beverage Services	22751	28007	29628	34252	37326	2.7	2.3
I	Transport, Postal and Warehousing	46	Road Transport	12042	12146	14212	16952	17583	1.7	2.2
		47	Rail Transport	1273	1705	2276	2576	2907	6.0	2.5
		48	Water Transport	345	309	219	254	262	-4.4	1.8
		49	Air and Space Transport	2944	3357	2436	4318	3769	-1.9	4.5
		50	Other Transport	187	222	387	438	293	7.5	-2.7
		51	Postal and Courier Pick-up and Delivery Services	3652	4283	6377	8348	9072	5.7	3.6
		52	Transport Support Services	4075	5458	5483	5816	5688	3.0	0.4
		53	Warehousing and Storage Services	2193	2578	4435	4676	4746	7.3	0.7
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	2240	1564	1623	1920	1860	-3.2	1.4
		55	Motion Picture and Sound Recording Activities	1150	1588	1849	2056	1939	4.9	0.5
		56	Broadcasting (except Internet)	830	892	840	997	1029	0.1	2.1
		57	Internet Publishing and Broadcasting	277	195	80	147	175	-11.7	8.2
		58	Telecommunications Services	4468	4874	5654	5011	4818	2.4	-1.6
		59	Internet Service Providers, Web Search Portals and Data Processing Services	520	913	600	655	626	1.4	0.4
		60	Library and Other Information Services	557	530	790	1012	1226	3.6	4.5
K	Financial and Insurance Services	62	Finance	8999	9297	10201	10237	10139	1.3	-0.1
		63	Insurance and Superannuation Funds	4530	4738	7444	7661	8305	5.1	1.1
		64	Auxiliary Finance and Insurance Services	4564	4837	4969	5201	5714	0.9	1.4
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	1637	1626	1064	887	876	-4.2	-1.9
		67	Property Operators and Real Estate Services	3869	5161	4539	5463	6103	1.6	3.0

**Table 14.25 Resident employment by industry subdivision – Melbourne's North (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	25397	28883	33209	38837	43786	2.7	2.8
		70	Computer System Design and Related Services	6624	8556	12085	12528	13295	6.2	1.0
N	Administrative and Support Services	72	Administrative Services	8154	8773	8328	9069	9148	0.2	0.9
		73	Building Cleaning, Pest Control and Other Support Services	6727	8334	8377	10492	12188	2.2	3.8
O	Public Administration and Safety	75	Public Administration	17217	18761	22714	26143	28989	2.8	2.5
		76	Defence	2495	2485	2458	3483	3935	-0.1	4.8
		77	Public Order, Safety and Regulatory Services	7210	8758	11180	12728	13458	4.5	1.9
P	Education and Training	80	Preschool and School Education	20578	26836	27528	29336	30713	3.0	1.1
		81	Tertiary Education	11553	13457	15035	17723	19627	2.7	2.7
		82	Adult, Community and Other Education	4301	5507	7841	8823	10725	6.2	3.2
Q	Health Care and Social Assistance	84	Hospitals	16922	19797	25429	31544	34866	4.2	3.2
		85	Medical and Other Health Care Services	13587	17573	21623	26055	30334	4.8	3.4
		86	Residential Care Services	6456	8941	9961	11968	13249	4.4	2.9
		87	Social Assistance Services	11642	14141	20893	23038	24493	6.0	1.6
R	Arts and Recreation Services	89	Heritage Activities	1078	1284	1280	1641	1998	1.7	4.6
		90	Creative and Performing Arts Activities	1896	2232	2129	2176	2244	1.2	0.5
		91	Sports and Recreation Activities	3611	4910	4075	5184	5718	1.2	3.4
		92	Gambling Activities	1419	1605	1568	1317	1258	1.0	-2.2
S	Other Services	94	Repair and Maintenance	7728	7742	10943	11958	12323	3.5	1.2
		95	Personal and Other Services	8736	10117	10441	12188	13048	1.8	2.3
		96	Private Households Employing Staff and Undifferentiated Goods	162	326	533	687	663	12.7	2.2

Source: NIEIR.



**Table 14.26 Share of resident employment in Greater Melbourne by industry subdivision – Melbourne's North**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	14.7	16.5	12.6	14.8	15.0	-1.5	1.7
		2	Aquaculture	29.7	16.7	9.0	19.9	21.2	-11.2	8.9
		3	Forestry and Logging	18.9	17.9	9.2	15.8	12.3	-7.0	3.0
		4	Fishing, Hunting and Trapping	12.3	24.3	26.1	66.6	56.4	7.8	8.0
		5	Agriculture, Forestry and Fishing Support Services	17.7	18.7	4.5	5.0	6.7	-12.9	4.1
B	Mining	6	Coal Mining	13.8	24.8	45.2	46.8	44.7	12.6	-0.1
		7	Oil and Gas Extraction	16.6	12.9	11.2	10.5	10.2	-3.9	-0.9
		8	Metal Ore Mining	24.7	18.1	8.1	5.1	9.5	-10.6	1.6
		9	Non-Metallic Mineral Mining and Quarrying	17.6	19.6	15.1	24.0	22.6	-1.5	4.1
		10	Exploration and Other Mining Support Services	25.6	16.1	4.2	14.7	12.3	-16.5	11.3
C	Manufacturing	11	Food Product Manufacturing	20.3	20.1	20.7	20.0	20.1	0.2	-0.3
		12	Beverage and Tobacco Product Manufacturing	17.2	18.5	15.6	16.8	17.0	-1.0	0.9
		13	Textile, Leather, Clothing and Footwear Manufacturing	25.1	24.8	27.8	23.1	23.6	1.0	-1.6
		14	Wood Product Manufacturing	20.8	18.3	20.4	19.8	18.5	-0.2	-1.0
		15	Pulp, Paper and Converted Paper Product Manufacturing	27.3	28.0	26.6	23.4	20.6	-0.2	-2.5
		16	Printing (including the Reproduction of Recorded Media)	18.7	17.0	16.6	16.4	15.6	-1.2	-0.6
		17	Petroleum and Coal Product Manufacturing	11.6	14.6	11.8	12.2	13.2	0.1	1.2
		18	Basic Chemical and Chemical Product Manufacturing	17.1	17.0	14.8	15.1	15.9	-1.4	0.7
		19	Polymer Product and Rubber Product Manufacturing	18.3	17.5	19.3	17.6	16.4	0.5	-1.6
		20	Non-Metallic Mineral Product Manufacturing	20.2	19.9	21.6	20.5	18.8	0.7	-1.4
		21	Primary Metal and Metal Product Manufacturing	17.1	15.9	15.6	15.8	15.6	-0.9	0.0
		22	Fabricated Metal Product Manufacturing	20.1	20.1	18.4	17.4	16.6	-0.9	-1.0
		23	Transport Equipment Manufacturing	20.8	20.2	23.1	23.3	23.4	1.1	0.1
		24	Machinery and Equipment Manufacturing	17.1	17.2	15.0	12.9	12.9	-1.3	-1.5
		25	Furniture and Other Manufacturing	25.6	24.0	19.8	17.6	17.1	-2.5	-1.4
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	22.5	21.6	15.0	16.9	17.2	-3.9	1.3
		27	Gas Supply	18.1	20.5	26.9	24.2	22.0	4.1	-2.0
		28	Water Supply, Sewerage and Drainage Services	13.7	14.9	11.7	13.4	14.6	-1.6	2.2
		29	Waste Collection, Treatment and Disposal Services	21.2	22.5	12.7	16.2	17.9	-5.0	3.5
E	Construction	30	Building Construction	21.1	21.4	21.6	21.4	21.5	0.3	0.0
		31	Heavy and Civil Engineering Construction	22.0	21.9	21.1	20.1	21.1	-0.4	0.0
		32	Construction Services	21.8	25.0	26.2	25.4	25.4	1.9	-0.3

**Table 14.26 Share of resident employment in Greater Melbourne by industry subdivision – Melbourne's North (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	16.5	18.7	16.0	16.2	15.9	-0.3	0.0
		34	Machinery and Equipment Wholesaling	16.0	15.3	15.6	15.8	15.8	-0.2	0.1
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	18.9	19.4	23.5	22.7	22.4	2.2	-0.5
		36	Grocery, Liquor and Tobacco Product Wholesaling	19.4	19.1	19.7	19.4	19.6	0.2	0.0
		37	Other Goods Wholesaling	16.6	16.4	18.6	18.7	18.2	1.1	-0.2
		38	Commission-Based Wholesaling	13.2	15.5	13.9	13.7	14.3	0.5	0.3
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	18.6	19.3	18.6	17.8	17.9	0.0	-0.4
		40	Fuel Retailing	20.3	18.8	30.6	26.4	27.6	4.2	-1.0
		41	Food Retailing	20.0	20.6	21.1	20.7	21.1	0.6	0.0
		42	Other Store-Based Retailing	19.1	19.2	18.9	19.5	19.4	-0.1	0.2
		43	Non-Store Retailing and Retail Commission Based Buying	17.3	12.7	22.0	20.9	23.8	2.4	0.8
H	Accommodation and Food Services	44	Accommodation	18.5	19.2	17.9	18.0	18.3	-0.4	0.2
		45	Food and Beverage Services	20.1	20.1	22.5	20.9	21.3	1.1	-0.6
I	Transport, Postal and Warehousing	46	Road Transport	24.6	25.5	24.8	24.4	24.1	0.1	-0.3
		47	Rail Transport	20.9	23.4	24.6	24.5	23.9	1.6	-0.3
		48	Water Transport	19.3	16.8	11.0	11.9	12.1	-5.5	0.9
		49	Air and Space Transport	33.1	31.6	32.4	34.6	34.0	-0.2	0.5
		50	Other Transport	14.2	16.3	23.4	21.9	16.3	5.1	-3.5
		51	Postal and Courier Pick-up and Delivery Services	19.0	20.0	26.5	24.3	23.0	3.4	-1.4
		52	Transport Support Services	28.9	29.8	28.2	28.9	28.5	-0.3	0.1
		53	Warehousing and Storage Services	16.0	17.7	19.8	20.3	20.7	2.1	0.5
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	18.8	18.6	19.6	18.8	18.8	0.4	-0.4
		55	Motion Picture and Sound Recording Activities	17.8	19.0	20.9	19.8	19.7	1.7	-0.6
		56	Broadcasting (except Internet)	16.7	18.7	14.6	15.9	16.9	-1.3	1.5
		57	Internet Publishing and Broadcasting	32.6	21.5	7.6	9.9	10.2	-13.5	3.0
		58	Telecommunications Services	17.9	18.6	23.1	23.0	23.6	2.6	0.2
		59	Internet Service Providers, Web Search Portals and Data Processing Services	17.1	18.0	9.6	10.1	10.3	-5.6	0.6
		60	Library and Other Information Services	23.7	22.7	17.3	19.7	20.5	-3.1	1.7
K	Financial and Insurance Services	62	Finance	17.4	17.5	17.9	17.9	18.2	0.3	0.1
		63	Insurance and Superannuation Funds	19.3	18.8	23.8	23.8	24.4	2.1	0.2
		64	Auxiliary Finance and Insurance Services	16.0	15.7	12.5	12.9	13.6	-2.4	0.8
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	20.3	21.6	15.1	14.4	14.5	-2.9	-0.4
		67	Property Operators and Real Estate Services	15.2	15.3	13.1	13.4	14.0	-1.5	0.6

**Table 14.26 Share of resident employment in Greater Melbourne by industry subdivision – Melbourne's North (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	16.7	17.3	16.2	16.7	17.2	-0.3	0.6
		70	Computer System Design and Related Services	15.1	15.8	15.2	15.6	16.1	0.1	0.5
N	Administrative and Support Services	72	Administrative Services	18.2	18.7	19.6	20.4	20.6	0.7	0.5
		73	Building Cleaning, Pest Control and Other Support Services	20.5	20.6	19.4	19.4	19.5	-0.5	0.0
O	Public Administration and Safety	75	Public Administration	24.4	24.9	24.5	24.1	24.0	0.1	-0.2
		76	Defence	30.0	29.8	32.2	30.0	26.9	0.7	-1.8
		77	Public Order, Safety and Regulatory Services	23.9	24.4	26.2	25.8	25.5	0.9	-0.3
P	Education and Training	80	Preschool and School Education	21.2	21.9	20.9	21.0	21.2	-0.1	0.1
		81	Tertiary Education	22.9	23.2	24.1	23.8	23.8	0.5	-0.1
		82	Adult, Community and Other Education	19.6	19.4	21.4	19.9	21.1	0.9	-0.1
Q	Health Care and Social Assistance	84	Hospitals	21.9	21.8	21.7	22.3	22.1	-0.1	0.2
		85	Medical and Other Health Care Services	18.7	19.1	20.5	19.4	20.0	0.9	-0.2
		86	Residential Care Services	20.3	20.4	22.4	21.8	22.2	1.0	-0.1
		87	Social Assistance Services	22.4	22.9	24.8	23.9	24.1	1.0	-0.3
R	Arts and Recreation Services	89	Heritage Activities	23.8	24.0	18.0	19.7	20.6	-2.7	1.4
		90	Creative and Performing Arts Activities	20.1	23.0	13.3	13.6	14.1	-4.1	0.7
		91	Sports and Recreation Activities	17.9	19.1	19.2	18.1	18.1	0.7	-0.6
		92	Gambling Activities	17.2	16.3	16.9	15.6	16.0	-0.2	-0.5
S	Other Services	94	Repair and Maintenance	22.1	21.4	27.0	26.1	25.6	2.0	-0.5
		95	Personal and Other Services	20.0	20.2	22.9	21.3	22.8	1.4	-0.1
		96	Private Households Employing Staff and Undifferentiated Goods	13.8	19.6	29.6	25.4	23.1	7.9	-2.5

Source: NIEIR.

## 14.3 Occupation forecasts for Melbourne's North

Occupation forecasts for the total Melbourne's North region are presented for the next ten years out to 2031 within this section. Forecasts have been completed to the occupation minor group level which classifies occupations into 97 distinct occupations.

Section 14.3.1 gives the total employment forecasts by occupation minor group for both a place-of-work employment and resident employment basis for Melbourne's North.

Section 14.3.2 and 14.3.1 present a more detailed place-of-work and resident employment forecasts of occupations by industry division.

### 14.3.1 Melbourne's North – Total employment by occupation minor group

Figures 14.8 to 14.10 show the change in workforce composition by occupation major group. This shows the proportion of workforce for each of the 8 major occupation groups on a place-of-work basis.

The most significant change is a shift away from Technicians and Trades Workers to a more Professional workforce from 2021 to 2031. The proportion of Professional workers will increase from 22.8 per cent of the workforce in 2021 to 25.8 per cent of the workforce by 2031. At the same time the proportion of Technicians and Trades workers will decrease from 15.5 per cent of place-of-work employment to 14.0 per cent of Melbourne's North.

Figure 14.11 shows the total change in the number of employed by occupation from 2021 to 2031 for Melbourne's North for the 20 occupations that will add the most workers over the next ten years (place-of-work basis). While Figure 14.12 shows the corresponding bottom 20 occupations, with many losing workers over the next ten years. The full set of total occupation forecasts are presented in Tables 14.27 and 14.28.

Midwifery and Nursing Professionals are expected to gain the most with a further 5,111 jobs required in Melbourne's north over the next ten years, followed by Personal Carers and Assistants with 3,039 and Information and Organisation Professionals with another 2,072 by 2031. A total of six of the top 20 occupations over the next ten years are related to the broad fields of health and social welfare. There are also a number of business and information type occupations represented in the most in

demand occupations (adding the most employed) including:

- Information and Organisation Professionals (2,072);
- Business and Systems Analysts, and Programmers (1,460); and
- Accountants, Auditors and Company Secretaries (1,361).

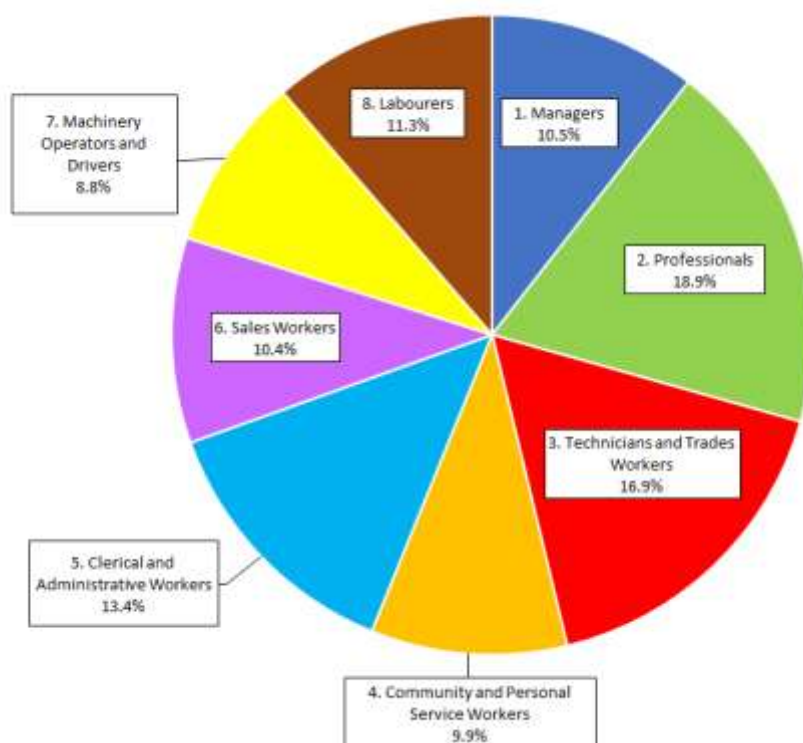
Employment growth over the next ten years will be constrained by slower population growth; this means that there are a number of occupations that will be in decline over the next ten years within Melbourne's North.

The occupations that are expected to lose the most employed by 2031 include:

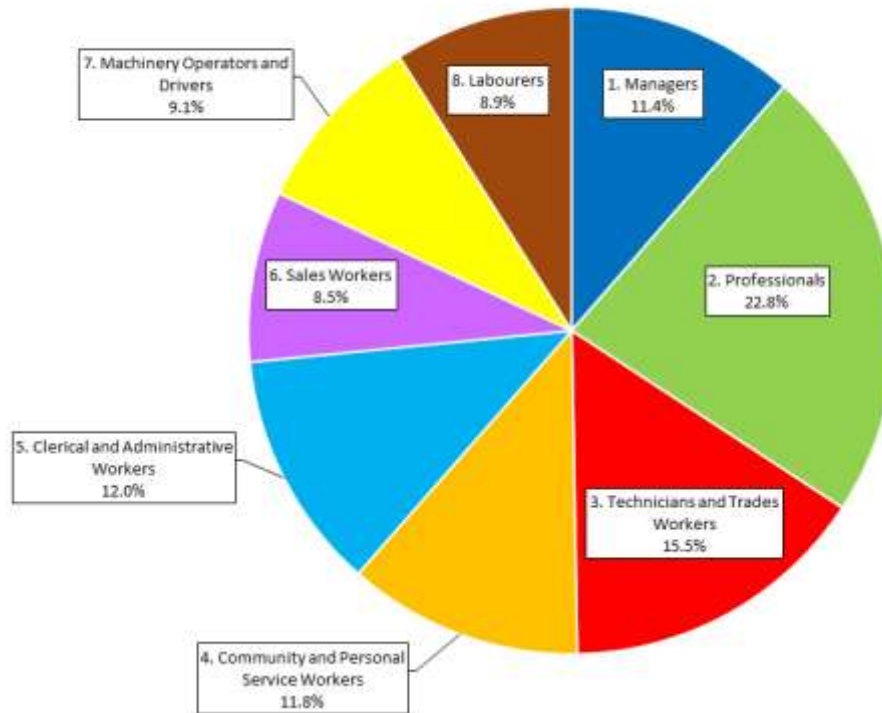
- Machine Operators (-815);
- Bricklayers, Carpenters and Joiners (548); and
- Wood Trades Workers (-513).

All of the occupations that are losing workers over the next ten years would typically be employed in Construction and Manufacturing industries, and are dominated by Technicians and Trades workers.

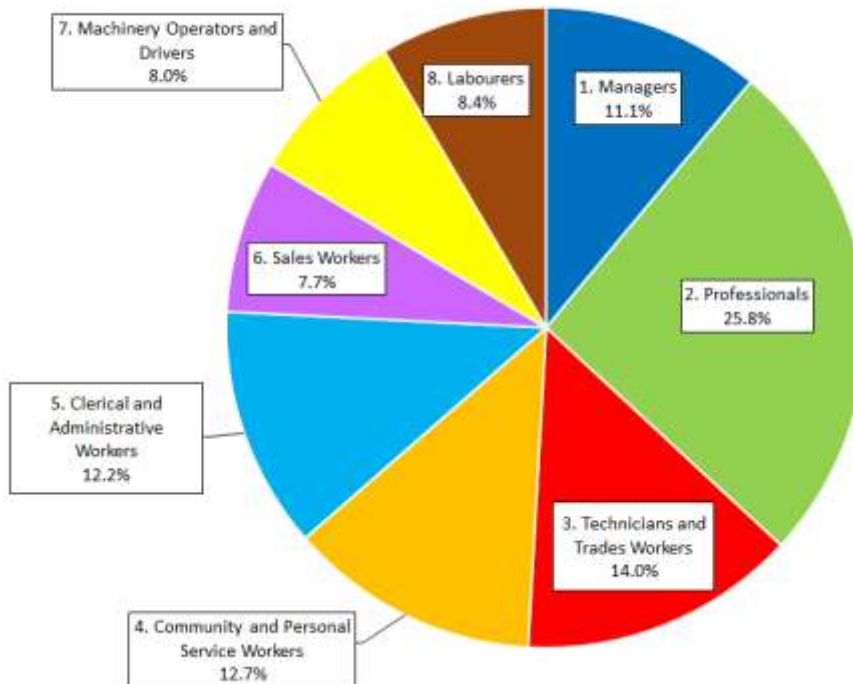
**Figure 14.8: Melbourne's North share of place-of-work employment by occupation major group – 2011**



**Figure 14.9: Melbourne's North share of place-of-work employment by occupation major group – 2021**

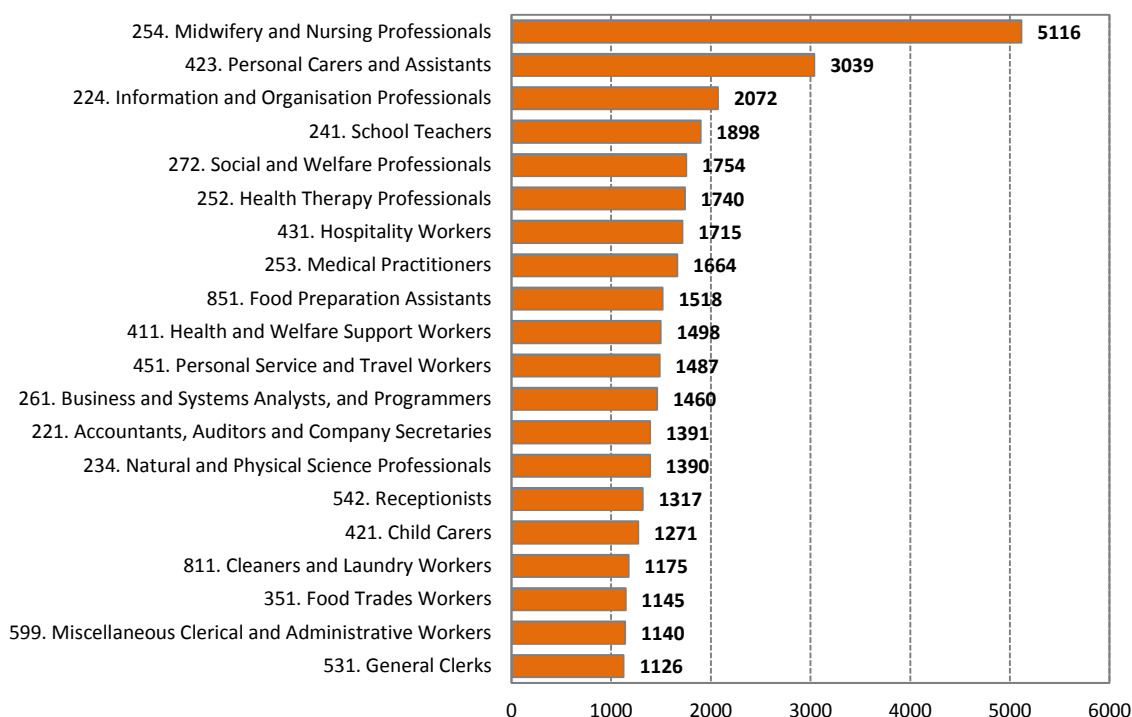


**Figure 14.10: Melbourne's North share of place-of-work employment by occupation major group – 2031**

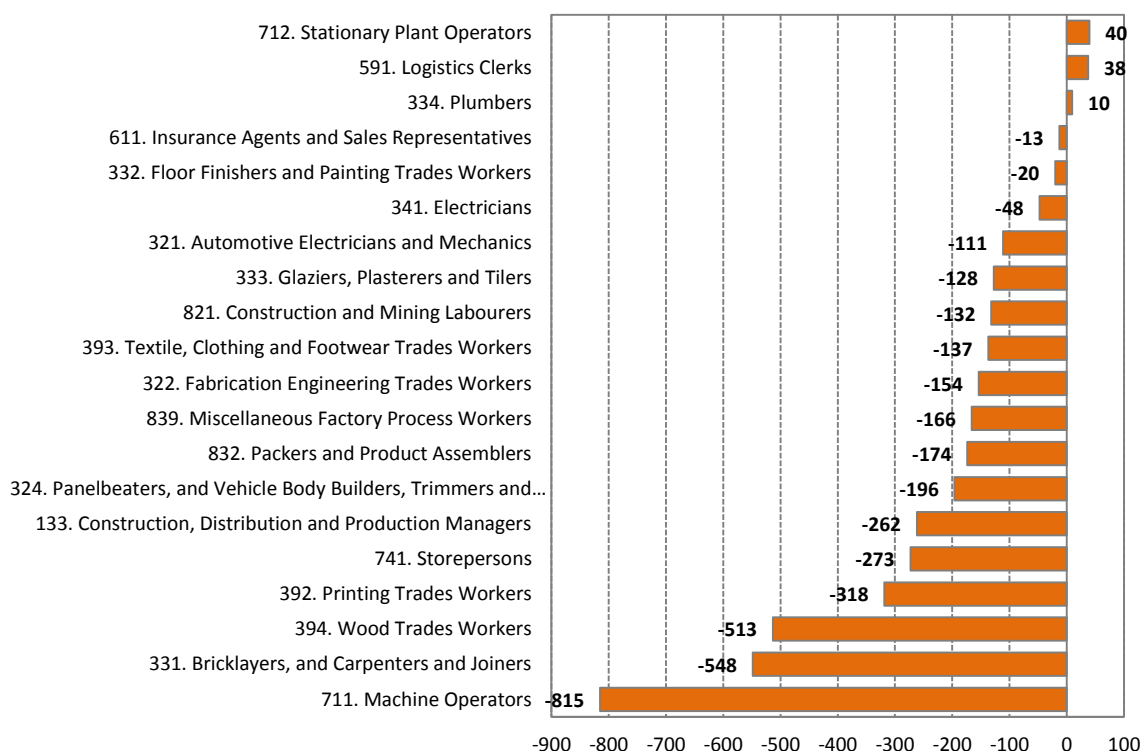




**Figure 14.11: Top 20 place-of-work employment by occupation minor group 2021 to 2031 (change in number employed) – Melbourne's North**



**Figure 14.12: Bottom 20 place-of-work employment by occupation minor group 2021 to 2031 (change in number employed) – Melbourne's North**



**Table 14.27 Total industry place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	2669	3064	3222	3400	3700	1.9	1.4
121	Farmers and Farm Managers	713	620	884	919	1193	2.2	3.0
131	Advertising, Public Relations and Sales Managers	2702	2865	3619	3881	4164	3.0	1.4
132	Business Administration Managers	2318	2562	3813	4311	4930	5.1	2.6
133	Construction, Distribution and Production Managers	8380	9148	11543	11129	11281	3.3	-0.2
134	Education, Health and Welfare Services Managers	1887	2259	2795	3152	3501	4.0	2.3
135	ICT Managers	366	604	633	787	1007	5.6	4.8
139	Miscellaneous Specialist Managers	1325	1697	2403	2898	3144	6.1	2.7
141	Accommodation and Hospitality Managers	1994	2286	1965	2254	2531	-0.1	2.6
142	Retail Managers	6904	7221	8033	8268	8430	1.5	0.5
149	Miscellaneous Hospitality, Retail and Service Managers	3554	4262	4620	5060	5454	2.7	1.7
211	Arts Professionals	1320	1488	2140	2363	2705	5.0	2.4
212	Media Professionals	849	1224	1632	1813	2033	6.8	2.2
221	Accountants, Auditors and Company Secretaries	2859	3598	4254	4765	5645	4.1	2.9
222	Financial Brokers and Dealers, and Investment Advisers	979	1259	1412	1563	2007	3.7	3.6
223	Human Resource and Training Professionals	1664	1585	1884	2340	2674	1.2	3.6
224	Information and Organisation Professionals	1670	2219	3675	4657	5748	8.2	4.6
225	Sales, Marketing and Public Relations Professionals	2007	2559	3186	3378	3780	4.7	1.7
231	Air and Marine Transport Professionals	1412	1643	1607	2455	2332	1.3	3.8
232	Architects, Designers, Planners and Surveyors	2980	3366	4555	4999	5666	4.3	2.2
233	Engineering Professionals	2552	3173	4358	4424	4795	5.5	1.0
234	Natural and Physical Science Professionals	2338	2536	3531	4309	4921	4.2	3.4
241	School Teachers	12301	14026	15806	16716	17704	2.5	1.1
242	Tertiary Education Teachers	2647	2639	3164	3632	4187	1.8	2.8
249	Miscellaneous Education Professionals	1580	2028	2930	3196	3920	6.4	3.0
251	Health Diagnostic and Promotion Professionals	2321	2719	3331	3795	4011	3.7	1.9
252	Health Therapy Professionals	2153	2778	4131	4932	5872	6.7	3.6
253	Medical Practitioners	2595	3312	3574	4515	5238	3.3	3.9
254	Midwifery and Nursing Professionals	7993	9493	12014	15132	17130	4.2	3.6
261	Business and Systems Analysts, and Programmers	1272	1427	2273	2862	3733	6.0	5.1
262	Database and Systems Administrators, and ICT Security Specialists	460	548	693	860	1035	4.2	4.1
263	ICT Network and Support Professionals	564	524	904	1123	1393	4.8	4.4
271	Legal Professionals	567	743	981	1322	1728	5.6	5.8
272	Social and Welfare Professionals	3943	4560	5140	6005	6894	2.7	3.0

**Table 14.27 Total industry place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	1779	1642	2314	2642	2879	2.7	2.2
312	Building and Engineering Technicians	2333	2724	3728	3807	4104	4.8	1.0
313	ICT and Telecommunications Technicians	796	919	1447	1706	2016	6.2	3.4
321	Automotive Electricians and Mechanics	3228	3508	3438	3385	3327	0.6	-0.3
322	Fabrication Engineering Trades Workers	2712	2495	2083	2032	1929	-2.6	-0.8
323	Mechanical Engineering Trades Workers	4919	3894	3971	4299	4067	-2.1	0.2
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	1666	1739	1963	1899	1767	1.7	-1.0
331	Bricklayers, and Carpenters and Joiners	6382	6176	7013	6195	6464	0.9	-0.8
332	Floor Finishers and Painting Trades Workers	1788	2110	2088	1894	2068	1.6	-0.1
333	Glaziers, Plasterers and Tilers	2532	2385	2248	2030	2121	-1.2	-0.6
334	Plumbers	3327	3623	3690	3465	3700	1.0	0.0
341	Electricians	4387	4798	5242	4929	5194	1.8	-0.1
342	Electronics and Telecommunications Trades Workers	2352	2461	1905	1977	2063	-2.1	0.8
351	Food Trades Workers	4164	4975	5480	6077	6625	2.8	1.9
361	Animal Attendants and Trainers, and Shearers	588	789	1021	1272	1604	5.7	4.6
362	Horticultural Trades Workers	2507	2430	3301	3716	4101	2.8	2.2
391	Hairdressers	1413	1820	1809	2181	2480	2.5	3.2
392	Printing Trades Workers	1415	1202	1401	1202	1082	-0.1	-2.5
393	Textile, Clothing and Footwear Trades Workers	713	577	687	558	550	-0.4	-2.2
394	Wood Trades Workers	2208	2340	2514	2079	2001	1.3	-2.3
399	Miscellaneous Technicians and Trades Workers	1464	1744	1874	2089	2359	2.5	2.3
411	Health and Welfare Support Workers	3176	4082	4722	5440	6220	4.0	2.8
421	Child Carers	4033	6528	5805	6697	7076	3.7	2.0
422	Education Aides	2139	2783	4106	4414	4669	6.7	1.3
423	Personal Carers and Assistants	7254	8704	10883	12508	13922	4.1	2.5
431	Hospitality Workers	4622	6202	6012	6898	7727	2.7	2.5
441	Defence Force Members, Fire Fighters and Police	2238	2899	3051	3645	3806	3.1	2.2
442	Prison and Security Officers	1528	2071	3137	3430	3446	7.5	0.9
451	Personal Service and Travel Workers	3807	4337	4016	5564	5503	0.5	3.2
452	Sports and Fitness Workers	2156	3484	3177	3667	4203	4.0	2.8
511	Contract, Program and Project Administrators	1738	2139	1987	2303	2597	1.4	2.7
512	Office and Practice Managers	3633	4129	4507	4774	5214	2.2	1.5
521	Personal Assistants and Secretaries	2396	1910	1655	1840	2093	-3.6	2.4
531	General Clerks	5646	5970	6797	7340	7923	1.9	1.5
532	Keyboard Operators	1775	1391	1542	1739	1859	-1.4	1.9
541	Call or Contact Centre Information Clerks	1999	2225	2597	2977	3262	2.6	2.3
542	Receptionists	5015	5188	5075	5712	6392	0.1	2.3
551	Accounting Clerks and Bookkeepers	8207	7557	7906	8289	9007	-0.4	1.3
552	Financial and Insurance Clerks	1632	1638	1659	1735	2157	0.2	2.7

**Table 14.27 Total industry place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	2873	2998	3091	3751	3881	0.7	2.3
591	Logistics Clerks	4772	5380	6161	6386	6199	2.6	0.1
599	Miscellaneous Clerical and Administrative Workers	2193	2504	2734	3314	3874	2.2	3.5
611	Insurance Agents and Sales Representatives	4032	3422	2885	2859	2872	-3.3	0.0
612	Real Estate Sales Agents	1564	2024	1741	1951	2174	1.1	2.2
621	Sales Assistants and Salespersons	20168	24004	22047	22637	22682	0.9	0.3
631	Checkout Operators and Office Cashiers	4460	5015	3928	4151	4218	-1.3	0.7
639	Miscellaneous Sales Support Workers	2197	2424	1985	2639	2465	-1.0	2.2
711	Machine Operators	3558	3514	4082	3534	3266	1.4	-2.2
712	Stationary Plant Operators	1854	1342	1392	1433	1432	-2.8	0.3
721	Mobile Plant Operators	6272	5443	5482	6137	5652	-1.3	0.3
731	Automobile, Bus and Rail Drivers	3767	4287	5731	6419	6845	4.3	1.8
732	Delivery Drivers	1832	2088	3365	3682	3779	6.3	1.2
733	Truck Drivers	4996	5845	6092	6840	6669	2.0	0.9
741	Storepersons	5146	6351	8505	8516	8232	5.2	-0.3
811	Cleaners and Laundry Workers	6680	6615	6133	6929	7308	-0.8	1.8
821	Construction and Mining Labourers	5302	5386	5888	5475	5756	1.1	-0.2
831	Food Process Workers	2318	2369	2407	2485	2636	0.4	0.9
832	Packers and Product Assemblers	5029	4715	3875	3695	3702	-2.6	-0.5
839	Miscellaneous Factory Process Workers	2227	1906	1596	1476	1430	-3.3	-1.1
841	Farm, Forestry and Garden Workers	1531	1414	1095	1195	1540	-3.3	3.5
851	Food Preparation Assistants	5502	5987	6234	7127	7752	1.3	2.2
891	Freight Handlers and Shelf Fillers	2635	2466	2702	2966	2916	0.3	0.8
899	Miscellaneous Labourers	4185	4214	4238	4436	4610	0.1	0.8
	<b>Total</b>	<b>312603</b>	<b>345334</b>	<b>381945</b>	<b>415653</b>	<b>445956</b>	<b>2.0</b>	<b>1.6</b>

Source: NIEIR.

**Table 14.28 Total industry resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	3382	3960	4319	4608	4821	2.5	1.1
121	Farmers and Farm Managers	753	716	1042	1157	1520	3.3	3.8
131	Advertising, Public Relations and Sales Managers	5180	5101	6782	7090	7305	2.7	0.7
132	Business Administration Managers	5123	5819	8760	9432	10001	5.5	1.3
133	Construction, Distribution and Production Managers	9013	10024	13144	12878	13073	3.8	-0.1
134	Education, Health and Welfare Services Managers	2287	2830	3649	4116	4456	4.8	2.0
135	ICT Managers	1736	2870	3161	3287	3431	6.2	0.8
139	Miscellaneous Specialist Managers	2183	2706	3855	4439	4788	5.8	2.2
141	Accommodation and Hospitality Managers	2769	3299	2964	3430	3776	0.7	2.5
142	Retail Managers	7709	8138	9443	9882	10018	2.0	0.6
149	Miscellaneous Hospitality, Retail and Service Managers	5855	6775	7581	8335	8833	2.6	1.5
211	Arts Professionals	1757	1929	2898	3173	3409	5.1	1.6
212	Media Professionals	2058	2629	3683	4154	4206	6.0	1.3
221	Accountants, Auditors and Company Secretaries	6650	7450	8836	9758	10607	2.9	1.8
222	Financial Brokers and Dealers, and Investment Advisers	2852	3324	3754	3914	4170	2.8	1.1
223	Human Resource and Training Professionals	4041	3741	4485	5010	5358	1.0	1.8
224	Information and Organisation Professionals	5698	6777	11301	12553	13527	7.1	1.8
225	Sales, Marketing and Public Relations Professionals	4491	5787	7335	7674	7931	5.0	0.8
231	Air and Marine Transport Professionals	473	653	585	791	741	2.2	2.4
232	Architects, Designers, Planners and Surveyors	5852	6584	9133	9860	10422	4.6	1.3
233	Engineering Professionals	4433	4874	6544	6731	7110	4.0	0.8
234	Natural and Physical Science Professionals	3863	3851	5407	6566	7300	3.4	3.0
241	School Teachers	13625	16271	18686	19915	21015	3.2	1.2
242	Tertiary Education Teachers	4153	4674	5816	6792	7536	3.4	2.6
249	Miscellaneous Education Professionals	2190	2784	4143	4652	5371	6.6	2.6
251	Health Diagnostic and Promotion Professionals	2644	3352	4223	4796	5171	4.8	2.0
252	Health Therapy Professionals	2495	3176	4788	5715	6452	6.7	3.0
253	Medical Practitioners	2054	2761	3131	3830	4303	4.3	3.2
254	Midwifery and Nursing Professionals	10132	12305	15776	19453	21758	4.5	3.3
261	Business and Systems Analysts, and Programmers	5623	6113	9880	10457	11045	5.8	1.1
262	Database and Systems Administrators, and ICT Security Specialists	1394	1666	2182	2354	2500	4.6	1.4
263	ICT Network and Support Professionals	2233	2300	4075	4212	4363	6.2	0.7
271	Legal Professionals	2699	3382	4657	5296	5777	5.6	2.2
272	Social and Welfare Professionals	5425	6357	7443	8486	9264	3.2	2.2



**Table 14.28 Total industry resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	2125	2172	3150	3691	4121	4.0	2.7
312	Building and Engineering Technicians	3522	3957	5439	5443	5840	4.4	0.7
313	ICT and Telecommunications Technicians	2680	2523	3938	4208	4468	3.9	1.3
321	Automotive Electricians and Mechanics	3555	4080	4029	4182	4343	1.3	0.8
322	Fabrication Engineering Trades Workers	2170	2670	2325	2343	2331	0.7	0.0
323	Mechanical Engineering Trades Workers	4020	3329	3463	3757	3719	-1.5	0.7
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	1687	1603	1832	1920	1954	0.8	0.6
331	Bricklayers, and Carpenters and Joiners	7216	7808	9101	8350	8803	2.3	-0.3
332	Floor Finishers and Painting Trades Workers	2383	2607	2591	2504	2661	0.8	0.3
333	Glaziers, Plasterers and Tilers	3024	2671	2550	2422	2580	-1.7	0.1
334	Plumbers	4091	4614	4715	4528	4959	1.4	0.5
341	Electricians	5134	6341	7021	6921	7375	3.2	0.5
342	Electronics and Telecommunications Trades Workers	3299	3831	3022	3139	3256	-0.9	0.7
351	Food Trades Workers	6280	7544	8341	9447	10202	2.9	2.0
361	Animal Attendants and Trainers, and Shearers	682	1018	1300	1572	1840	6.7	3.5
362	Horticultural Trades Workers	3475	3407	4594	5104	5689	2.8	2.2
391	Hairdressers	1916	2533	2513	2984	3264	2.7	2.6
392	Printing Trades Workers	1591	1071	1261	1122	1008	-2.3	-2.2
393	Textile, Clothing and Footwear Trades Workers	1062	795	966	871	845	-0.9	-1.3
394	Wood Trades Workers	2115	2012	2137	1927	1876	0.1	-1.3
399	Miscellaneous Technicians and Trades Workers	2132	3008	3281	3621	3900	4.4	1.7
411	Health and Welfare Support Workers	4022	5287	6274	7298	8121	4.5	2.6
421	Child Carers	4706	7220	6462	7481	7938	3.2	2.1
422	Education Aides	2424	3000	4438	4863	5171	6.2	1.5
423	Personal Carers and Assistants	9016	10375	13280	15795	17589	3.9	2.9
431	Hospitality Workers	8051	10453	10262	11686	12736	2.5	2.2
441	Defence Force Members, Fire Fighters and Police	2636	3375	3716	4444	4789	3.5	2.6
442	Prison and Security Officers	2804	3453	5348	6039	6394	6.7	1.8
451	Personal Service and Travel Workers	3402	3807	3572	4370	4588	0.5	2.5
452	Sports and Fitness Workers	2756	4088	3766	4428	5014	3.2	2.9
511	Contract, Program and Project Administrators	4563	5812	5440	5890	6280	1.8	1.4
512	Office and Practice Managers	5142	5496	6033	6519	7005	1.6	1.5
521	Personal Assistants and Secretaries	5152	3989	3463	3840	4175	-3.9	1.9
531	General Clerks	8792	9119	10297	11343	12133	1.6	1.7
532	Keyboard Operators	2958	2427	2692	2972	3163	-0.9	1.6
541	Call or Contact Centre Information Clerks	5813	5180	5841	6471	6903	0.0	1.7
542	Receptionists	7332	7225	7025	8125	9062	-0.4	2.6
551	Accounting Clerks and Bookkeepers	11940	10888	11314	12106	12824	-0.5	1.3
552	Financial and Insurance Clerks	5652	5215	5251	5356	5555	-0.7	0.6

**Table 14.28 Total industry resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	4573	3866	3810	4718	5109	-1.8	3.0
591	Logistics Clerks	5842	6146	6761	7105	7142	1.5	0.5
599	Miscellaneous Clerical and Administrative Workers	4739	5312	5738	6550	7190	1.9	2.3
611	Insurance Agents and Sales Representatives	5394	5210	4262	4314	4356	-2.3	0.2
612	Real Estate Sales Agents	1818	2877	2480	2929	3229	3.2	2.7
621	Sales Assistants and Salespersons	26195	30888	27912	28789	28874	0.6	0.3
631	Checkout Operators and Office Cashiers	4772	6311	5030	5360	5410	0.5	0.7
639	Miscellaneous Sales Support Workers	2510	3248	2483	2913	2878	-0.1	1.5
711	Machine Operators	3247	3031	3395	3124	2966	0.4	-1.3
712	Stationary Plant Operators	1809	1715	1833	1990	1995	0.1	0.8
721	Mobile Plant Operators	5041	5230	5056	5534	5587	0.0	1.0
731	Automobile, Bus and Rail Drivers	4046	5490	7358	8643	8955	6.2	2.0
732	Delivery Drivers	1734	2157	3443	3926	4123	7.1	1.8
733	Truck Drivers	5350	7202	7342	8608	8951	3.2	2.0
741	Storepersons	5308	6198	8009	8199	8193	4.2	0.2
811	Cleaners and Laundry Workers	8750	9593	8818	10438	11739	0.1	2.9
821	Construction and Mining Labourers	5771	6496	6922	6523	6956	1.8	0.1
831	Food Process Workers	2044	2076	2048	2205	2359	0.0	1.4
832	Packers and Product Assemblers	4321	4557	3821	3776	3795	-1.2	-0.1
839	Miscellaneous Factory Process Workers	1887	1882	1566	1487	1437	-1.8	-0.9
841	Farm, Forestry and Garden Workers	1494	1719	1360	1512	1804	-0.9	2.9
851	Food Preparation Assistants	6019	7078	7232	8383	9142	1.9	2.4
891	Freight Handlers and Shelf Fillers	2539	2899	3151	3459	3481	2.2	1.0
899	Miscellaneous Labourers	4449	5391	5432	5888	6251	2.0	1.4
	<b>Total</b>	<b>423795</b>	<b>477552</b>	<b>540764</b>	<b>590253</b>	<b>627758</b>	<b>2.5</b>	<b>1.5</b>

Source: NIEIR.

### 14.3.2 Melbourne's North – Place-of-work employment occupation minor group by industry division

The following tables contain a detailed set of occupation forecasts for Melbourne's North by industry division on a place-of-work basis.

**NOTE:** SEE APPENDIX B – In Section 3.2 the distribution of employment in 2021 and preceding years was described on the basis of the ANZSCO 2-digit classification. In Part 3 of the report, projections are provided at the ANZSCO 3-digit level. APPENDIX B links the two sections by comparing the distribution of employment in Melbourne's North in 2021 by ANZSCO 3-digit occupations with the distribution in Melbourne as a whole. It also compares the place-of-work distribution in Melbourne's North with the residential distribution.

**Table 14.29 Agriculture, Forestry and Fishing (A) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	18	28	22	22	27	2.0	2.2
121	Farmers and Farm Managers	590	560	797	835	1103	3.1	3.3
131	Advertising, Public Relations and Sales Managers	11	27	22	29	39	7.1	5.8
132	Business Administration Managers	5	13	16	18	25	12.2	4.7
133	Construction, Distribution and Production Managers	37	96	92	104	142	9.5	4.5
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	0	0	0	0	0	0.0	0.0
139	Miscellaneous Specialist Managers	10	27	24	22	34	9.7	3.5
141	Accommodation and Hospitality Managers	0	0	0	0	0	0.0	0.0
142	Retail Managers	8	16	15	15	19	6.3	2.2
149	Miscellaneous Hospitality, Retail and Service Managers	13	25	18	22	28	3.0	4.8
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	0	0	0	0	0	0.0	0.0
221	Accountants, Auditors and Company Secretaries	5	14	18	14	17	15.0	-0.5
222	Financial Brokers and Dealers, and Investment Advisers	8	14	13	17	28	4.7	7.9
223	Human Resource and Training Professionals	0	0	0	0	0	0.0	0.0
224	Information and Organisation Professionals	3	9	10	17	24	13.6	9.8
225	Sales, Marketing and Public Relations Professionals	2	6	4	7	10	8.1	10.1
231	Air and Marine Transport Professionals	0	0	0	0	0	-12.2	4.7
232	Architects, Designers, Planners and Surveyors	4	7	3	5	8	-2.8	9.6
233	Engineering Professionals	0	0	0	0	0	0.0	0.0
234	Natural and Physical Science Professionals	19	39	31	47	73	5.0	8.9
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	3	6	6	5	6	8.3	-0.4
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	0	0	0	0	0	0.0	0.0
262	Database and Systems Administrators, and ICT Security Specialists	0	0	0	0	0	0.0	0.0
263	ICT Network and Support Professionals	0	0	0	0	0	0.0	0.0
271	Legal Professionals	0	0	0	0	0	0.0	0.0
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0

**Table 14.29 Agriculture, Forestry and Fishing (A) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	16	26	16	30	43	-0.3	10.6
312	Building and Engineering Technicians	4	8	5	10	13	3.8	9.7
313	ICT and Telecommunications Technicians	3	8	10	20	31	13.0	11.8
321	Automotive Electricians and Mechanics	0	0	0	0	0	0.0	0.0
322	Fabrication Engineering Trades Workers	2	10	5	5	5	7.8	0.5
323	Mechanical Engineering Trades Workers	12	30	30	26	32	9.5	0.6
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	4	14	11	28	25	10.0	8.4
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	2	4	5	4	5	13.1	-0.3
342	Electronics and Telecommunications Trades Workers	0	0	0	0	0	0.0	0.0
351	Food Trades Workers	3	8	6	11	15	7.4	9.6
361	Animal Attendants and Trainers, and Shearers	30	53	53	62	79	5.8	4.1
362	Horticultural Trades Workers	91	101	113	124	163	2.2	3.7
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	0	0	0	0	0	0.0	0.0
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	0	0	0	0	0	0.0	0.0
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	0	0	0	0	0	0.0	0.0
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	3	10	5	9	12	3.2	9.9
512	Office and Practice Managers	15	27	25	26	33	5.3	2.8
521	Personal Assistants and Secretaries	0	0	0	0	0	0.0	0.0
531	General Clerks	15	29	30	34	45	7.2	4.1
532	Keyboard Operators	0	0	0	0	0	0.0	0.0
541	Call or Contact Centre Information Clerks	0	0	0	0	0	0.0	0.0
542	Receptionists	0	0	0	0	0	0.0	0.0
551	Accounting Clerks and Bookkeepers	39	57	59	59	79	4.3	2.8
552	Financial and Insurance Clerks	0	0	0	0	0	0.0	0.0

**Table 14.29 Agriculture, Forestry and Fishing (A) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	0	0	0	0	0	0.0	0.0
591	Logistics Clerks	11	28	20	29	40	6.6	6.9
599	Miscellaneous Clerical and Administrative Workers	2	6	4	6	9	4.7	9.6
611	Insurance Agents and Sales Representatives	9	17	9	10	13	-0.1	3.3
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	23	65	38	52	74	5.3	7.0
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	2	6	3	2	3	3.2	-0.5
711	Machine Operators	11	36	32	47	50	11.5	4.5
712	Stationary Plant Operators	0	0	0	0	0	0.0	0.0
721	Mobile Plant Operators	57	114	94	91	123	5.1	2.7
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	5	16	17	30	42	12.1	9.7
733	Truck Drivers	10	24	18	25	34	6.3	6.7
741	Storepersons	23	77	53	51	77	8.6	3.8
811	Cleaners and Laundry Workers	9	13	10	11	13	1.8	2.6
821	Construction and Mining Labourers	0	0	0	0	0	0.0	0.0
831	Food Process Workers	40	85	61	69	94	4.4	4.4
832	Packers and Product Assemblers	46	93	59	61	86	2.7	3.7
839	Miscellaneous Factory Process Workers	27	54	31	44	52	1.7	5.1
841	Farm, Forestry and Garden Workers	627	747	536	547	785	-1.5	3.9
851	Food Preparation Assistants	2	4	4	3	4	6.2	-0.4
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	7	7	10	7	6	3.2	-4.4
	<b>Total</b>	<b>1886</b>	<b>2668</b>	<b>2467</b>	<b>2709</b>	<b>3672</b>	<b>2.7</b>	<b>4.1</b>

Source: NIEIR.



**Table 14.30 Mining (B) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	10	9	5	8	13	-6.8	9.6
121	Farmers and Farm Managers	0	0	0	0	0	-34.7	23.4
131	Advertising, Public Relations and Sales Managers	6	6	4	50	40	-3.7	25.1
132	Business Administration Managers	0	0	0	2	2	-14.5	36.4
133	Construction, Distribution and Production Managers	52	47	39	291	285	-2.8	22.0
134	Education, Health and Welfare Services Managers	1	0	0	1	1	-15.4	27.9
135	ICT Managers	0	0	0	0	0	-7.8	27.0
139	Miscellaneous Specialist Managers	47	31	13	33	33	-12.0	9.7
141	Accommodation and Hospitality Managers	0	0	0	1	1	-16.9	26.3
142	Retail Managers	1	1	0	2	2	-16.8	26.6
149	Miscellaneous Hospitality, Retail and Service Managers	1	0	0	1	1	-18.3	26.1
211	Arts Professionals	0	0	0	1	1	-13.8	24.5
212	Media Professionals	0	0	0	1	1	-12.5	22.8
221	Accountants, Auditors and Company Secretaries	1	1	0	2	2	-14.0	27.6
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	1	1	-15.4	28.7
223	Human Resource and Training Professionals	0	0	0	1	1	-15.2	27.7
224	Information and Organisation Professionals	1	0	0	1	1	-14.4	26.7
225	Sales, Marketing and Public Relations Professionals	0	0	0	1	1	-13.4	28.5
231	Air and Marine Transport Professionals	2	0	0	0	0	-30.8	7.4
232	Architects, Designers, Planners and Surveyors	1	1	0	2	2	-15.7	25.5
233	Engineering Professionals	18	15	13	8	9	-3.3	-3.9
234	Natural and Physical Science Professionals	189	103	47	156	149	-12.9	12.1
241	School Teachers	4	2	1	10	9	-15.0	28.1
242	Tertiary Education Teachers	0	0	0	1	1	-13.4	26.9
249	Miscellaneous Education Professionals	0	0	0	1	1	-15.1	27.5
251	Health Diagnostic and Promotion Professionals	0	1	0	2	2	-11.5	30.2
252	Health Therapy Professionals	1	1	0	2	2	-14.9	28.4
253	Medical Practitioners	1	1	0	3	3	-11.2	29.6
254	Midwifery and Nursing Professionals	2	3	1	11	10	-9.9	29.6
261	Business and Systems Analysts, and Programmers	0	0	0	1	1	-16.8	26.2
262	Database and Systems Administrators, and ICT Security Specialists	0	0	0	0	0	-15.1	28.3
263	ICT Network and Support Professionals	0	0	0	0	0	-15.8	27.0
271	Legal Professionals	0	0	0	1	1	-9.1	27.9
272	Social and Welfare Professionals	1	1	0	2	2	-16.8	27.7

**Table 14.30 Mining (B) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	40	16	3	25	26	-23.1	24.5
312	Building and Engineering Technicians	43	22	8	71	76	-15.8	25.8
313	ICT and Telecommunications Technicians	0	0	0	0	0	-15.7	27.6
321	Automotive Electricians and Mechanics	1	0	0	1	0	-22.1	25.8
322	Fabrication Engineering Trades Workers	0	0	0	1	0	-6.5	28.2
323	Mechanical Engineering Trades Workers	29	24	17	194	173	-4.9	25.9
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	-23.4	25.2
331	Bricklayers, and Carpenters and Joiners	1	1	0	2	2	-19.0	26.4
332	Floor Finishers and Painting Trades Workers	0	0	0	1	1	-16.5	26.4
333	Glaziers, Plasterers and Tilers	0	0	0	1	1	-18.3	25.8
334	Plumbers	1	1	0	1	1	-21.0	26.3
341	Electricians	1	1	0	2	1	-16.9	27.7
342	Electronics and Telecommunications Trades Workers	0	0	0	1	1	-14.1	29.2
351	Food Trades Workers	1	1	0	2	2	-15.9	25.4
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	-22.0	25.5
362	Horticultural Trades Workers	1	0	0	1	1	-20.9	25.9
391	Hairdressers	0	0	0	1	1	-17.8	26.6
392	Printing Trades Workers	0	0	0	1	1	-9.9	27.5
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	-11.7	23.0
394	Wood Trades Workers	0	0	0	0	0	-12.3	26.7
399	Miscellaneous Technicians and Trades Workers	0	0	0	1	1	-15.9	28.7
411	Health and Welfare Support Workers	1	1	0	2	2	-16.4	27.9
421	Child Carers	1	1	0	1	1	-20.9	26.5
422	Education Aides	1	0	0	2	2	-14.7	27.7
423	Personal Carers and Assistants	2	2	0	5	4	-15.8	27.8
431	Hospitality Workers	1	1	0	3	2	-16.0	26.6
441	Defence Force Members, Fire Fighters and Police	1	0	0	2	2	-12.9	26.6
442	Prison and Security Officers	0	0	0	1	1	-7.7	27.0
451	Personal Service and Travel Workers	1	0	0	1	1	-20.3	26.6
452	Sports and Fitness Workers	1	1	0	2	2	-18.2	27.7
511	Contract, Program and Project Administrators	8	6	3	2	2	-8.1	-5.5
512	Office and Practice Managers	1	1	0	2	2	-17.7	27.4
521	Personal Assistants and Secretaries	1	0	0	1	1	-19.5	27.8
531	General Clerks	1	1	0	2	2	-17.1	27.6
532	Keyboard Operators	0	0	0	1	1	-16.1	28.7
541	Call or Contact Centre Information Clerks	0	0	0	1	1	-13.6	26.6
542	Receptionists	1	1	0	3	2	-17.0	28.2
551	Accounting Clerks and Bookkeepers	2	1	0	2	2	-19.6	26.9
552	Financial and Insurance Clerks	0	0	0	1	1	-12.9	27.1

**Table 14.30 Mining (B) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	0	0	0	0	0	-20.5	27.4
591	Logistics Clerks	0	0	0	1	1	-14.3	26.1
599	Miscellaneous Clerical and Administrative Workers	0	0	0	1	1	-13.6	27.3
611	Insurance Agents and Sales Representatives	0	0	0	0	0	-18.3	25.4
612	Real Estate Sales Agents	1	0	0	1	1	-19.0	26.3
621	Sales Assistants and Salespersons	3	3	1	6	6	-16.6	26.9
631	Checkout Operators and Office Cashiers	1	1	0	1	1	-17.7	26.8
639	Miscellaneous Sales Support Workers	0	0	0	0	0	-20.7	23.5
711	Machine Operators	10	12	7	79	63	-4.4	25.3
712	Stationary Plant Operators	28	25	15	174	178	-5.8	27.7
721	Mobile Plant Operators	110	69	47	374	341	-8.1	21.9
731	Automobile, Bus and Rail Drivers	1	0	0	0	0	-18.3	16.4
732	Delivery Drivers	0	0	0	0	0	-15.5	23.3
733	Truck Drivers	72	64	41	327	323	-5.6	23.0
741	Storepersons	0	0	0	1	1	-11.6	27.3
811	Cleaners and Laundry Workers	1	1	0	2	1	-18.1	26.9
821	Construction and Mining Labourers	33	17	10	62	55	-11.0	18.4
831	Food Process Workers	0	0	0	0	0	-14.7	20.6
832	Packers and Product Assemblers	0	0	0	0	0	-16.1	25.5
839	Miscellaneous Factory Process Workers	0	0	0	0	0	-14.3	26.5
841	Farm, Forestry and Garden Workers	0	0	0	0	0	-29.9	23.4
851	Food Preparation Assistants	1	1	0	2	2	-17.3	27.0
891	Freight Handlers and Shelf Fillers	0	0	0	1	1	-18.2	27.1
899	Miscellaneous Labourers	1	1	0	1	1	-19.2	30.8
	<b>Total</b>	<b>749</b>	<b>504</b>	<b>282</b>	<b>1966</b>	<b>1868</b>	<b>-9.3</b>	<b>20.8</b>

Source: NIEIR.

**Table 14.31 Manufacturing (C) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	692	639	658	586	568	-0.5	-1.5
121	Farmers and Farm Managers	41	23	24	28	31	-5.3	2.7
131	Advertising, Public Relations and Sales Managers	638	597	790	724	723	2.2	-0.9
132	Business Administration Managers	489	454	774	695	687	4.7	-1.2
133	Construction, Distribution and Production Managers	3699	3498	4272	3676	3529	1.4	-1.9
134	Education, Health and Welfare Services Managers	4	6	21	21	24	16.8	1.5
135	ICT Managers	66	78	90	77	78	3.2	-1.4
139	Miscellaneous Specialist Managers	302	362	631	596	608	7.7	-0.4
141	Accommodation and Hospitality Managers	39	31	23	21	21	-5.3	-0.8
142	Retail Managers	355	303	306	286	297	-1.5	-0.3
149	Miscellaneous Hospitality, Retail and Service Managers	279	260	306	261	242	0.9	-2.3
211	Arts Professionals	29	21	33	30	29	1.1	-1.2
212	Media Professionals	17	17	25	24	25	4.1	0.1
221	Accountants, Auditors and Company Secretaries	501	530	708	610	578	3.5	-2.0
222	Financial Brokers and Dealers, and Investment Advisers	6	9	5	5	5	-1.5	-0.2
223	Human Resource and Training Professionals	65	50	69	65	68	0.6	-0.2
224	Information and Organisation Professionals	148	169	357	337	343	9.2	-0.4
225	Sales, Marketing and Public Relations Professionals	426	484	630	555	570	4.0	-1.0
231	Air and Marine Transport Professionals	0	0	0	0	0	-21.1	-4.6
232	Architects, Designers, Planners and Surveyors	700	627	900	722	657	2.5	-3.1
233	Engineering Professionals	1416	1493	1953	1609	1523	3.3	-2.5
234	Natural and Physical Science Professionals	244	283	498	536	609	7.4	2.0
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	9	6	8	7	6	-0.4	-3.9
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	148	169	253	247	267	5.5	0.6
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	213	170	291	260	267	3.2	-0.8
262	Database and Systems Administrators, and ICT Security Specialists	28	34	64	64	67	8.6	0.4
263	ICT Network and Support Professionals	34	21	46	52	55	3.3	1.7
271	Legal Professionals	7	8	8	8	8	1.4	0.6
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0

**Table 14.31 Manufacturing (C) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	306	230	398	379	406	2.6	0.2
312	Building and Engineering Technicians	431	378	520	449	429	1.9	-1.9
313	ICT and Telecommunications Technicians	41	36	62	65	66	4.2	0.6
321	Automotive Electricians and Mechanics	228	198	170	125	109	-2.9	-4.3
322	Fabrication Engineering Trades Workers	2184	1831	1481	1445	1370	-3.8	-0.8
323	Mechanical Engineering Trades Workers	2682	1811	1999	1626	1474	-2.9	-3.0
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	496	488	476	347	286	-0.4	-5.0
331	Bricklayers, and Carpenters and Joiners	1020	733	902	765	676	-1.2	-2.8
332	Floor Finishers and Painting Trades Workers	14	11	10	9	9	-2.8	-1.8
333	Glaziers, Plasterers and Tilers	121	88	93	91	83	-2.6	-1.1
334	Plumbers	38	29	25	21	21	-4.1	-1.6
341	Electricians	516	414	448	358	332	-1.4	-3.0
342	Electronics and Telecommunications Trades Workers	118	92	66	56	58	-5.6	-1.3
351	Food Trades Workers	881	937	1146	1178	1250	2.7	0.9
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	0	0	0	0	0	0.0	0.0
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	1364	1153	1338	1122	991	-0.2	-3.0
393	Textile, Clothing and Footwear Trades Workers	552	415	433	306	297	-2.4	-3.7
394	Wood Trades Workers	1906	1882	2048	1657	1570	0.7	-2.6
399	Miscellaneous Technicians and Trades Workers	357	314	424	353	339	1.7	-2.2
411	Health and Welfare Support Workers	122	81	74	52	53	-4.9	-3.2
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	119	135	157	167	181	2.8	1.4
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	33	40	79	74	67	9.1	-1.6
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	257	244	242	211	207	-0.6	-1.5
512	Office and Practice Managers	563	462	540	470	446	-0.4	-1.9
521	Personal Assistants and Secretaries	219	141	157	141	139	-3.3	-1.2
531	General Clerks	705	521	706	591	548	0.0	-2.5
532	Keyboard Operators	178	106	147	135	131	-1.9	-1.2
541	Call or Contact Centre Information Clerks	190	178	281	241	221	4.0	-2.4
542	Receptionists	314	229	300	252	229	-0.4	-2.7
551	Accounting Clerks and Bookkeepers	1384	997	1129	985	936	-2.0	-1.9
552	Financial and Insurance Clerks	15	21	11	8	7	-2.9	-5.1



**Table 14.31 Manufacturing (C) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	37	36	38	32	31	0.1	-1.9
591	Logistics Clerks	937	933	1155	991	926	2.1	-2.2
599	Miscellaneous Clerical and Administrative Workers	29	30	48	45	46	5.2	-0.5
611	Insurance Agents and Sales Representatives	929	717	630	558	529	-3.8	-1.7
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	1123	1172	1022	975	1001	-0.9	-0.2
631	Checkout Operators and Office Cashiers	40	45	33	34	36	-1.8	0.9
639	Miscellaneous Sales Support Workers	60	55	71	65	61	1.7	-1.6
711	Machine Operators	2930	2667	3118	2418	2139	0.6	-3.7
712	Stationary Plant Operators	1035	645	701	616	545	-3.8	-2.5
721	Mobile Plant Operators	1352	947	1128	938	834	-1.8	-3.0
731	Automobile, Bus and Rail Drivers	5	5	6	4	3	1.5	-4.5
732	Delivery Drivers	194	199	314	294	301	4.9	-0.4
733	Truck Drivers	450	393	546	431	363	1.9	-4.0
741	Storepersons	1060	1151	1509	1304	1227	3.6	-2.1
811	Cleaners and Laundry Workers	432	308	332	292	280	-2.6	-1.7
821	Construction and Mining Labourers	226	151	163	142	124	-3.2	-2.7
831	Food Process Workers	1892	1886	1934	1979	2099	0.2	0.8
832	Packers and Product Assemblers	3659	3138	2543	2250	2196	-3.6	-1.5
839	Miscellaneous Factory Process Workers	1714	1364	1167	1006	934	-3.8	-2.2
841	Farm, Forestry and Garden Workers	61	36	29	33	37	-7.1	2.4
851	Food Preparation Assistants	219	198	288	289	303	2.8	0.5
891	Freight Handlers and Shelf Fillers	31	24	43	38	34	3.2	-2.3
899	Miscellaneous Labourers	526	424	529	437	378	0.1	-3.3
	<b>Total</b>	<b>46888</b>	<b>41060</b>	<b>46951</b>	<b>40950</b>	<b>39240</b>	<b>0.0</b>	<b>-1.8</b>

Source: NIEIR.

**Table 14.32 Electricity, Gas, Water and Waste Services (D) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	19	35	27	35	40	3.3	4.0
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	14	20	20	28	34	4.0	5.1
132	Business Administration Managers	25	50	65	92	107	9.9	5.1
133	Construction, Distribution and Production Managers	66	80	104	124	141	4.7	3.1
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	7	13	11	15	17	4.7	4.6
139	Miscellaneous Specialist Managers	31	41	49	69	82	4.6	5.4
141	Accommodation and Hospitality Managers	0	0	0	0	0	0.0	0.0
142	Retail Managers	0	0	0	0	0	0.0	0.0
149	Miscellaneous Hospitality, Retail and Service Managers	59	93	91	116	130	4.4	3.7
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	0	0	0	0	0	0.0	0.0
221	Accountants, Auditors and Company Secretaries	20	47	74	62	66	13.9	-1.2
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	0	0	0.0	0.0
223	Human Resource and Training Professionals	9	17	45	29	28	18.1	-4.5
224	Information and Organisation Professionals	10	17	31	51	62	12.5	7.1
225	Sales, Marketing and Public Relations Professionals	59	61	84	73	81	3.6	-0.3
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	8	14	18	23	25	8.8	3.3
233	Engineering Professionals	51	109	174	191	221	13.0	2.4
234	Natural and Physical Science Professionals	5	7	8	10	12	3.9	4.5
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	7	10	10	14	16	4.7	4.1
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	15	16	23	47	73	4.2	12.4
262	Database and Systems Administrators, and ICT Security Specialists	10	10	9	13	15	-1.1	5.9
263	ICT Network and Support Professionals	2	4	12	18	21	20.4	5.3
271	Legal Professionals	0	0	0	0	0	0.0	0.0
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0

**Table 14.32 Electricity, Gas, Water and Waste Services (D) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	1	3	0.0	0.0
312	Building and Engineering Technicians	61	91	146	167	185	9.1	2.4
313	ICT and Telecommunications Technicians	0	0	0	1	1	0.0	0.0
321	Automotive Electricians and Mechanics	24	40	37	45	48	4.4	2.7
322	Fabrication Engineering Trades Workers	5	7	4	7	9	-1.0	7.4
323	Mechanical Engineering Trades Workers	16	22	34	22	23	7.9	-4.0
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	0	0	0	0	0	0.0	0.0
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	82	69	112	81	97	3.2	-1.5
341	Electricians	114	144	152	278	420	2.9	10.7
342	Electronics and Telecommunications Trades Workers	152	224	184	278	318	2.0	5.6
351	Food Trades Workers	0	0	0	0	0	0.0	0.0
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	14	14	24	27	32	5.9	2.9
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	17	15	19	30	35	1.1	6.3
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	0	0	0	0	0	0.0	0.0
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	0	0	0	0	0	0.0	0.0
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	17	33	31	50	59	5.9	6.6
512	Office and Practice Managers	30	38	38	49	58	2.2	4.4
521	Personal Assistants and Secretaries	13	9	7	10	11	-6.3	5.4
531	General Clerks	72	68	79	98	120	0.9	4.3
532	Keyboard Operators	24	25	23	35	43	-0.3	6.3
541	Call or Contact Centre Information Clerks	257	173	157	235	267	-4.8	5.5
542	Receptionists	9	3	2	4	7	-12.8	12.4
551	Accounting Clerks and Bookkeepers	95	92	80	112	138	-1.7	5.6
552	Financial and Insurance Clerks	0	0	0	0	0	0.0	0.0

**Table 14.32 Electricity, Gas, Water and Waste Services (D) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	24	24	23	19	20	-0.4	-1.2
591	Logistics Clerks	39	71	83	99	116	7.9	3.5
599	Miscellaneous Clerical and Administrative Workers	8	14	16	22	26	7.3	4.9
611	Insurance Agents and Sales Representatives	36	50	41	52	65	1.3	4.7
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	46	54	40	53	58	-1.6	3.9
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	12	16	9	15	19	-3.0	8.1
711	Machine Operators	35	53	48	64	76	3.2	4.8
712	Stationary Plant Operators	114	97	87	101	129	-2.6	4.0
721	Mobile Plant Operators	114	118	117	127	141	0.2	1.8
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	74	50	77	81	104	0.4	3.1
733	Truck Drivers	351	529	482	578	648	3.2	3.0
741	Storepersons	35	39	44	51	56	2.2	2.5
811	Cleaners and Laundry Workers	44	57	63	74	84	3.7	2.9
821	Construction and Mining Labourers	41	49	58	65	90	3.6	4.5
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	0	0	0	0	0	0.0	0.0
839	Miscellaneous Factory Process Workers	49	63	38	50	57	-2.5	4.3
841	Farm, Forestry and Garden Workers	15	11	10	16	21	-3.9	7.6
851	Food Preparation Assistants	0	0	0	0	0	0.0	0.0
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	80	86	72	96	114	-1.1	4.7
	<b>Total</b>	<b>2534</b>	<b>3092</b>	<b>3292</b>	<b>4103</b>	<b>4872</b>	<b>2.7</b>	<b>4.0</b>

Source: NIEIR.

**Table 14.33 Construction (E) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	275	360	425	414	404	4.5	-0.5
121	Farmers and Farm Managers	7	3	5	3	6	-2.5	0.8
131	Advertising, Public Relations and Sales Managers	193	245	319	296	285	5.2	-1.1
132	Business Administration Managers	172	193	336	310	315	6.9	-0.7
133	Construction, Distribution and Production Managers	2160	2722	3711	3311	3468	5.6	-0.7
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	5	14	19	22	15	13.0	-2.0
139	Miscellaneous Specialist Managers	13	22	41	50	41	12.0	0.0
141	Accommodation and Hospitality Managers	13	12	21	19	19	5.0	-0.9
142	Retail Managers	19	31	42	51	44	8.4	0.5
149	Miscellaneous Hospitality, Retail and Service Managers	232	293	347	328	333	4.1	-0.4
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	5	8	13	14	13	9.1	0.6
221	Accountants, Auditors and Company Secretaries	117	145	202	174	194	5.6	-0.4
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	0	0	0.0	0.0
223	Human Resource and Training Professionals	13	10	21	21	15	4.7	-2.9
224	Information and Organisation Professionals	37	45	86	86	92	8.7	0.7
225	Sales, Marketing and Public Relations Professionals	38	67	87	81	77	8.5	-1.1
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	159	180	313	296	291	7.0	-0.7
233	Engineering Professionals	299	420	768	742	775	9.9	0.1
234	Natural and Physical Science Professionals	4	8	12	14	9	11.2	-2.7
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	59	85	156	161	103	10.3	-4.0
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	24	24	47	43	40	7.1	-1.6
262	Database and Systems Administrators, and ICT Security Specialists	7	7	7	8	9	0.6	2.4
263	ICT Network and Support Professionals	12	9	16	9	19	3.0	2.0
271	Legal Professionals	3	2	5	3	3	6.9	-5.5
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0



**Table 14.33 Construction (E) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	1	0.0	0.0
312	Building and Engineering Technicians	998	1175	1847	1635	1700	6.3	-0.8
313	ICT and Telecommunications Technicians	14	15	19	16	23	3.6	1.6
321	Automotive Electricians and Mechanics	58	75	87	86	76	4.2	-1.4
322	Fabrication Engineering Trades Workers	371	479	446	408	362	1.9	-2.1
323	Mechanical Engineering Trades Workers	159	175	221	211	193	3.3	-1.4
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	32	52	74	74	56	8.6	-2.8
331	Bricklayers, and Carpenters and Joiners	5216	5261	5940	5218	5568	1.3	-0.6
332	Floor Finishers and Painting Trades Workers	1748	2063	2045	1840	2003	1.6	-0.2
333	Glaziers, Plasterers and Tilers	2394	2286	2145	1927	2026	-1.1	-0.6
334	Plumbers	3060	3343	3351	3145	3372	0.9	0.1
341	Electricians	3245	3744	4055	3682	3837	2.3	-0.5
342	Electronics and Telecommunications Trades Workers	685	737	592	566	546	-1.5	-0.8
351	Food Trades Workers	13	10	15	8	16	1.5	0.4
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	799	679	997	998	1026	2.2	0.3
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	203	319	315	269	278	4.5	-1.3
399	Miscellaneous Technicians and Trades Workers	35	30	37	25	42	0.5	1.3
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	24	22	28	18	27	1.2	-0.3
441	Defence Force Members, Fire Fighters and Police	6	9	26	17	41	16.1	4.6
442	Prison and Security Officers	5	5	10	5	10	6.8	0.1
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	303	372	423	380	353	3.4	-1.8
512	Office and Practice Managers	636	706	842	793	793	2.8	-0.6
521	Personal Assistants and Secretaries	337	255	262	246	279	-2.5	0.7
531	General Clerks	603	629	836	784	793	3.3	-0.5
532	Keyboard Operators	124	101	132	127	110	0.6	-1.8
541	Call or Contact Centre Information Clerks	47	57	74	72	63	4.6	-1.5
542	Receptionists	229	238	312	299	260	3.1	-1.8
551	Accounting Clerks and Bookkeepers	1359	1303	1518	1398	1442	1.1	-0.5
552	Financial and Insurance Clerks	6	15	17	18	12	11.2	-3.6

**Table 14.33 Construction (E) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	20	26	27	27	23	2.8	-1.6
591	Logistics Clerks	129	184	238	231	193	6.3	-2.1
599	Miscellaneous Clerical and Administrative Workers	13	14	26	25	19	7.4	-3.3
611	Insurance Agents and Sales Representatives	333	331	284	265	236	-1.6	-1.9
612	Real Estate Sales Agents	54	63	116	106	83	8.0	-3.2
621	Sales Assistants and Salespersons	210	292	330	339	264	4.6	-2.2
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	9	9	20	19	12	8.2	-4.4
711	Machine Operators	186	265	298	284	280	4.8	-0.6
712	Stationary Plant Operators	440	399	417	340	366	-0.5	-1.3
721	Mobile Plant Operators	1168	1107	1310	1281	1159	1.1	-1.2
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	54	55	78	70	92	3.8	1.6
733	Truck Drivers	539	724	827	802	727	4.4	-1.3
741	Storepersons	138	202	249	233	225	6.1	-1.0
811	Cleaners and Laundry Workers	163	138	166	158	135	0.2	-2.1
821	Construction and Mining Labourers	4625	4716	5203	4707	4906	1.2	-0.6
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	68	79	70	67	62	0.4	-1.3
839	Miscellaneous Factory Process Workers	96	115	89	88	75	-0.8	-1.7
841	Farm, Forestry and Garden Workers	127	76	81	81	86	-4.5	0.6
851	Food Preparation Assistants	10	6	9	5	10	-0.6	1.1
891	Freight Handlers and Shelf Fillers	6	7	16	15	10	10.8	-4.7
899	Miscellaneous Labourers	878	825	895	852	801	0.2	-1.1
	<b>Total</b>	<b>35841</b>	<b>38692</b>	<b>44414</b>	<b>40721</b>	<b>41643</b>	<b>2.2</b>	<b>-0.6</b>

Source: NIEIR.

**Table 14.34 Wholesale Trade (F) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	338	313	360	338	317	0.6	-1.3
121	Farmers and Farm Managers	33	17	38	32	30	1.4	-2.2
131	Advertising, Public Relations and Sales Managers	671	574	738	721	699	1.0	-0.5
132	Business Administration Managers	282	227	378	370	359	3.0	-0.5
133	Construction, Distribution and Production Managers	1180	1157	1577	1490	1427	2.9	-1.0
134	Education, Health and Welfare Services Managers	7	3	4	3	3	-5.4	-2.4
135	ICT Managers	41	41	42	53	64	0.2	4.3
139	Miscellaneous Specialist Managers	38	41	69	65	61	6.0	-1.1
141	Accommodation and Hospitality Managers	11	9	7	7	7	-4.6	-0.1
142	Retail Managers	383	319	369	354	347	-0.4	-0.6
149	Miscellaneous Hospitality, Retail and Service Managers	173	144	173	166	156	0.0	-1.1
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	0	0	0	1	1	0.0	0.0
221	Accountants, Auditors and Company Secretaries	253	246	334	324	309	2.8	-0.8
222	Financial Brokers and Dealers, and Investment Advisers	10	11	11	14	15	1.0	3.4
223	Human Resource and Training Professionals	16	10	15	20	22	-0.8	4.2
224	Information and Organisation Professionals	28	32	70	88	100	9.5	3.6
225	Sales, Marketing and Public Relations Professionals	582	578	766	730	701	2.8	-0.9
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	105	82	150	140	135	3.7	-1.1
233	Engineering Professionals	60	61	90	96	98	4.1	0.8
234	Natural and Physical Science Professionals	17	17	26	29	33	4.2	2.3
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	69	46	63	52	47	-0.9	-2.9
252	Health Therapy Professionals	0	0	0	1	1	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	51	43	85	103	117	5.3	3.2
262	Database and Systems Administrators, and ICT Security Specialists	55	43	64	67	64	1.6	-0.1
263	ICT Network and Support Professionals	50	29	53	77	95	0.5	6.0
271	Legal Professionals	0	0	0	2	4	0.0	0.0
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0

**Table 14.34 Wholesale Trade (F) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	44	31	69	54	47	4.5	-3.6
312	Building and Engineering Technicians	19	17	29	26	23	4.5	-2.5
313	ICT and Telecommunications Technicians	20	17	34	36	38	5.6	1.0
321	Automotive Electricians and Mechanics	112	106	115	123	122	0.2	0.7
322	Fabrication Engineering Trades Workers	32	27	26	25	24	-2.3	-0.6
323	Mechanical Engineering Trades Workers	193	128	145	133	114	-2.8	-2.4
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	11	8	8	9	9	-2.9	1.1
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	11	7	6	6	5	-6.8	-1.5
334	Plumbers	9	7	10	8	8	0.8	-1.8
341	Electricians	167	115	100	92	79	-5.0	-2.4
342	Electronics and Telecommunications Trades Workers	96	64	41	42	40	-8.1	-0.4
351	Food Trades Workers	132	123	144	142	135	0.8	-0.6
361	Animal Attendants and Trainers, and Shearers	14	14	39	31	27	10.9	-3.8
362	Horticultural Trades Workers	9	5	11	10	8	2.2	-2.8
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	12	9	8	9	9	-4.2	0.8
393	Textile, Clothing and Footwear Trades Workers	20	14	28	22	18	3.7	-4.2
394	Wood Trades Workers	5	5	5	5	4	1.2	-2.9
399	Miscellaneous Technicians and Trades Workers	23	23	34	29	25	3.7	-3.1
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	11	10	12	11	10	0.7	-1.2
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	7	10	26	23	22	13.8	-1.4
451	Personal Service and Travel Workers	9	7	12	14	13	2.4	0.8
452	Sports and Fitness Workers	9	10	11	11	10	2.6	-1.5
511	Contract, Program and Project Administrators	79	76	72	71	66	-1.0	-0.8
512	Office and Practice Managers	315	258	316	293	275	0.0	-1.4
521	Personal Assistants and Secretaries	105	57	65	62	60	-4.7	-0.7
531	General Clerks	382	321	439	416	382	1.4	-1.4
532	Keyboard Operators	153	102	132	124	114	-1.4	-1.5
541	Call or Contact Centre Information Clerks	118	102	141	134	127	1.7	-1.1
542	Receptionists	158	108	136	127	118	-1.5	-1.4
551	Accounting Clerks and Bookkeepers	922	682	802	755	704	-1.4	-1.3
552	Financial and Insurance Clerks	0	0	0	2	3	0.0	0.0

**Table 14.34 Wholesale Trade (F) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	58	45	54	50	45	-0.7	-1.7
591	Logistics Clerks	882	816	976	907	838	1.0	-1.5
599	Miscellaneous Clerical and Administrative Workers	20	18	33	31	30	5.3	-0.8
611	Insurance Agents and Sales Representatives	1256	948	800	751	701	-4.4	-1.3
612	Real Estate Sales Agents	44	21	24	23	23	-5.9	-0.4
621	Sales Assistants and Salespersons	1512	1368	1281	1225	1142	-1.6	-1.1
631	Checkout Operators and Office Cashiers	131	120	100	96	89	-2.7	-1.1
639	Miscellaneous Sales Support Workers	156	132	115	107	102	-3.0	-1.2
711	Machine Operators	122	114	135	115	96	1.0	-3.4
712	Stationary Plant Operators	47	35	39	34	33	-1.9	-1.7
721	Mobile Plant Operators	512	413	490	449	406	-0.4	-1.9
731	Automobile, Bus and Rail Drivers	0	0	0	0	1	0.0	0.0
732	Delivery Drivers	409	400	623	607	581	4.3	-0.7
733	Truck Drivers	321	316	329	312	289	0.3	-1.3
741	Storepersons	1094	1126	1480	1374	1252	3.1	-1.7
811	Cleaners and Laundry Workers	25	22	29	30	28	1.3	-0.3
821	Construction and Mining Labourers	12	9	13	11	11	0.5	-1.6
831	Food Process Workers	181	181	196	196	195	0.8	-0.1
832	Packers and Product Assemblers	295	277	249	240	224	-1.7	-1.1
839	Miscellaneous Factory Process Workers	149	113	88	81	73	-5.1	-2.0
841	Farm, Forestry and Garden Workers	63	43	42	42	42	-4.0	0.1
851	Food Preparation Assistants	14	13	17	20	23	2.0	3.0
891	Freight Handlers and Shelf Fillers	71	53	55	53	49	-2.5	-1.1
899	Miscellaneous Labourers	35	28	45	41	38	2.5	-1.8
	<b>Total</b>	<b>15060</b>	<b>13119</b>	<b>15709</b>	<b>14982</b>	<b>14161</b>	<b>0.4</b>	<b>-1.0</b>

Source: NIEIR.

**Table 14.35 Retail Trade (G) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	159	185	272	241	240	5.5	-1.3
121	Farmers and Farm Managers	10	4	3	4	4	-11.3	2.6
131	Advertising, Public Relations and Sales Managers	375	426	664	672	679	5.9	0.2
132	Business Administration Managers	119	125	229	228	240	6.7	0.5
133	Construction, Distribution and Production Managers	151	189	281	291	294	6.4	0.4
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	13	20	31	38	43	9.0	3.6
139	Miscellaneous Specialist Managers	30	36	66	71	72	8.4	0.8
141	Accommodation and Hospitality Managers	59	56	76	73	69	2.6	-0.9
142	Retail Managers	4539	4644	5408	5457	5397	1.8	0.0
149	Miscellaneous Hospitality, Retail and Service Managers	148	173	228	204	205	4.4	-1.1
211	Arts Professionals	21	20	57	63	61	10.6	0.6
212	Media Professionals	0	0	0	2	3	0.0	0.0
221	Accountants, Auditors and Company Secretaries	99	119	201	200	209	7.4	0.4
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	1	3	0.0	0.0
223	Human Resource and Training Professionals	48	36	49	55	60	0.2	2.2
224	Information and Organisation Professionals	25	29	69	88	105	10.9	4.2
225	Sales, Marketing and Public Relations Professionals	156	217	360	362	365	8.7	0.2
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	108	112	237	239	235	8.2	-0.1
233	Engineering Professionals	13	19	24	18	20	6.4	-2.0
234	Natural and Physical Science Professionals	17	18	32	35	34	6.5	0.5
241	School Teachers	11	8	15	19	18	3.5	1.9
242	Tertiary Education Teachers	0	0	0	1	1	0.0	0.0
249	Miscellaneous Education Professionals	13	12	22	27	26	5.6	1.7
251	Health Diagnostic and Promotion Professionals	824	793	1070	1131	1101	2.6	0.3
252	Health Therapy Professionals	16	13	20	20	20	2.4	0.1
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	3	3	9	9	8	11.9	-0.6
261	Business and Systems Analysts, and Programmers	18	17	32	56	77	6.3	9.2
262	Database and Systems Administrators, and ICT Security Specialists	30	31	45	53	55	4.1	2.0
263	ICT Network and Support Professionals	12	11	22	33	44	6.0	7.2
271	Legal Professionals	0	0	0	1	3	0.0	0.0
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0



**Table 14.35 Retail Trade (G) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	172	139	260	276	270	4.2	0.4
312	Building and Engineering Technicians	14	18	33	25	28	9.3	-1.7
313	ICT and Telecommunications Technicians	58	57	122	126	125	7.8	0.2
321	Automotive Electricians and Mechanics	368	441	381	251	282	0.3	-3.0
322	Fabrication Engineering Trades Workers	11	13	20	20	19	6.5	-0.6
323	Mechanical Engineering Trades Workers	28	27	35	32	32	2.2	-0.8
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	23	29	31	22	23	3.0	-2.9
331	Bricklayers, and Carpenters and Joiners	30	26	40	41	39	3.1	-0.3
332	Floor Finishers and Painting Trades Workers	7	6	5	6	5	-3.0	0.5
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	3	2	2	3	4	-2.8	5.6
341	Electricians	13	11	11	11	11	-2.3	0.4
342	Electronics and Telecommunications Trades Workers	38	34	27	29	28	-3.4	0.2
351	Food Trades Workers	574	632	830	856	861	3.8	0.4
361	Animal Attendants and Trainers, and Shearers	5	6	17	16	16	13.4	-0.6
362	Horticultural Trades Workers	310	233	383	423	420	2.1	0.9
391	Hairdressers	24	26	48	48	46	7.1	-0.4
392	Printing Trades Workers	14	12	13	14	13	-0.7	0.3
393	Textile, Clothing and Footwear Trades Workers	24	24	30	32	32	2.1	0.6
394	Wood Trades Workers	50	71	77	79	76	4.3	-0.1
399	Miscellaneous Technicians and Trades Workers	89	99	133	139	136	4.1	0.3
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	7	8	4	5	5	-4.4	1.8
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	19	14	17	17	16	-1.2	-0.3
431	Hospitality Workers	126	144	183	186	185	3.8	0.2
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	28	36	86	88	83	11.8	-0.3
451	Personal Service and Travel Workers	33	40	56	57	56	5.4	-0.1
452	Sports and Fitness Workers	11	13	14	15	15	2.7	0.7
511	Contract, Program and Project Administrators	35	36	40	47	51	1.4	2.4
512	Office and Practice Managers	150	159	218	218	219	3.9	0.0
521	Personal Assistants and Secretaries	31	20	24	27	28	-2.7	1.6
531	General Clerks	331	313	446	432	431	3.0	-0.3
532	Keyboard Operators	93	64	93	85	87	0.0	-0.7
541	Call or Contact Centre Information Clerks	141	153	223	193	203	4.7	-0.9
542	Receptionists	140	120	152	130	132	0.8	-1.4
551	Accounting Clerks and Bookkeepers	484	427	552	540	538	1.3	-0.2
552	Financial and Insurance Clerks	37	44	60	38	41	4.9	-3.7

**Table 14.35 Retail Trade (G) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	151	122	109	112	113	-3.2	0.4
591	Logistics Clerks	491	578	717	717	715	3.9	0.0
599	Miscellaneous Clerical and Administrative Workers	27	27	39	40	40	3.9	0.1
611	Insurance Agents and Sales Representatives	738	653	592	573	569	-2.2	-0.4
612	Real Estate Sales Agents	0	0	0	1	3	0.0	0.0
621	Sales Assistants and Salespersons	13887	16307	15624	15841	15578	1.2	0.0
631	Checkout Operators and Office Cashiers	3586	3941	3202	3327	3319	-1.1	0.4
639	Miscellaneous Sales Support Workers	369	371	330	348	351	-1.1	0.6
711	Machine Operators	58	65	89	91	88	4.4	-0.1
712	Stationary Plant Operators	4	3	2	2	2	-7.8	0.5
721	Mobile Plant Operators	277	232	263	272	262	-0.5	0.0
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	170	191	323	306	302	6.6	-0.7
733	Truck Drivers	99	115	128	125	119	2.6	-0.7
741	Storepersons	1071	1391	1848	1855	1792	5.6	-0.3
811	Cleaners and Laundry Workers	328	262	285	251	261	-1.4	-0.9
821	Construction and Mining Labourers	27	29	34	36	35	2.2	0.4
831	Food Process Workers	74	72	93	97	95	2.2	0.3
832	Packers and Product Assemblers	277	276	255	259	256	-0.8	0.0
839	Miscellaneous Factory Process Workers	48	43	48	44	41	0.0	-1.5
841	Farm, Forestry and Garden Workers	12	8	9	10	10	-3.0	0.9
851	Food Preparation Assistants	174	160	212	218	219	2.0	0.3
891	Freight Handlers and Shelf Fillers	1930	1753	1784	1900	1925	-0.8	0.8
899	Miscellaneous Labourers	234	212	262	231	235	1.1	-1.1
	<b>Total</b>	<b>34569</b>	<b>37628</b>	<b>40436</b>	<b>40872</b>	<b>40581</b>	<b>1.6</b>	<b>0.0</b>

Source: NIEIR.

**Table 14.36 Accommodation and Food Services (H) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	68	96	89	105	124	2.6	3.4
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	35	41	44	53	62	2.4	3.5
132	Business Administration Managers	38	44	58	68	79	4.3	3.1
133	Construction, Distribution and Production Managers	23	30	29	35	38	2.2	2.7
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	0	0	0	0	0	0.0	0.0
139	Miscellaneous Specialist Managers	6	8	8	10	11	3.4	2.7
141	Accommodation and Hospitality Managers	1699	1950	1654	1917	2185	-0.3	2.8
142	Retail Managers	887	1110	958	1104	1253	0.8	2.7
149	Miscellaneous Hospitality, Retail and Service Managers	109	146	140	164	191	2.6	3.1
211	Arts Professionals	0	0	0	1	1	0.0	0.0
212	Media Professionals	0	0	0	0	0	0.0	0.0
221	Accountants, Auditors and Company Secretaries	30	41	47	54	61	4.5	2.7
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	0	0	0.0	0.0
223	Human Resource and Training Professionals	3	3	4	5	6	0.5	4.4
224	Information and Organisation Professionals	2	3	4	5	5	8.1	2.3
225	Sales, Marketing and Public Relations Professionals	13	23	28	34	38	7.5	3.0
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	4	6	9	11	13	9.0	3.6
233	Engineering Professionals	0	0	0	0	0	0.0	0.0
234	Natural and Physical Science Professionals	0	0	0	0	0	0.0	0.0
241	School Teachers	3	3	4	5	5	1.5	3.1
242	Tertiary Education Teachers	4	3	5	5	5	3.1	1.1
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	4	5	4	5	5	0.8	1.0
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	0	0	0	0	1	0.0	0.0
262	Database and Systems Administrators, and ICT Security Specialists	0	0	0	0	1	0.0	0.0
263	ICT Network and Support Professionals	0	0	0	0	0	0.0	0.0
271	Legal Professionals	0	0	0	0	0	0.0	0.0
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0

**Table 14.36 Accommodation and Food Services (H) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	5	7	8	10	11	5.4	2.4
313	ICT and Telecommunications Technicians	0	0	0	0	0	0.0	0.0
321	Automotive Electricians and Mechanics	7	6	3	3	4	-7.9	3.2
322	Fabrication Engineering Trades Workers	10	11	5	6	6	-6.5	1.1
323	Mechanical Engineering Trades Workers	0	0	0	0	0	0.0	0.0
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	6	5	3	4	5	-5.2	4.8
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	1	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	3	3	4	5	6	2.9	3.4
342	Electronics and Telecommunications Trades Workers	0	0	0	0	0	0.0	0.0
351	Food Trades Workers	2170	2724	2715	3143	3541	2.3	2.7
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	14	11	13	14	16	-1.4	2.7
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	1	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	10	13	14	15	16	3.0	1.2
411	Health and Welfare Support Workers	8	8	8	9	9	-0.1	1.4
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	18	19	23	26	30	2.5	2.6
431	Hospitality Workers	3983	5387	5094	5878	6642	2.5	2.7
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	8	10	13	15	16	4.8	2.7
451	Personal Service and Travel Workers	14	16	17	20	22	1.8	2.7
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	0	0	0	0	0	0.0	0.0
512	Office and Practice Managers	41	48	44	51	57	0.9	2.6
521	Personal Assistants and Secretaries	5	4	3	4	5	-4.1	3.3
531	General Clerks	54	65	66	78	92	2.0	3.4
532	Keyboard Operators	6	4	4	4	5	-5.6	2.8
541	Call or Contact Centre Information Clerks	9	16	19	24	27	7.6	4.0
542	Receptionists	180	157	123	140	158	-3.7	2.5
551	Accounting Clerks and Bookkeepers	146	136	118	138	158	-2.1	3.0
552	Financial and Insurance Clerks	0	0	0	0	0	0.0	0.0

**Table 14.36 Accommodation and Food Services (H) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	28	32	25	28	31	-1.1	2.3
591	Logistics Clerks	42	51	46	52	56	0.9	2.1
599	Miscellaneous Clerical and Administrative Workers	5	6	6	7	8	1.6	3.8
611	Insurance Agents and Sales Representatives	35	36	25	30	34	-3.2	3.1
612	Real Estate Sales Agents	15	16	12	16	21	-2.3	5.9
621	Sales Assistants and Salespersons	2166	3126	2162	2483	2791	0.0	2.6
631	Checkout Operators and Office Cashiers	589	767	471	540	599	-2.2	2.4
639	Miscellaneous Sales Support Workers	25	25	20	23	25	-2.1	2.2
711	Machine Operators	6	8	9	10	11	4.6	2.3
712	Stationary Plant Operators	3	2	1	2	2	-9.2	3.5
721	Mobile Plant Operators	17	16	12	14	14	-3.3	1.3
731	Automobile, Bus and Rail Drivers	8	10	9	10	10	1.5	1.4
732	Delivery Drivers	221	284	359	410	460	5.0	2.5
733	Truck Drivers	37	52	42	48	51	1.3	1.9
741	Storepersons	65	94	94	106	114	3.7	2.0
811	Cleaners and Laundry Workers	407	347	252	286	330	-4.7	2.7
821	Construction and Mining Labourers	7	4	3	3	3	-8.4	1.6
831	Food Process Workers	67	65	52	58	63	-2.5	2.0
832	Packers and Product Assemblers	58	66	46	52	57	-2.3	2.1
839	Miscellaneous Factory Process Workers	0	0	0	0	0	0.0	0.0
841	Farm, Forestry and Garden Workers	0	0	0	0	0	0.0	0.0
851	Food Preparation Assistants	4150	4442	4507	5130	5661	0.8	2.3
891	Freight Handlers and Shelf Fillers	5	6	6	7	7	1.2	1.1
899	Miscellaneous Labourers	359	382	313	362	412	-1.4	2.8
	<b>Total</b>	<b>17941</b>	<b>21996</b>	<b>19854</b>	<b>22844</b>	<b>25678</b>	<b>1.0</b>	<b>2.6</b>

Source: NIEIR.

**Table 14.37 Transport, Postal and Warehousing (I) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	125	154	169	223	255	3.0	4.2
121	Farmers and Farm Managers	10	4	6	6	7	-4.4	0.5
131	Advertising, Public Relations and Sales Managers	195	199	195	268	288	0.0	4.0
132	Business Administration Managers	147	184	234	323	334	4.7	3.6
133	Construction, Distribution and Production Managers	587	730	792	978	927	3.0	1.6
134	Education, Health and Welfare Services Managers	3	4	8	9	9	10.0	1.1
135	ICT Managers	17	31	28	59	82	5.4	11.3
139	Miscellaneous Specialist Managers	108	164	163	234	221	4.2	3.1
141	Accommodation and Hospitality Managers	28	33	27	38	39	-0.3	3.6
142	Retail Managers	142	166	288	343	355	7.3	2.1
149	Miscellaneous Hospitality, Retail and Service Managers	697	830	1052	1208	1252	4.2	1.8
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	4	8	8	15	14	6.3	5.7
221	Accountants, Auditors and Company Secretaries	89	140	173	225	258	6.9	4.1
222	Financial Brokers and Dealers, and Investment Advisers	3	6	5	8	10	6.2	8.1
223	Human Resource and Training Professionals	97	109	130	191	190	3.0	3.8
224	Information and Organisation Professionals	88	128	254	367	420	11.2	5.2
225	Sales, Marketing and Public Relations Professionals	32	56	64	96	116	7.0	6.2
231	Air and Marine Transport Professionals	1369	1599	1553	2365	2201	1.3	3.5
232	Architects, Designers, Planners and Surveyors	26	38	63	107	109	9.3	5.6
233	Engineering Professionals	65	116	148	274	326	8.6	8.2
234	Natural and Physical Science Professionals	0	0	0	1	2	0.0	0.0
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	52	56	95	109	98	6.2	0.3
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	51	65	69	90	84	3.0	2.0
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	5	8	12	21	19	9.3	4.8
261	Business and Systems Analysts, and Programmers	49	70	113	213	283	8.7	9.6
262	Database and Systems Administrators, and ICT Security Specialists	22	30	38	63	82	5.7	7.9
263	ICT Network and Support Professionals	54	50	95	130	142	5.7	4.1
271	Legal Professionals	3	6	7	12	15	9.6	7.3
272	Social and Welfare Professionals	4	6	6	12	12	3.9	7.7



**Table 14.37 Transport, Postal and Warehousing (I) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	5	4	3	6	5	-5.1	4.8
312	Building and Engineering Technicians	112	145	167	229	176	4.0	0.5
313	ICT and Telecommunications Technicians	47	66	128	174	183	10.4	3.7
321	Automotive Electricians and Mechanics	161	179	167	188	186	0.4	1.1
322	Fabrication Engineering Trades Workers	20	20	19	21	22	-0.6	1.7
323	Mechanical Engineering Trades Workers	1123	1018	779	1276	1213	-3.6	4.5
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	60	62	65	79	84	0.8	2.5
331	Bricklayers, and Carpenters and Joiners	6	5	7	8	8	2.2	0.9
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	6	4	5	5	5	-2.2	0.9
334	Plumbers	5	7	9	13	4	5.5	-8.2
341	Electricians	78	82	103	128	138	2.7	3.0
342	Electronics and Telecommunications Trades Workers	43	37	25	30	31	-5.2	2.0
351	Food Trades Workers	27	44	45	61	57	5.1	2.5
361	Animal Attendants and Trainers, and Shearers	3	4	4	8	7	3.5	4.8
362	Horticultural Trades Workers	15	13	17	22	20	1.5	1.6
391	Hairdressers	5	5	5	9	8	1.0	4.8
392	Printing Trades Workers	12	13	24	33	34	7.6	3.5
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	1	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	6	11	12	17	17	6.0	3.8
411	Health and Welfare Support Workers	0	0	0	0	1	0.0	0.0
421	Child Carers	14	14	26	25	25	6.8	-0.3
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	24	21	63	59	61	10.2	-0.2
431	Hospitality Workers	61	94	95	140	135	4.5	3.6
441	Defence Force Members, Fire Fighters and Police	37	68	63	66	59	5.5	-0.6
442	Prison and Security Officers	75	114	153	179	163	7.4	0.6
451	Personal Service and Travel Workers	1943	1942	1844	2996	2578	-0.5	3.4
452	Sports and Fitness Workers	12	13	16	18	19	2.7	1.6
511	Contract, Program and Project Administrators	71	101	85	136	154	1.9	6.1
512	Office and Practice Managers	127	139	156	196	204	2.1	2.7
521	Personal Assistants and Secretaries	103	84	95	103	108	-0.8	1.2
531	General Clerks	388	420	524	619	603	3.1	1.4
532	Keyboard Operators	183	153	186	230	213	0.2	1.4
541	Call or Contact Centre Information Clerks	299	380	459	578	589	4.4	2.5
542	Receptionists	104	115	128	150	138	2.1	0.7
551	Accounting Clerks and Bookkeepers	501	495	543	631	630	0.8	1.5
552	Financial and Insurance Clerks	3	8	6	9	11	7.9	7.0

**Table 14.37 Transport, Postal and Warehousing (I) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	1704	1924	2253	2819	2818	2.8	2.3
591	Logistics Clerks	1781	2222	2442	2772	2636	3.2	0.8
599	Miscellaneous Clerical and Administrative Workers	242	287	322	425	442	2.9	3.2
611	Insurance Agents and Sales Representatives	302	288	218	282	294	-3.2	3.0
612	Real Estate Sales Agents	3	5	7	10	11	9.3	4.9
621	Sales Assistants and Salespersons	254	373	506	605	615	7.1	2.0
631	Checkout Operators and Office Cashiers	37	53	53	70	79	3.6	4.0
639	Miscellaneous Sales Support Workers	1211	1387	1111	1677	1470	-0.9	2.8
711	Machine Operators	14	18	25	33	33	6.2	2.8
712	Stationary Plant Operators	64	54	58	79	89	-0.9	4.3
721	Mobile Plant Operators	2305	2089	1739	2243	2000	-2.8	1.4
731	Automobile, Bus and Rail Drivers	3555	3980	5390	6058	6469	4.3	1.8
732	Delivery Drivers	567	719	1347	1629	1624	9.0	1.9
733	Truck Drivers	2758	3169	3356	3803	3707	2.0	1.0
741	Storepersons	1345	1804	2745	2937	2848	7.4	0.4
811	Cleaners and Laundry Workers	229	232	186	259	236	-2.1	2.4
821	Construction and Mining Labourers	63	87	132	147	182	7.7	3.3
831	Food Process Workers	6	6	7	8	8	1.6	1.0
832	Packers and Product Assemblers	114	121	121	147	153	0.7	2.3
839	Miscellaneous Factory Process Workers	27	26	22	28	28	-1.8	2.3
841	Farm, Forestry and Garden Workers	8	8	9	8	8	1.0	-0.2
851	Food Preparation Assistants	112	133	156	235	203	3.4	2.7
891	Freight Handlers and Shelf Fillers	571	595	773	917	854	3.1	1.0
899	Miscellaneous Labourers	260	304	429	492	518	5.1	1.9
	<b>Total</b>	<b>27281</b>	<b>30749</b>	<b>35228</b>	<b>44114</b>	<b>43366</b>	<b>2.6</b>	<b>2.1</b>

Source: NIEIR.

**Table 14.38 Information Media and Telecommunications (J) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	137	113	76	67	78	-5.7	0.3
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	25	28	34	28	36	3.1	0.6
132	Business Administration Managers	12	14	20	17	20	4.9	-0.1
133	Construction, Distribution and Production Managers	35	25	24	20	25	-3.6	0.2
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	30	44	51	44	68	5.5	3.0
139	Miscellaneous Specialist Managers	3	5	7	5	5	10.4	-2.7
141	Accommodation and Hospitality Managers	0	0	0	0	0	0.0	0.0
142	Retail Managers	55	50	42	32	37	-2.7	-1.3
149	Miscellaneous Hospitality, Retail and Service Managers	45	60	50	49	54	1.2	0.7
211	Arts Professionals	11	21	22	29	26	6.6	2.0
212	Media Professionals	419	551	638	713	757	4.3	1.7
221	Accountants, Auditors and Company Secretaries	12	14	19	15	18	5.4	-0.7
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	4	11	0.0	0.0
223	Human Resource and Training Professionals	8	6	6	8	9	-3.3	4.5
224	Information and Organisation Professionals	134	126	213	236	259	4.8	2.0
225	Sales, Marketing and Public Relations Professionals	98	98	105	98	132	0.6	2.4
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	65	68	58	66	67	-1.0	1.4
233	Engineering Professionals	4	9	13	9	10	11.4	-2.2
234	Natural and Physical Science Professionals	0	0	0	0	0	0.0	0.0
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	2	4	5	4	4	8.6	-3.2
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	42	50	81	70	81	6.9	0.0
262	Database and Systems Administrators, and ICT Security Specialists	0	0	0	1	2	0.0	0.0
263	ICT Network and Support Professionals	22	26	55	43	45	9.4	-1.9
271	Legal Professionals	0	0	0	0	0	0.0	0.0
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0

**Table 14.38 Information Media and Telecommunications (J) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	7	10	16	11	13	9.4	-2.4
313	ICT and Telecommunications Technicians	53	69	134	116	134	9.7	0.0
321	Automotive Electricians and Mechanics	0	0	0	0	0	0.0	0.0
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	0	0	0	0	0	0.0	0.0
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	0	0	0	0	0	0.0	0.0
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	6	8	15	9	13	10.0	-1.6
342	Electronics and Telecommunications Trades Workers	284	301	231	185	239	-2.0	0.3
351	Food Trades Workers	0	0	0	0	0	0.0	0.0
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	0	0	0	0	0	0.0	0.0
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	1	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	206	225	196	254	307	-0.5	4.6
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	5	9	9	8	9	6.3	0.9
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	0	0	0	0	0	0.0	0.0
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	39	45	41	32	34	0.5	-1.7
512	Office and Practice Managers	15	16	17	13	15	1.8	-1.7
521	Personal Assistants and Secretaries	43	21	16	15	17	-9.6	0.6
531	General Clerks	18	21	28	21	31	4.3	1.0
532	Keyboard Operators	18	11	5	6	8	-12.1	4.7
541	Call or Contact Centre Information Clerks	40	50	68	51	58	5.3	-1.5
542	Receptionists	9	12	14	11	12	4.7	-1.9
551	Accounting Clerks and Bookkeepers	50	41	36	33	38	-3.3	0.6
552	Financial and Insurance Clerks	0	0	0	0	0	0.0	0.0

**Table 14.38 Information Media and Telecommunications (J) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	42	13	10	9	12	-13.1	1.2
591	Logistics Clerks	108	45	41	33	33	-9.1	-2.1
599	Miscellaneous Clerical and Administrative Workers	100	91	98	104	113	-0.2	1.4
611	Insurance Agents and Sales Representatives	27	21	12	12	15	-8.2	2.3
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	156	201	166	133	146	0.6	-1.3
631	Checkout Operators and Office Cashiers	14	19	12	11	12	-1.5	-0.2
639	Miscellaneous Sales Support Workers	161	190	121	111	116	-2.8	-0.4
711	Machine Operators	0	0	0	0	0	0.0	0.0
712	Stationary Plant Operators	0	0	0	0	0	0.0	0.0
721	Mobile Plant Operators	0	0	0	0	0	0.0	0.0
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	0	0	0	0	0	0.0	0.0
733	Truck Drivers	0	0	0	0	0	0.0	0.0
741	Storepersons	31	15	13	11	12	-8.1	-0.9
811	Cleaners and Laundry Workers	1	2	2	2	2	4.6	1.0
821	Construction and Mining Labourers	36	44	44	31	35	2.1	-2.2
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	1	2	2	1	1	6.1	-2.6
839	Miscellaneous Factory Process Workers	0	0	0	0	0	0.0	0.0
841	Farm, Forestry and Garden Workers	0	0	0	0	0	0.0	0.0
851	Food Preparation Assistants	0	0	0	0	0	0.0	0.0
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	76	34	19	19	19	-12.8	-0.1
	<b>Total</b>	<b>2703</b>	<b>2830</b>	<b>2886</b>	<b>2803</b>	<b>3193</b>	<b>0.7</b>	<b>1.0</b>

Source: NIEIR.

**Table 14.39 Financial and Insurance Services (K) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	17	22	24	26	36	3.5	4.3
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	40	43	60	65	91	4.1	4.4
132	Business Administration Managers	100	88	137	153	206	3.1	4.2
133	Construction, Distribution and Production Managers	15	17	23	22	31	4.2	3.3
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	2	4	4	7	14	5.1	14.5
139	Miscellaneous Specialist Managers	8	9	15	18	25	6.6	5.4
141	Accommodation and Hospitality Managers	0	0	0	0	0	0.0	0.0
142	Retail Managers	5	6	7	7	11	4.0	4.2
149	Miscellaneous Hospitality, Retail and Service Managers	237	230	240	257	313	0.1	2.7
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	0	0	0	0	1	0.0	0.0
221	Accountants, Auditors and Company Secretaries	74	81	107	121	165	3.8	4.4
222	Financial Brokers and Dealers, and Investment Advisers	890	1132	1280	1388	1775	3.7	3.3
223	Human Resource and Training Professionals	0	0	0	3	7	0.0	0.0
224	Information and Organisation Professionals	28	36	71	92	138	9.6	6.9
225	Sales, Marketing and Public Relations Professionals	10	17	19	22	31	6.1	5.4
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	0	0	0	1	2	0.0	0.0
233	Engineering Professionals	9	10	17	18	22	6.8	2.1
234	Natural and Physical Science Professionals	11	8	16	16	19	4.2	1.8
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	3	3	4	4	4	1.8	1.8
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	0	0	0	1	2	0.0	0.0
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	30	30	51	49	77	5.4	4.2
261	Business and Systems Analysts, and Programmers	22	22	41	57	90	6.5	8.2
262	Database and Systems Administrators, and ICT Security Specialists	9	13	15	18	23	4.8	4.4
263	ICT Network and Support Professionals	17	10	20	24	34	1.2	5.8
271	Legal Professionals	0	0	0	2	6	0.0	0.0
272	Social and Welfare Professionals	0	0	0	0	1	0.0	0.0



**Table 14.39 Financial and Insurance Services (K) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	15	12	19	19	23	2.3	1.9
313	ICT and Telecommunications Technicians	5	6	12	14	21	10.4	5.6
321	Automotive Electricians and Mechanics	4	3	5	5	6	1.8	2.0
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	12	6	9	9	11	-3.0	1.7
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	0	0	0	0	0	0.0	0.0
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	0	0	0	0	0	0.0	0.0
342	Electronics and Telecommunications Trades Workers	3	4	3	3	3	-0.3	2.1
351	Food Trades Workers	0	0	0	0	0	0.0	0.0
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	0	0	0	0	0	0.0	0.0
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	0	0	0	0	0	0.0	0.0
411	Health and Welfare Support Workers	3	3	3	3	5	0.1	4.7
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	0	0	0	0	0	0.0	0.0
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	0	0	0	0	1	0.0	0.0
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	8	8	6	9	14	-3.3	9.1
512	Office and Practice Managers	55	57	71	73	96	2.6	3.1
521	Personal Assistants and Secretaries	60	48	43	46	63	-3.3	3.8
531	General Clerks	133	125	150	163	215	1.2	3.7
532	Keyboard Operators	21	13	14	20	30	-3.5	7.5
541	Call or Contact Centre Information Clerks	44	37	54	60	91	2.1	5.4
542	Receptionists	27	23	23	28	39	-1.5	5.4
551	Accounting Clerks and Bookkeepers	82	61	62	75	103	-2.7	5.2
552	Financial and Insurance Clerks	1542	1507	1524	1601	2005	-0.1	2.8

**Table 14.39 Financial and Insurance Services (K) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	14	13	12	13	16	-1.6	2.7
591	Logistics Clerks	18	15	23	24	28	2.4	2.1
599	Miscellaneous Clerical and Administrative Workers	111	107	162	181	259	3.9	4.8
611	Insurance Agents and Sales Representatives	103	89	79	84	130	-2.6	5.1
612	Real Estate Sales Agents	5	6	10	13	18	6.0	6.3
621	Sales Assistants and Salespersons	20	19	23	26	35	1.3	4.2
631	Checkout Operators and Office Cashiers	4	3	4	8	11	2.0	9.6
639	Miscellaneous Sales Support Workers	4	6	3	4	5	-2.5	3.1
711	Machine Operators	2	3	4	4	5	4.4	2.2
712	Stationary Plant Operators	0	0	0	0	0	0.0	0.0
721	Mobile Plant Operators	3	2	3	3	3	-0.2	2.2
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	0	0	0	0	0	0.0	0.0
733	Truck Drivers	0	0	0	0	0	0.0	0.0
741	Storepersons	5	6	7	7	8	3.9	1.2
811	Cleaners and Laundry Workers	0	0	0	0	0	0.0	0.0
821	Construction and Mining Labourers	0	0	0	0	0	0.0	0.0
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	0	0	0	0	0	0.0	0.0
839	Miscellaneous Factory Process Workers	0	0	0	0	0	0.0	0.0
841	Farm, Forestry and Garden Workers	0	0	0	0	0	0.0	0.0
851	Food Preparation Assistants	0	0	0	0	0	0.0	0.0
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	0	0	0	0	0	0.0	0.0
	<b>Total</b>	<b>3832</b>	<b>3963</b>	<b>4477</b>	<b>4869</b>	<b>6373</b>	<b>1.6</b>	<b>3.6</b>

Source: NIEIR.

**Table 14.40 Rental, Hiring and Real Estate Services (L) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	31	42	36	42	51	1.4	3.6
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	53	75	81	91	109	4.2	3.0
132	Business Administration Managers	22	24	28	36	49	2.4	5.6
133	Construction, Distribution and Production Managers	11	17	17	24	31	4.2	6.3
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	4	7	6	6	7	2.8	2.3
139	Miscellaneous Specialist Managers	3	4	4	6	8	2.1	8.5
141	Accommodation and Hospitality Managers	0	0	0	0	1	0.0	0.0
142	Retail Managers	46	35	25	24	26	-5.9	0.1
149	Miscellaneous Hospitality, Retail and Service Managers	325	311	260	277	318	-2.2	2.0
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	0	0	0	1	2	0.0	0.0
221	Accountants, Auditors and Company Secretaries	22	28	28	39	54	2.7	6.7
222	Financial Brokers and Dealers, and Investment Advisers	23	32	34	38	44	3.8	2.8
223	Human Resource and Training Professionals	15	14	15	16	18	0.1	1.5
224	Information and Organisation Professionals	69	96	145	190	250	7.8	5.6
225	Sales, Marketing and Public Relations Professionals	22	35	37	44	54	5.4	3.7
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	3	4	7	12	19	7.6	11.1
233	Engineering Professionals	0	0	0	1	3	0.0	0.0
234	Natural and Physical Science Professionals	0	0	0	0	0	0.0	0.0
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	0	0	0	0	0	0.0	0.0
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	20	22	31	28	30	4.6	-0.6
262	Database and Systems Administrators, and ICT Security Specialists	0	0	0	1	3	0.0	0.0
263	ICT Network and Support Professionals	0	0	0	1	2	0.0	0.0
271	Legal Professionals	0	0	0	1	1	0.0	0.0
272	Social and Welfare Professionals	11	14	14	16	17	2.5	1.9

**Table 14.40 Rental, Hiring and Real Estate Services (L) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	3	5	5	6	8	5.9	4.6
313	ICT and Telecommunications Technicians	6	6	11	10	11	6.3	0.0
321	Automotive Electricians and Mechanics	31	33	21	18	16	-3.5	-2.5
322	Fabrication Engineering Trades Workers	6	8	6	7	9	0.1	3.6
323	Mechanical Engineering Trades Workers	9	5	4	4	3	-6.6	-2.3
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	0	0	0	0	0	0.0	0.0
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	0	0	0	0	0	0.0	0.0
342	Electronics and Telecommunications Trades Workers	0	0	0	0	1	0.0	0.0
351	Food Trades Workers	0	0	0	1	2	0.0	0.0
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	5	4	4	5	5	-1.6	2.9
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	9	12	8	9	9	-0.9	1.0
399	Miscellaneous Technicians and Trades Workers	11	15	14	14	16	2.6	1.2
411	Health and Welfare Support Workers	28	37	39	46	50	3.5	2.6
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	16	16	18	21	25	1.4	3.1
431	Hospitality Workers	20	25	25	27	30	2.6	1.7
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	12	19	24	29	33	7.5	3.4
451	Personal Service and Travel Workers	10	9	8	10	11	-1.3	2.9
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	11	16	12	18	24	1.5	6.7
512	Office and Practice Managers	78	92	78	86	95	0.1	1.9
521	Personal Assistants and Secretaries	122	100	76	85	97	-4.6	2.4
531	General Clerks	138	147	144	161	189	0.4	2.7
532	Keyboard Operators	33	28	25	26	28	-2.9	1.1
541	Call or Contact Centre Information Clerks	22	26	24	25	27	0.6	1.5
542	Receptionists	219	216	168	191	216	-2.7	2.6
551	Accounting Clerks and Bookkeepers	144	141	117	125	138	-2.1	1.6
552	Financial and Insurance Clerks	6	10	6	5	5	-0.3	-1.3

**Table 14.40 Rental, Hiring and Real Estate Services (L) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	7	7	3	4	4	-7.3	3.2
591	Logistics Clerks	22	28	22	24	28	-0.1	2.4
599	Miscellaneous Clerical and Administrative Workers	25	28	28	32	37	1.0	2.7
611	Insurance Agents and Sales Representatives	62	59	35	36	38	-5.6	0.9
612	Real Estate Sales Agents	1404	1862	1515	1715	1937	0.8	2.5
621	Sales Assistants and Salespersons	327	384	274	257	255	-1.8	-0.7
631	Checkout Operators and Office Cashiers	0	0	0	0	1	0.0	0.0
639	Miscellaneous Sales Support Workers	4	7	3	4	5	-1.8	4.4
711	Machine Operators	0	0	0	0	0	0.0	0.0
712	Stationary Plant Operators	15	11	9	9	10	-5.3	1.8
721	Mobile Plant Operators	12	9	6	5	5	-6.3	-2.3
731	Automobile, Bus and Rail Drivers	55	46	50	47	49	-0.9	-0.2
732	Delivery Drivers	10	12	12	10	9	2.0	-2.8
733	Truck Drivers	17	20	15	12	11	-1.4	-2.4
741	Storepersons	4	4	3	2	2	-2.9	-1.5
811	Cleaners and Laundry Workers	175	145	107	104	107	-4.8	0.0
821	Construction and Mining Labourers	24	23	21	21	24	-1.6	1.4
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	0	0	0	0	0	0.0	0.0
839	Miscellaneous Factory Process Workers	4	4	2	1	1	-8.4	-2.2
841	Farm, Forestry and Garden Workers	0	0	0	0	0	0.0	0.0
851	Food Preparation Assistants	8	9	10	13	14	2.0	4.2
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	50	50	36	39	43	-3.1	1.7
	<b>Total</b>	<b>3841</b>	<b>4437</b>	<b>3757</b>	<b>4160</b>	<b>4729</b>	<b>-0.2</b>	<b>2.3</b>

Source: NIEIR.

**Table 14.41 Professional, Scientific and Technical Services (M) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	153	193	157	208	275	0.3	5.8
121	Farmers and Farm Managers	15	6	6	6	7	-9.0	1.0
131	Advertising, Public Relations and Sales Managers	137	181	177	230	306	2.6	5.6
132	Business Administration Managers	153	175	203	266	354	2.9	5.7
133	Construction, Distribution and Production Managers	135	189	183	255	349	3.1	6.7
134	Education, Health and Welfare Services Managers	18	15	13	14	16	-2.7	1.8
135	ICT Managers	102	197	203	253	340	7.1	5.3
139	Miscellaneous Specialist Managers	54	70	83	107	143	4.3	5.6
141	Accommodation and Hospitality Managers	4	4	2	3	3	-4.5	3.2
142	Retail Managers	24	28	22	29	38	-0.9	5.8
149	Miscellaneous Hospitality, Retail and Service Managers	82	101	83	104	131	0.1	4.6
211	Arts Professionals	383	441	744	925	1172	6.9	4.7
212	Media Professionals	63	102	185	219	269	11.3	3.8
221	Accountants, Auditors and Company Secretaries	1248	1617	1629	2026	2620	2.7	4.9
222	Financial Brokers and Dealers, and Investment Advisers	18	26	24	37	53	2.9	8.1
223	Human Resource and Training Professionals	52	46	46	61	83	-1.2	6.0
224	Information and Organisation Professionals	354	457	653	837	1112	6.3	5.5
225	Sales, Marketing and Public Relations Professionals	235	365	369	462	599	4.6	5.0
231	Air and Marine Transport Professionals	8	8	12	22	32	3.4	10.5
232	Architects, Designers, Planners and Surveyors	1240	1526	1876	2242	2774	4.2	4.0
233	Engineering Professionals	356	520	602	789	1053	5.4	5.7
234	Natural and Physical Science Professionals	581	600	736	923	1180	2.4	4.8
241	School Teachers	6	4	5	5	6	-1.9	1.7
242	Tertiary Education Teachers	14	14	19	27	37	3.1	6.7
249	Miscellaneous Education Professionals	21	20	29	41	52	3.3	6.1
251	Health Diagnostic and Promotion Professionals	47	51	42	52	68	-1.1	4.9
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	3	3	2	3	3	-4.1	4.1
254	Midwifery and Nursing Professionals	3	3	1	2	5	-6.9	13.1
261	Business and Systems Analysts, and Programmers	682	827	1271	1575	2091	6.4	5.1
262	Database and Systems Administrators, and ICT Security Specialists	83	103	133	164	224	4.8	5.4
263	ICT Network and Support Professionals	219	207	349	447	592	4.8	5.4
271	Legal Professionals	429	549	697	893	1158	5.0	5.2
272	Social and Welfare Professionals	176	175	165	240	319	-0.6	6.8



**Table 14.41 Professional, Scientific and Technical Services (M) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	74	61	76	115	160	0.2	7.7
312	Building and Engineering Technicians	423	564	603	768	1001	3.6	5.2
313	ICT and Telecommunications Technicians	208	253	375	479	641	6.1	5.5
321	Automotive Electricians and Mechanics	6	8	7	12	19	0.6	10.7
322	Fabrication Engineering Trades Workers	24	32	24	32	48	0.1	7.0
323	Mechanical Engineering Trades Workers	55	62	48	61	83	-1.3	5.7
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	4	4	4	8	11	0.4	10.5
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	5	4	4	9	12	-0.4	10.5
341	Electricians	4	5	3	3	4	-4.6	4.4
342	Electronics and Telecommunications Trades Workers	80	97	59	74	101	-3.0	5.5
351	Food Trades Workers	13	15	16	25	33	1.8	7.6
361	Animal Attendants and Trainers, and Shearers	213	278	331	462	641	4.5	6.8
362	Horticultural Trades Workers	28	24	22	26	35	-2.3	4.5
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	6	8	10	12	18	5.7	5.9
393	Textile, Clothing and Footwear Trades Workers	2	3	2	3	3	2.1	3.0
394	Wood Trades Workers	6	11	8	11	15	2.3	6.6
399	Miscellaneous Technicians and Trades Workers	167	217	235	356	494	3.5	7.7
411	Health and Welfare Support Workers	9	10	13	22	30	3.9	8.9
421	Child Carers	31	30	13	14	16	-7.9	1.4
422	Education Aides	3	3	8	9	15	10.8	6.9
423	Personal Carers and Assistants	7	6	4	5	6	-4.7	2.7
431	Hospitality Workers	0	0	0	0	0	0.0	0.0
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	5	7	11	20	29	8.1	10.7
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	2	3	2	2	3	-2.5	4.0
511	Contract, Program and Project Administrators	65	82	63	85	117	-0.2	6.3
512	Office and Practice Managers	239	270	224	286	382	-0.7	5.5
521	Personal Assistants and Secretaries	309	229	162	205	274	-6.3	5.4
531	General Clerks	232	239	219	291	391	-0.6	6.0
532	Keyboard Operators	100	76	69	96	130	-3.7	6.6
541	Call or Contact Centre Information Clerks	28	43	42	56	70	4.1	5.3
542	Receptionists	206	184	147	204	273	-3.3	6.4
551	Accounting Clerks and Bookkeepers	1119	1046	860	1136	1537	-2.6	6.0
552	Financial and Insurance Clerks	0	0	0	1	2	0.0	0.0

**Table 14.41 Professional, Scientific and Technical Services (M) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	112	98	62	96	139	-5.7	8.3
591	Logistics Clerks	26	31	30	46	65	1.4	8.1
599	Miscellaneous Clerical and Administrative Workers	417	460	437	588	783	0.5	6.0
611	Insurance Agents and Sales Representatives	81	78	46	64	87	-5.5	6.6
612	Real Estate Sales Agents	8	10	7	8	11	-1.2	5.4
621	Sales Assistants and Salespersons	40	52	34	44	57	-1.6	5.2
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	52	62	39	59	81	-2.7	7.5
711	Machine Operators	17	21	18	27	36	0.8	7.2
712	Stationary Plant Operators	27	21	15	21	27	-5.7	6.1
721	Mobile Plant Operators	12	10	7	11	15	-4.8	7.5
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	0	0	0	0	0	0.0	0.0
733	Truck Drivers	9	12	9	13	18	-0.1	7.1
741	Storepersons	26	42	41	58	76	4.5	6.4
811	Cleaners and Laundry Workers	15	12	7	8	9	-7.6	2.4
821	Construction and Mining Labourers	42	51	35	40	52	-1.9	4.2
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	4	5	3	5	7	-1.6	7.2
839	Miscellaneous Factory Process Workers	11	11	7	13	18	-3.8	9.4
841	Farm, Forestry and Garden Workers	10	6	3	3	4	-12.2	3.8
851	Food Preparation Assistants	0	0	0	0	0	0.0	0.0
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	73	74	51	68	90	-3.5	5.8
	<b>Total</b>	<b>11750</b>	<b>13753</b>	<b>15237</b>	<b>19531</b>	<b>25632</b>	<b>2.6</b>	<b>5.3</b>

Source: NIEIR.

**Table 14.42 Administrative and Support Services (N) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	86	143	130	162	183	4.2	3.5
121	Farmers and Farm Managers	6	4	4	4	6	-4.0	3.4
131	Advertising, Public Relations and Sales Managers	50	76	83	112	137	5.2	5.2
132	Business Administration Managers	78	112	135	180	213	5.6	4.7
133	Construction, Distribution and Production Managers	57	98	107	133	144	6.4	3.0
134	Education, Health and Welfare Services Managers	14	15	20	24	25	3.7	2.6
135	ICT Managers	2	4	3	10	16	7.1	18.1
139	Miscellaneous Specialist Managers	7	13	17	26	31	9.5	6.1
141	Accommodation and Hospitality Managers	14	21	22	28	29	4.7	2.9
142	Retail Managers	62	84	65	79	85	0.4	2.7
149	Miscellaneous Hospitality, Retail and Service Managers	194	302	282	344	383	3.8	3.1
211	Arts Professionals	4	5	9	9	9	9.3	-0.2
212	Media Professionals	10	25	49	50	54	16.8	1.0
221	Accountants, Auditors and Company Secretaries	28	48	51	68	82	6.2	4.8
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	1	3	0.0	0.0
223	Human Resource and Training Professionals	427	475	525	667	733	2.1	3.4
224	Information and Organisation Professionals	14	24	34	54	73	9.4	7.9
225	Sales, Marketing and Public Relations Professionals	25	49	52	68	81	7.7	4.5
231	Air and Marine Transport Professionals	3	4	4	7	7	3.6	5.4
232	Architects, Designers, Planners and Surveyors	14	25	29	42	46	7.3	4.6
233	Engineering Professionals	21	43	47	72	70	8.3	4.2
234	Natural and Physical Science Professionals	2	4	4	6	6	6.2	4.1
241	School Teachers	27	31	58	81	83	7.9	3.7
242	Tertiary Education Teachers	7	8	9	9	10	2.3	0.7
249	Miscellaneous Education Professionals	0	0	0	1	2	0.0	0.0
251	Health Diagnostic and Promotion Professionals	22	33	39	47	49	5.7	2.2
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	45	52	54	62	68	2.0	2.3
261	Business and Systems Analysts, and Programmers	0	0	0	16	34	0.0	0.0
262	Database and Systems Administrators, and ICT Security Specialists	3	5	5	8	12	6.8	8.5
263	ICT Network and Support Professionals	0	0	0	5	11	0.0	0.0
271	Legal Professionals	0	0	0	4	8	0.0	0.0
272	Social and Welfare Professionals	25	31	29	40	44	1.6	4.0

**Table 14.42 Administrative and Support Services (N) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	11	19	23	30	34	7.7	3.9
313	ICT and Telecommunications Technicians	2	3	4	11	19	6.4	15.6
321	Automotive Electricians and Mechanics	9	14	11	14	17	2.6	4.3
322	Fabrication Engineering Trades Workers	15	22	13	19	18	-1.5	3.2
323	Mechanical Engineering Trades Workers	57	61	55	78	79	-0.4	3.7
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	5	9	13	16	16	10.2	2.0
331	Bricklayers, and Carpenters and Joiners	29	46	42	49	52	3.6	2.3
332	Floor Finishers and Painting Trades Workers	15	22	20	27	34	2.7	5.4
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	4	5	6	8	8	2.5	3.9
341	Electricians	22	27	27	33	33	2.2	1.9
342	Electronics and Telecommunications Trades Workers	16	22	15	19	19	-0.1	2.2
351	Food Trades Workers	24	40	42	56	59	6.0	3.4
361	Animal Attendants and Trainers, and Shearers	2	4	6	9	9	8.4	5.4
362	Horticultural Trades Workers	632	739	986	1209	1400	4.6	3.6
391	Hairdressers	11	20	16	18	17	3.2	1.0
392	Printing Trades Workers	4	4	3	5	8	-3.0	10.5
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	3	5	4	4	4	2.9	1.3
399	Miscellaneous Technicians and Trades Workers	3	6	6	11	12	8.2	6.8
411	Health and Welfare Support Workers	54	69	66	78	81	2.1	2.1
421	Child Carers	23	29	18	22	24	-2.5	3.0
422	Education Aides	3	4	14	21	21	17.7	4.3
423	Personal Carers and Assistants	115	145	156	174	182	3.2	1.5
431	Hospitality Workers	29	47	58	73	71	7.1	2.0
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	33	58	90	104	102	10.6	1.3
451	Personal Service and Travel Workers	379	538	455	559	587	1.9	2.6
452	Sports and Fitness Workers	0	0	0	0	1	0.0	0.0
511	Contract, Program and Project Administrators	26	39	33	44	53	2.4	4.9
512	Office and Practice Managers	127	191	173	205	229	3.1	2.9
521	Personal Assistants and Secretaries	166	162	121	136	147	-3.1	2.0
531	General Clerks	255	340	326	388	416	2.5	2.5
532	Keyboard Operators	99	90	76	91	98	-2.6	2.6
541	Call or Contact Centre Information Clerks	95	121	111	150	183	1.5	5.2
542	Receptionists	86	94	77	94	99	-1.1	2.6
551	Accounting Clerks and Bookkeepers	285	351	309	370	411	0.8	2.9
552	Financial and Insurance Clerks	0	0	0	6	12	0.0	0.0

**Table 14.42 Administrative and Support Services (N) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	93	100	60	74	80	-4.4	3.0
591	Logistics Clerks	43	74	71	89	90	5.1	2.3
599	Miscellaneous Clerical and Administrative Workers	37	54	50	75	92	3.1	6.3
611	Insurance Agents and Sales Representatives	37	47	34	48	57	-0.9	5.3
612	Real Estate Sales Agents	6	6	6	6	7	1.3	1.4
621	Sales Assistants and Salespersons	39	69	54	74	79	3.3	3.8
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	99	130	117	172	172	1.7	3.9
711	Machine Operators	34	57	53	66	69	4.5	2.8
712	Stationary Plant Operators	8	8	5	7	7	-5.3	4.3
721	Mobile Plant Operators	173	191	154	202	203	-1.1	2.8
731	Automobile, Bus and Rail Drivers	7	12	8	11	10	1.3	2.3
732	Delivery Drivers	22	35	47	53	56	7.7	1.9
733	Truck Drivers	79	126	108	131	132	3.2	2.0
741	Storepersons	121	223	220	279	278	6.1	2.4
811	Cleaners and Laundry Workers	2905	3274	3052	3653	3925	0.5	2.5
821	Construction and Mining Labourers	52	64	49	64	72	-0.5	3.9
831	Food Process Workers	46	61	47	60	61	0.3	2.6
832	Packers and Product Assemblers	275	382	262	322	345	-0.5	2.8
839	Miscellaneous Factory Process Workers	21	25	15	19	22	-3.2	3.6
841	Farm, Forestry and Garden Workers	369	305	236	279	313	-4.4	2.9
851	Food Preparation Assistants	72	103	113	159	162	4.7	3.7
891	Freight Handlers and Shelf Fillers	20	28	25	36	37	2.3	3.9
899	Miscellaneous Labourers	222	291	255	325	349	1.4	3.2
	<b>Total</b>	<b>8665</b>	<b>10741</b>	<b>10280</b>	<b>12759</b>	<b>13911</b>	<b>1.7</b>	<b>3.1</b>

Source: NIEIR.

**Table 14.43 Public Administration and Safety (O) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	105	124	101	146	185	-0.5	6.3
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	64	61	79	114	132	2.0	5.4
132	Business Administration Managers	225	253	324	496	682	3.7	7.7
133	Construction, Distribution and Production Managers	87	128	133	196	267	4.3	7.2
134	Education, Health and Welfare Services Managers	91	93	122	145	164	2.9	3.0
135	ICT Managers	18	29	29	56	87	4.6	11.7
139	Miscellaneous Specialist Managers	479	573	778	1065	1167	5.0	4.1
141	Accommodation and Hospitality Managers	7	7	9	9	9	2.6	-1.0
142	Retail Managers	0	0	0	0	1	0.0	0.0
149	Miscellaneous Hospitality, Retail and Service Managers	205	260	236	287	326	1.4	3.3
211	Arts Professionals	36	24	40	58	68	1.3	5.4
212	Media Professionals	19	23	35	48	58	6.5	5.2
221	Accountants, Auditors and Company Secretaries	78	109	118	178	241	4.3	7.4
222	Financial Brokers and Dealers, and Investment Advisers	3	4	2	7	13	-2.8	19.2
223	Human Resource and Training Professionals	331	245	281	378	432	-1.6	4.4
224	Information and Organisation Professionals	285	390	645	960	1297	8.5	7.2
225	Sales, Marketing and Public Relations Professionals	81	117	127	180	235	4.6	6.3
231	Air and Marine Transport Professionals	18	20	26	47	72	3.9	10.7
232	Architects, Designers, Planners and Surveyors	336	432	616	775	929	6.3	4.2
233	Engineering Professionals	133	200	249	317	379	6.5	4.3
234	Natural and Physical Science Professionals	397	512	686	758	770	5.6	1.2
241	School Teachers	130	114	218	246	270	5.3	2.2
242	Tertiary Education Teachers	17	15	25	29	33	3.7	2.9
249	Miscellaneous Education Professionals	15	17	28	48	71	6.3	9.8
251	Health Diagnostic and Promotion Professionals	117	137	138	171	200	1.7	3.8
252	Health Therapy Professionals	31	33	48	54	58	4.5	1.9
253	Medical Practitioners	0	0	0	4	8	0.0	0.0
254	Midwifery and Nursing Professionals	301	328	441	511	575	3.9	2.7
261	Business and Systems Analysts, and Programmers	17	25	41	103	184	9.3	16.2
262	Database and Systems Administrators, and ICT Security Specialists	76	89	112	153	191	3.9	5.5
263	ICT Network and Support Professionals	23	20	33	54	74	3.6	8.5
271	Legal Professionals	88	122	167	279	389	6.6	8.8
272	Social and Welfare Professionals	430	454	440	520	564	0.2	2.5



**Table 14.43 Public Administration and Safety (O) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	248	168	219	227	227	-1.2	0.3
312	Building and Engineering Technicians	122	163	182	222	247	4.1	3.1
313	ICT and Telecommunications Technicians	90	90	123	160	190	3.2	4.4
321	Automotive Electricians and Mechanics	67	72	31	36	39	-7.4	2.4
322	Fabrication Engineering Trades Workers	0	0	0	1	2	0.0	0.0
323	Mechanical Engineering Trades Workers	116	120	75	91	103	-4.3	3.2
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	4	4	1	2	2	-9.2	0.7
331	Bricklayers, and Carpenters and Joiners	12	15	12	13	14	0.6	1.2
332	Floor Finishers and Painting Trades Workers	2	4	4	5	7	6.7	6.2
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	46	56	39	44	44	-1.7	1.1
341	Electricians	46	48	39	42	40	-1.6	0.1
342	Electronics and Telecommunications Trades Workers	358	351	165	197	191	-7.4	1.4
351	Food Trades Workers	12	12	11	13	14	-0.2	2.2
361	Animal Attendants and Trainers, and Shearers	30	33	58	65	70	6.9	1.8
362	Horticultural Trades Workers	233	213	267	310	333	1.4	2.2
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	1	2	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	1	3	4	11	22	23.6	17.9
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	127	148	151	176	191	1.7	2.4
411	Health and Welfare Support Workers	390	447	523	594	645	3.0	2.1
421	Child Carers	105	158	162	174	183	4.5	1.2
422	Education Aides	35	35	95	106	115	10.4	2.0
423	Personal Carers and Assistants	983	1029	1272	1460	1617	2.6	2.4
431	Hospitality Workers	4	4	3	4	4	-1.2	2.9
441	Defence Force Members, Fire Fighters and Police	2190	2814	2950	3544	3672	3.0	2.2
442	Prison and Security Officers	1275	1702	2529	2750	2772	7.1	0.9
451	Personal Service and Travel Workers	21	20	16	20	22	-2.5	2.9
452	Sports and Fitness Workers	101	141	140	163	180	3.3	2.5
511	Contract, Program and Project Administrators	271	335	273	432	557	0.1	7.4
512	Office and Practice Managers	135	155	137	176	209	0.2	4.3
521	Personal Assistants and Secretaries	143	112	92	129	165	-4.3	6.0
531	General Clerks	652	671	645	820	957	-0.1	4.0
532	Keyboard Operators	181	132	125	161	193	-3.7	4.4
541	Call or Contact Centre Information Clerks	383	477	472	590	684	2.1	3.8
542	Receptionists	75	68	54	67	79	-3.3	3.9
551	Accounting Clerks and Bookkeepers	241	229	197	249	291	-2.0	4.0
552	Financial and Insurance Clerks	12	18	16	24	31	3.1	6.9

**Table 14.43 Public Administration and Safety (O) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	118	113	79	109	136	-3.9	5.6
591	Logistics Clerks	122	152	125	164	198	0.2	4.7
599	Miscellaneous Clerical and Administrative Workers	901	1024	1135	1344	1532	2.3	3.0
611	Insurance Agents and Sales Representatives	0	0	0	2	3	0.0	0.0
612	Real Estate Sales Agents	11	14	14	17	19	2.6	3.0
621	Sales Assistants and Salespersons	7	10	8	9	10	0.6	2.3
631	Checkout Operators and Office Cashiers	19	23	25	27	28	2.9	1.1
639	Miscellaneous Sales Support Workers	8	7	11	11	11	2.8	0.3
711	Machine Operators	5	7	6	9	14	0.5	9.2
712	Stationary Plant Operators	37	22	14	18	18	-9.5	3.0
721	Mobile Plant Operators	129	104	75	89	99	-5.3	2.8
731	Automobile, Bus and Rail Drivers	40	57	70	80	88	5.8	2.3
732	Delivery Drivers	43	54	68	83	94	4.7	3.3
733	Truck Drivers	235	272	165	203	214	-3.5	2.6
741	Storepersons	23	26	21	33	45	-0.6	7.7
811	Cleaners and Laundry Workers	73	63	54	60	63	-2.9	1.6
821	Construction and Mining Labourers	55	72	59	73	87	0.8	3.8
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	0	0	0	0	0	0.0	0.0
839	Miscellaneous Factory Process Workers	2	8	7	18	36	15.4	18.2
841	Farm, Forestry and Garden Workers	103	71	57	66	72	-5.8	2.4
851	Food Preparation Assistants	20	21	25	29	33	2.2	2.9
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	689	712	590	682	757	-1.5	2.5
	<b>Total</b>	<b>15593</b>	<b>17835</b>	<b>20020</b>	<b>24599</b>	<b>27803</b>	<b>2.5</b>	<b>3.3</b>

Source: NIEIR.

**Table 14.44 Education and Training (P) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	108	157	131	145	176	1.9	3.0
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	84	110	101	123	151	1.9	4.1
132	Business Administration Managers	210	286	318	355	405	4.2	2.4
133	Construction, Distribution and Production Managers	15	20	20	23	24	3.0	1.7
134	Education, Health and Welfare Services Managers	940	1204	1078	1165	1281	1.4	1.7
135	ICT Managers	48	101	88	97	104	6.2	1.7
139	Miscellaneous Specialist Managers	53	79	96	100	113	6.2	1.6
141	Accommodation and Hospitality Managers	54	78	43	45	47	-2.3	1.0
142	Retail Managers	3	5	2	3	3	-4.3	4.3
149	Miscellaneous Hospitality, Retail and Service Managers	157	228	189	198	223	1.8	1.7
211	Arts Professionals	85	121	252	236	263	11.5	0.4
212	Media Professionals	46	79	153	174	223	12.6	3.9
221	Accountants, Auditors and Company Secretaries	104	144	128	149	175	2.1	3.2
222	Financial Brokers and Dealers, and Investment Advisers	4	5	5	6	6	3.1	1.3
223	Human Resource and Training Professionals	342	328	338	375	461	-0.1	3.2
224	Information and Organisation Professionals	289	415	566	642	741	6.9	2.7
225	Sales, Marketing and Public Relations Professionals	100	173	184	203	223	6.3	1.9
231	Air and Marine Transport Professionals	11	12	11	14	19	0.4	5.6
232	Architects, Designers, Planners and Surveyors	46	57	75	84	92	5.0	2.1
233	Engineering Professionals	25	35	41	46	49	5.1	1.8
234	Natural and Physical Science Professionals	235	273	388	436	474	5.1	2.0
241	School Teachers	11854	13610	14892	15643	16551	2.3	1.1
242	Tertiary Education Teachers	2482	2472	2886	3312	3853	1.5	2.9
249	Miscellaneous Education Professionals	1453	1886	2674	2867	3519	6.3	2.8
251	Health Diagnostic and Promotion Professionals	20	25	25	34	53	2.1	8.0
252	Health Therapy Professionals	147	208	211	224	234	3.6	1.0
253	Medical Practitioners	20	19	13	14	20	-4.7	4.5
254	Midwifery and Nursing Professionals	106	142	110	118	133	0.4	1.9
261	Business and Systems Analysts, and Programmers	90	95	131	162	195	3.9	4.0
262	Database and Systems Administrators, and ICT Security Specialists	111	150	143	154	166	2.5	1.5
263	ICT Network and Support Professionals	104	118	165	176	187	4.7	1.3
271	Legal Professionals	15	18	26	30	31	5.5	1.9
272	Social and Welfare Professionals	580	734	573	639	736	-0.1	2.5

**Table 14.44 Education and Training (P) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	168	197	186	202	220	1.0	1.7
312	Building and Engineering Technicians	37	50	50	59	67	3.1	2.9
313	ICT and Telecommunications Technicians	177	213	242	273	302	3.2	2.3
321	Automotive Electricians and Mechanics	0	0	0	0	0	0.0	0.0
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	6	8	5	6	7	-1.6	2.4
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	20	31	18	20	20	-0.8	0.8
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	3	3	3	3	4	1.0	2.4
341	Electricians	12	17	14	16	17	1.5	2.1
342	Electronics and Telecommunications Trades Workers	36	48	19	21	23	-6.0	1.7
351	Food Trades Workers	37	59	42	46	51	1.1	1.9
361	Animal Attendants and Trainers, and Shearers	20	33	41	55	97	7.2	9.1
362	Horticultural Trades Workers	117	132	117	122	132	0.0	1.2
391	Hairdressers	0	0	0	1	3	0.0	0.0
392	Printing Trades Workers	4	5	4	5	5	1.1	1.3
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	188	296	213	230	249	1.3	1.6
411	Health and Welfare Support Workers	126	183	158	173	205	2.3	2.6
421	Child Carers	819	1497	656	690	723	-2.2	1.0
422	Education Aides	2048	2688	3836	4096	4321	6.5	1.2
423	Personal Carers and Assistants	92	127	140	166	217	4.3	4.5
431	Hospitality Workers	36	59	37	39	39	0.3	0.6
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	16	27	40	45	46	9.9	1.5
451	Personal Service and Travel Workers	213	275	253	290	392	1.7	4.5
452	Sports and Fitness Workers	787	1307	1098	1155	1475	3.4	3.0
511	Contract, Program and Project Administrators	312	425	320	358	403	0.2	2.3
512	Office and Practice Managers	274	387	279	307	361	0.2	2.6
521	Personal Assistants and Secretaries	326	301	177	193	212	-5.9	1.8
531	General Clerks	804	1040	832	903	1005	0.3	1.9
532	Keyboard Operators	119	106	86	92	101	-3.2	1.7
541	Call or Contact Centre Information Clerks	99	134	118	139	158	1.8	3.0
542	Receptionists	329	374	246	269	310	-2.9	2.4
551	Accounting Clerks and Bookkeepers	568	692	470	497	542	-1.9	1.4
552	Financial and Insurance Clerks	0	0	0	0	0	0.0	0.0

**Table 14.44 Education and Training (P) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	55	52	24	28	32	-7.9	2.7
591	Logistics Clerks	12	16	12	15	16	-0.1	2.5
599	Miscellaneous Clerical and Administrative Workers	175	228	185	210	236	0.6	2.5
611	Insurance Agents and Sales Representatives	4	6	5	5	5	2.1	0.1
612	Real Estate Sales Agents	3	5	5	5	5	5.7	0.0
621	Sales Assistants and Salespersons	19	32	21	21	23	0.6	1.3
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	12	8	5	8	11	-7.6	8.0
711	Machine Operators	0	0	0	0	0	0.0	0.0
712	Stationary Plant Operators	0	0	0	0	0	0.0	0.0
721	Mobile Plant Operators	0	0	0	0	0	0.0	0.0
731	Automobile, Bus and Rail Drivers	42	82	72	72	74	5.5	0.4
732	Delivery Drivers	0	0	0	0	0	0.0	0.0
733	Truck Drivers	0	0	0	0	0	0.0	0.0
741	Storepersons	7	8	6	8	9	-0.6	3.1
811	Cleaners and Laundry Workers	246	268	147	156	169	-5.0	1.4
821	Construction and Mining Labourers	0	0	0	0	0	0.0	0.0
831	Food Process Workers	3	4	6	5	6	8.5	0.0
832	Packers and Product Assemblers	4	6	2	2	2	-9.4	1.4
839	Miscellaneous Factory Process Workers	0	0	0	0	0	0.0	0.0
841	Farm, Forestry and Garden Workers	29	25	16	20	30	-6.1	6.8
851	Food Preparation Assistants	52	75	49	51	52	-0.7	0.7
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	209	278	142	150	159	-3.8	1.2
	<b>Total</b>	<b>28606</b>	<b>35194</b>	<b>36452</b>	<b>39217</b>	<b>43466</b>	<b>2.5</b>	<b>1.8</b>

Source: NIEIR.

**Table 14.45 Health Care and Social Assistance (Q) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	184	274	348	402	468	6.6	3.0
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	36	58	89	118	153	9.5	5.6
132	Business Administration Managers	166	229	402	498	607	9.2	4.2
133	Construction, Distribution and Production Managers	23	43	56	66	71	9.5	2.3
134	Education, Health and Welfare Services Managers	798	908	1515	1744	1944	6.6	2.5
135	ICT Managers	10	20	27	42	56	11.0	7.3
139	Miscellaneous Specialist Managers	69	109	192	229	251	10.8	2.7
141	Accommodation and Hospitality Managers	44	60	56	62	68	2.4	2.1
142	Retail Managers	60	86	84	91	104	3.3	2.2
149	Miscellaneous Hospitality, Retail and Service Managers	93	141	165	199	230	5.9	3.4
211	Arts Professionals	15	21	69	70	77	16.9	1.1
212	Media Professionals	4	8	38	41	50	26.6	2.8
221	Accountants, Auditors and Company Secretaries	121	195	302	364	436	9.6	3.8
222	Financial Brokers and Dealers, and Investment Advisers	13	20	32	34	35	9.5	0.9
223	Human Resource and Training Professionals	183	187	282	338	383	4.4	3.1
224	Information and Organisation Professionals	129	198	397	493	566	11.9	3.6
225	Sales, Marketing and Public Relations Professionals	56	105	152	199	256	10.6	5.4
231	Air and Marine Transport Professionals	0	0	0	0	0	-16.4	4.2
232	Architects, Designers, Planners and Surveyors	16	18	39	50	57	9.2	3.9
233	Engineering Professionals	21	38	50	63	66	8.9	2.7
234	Natural and Physical Science Professionals	566	611	956	1228	1383	5.4	3.8
241	School Teachers	257	245	601	691	746	8.9	2.2
242	Tertiary Education Teachers	35	38	76	84	91	8.0	1.8
249	Miscellaneous Education Professionals	39	48	106	122	134	10.6	2.4
251	Health Diagnostic and Promotion Professionals	934	1270	1434	1752	1967	4.4	3.2
252	Health Therapy Professionals	1948	2513	3839	4614	5538	7.0	3.7
253	Medical Practitioners	2564	3283	3554	4484	5196	3.3	3.9
254	Midwifery and Nursing Professionals	7476	8907	11315	14318	16198	4.2	3.7
261	Business and Systems Analysts, and Programmers	23	37	67	94	118	11.4	5.8
262	Database and Systems Administrators, and ICT Security Specialists	14	26	49	77	93	13.1	6.7
263	ICT Network and Support Professionals	10	13	28	38	50	10.7	6.2
271	Legal Professionals	22	39	70	79	84	12.2	1.8
272	Social and Welfare Professionals	2335	2747	3515	4041	4623	4.2	2.8



**Table 14.45 Health Care and Social Assistance (Q) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	699	767	1078	1317	1464	4.4	3.1
312	Building and Engineering Technicians	10	20	27	30	32	10.0	1.7
313	ICT and Telecommunications Technicians	41	51	97	122	139	9.0	3.7
321	Automotive Electricians and Mechanics	0	0	0	0	0	0.0	0.0
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	11	15	14	17	17	2.6	1.7
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	0	0	0	0	0	0.0	0.0
332	Floor Finishers and Painting Trades Workers	0	0	0	1	1	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	2	3	3	3	4	5.3	2.2
341	Electricians	8	16	14	17	17	5.6	1.5
342	Electronics and Telecommunications Trades Workers	0	0	0	0	1	0.0	0.0
351	Food Trades Workers	267	360	453	516	568	5.4	2.3
361	Animal Attendants and Trainers, and Shearers	0	0	0	1	2	0.0	0.0
362	Horticultural Trades Workers	31	31	46	52	54	4.1	1.7
391	Hairdressers	0	0	0	0	1	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	119	194	227	258	298	6.7	2.8
411	Health and Welfare Support Workers	2362	3162	3754	4354	5013	4.7	2.9
421	Child Carers	2882	4482	4509	5244	5642	4.6	2.3
422	Education Aides	50	53	154	178	192	11.8	2.2
423	Personal Carers and Assistants	5896	7249	9101	10475	11660	4.4	2.5
431	Hospitality Workers	28	43	50	61	66	6.1	2.8
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	1	0.0	0.0
442	Prison and Security Officers	21	29	52	65	62	9.5	1.8
451	Personal Service and Travel Workers	165	248	246	282	336	4.1	3.2
452	Sports and Fitness Workers	30	52	56	65	73	6.6	2.7
511	Contract, Program and Project Administrators	186	253	281	339	393	4.2	3.4
512	Office and Practice Managers	616	883	1018	1172	1367	5.2	3.0
521	Personal Assistants and Secretaries	270	256	250	313	346	-0.7	3.3
531	General Clerks	602	751	964	1115	1237	4.8	2.5
532	Keyboard Operators	388	336	371	442	496	-0.4	3.0
541	Call or Contact Centre Information Clerks	110	150	177	221	265	4.8	4.1
542	Receptionists	2606	2940	2862	3362	3912	0.9	3.2
551	Accounting Clerks and Bookkeepers	375	435	518	620	729	3.3	3.5
552	Financial and Insurance Clerks	11	13	20	22	25	5.9	2.0

**Table 14.45 Health Care and Social Assistance (Q) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	307	290	167	222	261	-5.9	4.5
591	Logistics Clerks	38	63	69	88	101	6.2	3.9
599	Miscellaneous Clerical and Administrative Workers	69	94	122	147	165	5.9	3.0
611	Insurance Agents and Sales Representatives	10	13	10	14	19	0.4	6.2
612	Real Estate Sales Agents	12	17	25	28	34	8.2	2.9
621	Sales Assistants and Salespersons	102	170	144	165	191	3.5	2.9
631	Checkout Operators and Office Cashiers	9	10	6	10	13	-4.0	9.0
639	Miscellaneous Sales Support Workers	7	6	3	4	4	-9.1	4.5
711	Machine Operators	82	128	156	195	212	6.6	3.1
712	Stationary Plant Operators	0	0	0	0	0	0.0	0.0
721	Mobile Plant Operators	24	17	29	29	39	2.0	2.8
731	Automobile, Bus and Rail Drivers	19	28	34	33	35	5.6	0.5
732	Delivery Drivers	4	5	5	9	13	1.5	10.0
733	Truck Drivers	2	3	2	3	5	-1.7	9.0
741	Storepersons	61	88	99	124	132	4.9	3.0
811	Cleaners and Laundry Workers	650	642	574	664	735	-1.2	2.5
821	Construction and Mining Labourers	5	10	8	11	13	4.5	5.1
831	Food Process Workers	4	4	6	6	7	5.9	0.8
832	Packers and Product Assemblers	145	184	184	206	232	2.5	2.3
839	Miscellaneous Factory Process Workers	50	46	47	48	59	-0.5	2.2
841	Farm, Forestry and Garden Workers	14	10	10	9	10	-3.5	0.6
851	Food Preparation Assistants	644	794	787	928	1015	2.0	2.6
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	82	102	82	98	109	0.0	2.9
	<b>Total</b>	<b>38389</b>	<b>48010</b>	<b>58814</b>	<b>70436</b>	<b>79914</b>	<b>4.4</b>	<b>3.1</b>

Source: NIEIR.

**Table 14.46 Arts and Recreational Services (R) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	37	46	37	51	60	0.1	5.0
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	33	44	46	65	79	3.4	5.6
132	Business Administration Managers	15	22	34	50	64	8.9	6.4
133	Construction, Distribution and Production Managers	6	7	6	7	7	-0.1	2.7
134	Education, Health and Welfare Services Managers	11	11	15	19	20	3.1	2.7
135	ICT Managers	0	0	0	3	6	0.0	0.0
139	Miscellaneous Specialist Managers	42	70	97	137	179	8.8	6.3
141	Accommodation and Hospitality Managers	21	23	24	29	30	1.3	2.4
142	Retail Managers	52	50	86	54	64	5.2	-3.0
149	Miscellaneous Hospitality, Retail and Service Managers	267	378	391	473	510	3.9	2.7
211	Arts Professionals	733	811	904	928	980	2.1	0.8
212	Media Professionals	262	403	490	505	546	6.5	1.1
221	Accountants, Auditors and Company Secretaries	2	5	6	13	20	9.0	13.4
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	0	0	0.0	0.0
223	Human Resource and Training Professionals	28	25	28	36	42	0.3	4.2
224	Information and Organisation Professionals	10	19	27	41	57	10.3	7.7
225	Sales, Marketing and Public Relations Professionals	46	69	61	82	99	2.9	5.1
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	121	135	108	120	137	-1.2	2.4
233	Engineering Professionals	9	14	17	17	15	6.8	-1.2
234	Natural and Physical Science Professionals	33	35	57	71	121	5.5	7.9
241	School Teachers	2	2	5	7	8	8.7	4.3
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	32	37	58	69	86	6.0	4.0
251	Health Diagnostic and Promotion Professionals	0	0	0	2	5	0.0	0.0
252	Health Therapy Professionals	0	0	0	2	5	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	0	0	0	8	18	0.0	0.0
262	Database and Systems Administrators, and ICT Security Specialists	0	0	0	3	6	0.0	0.0
263	ICT Network and Support Professionals	0	0	0	1	2	0.0	0.0
271	Legal Professionals	0	0	0	1	1	0.0	0.0
272	Social and Welfare Professionals	16	18	11	13	14	-4.0	3.0

**Table 14.46 Arts and Recreational Services (R) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	0	0	0	0	0	0.0	0.0
313	ICT and Telecommunications Technicians	0	0	0	4	10	0.0	0.0
321	Automotive Electricians and Mechanics	12	19	16	17	15	3.0	-0.5
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	12	10	21	12	12	5.4	-5.7
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	5	6	3	3	3	-4.1	0.5
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	5	5	3	3	3	-5.6	2.5
342	Electronics and Telecommunications Trades Workers	3	7	4	5	6	1.9	3.6
351	Food Trades Workers	3	5	7	9	9	10.6	1.9
361	Animal Attendants and Trainers, and Shearers	33	39	53	73	86	4.8	5.0
362	Horticultural Trades Workers	173	190	241	310	395	3.4	5.1
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	23	27	13	14	15	-5.2	1.2
411	Health and Welfare Support Workers	3	3	2	6	9	-1.2	13.3
421	Child Carers	28	46	38	42	42	3.0	1.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	168	212	253	273	309	4.2	2.0
441	Defence Force Members, Fire Fighters and Police	5	8	12	15	32	8.7	10.6
442	Prison and Security Officers	6	8	14	18	24	10.0	5.1
451	Personal Service and Travel Workers	31	25	23	28	40	-2.8	5.5
452	Sports and Fitness Workers	878	1467	1415	1730	1855	4.9	2.7
511	Contract, Program and Project Administrators	17	21	18	26	32	0.4	6.1
512	Office and Practice Managers	32	40	46	57	62	3.6	3.1
521	Personal Assistants and Secretaries	8	6	4	8	11	-6.4	10.3
531	General Clerks	75	83	93	120	134	2.1	3.7
532	Keyboard Operators	6	8	10	11	12	4.3	1.8
541	Call or Contact Centre Information Clerks	43	45	51	69	82	1.7	4.9
542	Receptionists	120	124	125	154	166	0.4	2.8
551	Accounting Clerks and Bookkeepers	51	54	56	71	80	0.9	3.7
552	Financial and Insurance Clerks	0	0	0	0	0	0.0	0.0

**Table 14.46 Arts and Recreational Services (R) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	81	72	118	72	80	3.8	-3.8
591	Logistics Clerks	32	26	30	38	53	-0.5	5.8
599	Miscellaneous Clerical and Administrative Workers	0	0	0	2	4	0.0	0.0
611	Insurance Agents and Sales Representatives	14	14	10	17	22	-2.9	7.9
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	135	176	184	175	199	3.2	0.8
631	Checkout Operators and Office Cashiers	27	27	14	17	19	-6.1	3.1
639	Miscellaneous Sales Support Workers	0	0	0	5	10	0.0	0.0
711	Machine Operators	13	17	25	30	32	7.1	2.6
712	Stationary Plant Operators	0	0	0	0	0	0.0	0.0
721	Mobile Plant Operators	0	0	0	0	0	0.0	0.0
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	0	0	0	0	0	0.0	0.0
733	Truck Drivers	1	2	2	2	2	11.8	1.2
741	Storepersons	1	2	3	3	3	12.7	0.2
811	Cleaners and Laundry Workers	33	32	39	38	39	1.9	-0.1
821	Construction and Mining Labourers	11	11	6	8	12	-5.8	7.0
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	0	0	0	0	0	0.0	0.0
839	Miscellaneous Factory Process Workers	0	0	0	0	0	0.0	0.0
841	Farm, Forestry and Garden Workers	92	68	59	81	120	-4.3	7.3
851	Food Preparation Assistants	15	21	49	36	36	12.3	-2.9
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	79	84	114	112	153	3.7	3.0
	<b>Total</b>	<b>4050</b>	<b>5233</b>	<b>5681</b>	<b>6520</b>	<b>7410</b>	<b>3.4</b>	<b>2.7</b>

Source: NIEIR.

**Table 14.47 Other Services (S) place-of-work employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	107	133	158	181	201	3.9	2.5
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	43	54	73	96	121	5.4	5.3
132	Business Administration Managers	58	69	122	153	182	7.7	4.1
133	Construction, Distribution and Production Managers	40	54	79	83	82	7.0	0.4
134	Education, Health and Welfare Services Managers	0	0	0	6	13	0.0	0.0
135	ICT Managers	1	3	2	6	10	6.7	16.1
139	Miscellaneous Specialist Managers	24	33	51	57	58	7.9	1.4
141	Accommodation and Hospitality Managers	0	0	0	1	2	0.0	0.0
142	Retail Managers	263	286	314	339	348	1.8	1.0
149	Miscellaneous Hospitality, Retail and Service Managers	238	287	368	403	430	4.5	1.6
211	Arts Professionals	2	4	9	13	17	15.6	5.9
212	Media Professionals	0	0	0	6	15	0.0	0.0
221	Accountants, Auditors and Company Secretaries	56	74	109	126	139	6.9	2.5
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	2	4	0.0	0.0
223	Human Resource and Training Professionals	27	25	31	72	117	1.2	14.3
224	Information and Organisation Professionals	17	25	43	71	101	9.5	8.9
225	Sales, Marketing and Public Relations Professionals	25	40	58	83	109	8.8	6.5
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	24	33	53	63	67	8.2	2.4
233	Engineering Professionals	52	71	151	155	157	11.2	0.3
234	Natural and Physical Science Professionals	17	20	34	39	47	7.4	3.1
241	School Teachers	8	6	8	8	8	0.1	0.7
242	Tertiary Education Teachers	24	22	38	44	48	4.6	2.3
249	Miscellaneous Education Professionals	7	8	13	20	27	6.8	7.7
251	Health Diagnostic and Promotion Professionals	14	19	17	25	33	1.7	6.8
252	Health Therapy Professionals	10	10	13	14	13	2.5	-0.5
253	Medical Practitioners	7	5	5	6	7	-3.0	4.3
254	Midwifery and Nursing Professionals	24	19	20	29	37	-1.4	6.0
261	Business and Systems Analysts, and Programmers	7	8	18	25	31	9.8	5.5
262	Database and Systems Administrators, and ICT Security Specialists	12	9	9	15	22	-2.6	8.9
263	ICT Network and Support Professionals	4	4	11	14	18	10.5	5.0
271	Legal Professionals	0	0	0	7	15	0.0	0.0
272	Social and Welfare Professionals	365	380	388	481	563	0.6	3.8



**Table 14.47 Other Services (S) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	8	5	7	9	8	-1.1	1.3
312	Building and Engineering Technicians	19	21	38	41	39	7.4	0.3
313	ICT and Telecommunications Technicians	31	30	72	79	82	8.9	1.3
321	Automotive Electricians and Mechanics	2142	2312	2387	2459	2385	1.1	0.0
322	Fabrication Engineering Trades Workers	31	34	31	36	34	0.2	0.8
323	Mechanical Engineering Trades Workers	399	373	480	501	500	1.9	0.4
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	1045	1095	1301	1360	1300	2.2	0.0
331	Bricklayers, and Carpenters and Joiners	20	23	20	27	31	0.3	4.5
332	Floor Finishers and Painting Trades Workers	2	4	4	5	7	4.3	7.4
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	70	94	126	126	122	6.1	-0.4
341	Electricians	144	155	248	247	237	5.6	-0.5
342	Electronics and Telecommunications Trades Workers	441	441	472	470	459	0.7	-0.3
351	Food Trades Workers	6	7	7	10	12	1.2	5.5
361	Animal Attendants and Trainers, and Shearers	237	326	420	491	571	5.9	3.1
362	Horticultural Trades Workers	37	42	60	63	60	4.9	0.0
391	Hairdressers	1372	1768	1740	2104	2405	2.4	3.3
392	Printing Trades Workers	0	0	0	0	1	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	114	117	189	184	177	5.2	-0.7
394	Wood Trades Workers	26	35	49	45	44	6.4	-1.0
399	Miscellaneous Technicians and Trades Workers	84	109	148	165	168	5.8	1.3
411	Health and Welfare Support Workers	70	78	81	101	117	1.4	3.7
421	Child Carers	123	264	379	479	416	11.9	0.9
422	Education Aides	0	0	0	1	3	0.0	0.0
423	Personal Carers and Assistants	84	76	88	99	104	0.5	1.7
431	Hospitality Workers	8	9	8	11	14	0.6	5.9
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	5	7	11	15	14	8.2	2.5
451	Personal Service and Travel Workers	989	1219	1084	1287	1445	0.9	2.9
452	Sports and Fitness Workers	325	478	425	505	571	2.7	3.0
511	Contract, Program and Project Administrators	30	37	40	53	67	2.9	5.3
512	Office and Practice Managers	186	203	283	300	311	4.3	1.0
521	Personal Assistants and Secretaries	134	105	102	116	130	-2.7	2.5
531	General Clerks	184	185	270	303	331	3.9	2.1
532	Keyboard Operators	49	38	44	54	60	-1.1	3.2
541	Call or Contact Centre Information Clerks	75	81	129	138	145	5.6	1.1
542	Receptionists	202	182	205	226	240	0.2	1.6
551	Accounting Clerks and Bookkeepers	358	318	478	491	510	3.0	0.6
552	Financial and Insurance Clerks	0	0	0	1	2	0.0	0.0

**Table 14.47 Other Services (S) place-of-work employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	21	30	27	35	39	2.4	3.8
591	Logistics Clerks	40	47	61	66	66	4.4	0.8
599	Miscellaneous Clerical and Administrative Workers	13	16	22	28	32	5.4	3.9
611	Insurance Agents and Sales Representatives	57	54	54	56	55	-0.5	0.2
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	97	128	138	155	159	3.6	1.4
631	Checkout Operators and Office Cashiers	4	7	7	9	10	4.3	3.4
639	Miscellaneous Sales Support Workers	4	7	2	4	6	-5.6	9.3
711	Machine Operators	33	41	60	62	63	6.2	0.5
712	Stationary Plant Operators	32	21	29	28	26	-1.2	-0.9
721	Mobile Plant Operators	6	5	7	8	8	2.3	0.7
731	Automobile, Bus and Rail Drivers	36	67	93	104	103	10.0	1.1
732	Delivery Drivers	58	66	95	100	100	5.1	0.5
733	Truck Drivers	18	25	23	25	25	2.4	1.1
741	Storepersons	36	52	70	78	75	6.9	0.7
811	Cleaners and Laundry Workers	945	796	827	882	891	-1.3	0.7
821	Construction and Mining Labourers	43	48	50	54	54	1.5	0.8
831	Food Process Workers	5	6	4	6	8	-2.2	7.4
832	Packers and Product Assemblers	84	85	79	82	81	-0.7	0.3
839	Miscellaneous Factory Process Workers	31	33	33	34	33	0.7	0.0
841	Farm, Forestry and Garden Workers	0	0	0	0	1	0.0	0.0
851	Food Preparation Assistants	10	7	8	10	12	-2.2	3.7
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	325	321	395	423	428	2.0	0.8
	<b>Total</b>	<b>12425</b>	<b>13831</b>	<b>15709</b>	<b>17495</b>	<b>18442</b>	<b>2.4</b>	<b>1.6</b>

Source: NIEIR.

### 14.3.3 Melbourne's North – Resident employment occupation minor group by industry division

The following tables contain a detailed set of occupation forecasts for Melbourne's North by industry division on a resident basis.

**Table 14.48 Agriculture, Forestry and Fishing (A) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	26	44	36	35	48	3.1	3.0
121	Farmers and Farm Managers	676	662	918	996	1345	3.1	3.9
131	Advertising, Public Relations and Sales Managers	16	57	12	43	67	-2.5	18.4
132	Business Administration Managers	22	35	39	40	57	6.0	3.9
133	Construction, Distribution and Production Managers	22	44	38	39	57	5.7	4.2
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	1	11	3	5	9	8.9	11.2
139	Miscellaneous Specialist Managers	15	23	20	22	34	3.2	5.2
141	Accommodation and Hospitality Managers	0	0	0	0	0	0.0	0.0
142	Retail Managers	14	24	16	15	19	0.9	1.7
149	Miscellaneous Hospitality, Retail and Service Managers	13	21	9	8	13	-3.2	3.8
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	0	0	0	0	0	0.0	0.0
221	Accountants, Auditors and Company Secretaries	9	16	21	21	30	8.6	3.5
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	0	0	0.0	0.0
223	Human Resource and Training Professionals	0	0	0	0	0	0.0	0.0
224	Information and Organisation Professionals	15	32	36	36	46	8.9	2.5
225	Sales, Marketing and Public Relations Professionals	3	4	7	7	10	9.1	3.5
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	1	4	1	1	2	1.8	11.2
233	Engineering Professionals	1	7	2	3	6	3.6	11.2
234	Natural and Physical Science Professionals	30	51	27	36	58	-0.8	7.8
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	0	0	0	0	0	0.0	0.0
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	5	9	1	2	4	-18.9	21.2
262	Database and Systems Administrators, and ICT Security Specialists	0	0	0	0	0	0.0	0.0
263	ICT Network and Support Professionals	0	0	0	0	0	0.0	0.0
271	Legal Professionals	0	0	0	0	0	0.0	0.0
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0

**Table 14.48 Agriculture, Forestry and Fishing (A) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	5	12	7	10	16	2.6	8.8
312	Building and Engineering Technicians	0	0	0	0	0	0.0	0.0
313	ICT and Telecommunications Technicians	0	0	0	0	0	0.0	0.0
321	Automotive Electricians and Mechanics	0	0	0	0	0	0.0	0.0
322	Fabrication Engineering Trades Workers	13	30	10	11	18	-3.3	6.2
323	Mechanical Engineering Trades Workers	9	13	8	8	9	-0.7	0.2
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	0	0	0	0	0	0.0	0.0
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	0	0	0	0	0	0.0	0.0
342	Electronics and Telecommunications Trades Workers	0	0	0	0	0	0.0	0.0
351	Food Trades Workers	4	7	0	1	1	-28.2	21.3
361	Animal Attendants and Trainers, and Shearers	25	40	40	43	51	4.9	2.3
362	Horticultural Trades Workers	131	178	174	178	257	2.8	4.0
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	0	0	0	0	0	0.0	0.0
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	6	10	0	1	1	-29.5	21.2
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	3	9	12	12	18	13.2	4.7
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	0	0	0	0	0	0.0	0.0
512	Office and Practice Managers	22	31	31	29	34	3.5	1.0
521	Personal Assistants and Secretaries	2	6	1	2	4	-3.4	11.2
531	General Clerks	14	21	23	20	23	5.2	0.0
532	Keyboard Operators	0	0	0	0	0	0.0	0.0
541	Call or Contact Centre Information Clerks	3	4	6	6	9	6.3	3.0
542	Receptionists	0	0	0	0	0	0.0	0.0
551	Accounting Clerks and Bookkeepers	63	81	58	58	75	-0.8	2.6
552	Financial and Insurance Clerks	0	0	0	0	0	0.0	0.0

**Table 14.48 Agriculture, Forestry and Fishing (A) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	0	0	0	0	0	0.0	0.0
591	Logistics Clerks	13	28	18	19	29	3.3	4.9
599	Miscellaneous Clerical and Administrative Workers	0	0	0	0	0	0.0	0.0
611	Insurance Agents and Sales Representatives	8	15	9	9	14	0.8	4.6
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	17	32	21	20	26	2.3	2.1
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	0	0	0	0	0	0.0	0.0
711	Machine Operators	23	44	18	52	47	-2.2	9.9
712	Stationary Plant Operators	2	3	5	5	7	11.6	3.0
721	Mobile Plant Operators	69	103	94	94	129	3.2	3.2
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	0	0	0	0	0	0.0	0.0
733	Truck Drivers	20	44	39	37	47	6.6	2.0
741	Storepersons	17	46	38	40	56	8.2	4.1
811	Cleaners and Laundry Workers	8	15	12	11	14	3.4	2.2
821	Construction and Mining Labourers	0	0	0	0	0	0.0	0.0
831	Food Process Workers	51	89	60	63	88	1.6	4.0
832	Packers and Product Assemblers	35	78	49	49	70	3.3	3.7
839	Miscellaneous Factory Process Workers	0	0	0	0	0	0.0	0.0
841	Farm, Forestry and Garden Workers	524	702	465	474	653	-1.2	3.5
851	Food Preparation Assistants	0	0	0	0	0	0.0	0.0
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	7	10	12	11	14	6.5	1.0
	<b>Total</b>	<b>1964</b>	<b>2697</b>	<b>2395</b>	<b>2574</b>	<b>3514</b>	<b>2.0</b>	<b>3.9</b>

Source: NIEIR.

**Table 14.49 Mining (B) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	52	35	9	79	75	-16.3	24.1
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	10	8	12	64	68	1.8	18.8
132	Business Administration Managers	21	34	17	8	17	-1.8	-0.4
133	Construction, Distribution and Production Managers	77	84	59	318	306	-2.8	18.0
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	8	9	4	1	3	-7.6	-2.2
139	Miscellaneous Specialist Managers	13	16	15	53	59	1.5	14.6
141	Accommodation and Hospitality Managers	0	0	0	0	0	0.0	0.0
142	Retail Managers	0	0	0	0	0	0.0	0.0
149	Miscellaneous Hospitality, Retail and Service Managers	40	27	4	38	35	-20.3	23.8
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	0	0	0	0	0	0.0	0.0
221	Accountants, Auditors and Company Secretaries	54	43	27	24	31	-6.5	1.3
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	0	0	0.0	0.0
223	Human Resource and Training Professionals	26	30	10	-4	4	-9.1	-9.5
224	Information and Organisation Professionals	18	17	11	9	12	-4.8	0.9
225	Sales, Marketing and Public Relations Professionals	6	6	3	1	2	-6.7	-2.5
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	0	0	0	0	0	0.0	0.0
233	Engineering Professionals	87	68	51	48	61	-5.1	1.9
234	Natural and Physical Science Professionals	278	225	66	331	323	-13.4	17.2
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	26	12	11	13	13	-8.2	1.8
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	4	6	3	9	13	-2.6	16.1
262	Database and Systems Administrators, and ICT Security Specialists	8	5	3	1	2	-9.3	-2.3
263	ICT Network and Support Professionals	0	0	0	0	0	0.0	0.0
271	Legal Professionals	0	0	0	0	0	0.0	0.0
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0



**Table 14.49 Mining (B) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	15	12	10	27	28	-4.1	11.2
313	ICT and Telecommunications Technicians	15	9	4	1	3	-12.4	-2.5
321	Automotive Electricians and Mechanics	2	4	1	2	3	-12.3	16.1
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	96	56	13	150	158	-18.1	28.2
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	0	0	0	0	0	0.0	0.0
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	3	2	1	2	3	-15.8	16.1
342	Electronics and Telecommunications Trades Workers	0	0	0	0	0	0.0	0.0
351	Food Trades Workers	0	0	0	0	0	0.0	0.0
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	0	0	0	0	0	0.0	0.0
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	45	43	23	56	60	-6.4	10.0
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	0	0	0	0	0	0.0	0.0
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	0	0	0	0	0	0.0	0.0
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	8	7	3	1	2	-10.8	-2.1
512	Office and Practice Managers	0	0	0	0	0	0.0	0.0
521	Personal Assistants and Secretaries	20	15	4	0	2	-15.0	-5.8
531	General Clerks	10	7	5	44	38	-5.4	21.4
532	Keyboard Operators	0	0	0	0	0	0.0	0.0
541	Call or Contact Centre Information Clerks	5	6	1	4	6	-11.8	16.1
542	Receptionists	0	0	0	0	0	0.0	0.0
551	Accounting Clerks and Bookkeepers	11	4	3	4	4	-10.8	1.5
552	Financial and Insurance Clerks	0	0	0	0	0	0.0	0.0

**Table 14.49 Mining (B) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	11	7	3	4	6	-12.8	6.8
591	Logistics Clerks	11	15	6	0	3	-6.0	-5.1
599	Miscellaneous Clerical and Administrative Workers	0	0	0	0	0	0.0	0.0
611	Insurance Agents and Sales Representatives	0	0	0	0	0	0.0	0.0
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	31	14	6	8	10	-15.3	6.0
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	0	0	0	0	0	0.0	0.0
711	Machine Operators	7	9	6	30	32	-1.6	18.7
712	Stationary Plant Operators	152	119	72	279	299	-7.2	15.4
721	Mobile Plant Operators	49	47	27	217	204	-5.7	22.3
731	Automobile, Bus and Rail Drivers	3	7	2	6	10	-2.2	16.1
732	Delivery Drivers	0	0	0	0	0	0.0	0.0
733	Truck Drivers	63	62	33	319	309	-6.2	25.0
741	Storepersons	0	0	0	0	0	0.0	0.0
811	Cleaners and Laundry Workers	7	10	2	-1	0	-13.6	0.0
821	Construction and Mining Labourers	7	6	4	18	20	-5.9	18.7
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	0	0	0	0	0	0.0	0.0
839	Miscellaneous Factory Process Workers	0	0	0	0	0	0.0	0.0
841	Farm, Forestry and Garden Workers	0	0	0	0	0	0.0	0.0
851	Food Preparation Assistants	0	0	0	0	0	0.0	0.0
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	0	0	0	0	0	0.0	0.0
	<b>Total</b>	<b>1297</b>	<b>1084</b>	<b>533</b>	<b>2162</b>	<b>2227</b>	<b>-8.5</b>	<b>15.4</b>

Source: NIEIR.

**Table 14.50 Manufacturing (C) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	545	494	492	444	423	-1.0	-1.5
121	Farmers and Farm Managers	40	31	93	130	142	8.9	4.3
131	Advertising, Public Relations and Sales Managers	787	647	810	764	752	0.3	-0.7
132	Business Administration Managers	609	539	779	729	729	2.5	-0.7
133	Construction, Distribution and Production Managers	3499	3291	4125	3785	3646	1.7	-1.2
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	87	102	113	104	103	2.7	-0.9
139	Miscellaneous Specialist Managers	353	363	522	512	527	4.0	0.1
141	Accommodation and Hospitality Managers	34	38	32	34	37	-0.6	1.4
142	Retail Managers	283	271	301	295	303	0.6	0.0
149	Miscellaneous Hospitality, Retail and Service Managers	342	305	355	330	317	0.4	-1.1
211	Arts Professionals	49	39	77	68	60	4.7	-2.4
212	Media Professionals	11	14	24	23	24	8.2	0.1
221	Accountants, Auditors and Company Secretaries	564	501	594	565	565	0.5	-0.5
222	Financial Brokers and Dealers, and Investment Advisers	9	10	12	12	13	2.5	1.0
223	Human Resource and Training Professionals	136	91	111	103	102	-2.0	-0.9
224	Information and Organisation Professionals	249	238	429	415	418	5.6	-0.2
225	Sales, Marketing and Public Relations Professionals	581	625	774	733	737	2.9	-0.5
231	Air and Marine Transport Professionals	8	9	6	6	6	-2.5	-1.2
232	Architects, Designers, Planners and Surveyors	829	694	1046	903	843	2.4	-2.1
233	Engineering Professionals	1468	1313	1730	1537	1484	1.7	-1.5
234	Natural and Physical Science Professionals	419	375	615	656	732	3.9	1.8
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	4	4	6	6	8	3.3	2.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	139	159	167	180	204	1.9	2.0
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	293	241	401	369	360	3.2	-1.1
262	Database and Systems Administrators, and ICT Security Specialists	47	42	61	57	58	2.7	-0.4
263	ICT Network and Support Professionals	77	57	108	99	94	3.5	-1.4
271	Legal Professionals	17	20	27	24	22	4.4	-1.9
272	Social and Welfare Professionals	10	8	5	5	5	-5.9	-0.3

**Table 14.50 Manufacturing (C) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	234	192	300	301	323	2.5	0.7
312	Building and Engineering Technicians	434	357	463	428	409	0.6	-1.2
313	ICT and Telecommunications Technicians	57	44	64	59	57	1.2	-1.1
321	Automotive Electricians and Mechanics	258	231	150	128	121	-5.2	-2.2
322	Fabrication Engineering Trades Workers	1714	1890	1554	1591	1527	-1.0	-0.2
323	Mechanical Engineering Trades Workers	2169	1653	1623	1456	1376	-2.9	-1.6
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	458	375	331	282	256	-3.2	-2.5
331	Bricklayers, and Carpenters and Joiners	890	641	844	756	686	-0.5	-2.0
332	Floor Finishers and Painting Trades Workers	32	22	23	20	18	-3.5	-2.0
333	Glaziers, Plasterers and Tilers	104	62	59	53	46	-5.6	-2.5
334	Plumbers	37	31	35	32	32	-0.7	-1.0
341	Electricians	395	370	411	364	352	0.4	-1.5
342	Electronics and Telecommunications Trades Workers	109	105	67	61	60	-4.7	-1.1
351	Food Trades Workers	899	1034	1127	1184	1257	2.3	1.1
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	0	0	0	0	0	0.0	0.0
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	1387	930	1123	974	859	-2.1	-2.7
393	Textile, Clothing and Footwear Trades Workers	753	548	568	449	418	-2.8	-3.0
394	Wood Trades Workers	1846	1645	1780	1579	1524	-0.4	-1.5
399	Miscellaneous Technicians and Trades Workers	375	389	525	467	476	3.4	-1.0
411	Health and Welfare Support Workers	191	166	126	109	109	-4.1	-1.5
421	Child Carers	10	6	5	4	4	-6.2	-3.3
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	187	226	220	238	254	1.6	1.5
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	67	56	79	73	67	1.6	-1.5
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	331	318	305	281	270	-0.8	-1.2
512	Office and Practice Managers	587	461	523	484	460	-1.1	-1.3
521	Personal Assistants and Secretaries	213	124	121	114	114	-5.5	-0.6
531	General Clerks	691	544	636	586	555	-0.8	-1.3
532	Keyboard Operators	196	142	189	175	168	-0.3	-1.2
541	Call or Contact Centre Information Clerks	218	154	200	189	182	-0.8	-1.0
542	Receptionists	302	214	218	199	191	-3.2	-1.3
551	Accounting Clerks and Bookkeepers	1518	1098	1174	1096	1044	-2.5	-1.2
552	Financial and Insurance Clerks	30	17	20	17	17	-3.9	-1.8

**Table 14.50 Manufacturing (C) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	46	33	27	25	24	-5.3	-1.1
591	Logistics Clerks	1256	1177	1266	1179	1148	0.1	-1.0
599	Miscellaneous Clerical and Administrative Workers	58	47	56	51	47	-0.2	-1.8
611	Insurance Agents and Sales Representatives	1106	959	728	704	683	-4.1	-0.6
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	1259	1353	1123	1103	1123	-1.1	0.0
631	Checkout Operators and Office Cashiers	47	66	48	51	54	0.4	1.0
639	Miscellaneous Sales Support Workers	69	83	70	72	75	0.2	0.7
711	Machine Operators	2588	2199	2491	2097	1881	-0.4	-2.8
712	Stationary Plant Operators	852	661	767	709	635	-1.0	-1.9
721	Mobile Plant Operators	1169	995	994	921	863	-1.6	-1.4
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	112	143	229	234	244	7.4	0.6
733	Truck Drivers	401	482	538	501	451	3.0	-1.8
741	Storepersons	1063	1098	1231	1132	1086	1.5	-1.2
811	Cleaners and Laundry Workers	344	241	245	236	235	-3.3	-0.4
821	Construction and Mining Labourers	197	130	140	125	112	-3.4	-2.2
831	Food Process Workers	1630	1632	1645	1760	1874	0.1	1.3
832	Packers and Product Assemblers	3004	2942	2407	2252	2207	-2.2	-0.9
839	Miscellaneous Factory Process Workers	1430	1311	1072	970	903	-2.8	-1.7
841	Farm, Forestry and Garden Workers	35	27	19	23	25	-5.9	2.9
851	Food Preparation Assistants	184	200	192	202	214	0.4	1.1
891	Freight Handlers and Shelf Fillers	18	21	25	25	26	3.0	0.6
899	Miscellaneous Labourers	360	300	343	299	268	-0.5	-2.4
	<b>Total</b>	<b>45406</b>	<b>40665</b>	<b>44334</b>	<b>41310</b>	<b>40124</b>	<b>-0.2</b>	<b>-1.0</b>

Source: NIEIR.

**Table 14.51 Electricity, Gas, Water and Waste Services (D) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	26	33	19	31	37	-3.2	6.9
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	70	88	72	105	120	0.3	5.2
132	Business Administration Managers	94	126	116	171	207	2.1	6.0
133	Construction, Distribution and Production Managers	113	137	118	143	168	0.4	3.6
134	Education, Health and Welfare Services Managers	3	4	3	3	4	-2.6	4.7
135	ICT Managers	47	76	60	76	88	2.3	4.0
139	Miscellaneous Specialist Managers	60	85	75	108	126	2.3	5.3
141	Accommodation and Hospitality Managers	0	0	0	0	0	0.0	0.0
142	Retail Managers	0	0	0	0	0	0.0	0.0
149	Miscellaneous Hospitality, Retail and Service Managers	92	124	81	126	153	-1.3	6.6
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	0	0	0	0	0	0.0	0.0
221	Accountants, Auditors and Company Secretaries	76	104	90	125	142	1.7	4.7
222	Financial Brokers and Dealers, and Investment Advisers	18	26	24	32	36	2.9	4.0
223	Human Resource and Training Professionals	36	36	30	43	49	-1.7	5.1
224	Information and Organisation Professionals	168	231	297	393	454	5.9	4.3
225	Sales, Marketing and Public Relations Professionals	53	70	52	71	84	-0.1	4.8
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	34	48	55	69	81	5.0	3.9
233	Engineering Professionals	220	284	252	323	388	1.4	4.4
234	Natural and Physical Science Professionals	46	45	49	61	74	0.7	4.3
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	25	37	29	38	47	1.4	5.0
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	103	121	155	213	240	4.2	4.4
262	Database and Systems Administrators, and ICT Security Specialists	14	17	18	24	27	2.5	4.2
263	ICT Network and Support Professionals	39	45	85	113	127	8.1	4.0
271	Legal Professionals	17	25	31	41	46	5.9	4.1
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0



**Table 14.51 Electricity, Gas, Water and Waste Services (D) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	12	14	11	16	22	-1.1	7.2
312	Building and Engineering Technicians	114	141	101	129	152	-1.3	4.2
313	ICT and Telecommunications Technicians	25	29	45	60	69	5.8	4.5
321	Automotive Electricians and Mechanics	12	20	10	14	17	-2.2	5.4
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	29	31	23	23	32	-2.3	3.2
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	0	0	0	0	0	0.0	0.0
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	123	100	103	94	113	-1.7	0.9
341	Electricians	133	209	138	205	232	0.4	5.3
342	Electronics and Telecommunications Trades Workers	139	194	89	137	157	-4.3	5.8
351	Food Trades Workers	0	0	0	0	0	0.0	0.0
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	19	17	17	26	31	-1.0	5.9
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	20	36	28	41	45	3.5	5.0
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	0	0	0	0	0	0.0	0.0
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	4	5	7	9	11	5.2	3.8
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	88	126	81	113	130	-0.9	4.9
512	Office and Practice Managers	29	36	21	32	37	-3.1	5.9
521	Personal Assistants and Secretaries	28	24	11	17	19	-9.0	5.8
531	General Clerks	159	167	197	232	268	2.2	3.1
532	Keyboard Operators	62	62	36	56	66	-5.3	6.2
541	Call or Contact Centre Information Clerks	467	472	382	529	615	-2.0	4.9
542	Receptionists	12	11	6	9	10	-6.5	5.2
551	Accounting Clerks and Bookkeepers	138	155	114	160	186	-1.9	5.0
552	Financial and Insurance Clerks	16	20	17	23	25	0.8	3.8

**Table 14.51 Electricity, Gas, Water and Waste Services (D) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	53	41	38	39	40	-3.2	0.7
591	Logistics Clerks	51	71	47	67	82	-0.7	5.6
599	Miscellaneous Clerical and Administrative Workers	53	58	63	70	76	1.8	1.9
611	Insurance Agents and Sales Representatives	93	122	56	83	96	-5.0	5.5
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	63	107	54	78	88	-1.5	5.0
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	37	63	38	52	58	0.2	4.4
711	Machine Operators	45	50	27	40	49	-4.9	6.1
712	Stationary Plant Operators	91	90	56	71	94	-4.7	5.3
721	Mobile Plant Operators	72	80	40	60	72	-5.6	6.0
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	30	40	36	38	54	1.9	4.0
733	Truck Drivers	330	579	483	587	698	3.9	3.8
741	Storepersons	51	44	31	30	33	-5.0	0.7
811	Cleaners and Laundry Workers	30	31	16	22	27	-6.1	5.5
821	Construction and Mining Labourers	77	78	48	62	88	-4.5	6.1
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	0	0	0	0	0	0.0	0.0
839	Miscellaneous Factory Process Workers	43	54	20	32	39	-7.2	6.8
841	Farm, Forestry and Garden Workers	22	26	10	15	18	-7.5	6.0
851	Food Preparation Assistants	0	0	0	0	0	0.0	0.0
891	Freight Handlers and Shelf Fillers	8	13	7	10	12	-2.3	6.2
899	Miscellaneous Labourers	78	97	50	78	96	-4.4	6.8
	<b>Total</b>	<b>4211</b>	<b>5277</b>	<b>4268</b>	<b>5667</b>	<b>6655</b>	<b>0.1</b>	<b>4.5</b>

Source: NIEIR.

**Table 14.52 Construction (E) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	239	308	370	343	374	4.5	0.1
121	Farmers and Farm Managers	9	7	7	6	8	-2.8	1.1
131	Advertising, Public Relations and Sales Managers	162	199	261	247	254	4.9	-0.2
132	Business Administration Managers	178	205	412	366	386	8.8	-0.6
133	Construction, Distribution and Production Managers	2359	3142	4543	3994	4201	6.8	-0.8
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	7	19	26	26	23	14.1	-1.2
139	Miscellaneous Specialist Managers	54	72	134	122	132	9.6	-0.2
141	Accommodation and Hospitality Managers	8	8	10	9	12	3.0	1.5
142	Retail Managers	33	55	51	49	50	4.5	-0.2
149	Miscellaneous Hospitality, Retail and Service Managers	246	326	404	376	407	5.1	0.1
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	2	2	3	3	3	3.1	0.4
221	Accountants, Auditors and Company Secretaries	172	248	376	345	338	8.2	-1.1
222	Financial Brokers and Dealers, and Investment Advisers	9	7	10	9	10	0.9	0.2
223	Human Resource and Training Professionals	31	21	39	31	33	2.4	-1.7
224	Information and Organisation Professionals	87	99	197	175	175	8.6	-1.2
225	Sales, Marketing and Public Relations Professionals	65	110	149	143	149	8.6	0.0
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	181	203	340	302	308	6.5	-1.0
233	Engineering Professionals	445	547	1021	882	892	8.7	-1.3
234	Natural and Physical Science Professionals	0	0	0	0	0	0.0	0.0
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	98	143	213	193	197	8.0	-0.8
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	22	16	29	25	27	2.8	-0.7
262	Database and Systems Administrators, and ICT Security Specialists	20	42	66	66	71	12.7	0.7
263	ICT Network and Support Professionals	6	12	36	37	34	19.5	-0.7
271	Legal Professionals	0	0	0	0	0	0.0	0.0
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0

**Table 14.52 Construction (E) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	1423	1646	2640	2308	2424	6.4	-0.9
313	ICT and Telecommunications Technicians	10	10	20	16	17	7.6	-2.0
321	Automotive Electricians and Mechanics	30	48	47	43	52	4.4	1.0
322	Fabrication Engineering Trades Workers	297	548	548	508	542	6.3	-0.1
323	Mechanical Engineering Trades Workers	149	166	223	207	223	4.1	0.0
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	38	40	28	26	32	-2.8	1.1
331	Bricklayers, and Carpenters and Joiners	6119	6906	7992	7300	7804	2.7	-0.2
332	Floor Finishers and Painting Trades Workers	2328	2566	2547	2461	2617	0.9	0.3
333	Glaziers, Plasterers and Tilers	2902	2590	2478	2356	2521	-1.6	0.2
334	Plumbers	3758	4287	4366	4165	4562	1.5	0.4
341	Electricians	3874	4888	5364	5158	5540	3.3	0.3
342	Electronics and Telecommunications Trades Workers	705	895	784	766	796	1.1	0.1
351	Food Trades Workers	8	8	14	12	19	6.3	2.8
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	1147	1048	1530	1504	1586	2.9	0.4
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	16	16	17	17	17	0.6	0.1
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	187	270	275	264	270	3.9	-0.2
399	Miscellaneous Technicians and Trades Workers	69	112	150	148	153	8.1	0.2
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	20	20	33	28	41	5.4	2.1
441	Defence Force Members, Fire Fighters and Police	3	4	13	11	18	17.0	2.8
442	Prison and Security Officers	22	40	61	57	54	10.5	-1.1
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	401	549	592	538	547	4.0	-0.8
512	Office and Practice Managers	570	696	836	798	825	3.9	-0.1
521	Personal Assistants and Secretaries	342	278	278	258	273	-2.0	-0.2
531	General Clerks	560	640	822	774	809	3.9	-0.2
532	Keyboard Operators	126	112	149	140	148	1.6	0.0
541	Call or Contact Centre Information Clerks	58	78	109	104	103	6.5	-0.5
542	Receptionists	237	278	333	326	322	3.5	-0.4
551	Accounting Clerks and Bookkeepers	1339	1457	1676	1587	1636	2.3	-0.2
552	Financial and Insurance Clerks	22	30	25	24	23	1.1	-0.5

**Table 14.52 Construction (E) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	23	26	21	21	21	-0.9	-0.4
591	Logistics Clerks	129	214	242	233	236	6.5	-0.3
599	Miscellaneous Clerical and Administrative Workers	50	59	84	74	74	5.5	-1.3
611	Insurance Agents and Sales Representatives	242	319	272	257	260	1.2	-0.4
612	Real Estate Sales Agents	65	111	260	235	220	14.8	-1.7
621	Sales Assistants and Salespersons	163	257	219	206	211	3.0	-0.4
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	16	36	39	40	36	9.1	-0.6
711	Machine Operators	171	246	295	277	291	5.6	-0.2
712	Stationary Plant Operators	433	551	611	575	598	3.5	-0.2
721	Mobile Plant Operators	1041	1353	1391	1309	1416	2.9	0.2
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	51	72	103	98	111	7.3	0.7
733	Truck Drivers	426	855	923	883	928	8.0	0.1
741	Storepersons	133	210	258	238	258	6.9	0.0
811	Cleaners and Laundry Workers	169	192	213	198	208	2.3	-0.3
821	Construction and Mining Labourers	4912	5615	6145	5686	6065	2.3	-0.1
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	42	76	69	68	66	5.0	-0.5
839	Miscellaneous Factory Process Workers	69	125	117	115	110	5.4	-0.5
841	Farm, Forestry and Garden Workers	163	175	210	206	204	2.6	-0.3
851	Food Preparation Assistants	7	6	11	9	15	4.2	2.8
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	889	1157	1309	1264	1281	3.9	-0.2
	<b>Total</b>	<b>40388</b>	<b>47677</b>	<b>55442</b>	<b>51644</b>	<b>54665</b>	<b>3.2</b>	<b>-0.1</b>

Source: NIEIR.

**Table 14.53 Wholesale Trade (F) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	301	271	303	289	270	0.1	-1.1
121	Farmers and Farm Managers	13	8	11	10	10	-1.9	-1.3
131	Advertising, Public Relations and Sales Managers	946	730	995	946	885	0.5	-1.2
132	Business Administration Managers	366	297	501	478	451	3.2	-1.0
133	Construction, Distribution and Production Managers	1025	959	1286	1246	1175	2.3	-0.9
134	Education, Health and Welfare Services Managers	7	5	8	7	6	1.9	-2.8
135	ICT Managers	82	92	99	92	85	1.9	-1.5
139	Miscellaneous Specialist Managers	40	34	58	55	51	3.8	-1.2
141	Accommodation and Hospitality Managers	9	7	4	4	4	-7.2	-0.1
142	Retail Managers	436	387	437	423	400	0.0	-0.9
149	Miscellaneous Hospitality, Retail and Service Managers	251	228	277	272	259	1.0	-0.7
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	4	5	9	8	7	8.5	-2.3
221	Accountants, Auditors and Company Secretaries	305	258	348	337	316	1.3	-1.0
222	Financial Brokers and Dealers, and Investment Advisers	10	9	9	9	8	-1.5	-0.9
223	Human Resource and Training Professionals	62	42	47	44	41	-2.7	-1.3
224	Information and Organisation Professionals	132	111	210	209	198	4.7	-0.6
225	Sales, Marketing and Public Relations Professionals	889	881	1144	1082	1007	2.5	-1.3
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	235	175	293	262	236	2.3	-2.2
233	Engineering Professionals	183	169	232	226	215	2.4	-0.8
234	Natural and Physical Science Professionals	43	30	46	43	41	0.5	-1.2
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	6	3	5	4	4	-2.3	-2.5
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	54	48	64	59	53	1.6	-1.7
252	Health Therapy Professionals	14	9	13	11	10	-0.7	-2.3
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	5	2	2	2	2	-8.5	-1.9
261	Business and Systems Analysts, and Programmers	199	148	266	255	240	2.9	-1.0
262	Database and Systems Administrators, and ICT Security Specialists	71	55	88	82	76	2.2	-1.4
263	ICT Network and Support Professionals	159	113	210	199	187	2.8	-1.2
271	Legal Professionals	0	0	0	0	0	0.0	0.0
272	Social and Welfare Professionals	4	2	3	3	3	-3.1	1.0



**Table 14.53 Wholesale Trade (F) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	77	47	82	74	67	0.6	-2.0
312	Building and Engineering Technicians	66	52	74	68	63	1.1	-1.5
313	ICT and Telecommunications Technicians	133	85	148	140	131	1.0	-1.2
321	Automotive Electricians and Mechanics	198	208	194	206	204	-0.2	0.5
322	Fabrication Engineering Trades Workers	15	22	23	24	24	4.2	0.1
323	Mechanical Engineering Trades Workers	167	144	131	134	132	-2.4	0.0
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	17	15	24	22	21	3.1	-1.2
332	Floor Finishers and Painting Trades Workers	4	3	7	6	6	6.9	-1.9
333	Glaziers, Plasterers and Tilers	16	15	10	9	8	-4.9	-1.7
334	Plumbers	28	23	22	20	19	-2.5	-1.3
341	Electricians	145	140	119	111	105	-1.9	-1.3
342	Electronics and Telecommunications Trades Workers	179	161	115	109	103	-4.3	-1.1
351	Food Trades Workers	116	103	111	114	111	-0.4	0.0
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	32	28	31	31	30	-0.1	-0.5
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	35	22	26	23	22	-2.9	-1.7
393	Textile, Clothing and Footwear Trades Workers	45	29	43	38	34	-0.5	-2.1
394	Wood Trades Workers	8	9	6	5	5	-2.4	-2.3
399	Miscellaneous Technicians and Trades Workers	63	63	86	80	74	3.2	-1.5
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	8	6	7	8	7	-0.4	-0.1
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	16	16	34	34	35	8.0	0.2
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	9	10	13	13	12	3.3	-0.8
511	Contract, Program and Project Administrators	117	115	103	97	90	-1.3	-1.3
512	Office and Practice Managers	317	238	283	269	250	-1.1	-1.2
521	Personal Assistants and Secretaries	158	88	83	78	72	-6.2	-1.4
531	General Clerks	421	326	424	414	390	0.1	-0.8
532	Keyboard Operators	237	150	177	167	156	-2.8	-1.3
541	Call or Contact Centre Information Clerks	208	138	172	168	159	-1.9	-0.8
542	Receptionists	266	178	206	202	190	-2.5	-0.8
551	Accounting Clerks and Bookkeepers	1087	765	884	866	820	-2.0	-0.7
552	Financial and Insurance Clerks	15	9	10	10	9	-3.7	-1.5

**Table 14.53 Wholesale Trade (F) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	47	28	24	24	23	-6.8	-0.2
591	Logistics Clerks	961	857	1006	971	912	0.5	-1.0
599	Miscellaneous Clerical and Administrative Workers	50	37	46	42	39	-0.8	-1.7
611	Insurance Agents and Sales Representatives	1383	1145	952	925	869	-3.7	-0.9
612	Real Estate Sales Agents	35	37	43	50	48	2.2	1.1
621	Sales Assistants and Salespersons	1870	1810	1616	1555	1457	-1.4	-1.0
631	Checkout Operators and Office Cashiers	120	133	110	106	99	-0.9	-1.1
639	Miscellaneous Sales Support Workers	201	182	181	181	173	-1.1	-0.5
711	Machine Operators	79	73	84	78	72	0.6	-1.5
712	Stationary Plant Operators	31	28	36	35	32	1.5	-1.1
721	Mobile Plant Operators	472	402	420	412	391	-1.2	-0.7
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	360	380	569	584	562	4.7	-0.1
733	Truck Drivers	296	381	382	382	363	2.6	-0.5
741	Storepersons	1130	1100	1435	1394	1318	2.4	-0.8
811	Cleaners and Laundry Workers	34	25	30	32	31	-1.2	0.2
821	Construction and Mining Labourers	41	37	39	37	35	-0.3	-1.3
831	Food Process Workers	164	133	135	142	140	-1.9	0.3
832	Packers and Product Assemblers	283	273	235	236	227	-1.8	-0.4
839	Miscellaneous Factory Process Workers	136	138	117	110	103	-1.5	-1.3
841	Farm, Forestry and Garden Workers	70	51	47	48	47	-3.8	-0.1
851	Food Preparation Assistants	24	19	18	18	17	-3.1	-0.1
891	Freight Handlers and Shelf Fillers	77	73	87	81	74	1.3	-1.6
899	Miscellaneous Labourers	78	69	82	82	78	0.4	-0.5
	<b>Total</b>	<b>17997</b>	<b>15698</b>	<b>18312</b>	<b>17724</b>	<b>16698</b>	<b>0.2</b>	<b>-0.9</b>

Source: NIEIR.

**Table 14.54 Retail Trade (G) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	166	190	244	232	224	4.0	-0.9
121	Farmers and Farm Managers	6	4	4	4	4	-4.4	0.6
131	Advertising, Public Relations and Sales Managers	651	605	1054	979	961	4.9	-0.9
132	Business Administration Managers	203	205	365	357	352	6.0	-0.4
133	Construction, Distribution and Production Managers	233	268	385	381	375	5.1	-0.2
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	51	70	88	95	94	5.5	0.7
139	Miscellaneous Specialist Managers	82	95	160	163	159	6.9	0.0
141	Accommodation and Hospitality Managers	49	47	45	49	50	-0.9	1.1
142	Retail Managers	5182	5305	6253	6353	6265	1.9	0.0
149	Miscellaneous Hospitality, Retail and Service Managers	251	272	381	339	342	4.3	-1.1
211	Arts Professionals	25	24	53	53	51	7.9	-0.4
212	Media Professionals	14	24	47	49	47	12.8	0.0
221	Accountants, Auditors and Company Secretaries	225	234	346	330	328	4.4	-0.5
222	Financial Brokers and Dealers, and Investment Advisers	17	17	24	25	24	3.2	0.2
223	Human Resource and Training Professionals	114	90	129	132	125	1.2	-0.3
224	Information and Organisation Professionals	109	116	228	219	216	7.7	-0.5
225	Sales, Marketing and Public Relations Professionals	333	413	673	643	624	7.3	-0.8
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	335	348	584	583	563	5.7	-0.4
233	Engineering Professionals	23	26	43	32	33	6.4	-2.7
234	Natural and Physical Science Professionals	22	21	37	42	42	5.3	1.1
241	School Teachers	3	2	6	6	6	4.8	0.1
242	Tertiary Education Teachers	6	6	11	12	11	6.1	0.1
249	Miscellaneous Education Professionals	16	14	29	30	28	6.5	-0.5
251	Health Diagnostic and Promotion Professionals	574	619	825	857	830	3.7	0.1
252	Health Therapy Professionals	19	15	20	21	20	0.6	-0.2
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	2	2	2	3	3	1.8	0.1
261	Business and Systems Analysts, and Programmers	109	101	240	218	213	8.2	-1.2
262	Database and Systems Administrators, and ICT Security Specialists	45	51	83	88	85	6.3	0.1
263	ICT Network and Support Professionals	34	29	67	66	64	7.1	-0.6
271	Legal Professionals	9	8	17	17	16	6.8	-0.5
272	Social and Welfare Professionals	2	2	1	1	1	-3.0	0.0

**Table 14.54 Retail Trade (G) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	219	182	314	332	326	3.7	0.4
312	Building and Engineering Technicians	26	26	38	38	37	3.9	-0.4
313	ICT and Telecommunications Technicians	123	97	219	221	215	5.9	-0.2
321	Automotive Electricians and Mechanics	443	614	505	347	382	1.3	-2.8
322	Fabrication Engineering Trades Workers	10	14	17	17	17	5.4	-0.4
323	Mechanical Engineering Trades Workers	37	34	42	42	41	1.2	-0.2
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	35	45	42	28	31	1.9	-2.8
331	Bricklayers, and Carpenters and Joiners	24	29	33	33	32	3.3	-0.3
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	6	7	7	8	8	1.7	0.9
341	Electricians	22	26	39	39	39	5.9	0.1
342	Electronics and Telecommunications Trades Workers	75	74	64	65	63	-1.6	-0.2
351	Food Trades Workers	698	750	873	945	958	2.3	0.9
361	Animal Attendants and Trainers, and Shearers	6	9	16	17	16	9.9	-0.1
362	Horticultural Trades Workers	386	321	471	481	464	2.0	-0.2
391	Hairdressers	49	55	70	71	69	3.6	-0.2
392	Printing Trades Workers	16	10	12	12	12	-2.7	-0.3
393	Textile, Clothing and Footwear Trades Workers	72	57	75	77	74	0.3	-0.1
394	Wood Trades Workers	50	59	48	48	46	-0.5	-0.4
399	Miscellaneous Technicians and Trades Workers	156	202	260	265	254	5.2	-0.2
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	16	16	12	13	12	-2.5	-0.5
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	6	5	5	5	4	-2.6	-0.7
431	Hospitality Workers	192	218	228	237	236	1.7	0.3
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	75	82	167	172	166	8.3	0.0
451	Personal Service and Travel Workers	63	60	68	69	67	0.8	-0.1
452	Sports and Fitness Workers	10	13	15	15	14	3.8	-0.4
511	Contract, Program and Project Administrators	89	102	105	106	103	1.7	-0.2
512	Office and Practice Managers	242	220	285	274	279	1.6	-0.2
521	Personal Assistants and Secretaries	98	65	71	70	68	-3.2	-0.4
531	General Clerks	437	409	530	513	513	2.0	-0.3
532	Keyboard Operators	92	70	91	83	83	-0.2	-0.9
541	Call or Contact Centre Information Clerks	285	245	336	290	299	1.7	-1.2
542	Receptionists	181	152	167	136	139	-0.8	-1.8
551	Accounting Clerks and Bookkeepers	751	622	748	731	724	0.0	-0.3
552	Financial and Insurance Clerks	82	77	86	59	63	0.4	-3.1

**Table 14.54 Retail Trade (G) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	122	90	99	99	99	-2.1	0.0
591	Logistics Clerks	823	877	1082	1066	1056	2.8	-0.2
599	Miscellaneous Clerical and Administrative Workers	53	54	72	71	69	3.2	-0.5
611	Insurance Agents and Sales Representatives	849	827	780	730	725	-0.8	-0.7
612	Real Estate Sales Agents	3	3	4	4	4	1.9	0.0
621	Sales Assistants and Salespersons	18224	21212	19401	19591	19238	0.6	-0.1
631	Checkout Operators and Office Cashiers	3750	4837	3852	4037	4005	0.3	0.4
639	Miscellaneous Sales Support Workers	629	753	666	682	662	0.6	-0.1
711	Machine Operators	53	53	66	66	64	2.2	-0.3
712	Stationary Plant Operators	9	9	12	12	12	3.4	-0.2
721	Mobile Plant Operators	235	230	262	262	259	1.1	-0.1
731	Automobile, Bus and Rail Drivers	2	3	5	3	4	12.0	-3.1
732	Delivery Drivers	155	194	313	296	293	7.3	-0.7
733	Truck Drivers	90	126	149	154	152	5.2	0.2
741	Storepersons	1140	1343	1832	1852	1833	4.9	0.0
811	Cleaners and Laundry Workers	390	357	368	329	340	-0.6	-0.8
821	Construction and Mining Labourers	38	39	38	38	37	0.0	-0.3
831	Food Process Workers	51	52	53	59	61	0.4	1.3
832	Packers and Product Assemblers	261	295	271	276	276	0.4	0.2
839	Miscellaneous Factory Process Workers	40	47	46	45	45	1.5	-0.2
841	Farm, Forestry and Garden Workers	21	19	16	17	16	-2.5	0.3
851	Food Preparation Assistants	197	197	208	224	227	0.5	0.9
891	Freight Handlers and Shelf Fillers	1718	2025	2234	2396	2404	2.7	0.7
899	Miscellaneous Labourers	218	243	273	248	247	2.3	-1.0
	<b>Total</b>	<b>43054</b>	<b>48073</b>	<b>50605</b>	<b>50793</b>	<b>50132</b>	<b>1.6</b>	<b>-0.1</b>

Source: NIEIR.

**Table 14.55 Accommodation and Food Services (H) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	84	104	116	134	149	3.2	2.6
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	91	93	123	143	163	3.0	2.9
132	Business Administration Managers	70	83	128	151	175	6.2	3.1
133	Construction, Distribution and Production Managers	44	53	76	89	97	5.6	2.4
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	3	6	7	9	9	9.3	2.3
139	Miscellaneous Specialist Managers	9	11	20	23	24	8.8	1.7
141	Accommodation and Hospitality Managers	2361	2783	2546	2955	3274	0.8	2.5
142	Retail Managers	989	1167	1359	1575	1735	3.2	2.5
149	Miscellaneous Hospitality, Retail and Service Managers	266	314	370	431	484	3.4	2.7
211	Arts Professionals	19	22	42	49	52	8.1	2.0
212	Media Professionals	2	4	8	9	10	14.1	1.9
221	Accountants, Auditors and Company Secretaries	57	62	77	90	100	3.1	2.7
222	Financial Brokers and Dealers, and Investment Advisers	4	3	3	4	5	-1.8	3.9
223	Human Resource and Training Professionals	32	29	39	46	50	1.9	2.5
224	Information and Organisation Professionals	28	31	63	73	79	8.4	2.3
225	Sales, Marketing and Public Relations Professionals	36	48	59	70	79	5.1	2.9
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	13	13	22	25	27	5.4	2.3
233	Engineering Professionals	0	0	0	0	0	0.0	0.0
234	Natural and Physical Science Professionals	0	0	0	0	0	0.0	0.0
241	School Teachers	1	1	2	2	2	2.5	2.5
242	Tertiary Education Teachers	15	14	20	24	27	3.0	3.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	0	0	0	0	0	0.0	0.0
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	8	7	10	12	14	2.5	2.7
262	Database and Systems Administrators, and ICT Security Specialists	3	2	4	4	5	3.2	2.5
263	ICT Network and Support Professionals	0	0	0	0	0	0.0	0.0
271	Legal Professionals	10	15	26	30	31	10.3	1.7
272	Social and Welfare Professionals	14	13	9	11	13	-4.9	4.0



**Table 14.55 Accommodation and Food Services (H) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	8	7	9	11	13	1.7	3.2
313	ICT and Telecommunications Technicians	0	0	0	0	0	0.0	0.0
321	Automotive Electricians and Mechanics	0	0	0	0	0	0.0	0.0
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	4	3	8	9	9	6.2	1.5
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	0	0	0	0	0	0.0	0.0
332	Floor Finishers and Painting Trades Workers	3	1	1	1	1	-11.1	4.1
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	3	4	6	7	8	8.3	3.0
341	Electricians	13	19	15	17	19	1.8	2.4
342	Electronics and Telecommunications Trades Workers	0	0	0	0	0	0.0	0.0
351	Food Trades Workers	3914	4739	5264	6114	6685	3.0	2.4
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	24	21	30	34	38	2.2	2.5
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	13	17	20	24	25	4.9	2.1
411	Health and Welfare Support Workers	11	11	8	9	11	-2.8	3.1
421	Child Carers	1	1	3	4	4	14.8	1.5
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	13	12	12	14	17	-0.8	3.6
431	Hospitality Workers	6565	8488	8560	9915	10893	2.7	2.4
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	33	36	64	75	82	6.8	2.5
451	Personal Service and Travel Workers	3	3	4	4	5	3.8	3.0
452	Sports and Fitness Workers	11	14	14	17	19	2.8	3.0
511	Contract, Program and Project Administrators	12	14	12	14	16	0.0	2.9
512	Office and Practice Managers	72	74	87	101	113	1.9	2.6
521	Personal Assistants and Secretaries	45	33	28	33	37	-4.6	2.8
531	General Clerks	62	66	86	100	111	3.3	2.6
532	Keyboard Operators	11	7	8	9	10	-3.4	2.4
541	Call or Contact Centre Information Clerks	38	34	45	53	60	1.6	2.9
542	Receptionists	445	386	324	386	458	-3.1	3.5
551	Accounting Clerks and Bookkeepers	202	178	203	234	258	0.1	2.4
552	Financial and Insurance Clerks	0	0	0	0	0	0.0	0.0

**Table 14.55 Accommodation and Food Services (H) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	38	31	28	33	37	-3.0	2.7
591	Logistics Clerks	69	81	97	112	121	3.5	2.3
599	Miscellaneous Clerical and Administrative Workers	10	11	15	17	18	3.8	2.3
611	Insurance Agents and Sales Representatives	61	67	50	59	66	-2.0	2.9
612	Real Estate Sales Agents	26	34	38	46	55	3.8	3.8
621	Sales Assistants and Salespersons	2712	3612	3360	3873	4221	2.2	2.3
631	Checkout Operators and Office Cashiers	656	966	817	942	1018	2.2	2.2
639	Miscellaneous Sales Support Workers	56	73	61	71	80	0.9	2.7
711	Machine Operators	0	0	0	0	0	0.0	0.0
712	Stationary Plant Operators	6	6	4	5	6	-3.8	4.1
721	Mobile Plant Operators	10	10	10	12	12	0.1	1.9
731	Automobile, Bus and Rail Drivers	7	13	13	16	20	6.8	4.2
732	Delivery Drivers	226	308	488	565	616	8.0	2.4
733	Truck Drivers	29	50	63	73	78	8.0	2.2
741	Storepersons	66	91	112	130	141	5.4	2.3
811	Cleaners and Laundry Workers	972	951	733	874	1038	-2.8	3.5
821	Construction and Mining Labourers	6	9	4	4	5	-4.6	3.7
831	Food Process Workers	73	81	87	101	110	1.8	2.3
832	Packers and Product Assemblers	32	41	39	45	49	2.0	2.2
839	Miscellaneous Factory Process Workers	0	0	0	0	0	0.0	0.0
841	Farm, Forestry and Garden Workers	4	3	4	5	5	1.9	1.9
851	Food Preparation Assistants	4537	5164	5441	6288	6868	1.8	2.4
891	Freight Handlers and Shelf Fillers	4	4	9	10	10	8.5	1.5
899	Miscellaneous Labourers	369	439	447	521	586	1.9	2.7
	<b>Total</b>	<b>25632</b>	<b>31090</b>	<b>31860</b>	<b>36944</b>	<b>40654</b>	<b>2.2</b>	<b>2.5</b>

Source: NIEIR.

**Table 14.56 Transport, Postal and Warehousing (I) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	129	125	145	168	172	1.2	1.7
121	Farmers and Farm Managers	9	6	9	11	12	-0.1	2.3
131	Advertising, Public Relations and Sales Managers	206	207	287	341	347	3.4	1.9
132	Business Administration Managers	265	283	451	530	530	5.5	1.6
133	Construction, Distribution and Production Managers	612	702	934	1099	1114	4.3	1.8
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	53	80	135	161	169	9.7	2.3
139	Miscellaneous Specialist Managers	98	127	170	212	206	5.6	1.9
141	Accommodation and Hospitality Managers	19	28	29	39	29	4.2	0.1
142	Retail Managers	123	165	260	336	366	7.8	3.5
149	Miscellaneous Hospitality, Retail and Service Managers	869	877	1137	1354	1401	2.7	2.1
211	Arts Professionals	4	6	20	22	22	17.0	0.9
212	Media Professionals	3	7	9	9	8	11.8	-0.3
221	Accountants, Auditors and Company Secretaries	235	245	318	384	393	3.1	2.1
222	Financial Brokers and Dealers, and Investment Advisers	19	32	49	56	57	10.0	1.5
223	Human Resource and Training Professionals	117	99	132	161	161	1.2	2.0
224	Information and Organisation Professionals	172	203	370	442	457	8.0	2.1
225	Sales, Marketing and Public Relations Professionals	90	120	179	208	216	7.1	1.9
231	Air and Marine Transport Professionals	410	558	487	678	609	1.7	2.3
232	Architects, Designers, Planners and Surveyors	22	26	42	46	47	6.4	1.3
233	Engineering Professionals	193	244	315	360	371	5.0	1.7
234	Natural and Physical Science Professionals	3	4	9	10	9	11.1	0.5
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	11	12	18	18	17	4.7	-0.2
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	51	67	68	86	85	2.9	2.3
252	Health Therapy Professionals	3	4	6	8	9	6.5	3.9
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	132	144	312	386	398	9.0	2.5
262	Database and Systems Administrators, and ICT Security Specialists	33	35	55	65	70	5.3	2.6
263	ICT Network and Support Professionals	22	19	43	47	47	6.9	0.8
271	Legal Professionals	19	19	34	40	44	6.3	2.7
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0

**Table 14.56 Transport, Postal and Warehousing (I) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	68	83	111	128	129	5.1	1.5
313	ICT and Telecommunications Technicians	45	53	90	105	109	7.1	1.9
321	Automotive Electricians and Mechanics	172	165	118	140	144	-3.7	2.0
322	Fabrication Engineering Trades Workers	40	42	51	57	58	2.4	1.4
323	Mechanical Engineering Trades Workers	535	477	452	677	635	-1.7	3.5
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	25	25	20	23	25	-2.5	2.3
331	Bricklayers, and Carpenters and Joiners	0	0	0	0	0	0.0	0.0
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	132	157	219	244	265	5.2	1.9
342	Electronics and Telecommunications Trades Workers	45	41	37	44	46	-2.1	2.3
351	Food Trades Workers	12	16	14	16	15	1.5	0.9
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	7	3	7	8	7	-0.1	0.5
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	6	6	9	11	11	4.6	1.8
411	Health and Welfare Support Workers	0	0	0	0	0	0.0	0.0
421	Child Carers	10	8	7	9	9	-3.0	2.2
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	16	13	14	17	17	-1.2	1.9
431	Hospitality Workers	33	43	34	49	48	0.1	3.6
441	Defence Force Members, Fire Fighters and Police	28	38	42	42	41	4.2	-0.3
442	Prison and Security Officers	97	99	163	182	184	5.3	1.2
451	Personal Service and Travel Workers	761	763	645	993	877	-1.6	3.1
452	Sports and Fitness Workers	27	25	65	60	54	9.0	-1.8
511	Contract, Program and Project Administrators	168	213	204	233	242	2.0	1.7
512	Office and Practice Managers	167	155	184	214	219	1.0	1.8
521	Personal Assistants and Secretaries	160	98	91	111	113	-5.5	2.2
531	General Clerks	503	515	629	753	765	2.3	2.0
532	Keyboard Operators	174	143	177	213	212	0.2	1.8
541	Call or Contact Centre Information Clerks	482	408	526	649	668	0.9	2.4
542	Receptionists	117	104	124	145	144	0.6	1.5
551	Accounting Clerks and Bookkeepers	692	573	651	766	782	-0.6	1.8
552	Financial and Insurance Clerks	9	7	7	9	10	-2.4	3.2

**Table 14.56 Transport, Postal and Warehousing (I) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	2354	2082	2367	3097	3346	0.1	3.5
591	Logistics Clerks	1683	1844	2044	2369	2380	2.0	1.5
599	Miscellaneous Clerical and Administrative Workers	385	419	480	577	600	2.2	2.3
611	Insurance Agents and Sales Representatives	255	263	225	265	269	-1.3	1.8
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	335	474	578	721	772	5.6	2.9
631	Checkout Operators and Office Cashiers	58	97	58	63	63	0.0	0.8
639	Miscellaneous Sales Support Workers	720	971	669	980	923	-0.7	3.3
711	Machine Operators	24	19	34	37	38	3.7	1.1
712	Stationary Plant Operators	153	164	199	219	226	2.6	1.3
721	Mobile Plant Operators	1581	1613	1474	1851	1804	-0.7	2.0
731	Automobile, Bus and Rail Drivers	3893	5196	7016	8257	8535	6.1	2.0
732	Delivery Drivers	653	822	1433	1805	1915	8.2	2.9
733	Truck Drivers	3378	4123	4298	5155	5353	2.4	2.2
741	Storepersons	1309	1713	2475	2704	2742	6.6	1.0
811	Cleaners and Laundry Workers	184	140	163	203	197	-1.2	2.0
821	Construction and Mining Labourers	104	122	142	157	173	3.2	2.0
831	Food Process Workers	2	4	2	2	2	0.1	1.8
832	Packers and Product Assemblers	127	120	153	167	165	1.9	0.8
839	Miscellaneous Factory Process Workers	11	16	26	29	29	8.6	1.2
841	Farm, Forestry and Garden Workers	4	3	4	5	5	1.5	0.5
851	Food Preparation Assistants	61	67	74	104	98	2.0	2.9
891	Freight Handlers and Shelf Fillers	677	716	751	894	911	1.0	2.0
899	Miscellaneous Labourers	305	353	435	525	566	3.6	2.7
	<b>Total</b>	<b>26711</b>	<b>30058</b>	<b>35810</b>	<b>43357</b>	<b>44311</b>	<b>3.0</b>	<b>2.2</b>

Source: NIEIR.

**Table 14.57 Information Media and Telecommunications (J) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	253	235	216	229	219	-1.6	0.2
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	295	259	286	300	291	-0.3	0.2
132	Business Administration Managers	166	185	249	238	229	4.1	-0.8
133	Construction, Distribution and Production Managers	102	110	125	122	116	2.0	-0.8
134	Education, Health and Welfare Services Managers	0	0	0	0	0	0.0	0.0
135	ICT Managers	299	463	458	421	404	4.4	-1.2
139	Miscellaneous Specialist Managers	36	44	58	52	49	5.0	-1.7
141	Accommodation and Hospitality Managers	0	0	0	0	0	0.0	0.0
142	Retail Managers	59	71	70	64	62	1.8	-1.3
149	Miscellaneous Hospitality, Retail and Service Managers	203	225	230	238	234	1.3	0.1
211	Arts Professionals	102	92	148	166	157	3.8	0.6
212	Media Professionals	1248	1378	1816	2137	2083	3.8	1.4
221	Accountants, Auditors and Company Secretaries	147	153	176	167	160	1.8	-0.9
222	Financial Brokers and Dealers, and Investment Advisers	14	19	14	17	18	0.1	3.0
223	Human Resource and Training Professionals	88	76	76	71	68	-1.5	-1.1
224	Information and Organisation Professionals	459	467	761	816	886	5.2	1.5
225	Sales, Marketing and Public Relations Professionals	440	505	515	520	505	1.6	-0.2
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	309	266	304	341	324	-0.2	0.6
233	Engineering Professionals	73	89	109	99	95	4.1	-1.4
234	Natural and Physical Science Professionals	5	4	12	15	18	8.6	3.8
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	13	8	14	18	20	0.8	4.1
251	Health Diagnostic and Promotion Professionals	4	3	4	3	3	-0.7	-1.8
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	493	463	551	545	535	1.1	-0.3
262	Database and Systems Administrators, and ICT Security Specialists	91	122	110	106	101	1.9	-0.8
263	ICT Network and Support Professionals	637	642	1005	917	876	4.7	-1.4
271	Legal Professionals	34	42	42	40	37	2.3	-1.3
272	Social and Welfare Professionals	0	0	0	0	0	0.0	0.0



**Table 14.57 Information Media and Telecommunications (J) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	37	40	50	47	45	3.0	-1.0
313	ICT and Telecommunications Technicians	447	413	598	562	556	3.0	-0.7
321	Automotive Electricians and Mechanics	0	0	0	0	0	0.0	0.0
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	11	10	7	9	8	-3.9	0.9
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	5	7	7	9	8	3.9	0.9
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	4	6	12	11	11	11.7	-0.8
342	Electronics and Telecommunications Trades Workers	707	841	586	542	537	-1.8	-0.9
351	Food Trades Workers	4	6	5	6	6	2.5	0.9
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	0	0	0	0	0	0.0	0.0
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	76	40	33	38	38	-8.1	1.4
393	Textile, Clothing and Footwear Trades Workers	5	5	6	7	7	2.4	0.9
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	374	497	483	577	626	2.6	2.6
411	Health and Welfare Support Workers	13	11	14	18	21	0.7	3.8
421	Child Carers	2	3	1	2	1	-5.4	0.9
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	20	32	27	32	29	2.7	0.8
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	16	18	18	17	17	1.3	-1.0
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	304	364	311	292	286	0.2	-0.8
512	Office and Practice Managers	69	65	56	54	53	-2.1	-0.5
521	Personal Assistants and Secretaries	120	79	49	51	48	-8.6	-0.1
531	General Clerks	174	149	141	141	136	-2.1	-0.4
532	Keyboard Operators	84	65	45	48	47	-6.1	0.5
541	Call or Contact Centre Information Clerks	365	325	289	280	278	-2.3	-0.4
542	Receptionists	49	33	23	29	33	-7.3	3.5
551	Accounting Clerks and Bookkeepers	182	152	125	126	126	-3.7	0.1
552	Financial and Insurance Clerks	0	0	0	0	0	0.0	0.0

**Table 14.57 Information Media and Telecommunications (J) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	53	35	29	32	36	-5.9	2.2
591	Logistics Clerks	83	74	61	64	62	-3.0	0.1
599	Miscellaneous Clerical and Administrative Workers	272	259	272	305	326	0.0	1.8
611	Insurance Agents and Sales Representatives	230	162	97	111	110	-8.2	1.2
612	Real Estate Sales Agents	3	5	3	3	3	0.3	-1.8
621	Sales Assistants and Salespersons	307	382	273	258	251	-1.2	-0.9
631	Checkout Operators and Office Cashiers	16	22	15	16	16	-0.8	0.5
639	Miscellaneous Sales Support Workers	268	363	262	270	260	-0.2	-0.1
711	Machine Operators	3	4	3	3	3	-0.7	1.0
712	Stationary Plant Operators	0	0	0	0	0	0.0	0.0
721	Mobile Plant Operators	10	12	10	9	9	0.0	-1.2
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	7	5	4	5	5	-3.9	1.5
733	Truck Drivers	3	2	3	3	3	-1.7	1.3
741	Storepersons	21	15	14	14	14	-4.4	0.3
811	Cleaners and Laundry Workers	7	7	6	7	6	-1.1	0.6
821	Construction and Mining Labourers	35	37	32	29	28	-0.8	-1.5
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	0	0	0	0	0	0.0	0.0
839	Miscellaneous Factory Process Workers	0	0	0	0	0	0.0	0.0
841	Farm, Forestry and Garden Workers	0	0	0	0	0	0.0	0.0
851	Food Preparation Assistants	4	6	5	5	5	1.9	0.9
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	83	80	64	72	69	-2.5	0.7
	<b>Total</b>	<b>10042</b>	<b>10555</b>	<b>11389</b>	<b>11745</b>	<b>11612</b>	<b>1.3</b>	<b>0.2</b>

Source: NIEIR.

**Table 14.58 Financial and Insurance Services (K) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	114	149	156	157	164	3.2	0.5
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	401	437	576	582	607	3.7	0.5
132	Business Administration Managers	496	582	846	853	874	5.5	0.3
133	Construction, Distribution and Production Managers	44	61	80	81	84	6.1	0.5
134	Education, Health and Welfare Services Managers	3	3	4	4	4	3.1	0.2
135	ICT Managers	205	331	369	370	376	6.0	0.2
139	Miscellaneous Specialist Managers	205	264	388	391	402	6.6	0.4
141	Accommodation and Hospitality Managers	0	0	0	0	0	0.0	0.0
142	Retail Managers	7	9	8	8	8	1.4	-0.6
149	Miscellaneous Hospitality, Retail and Service Managers	566	675	770	781	800	3.1	0.4
211	Arts Professionals	0	0	0	0	0	0.0	0.0
212	Media Professionals	25	36	64	64	65	10.0	0.2
221	Accountants, Auditors and Company Secretaries	806	903	1105	1122	1162	3.2	0.5
222	Financial Brokers and Dealers, and Investment Advisers	2521	2924	3318	3411	3632	2.8	0.9
223	Human Resource and Training Professionals	257	232	329	338	355	2.5	0.8
224	Information and Organisation Professionals	636	755	1349	1371	1415	7.8	0.5
225	Sales, Marketing and Public Relations Professionals	198	281	369	372	382	6.4	0.4
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	62	73	111	114	117	6.1	0.5
233	Engineering Professionals	5	6	11	11	11	7.2	0.6
234	Natural and Physical Science Professionals	8	8	10	10	11	2.5	0.2
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	7	7	14	15	16	7.6	1.0
249	Miscellaneous Education Professionals	11	11	15	16	16	3.4	0.7
251	Health Diagnostic and Promotion Professionals	49	59	94	97	104	6.7	1.0
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	50	53	81	84	93	5.0	1.4
261	Business and Systems Analysts, and Programmers	731	751	1352	1382	1432	6.3	0.6
262	Database and Systems Administrators, and ICT Security Specialists	179	196	288	294	305	4.9	0.6
263	ICT Network and Support Professionals	188	185	362	370	385	6.8	0.6
271	Legal Professionals	102	129	192	197	209	6.5	0.9
272	Social and Welfare Professionals	11	12	16	17	19	4.4	1.3

**Table 14.58 Financial and Insurance Services (K) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	16	19	33	34	37	7.5	1.3
313	ICT and Telecommunications Technicians	146	131	215	222	234	4.0	0.9
321	Automotive Electricians and Mechanics	6	7	9	10	11	5.4	1.4
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	0	0	0	0	0	0.0	0.0
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	0	0	0	0	0	0.0	0.0
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	4	7	7	7	7	5.1	0.6
342	Electronics and Telecommunications Trades Workers	22	26	22	22	23	0.0	0.5
351	Food Trades Workers	1	2	3	3	3	8.4	0.9
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	4	2	3	3	4	-5.3	4.9
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	0	0	0	0	0	0.0	0.0
411	Health and Welfare Support Workers	3	3	4	4	4	2.9	0.9
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	11	10	21	22	24	6.6	1.3
431	Hospitality Workers	9	10	10	10	10	0.7	0.4
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	34	40	66	66	67	6.9	0.3
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	356	448	386	387	394	0.8	0.2
512	Office and Practice Managers	195	204	208	213	225	0.6	0.8
521	Personal Assistants and Secretaries	433	336	303	309	326	-3.5	0.7
531	General Clerks	625	635	715	738	790	1.4	1.0
532	Keyboard Operators	240	190	238	246	262	-0.1	0.9
541	Call or Contact Centre Information Clerks	871	763	987	1018	1079	1.3	0.9
542	Receptionists	164	146	149	154	164	-1.0	1.0
551	Accounting Clerks and Bookkeepers	564	523	541	559	597	-0.4	1.0
552	Financial and Insurance Clerks	5173	4761	4827	4926	5100	-0.7	0.6

**Table 14.58 Financial and Insurance Services (K) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	95	76	68	69	73	-3.4	0.8
591	Logistics Clerks	51	57	71	72	76	3.2	0.7
599	Miscellaneous Clerical and Administrative Workers	451	501	628	648	690	3.4	0.9
611	Insurance Agents and Sales Representatives	582	658	635	651	701	0.9	1.0
612	Real Estate Sales Agents	15	21	16	15	15	0.2	-0.2
621	Sales Assistants and Salespersons	45	59	54	56	60	1.9	1.1
631	Checkout Operators and Office Cashiers	4	6	2	2	2	-3.7	-0.2
639	Miscellaneous Sales Support Workers	26	31	42	44	46	4.8	0.9
711	Machine Operators	0	0	0	0	0	0.0	0.0
712	Stationary Plant Operators	0	0	0	0	0	0.0	0.0
721	Mobile Plant Operators	8	10	11	11	11	2.4	0.6
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	0	0	0	0	0	0.0	0.0
733	Truck Drivers	1	1	2	2	2	6.4	0.6
741	Storepersons	23	29	28	28	28	1.9	-0.1
811	Cleaners and Laundry Workers	24	23	31	32	35	2.8	1.2
821	Construction and Mining Labourers	0	0	0	0	0	0.0	0.0
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	0	0	0	0	0	0.0	0.0
839	Miscellaneous Factory Process Workers	3	5	3	3	3	1.8	0.7
841	Farm, Forestry and Garden Workers	0	0	0	0	0	0.0	0.0
851	Food Preparation Assistants	0	0	0	0	0	0.0	0.0
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	0	0	0	0	0	0.0	0.0
	<b>Total</b>	<b>18093</b>	<b>18871</b>	<b>22614</b>	<b>23099</b>	<b>24158</b>	<b>2.3</b>	<b>0.7</b>

Source: NIEIR.

**Table 14.59 Rental, Hiring and Real Estate Services (L) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	81	97	81	86	91	0.0	1.2
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	124	133	143	156	168	1.5	1.6
132	Business Administration Managers	104	121	146	160	173	3.4	1.7
133	Construction, Distribution and Production Managers	53	69	71	78	85	2.8	1.8
134	Education, Health and Welfare Services Managers	3	3	4	4	4	2.6	1.8
135	ICT Managers	3	6	6	7	8	9.4	2.9
139	Miscellaneous Specialist Managers	18	22	39	45	55	8.2	3.5
141	Accommodation and Hospitality Managers	6	11	8	10	11	2.7	3.2
142	Retail Managers	30	34	22	20	21	-3.3	-0.4
149	Miscellaneous Hospitality, Retail and Service Managers	365	401	332	340	364	-0.9	0.9
211	Arts Professionals	3	4	7	9	9	8.5	2.6
212	Media Professionals	11	11	15	14	14	3.2	-0.4
221	Accountants, Auditors and Company Secretaries	108	126	131	147	159	1.9	2.0
222	Financial Brokers and Dealers, and Investment Advisers	43	53	51	59	64	1.8	2.2
223	Human Resource and Training Professionals	24	24	22	23	24	-0.9	1.0
224	Information and Organisation Professionals	154	195	286	329	357	6.4	2.3
225	Sales, Marketing and Public Relations Professionals	51	75	87	98	106	5.4	2.1
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	26	35	48	57	62	6.1	2.8
233	Engineering Professionals	0	0	0	0	0	0.0	0.0
234	Natural and Physical Science Professionals	4	5	5	6	7	2.3	2.9
241	School Teachers	0	0	0	0	0	0.0	0.0
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	0	0	0	0	0	0.0	0.0
251	Health Diagnostic and Promotion Professionals	0	0	0	0	0	0.0	0.0
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	20	19	31	33	35	4.2	1.3
262	Database and Systems Administrators, and ICT Security Specialists	9	8	9	10	11	0.4	1.5
263	ICT Network and Support Professionals	2	2	4	5	6	8.3	3.5
271	Legal Professionals	7	8	13	15	17	5.9	2.3
272	Social and Welfare Professionals	8	10	12	15	17	4.1	3.5



**Table 14.59 Rental, Hiring and Real Estate Services (L) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	10	12	15	18	20	4.5	3.0
313	ICT and Telecommunications Technicians	9	10	12	13	14	2.5	1.6
321	Automotive Electricians and Mechanics	49	56	18	15	15	-9.7	-2.1
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	6	4	4	3	3	-4.7	-2.6
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	4	4	4	4	4	1.9	-1.3
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	3	3	4	5	6	4.6	3.5
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	9	13	8	7	8	-0.8	-0.5
342	Electronics and Telecommunications Trades Workers	30	37	15	12	13	-6.7	-1.6
351	Food Trades Workers	5	6	2	3	4	-6.2	3.9
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	15	13	15	19	24	-0.2	4.7
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	8	6	6	5	5	-1.7	-2.1
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	59	70	54	47	48	-1.0	-1.2
411	Health and Welfare Support Workers	40	50	43	53	62	0.8	3.7
421	Child Carers	0	0	0	0	0	0.0	0.0
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	10	10	9	12	13	-0.4	3.6
431	Hospitality Workers	35	53	37	45	49	0.7	2.8
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	30	39	54	67	75	6.3	3.2
451	Personal Service and Travel Workers	0	0	0	0	0	0.0	0.0
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	49	69	52	61	67	0.6	2.6
512	Office and Practice Managers	134	144	121	136	148	-1.0	2.1
521	Personal Assistants and Secretaries	160	127	99	116	126	-4.7	2.4
531	General Clerks	260	272	265	303	339	0.2	2.5
532	Keyboard Operators	81	62	46	45	47	-5.5	0.2
541	Call or Contact Centre Information Clerks	69	66	57	63	69	-1.9	1.9
542	Receptionists	279	267	194	231	259	-3.6	2.9
551	Accounting Clerks and Bookkeepers	242	222	183	201	221	-2.8	1.9
552	Financial and Insurance Clerks	12	13	5	4	4	-8.9	-0.5

**Table 14.59 Rental, Hiring and Real Estate Services (L) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	26	19	13	14	14	-6.4	0.8
591	Logistics Clerks	65	71	50	46	46	-2.7	-0.8
599	Miscellaneous Clerical and Administrative Workers	70	82	71	80	87	0.2	2.1
611	Insurance Agents and Sales Representatives	86	88	50	50	52	-5.3	0.5
612	Real Estate Sales Agents	1587	2534	1981	2422	2714	2.2	3.2
621	Sales Assistants and Salespersons	374	437	228	213	220	-4.8	-0.3
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	11	16	11	13	14	-0.1	2.8
711	Machine Operators	0	0	0	0	0	0.0	0.0
712	Stationary Plant Operators	10	11	7	6	6	-3.1	-1.7
721	Mobile Plant Operators	12	10	4	3	3	-9.7	-3.7
731	Automobile, Bus and Rail Drivers	12	21	20	17	16	4.9	-2.3
732	Delivery Drivers	24	27	25	21	21	0.5	-1.7
733	Truck Drivers	26	39	22	18	18	-1.6	-1.9
741	Storepersons	17	19	14	12	11	-1.8	-2.1
811	Cleaners and Laundry Workers	157	138	90	93	101	-5.4	1.1
821	Construction and Mining Labourers	65	61	33	29	32	-6.5	-0.3
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	0	0	0	0	0	0.0	0.0
839	Miscellaneous Factory Process Workers	16	14	9	8	7	-5.4	-2.6
841	Farm, Forestry and Garden Workers	0	0	0	0	0	0.0	0.0
851	Food Preparation Assistants	23	25	20	25	30	-1.5	4.3
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	63	76	59	67	75	-0.8	2.5
	<b>Total</b>	<b>5506</b>	<b>6787</b>	<b>5603</b>	<b>6350</b>	<b>6980</b>	<b>0.2</b>	<b>2.2</b>

Source: NIEIR.

**Table 14.60 Professional, Scientific and Technical Services (M) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	359	504	519	564	608	3.8	1.6
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	548	620	793	882	969	3.8	2.0
132	Business Administration Managers	563	700	971	1100	1221	5.6	2.3
133	Construction, Distribution and Production Managers	385	521	574	653	724	4.1	2.4
134	Education, Health and Welfare Services Managers	37	39	43	50	56	1.6	2.7
135	ICT Managers	612	1132	1263	1321	1407	7.5	1.1
139	Miscellaneous Specialist Managers	146	193	265	303	339	6.2	2.5
141	Accommodation and Hospitality Managers	9	11	7	8	9	-2.9	3.4
142	Retail Managers	34	42	38	44	50	1.1	2.9
149	Miscellaneous Hospitality, Retail and Service Managers	273	352	367	411	454	3.0	2.2
211	Arts Professionals	455	524	927	1094	1240	7.4	2.9
212	Media Professionals	217	354	585	656	711	10.4	2.0
221	Accountants, Auditors and Company Secretaries	2826	3258	3632	4261	4865	2.5	3.0
222	Financial Brokers and Dealers, and Investment Advisers	93	111	115	133	147	2.2	2.5
223	Human Resource and Training Professionals	350	337	391	442	494	1.1	2.4
224	Information and Organisation Professionals	1083	1349	2094	2365	2596	6.8	2.2
225	Sales, Marketing and Public Relations Professionals	885	1346	1633	1811	1968	6.3	1.9
231	Air and Marine Transport Professionals	3	4	3	4	5	-0.1	6.4
232	Architects, Designers, Planners and Surveyors	2886	3583	4757	5431	5944	5.1	2.3
233	Engineering Professionals	1233	1526	1909	2191	2438	4.5	2.5
234	Natural and Physical Science Professionals	1178	1149	1589	1850	2080	3.0	2.7
241	School Teachers	25	22	30	34	39	2.0	2.8
242	Tertiary Education Teachers	27	28	36	43	49	3.0	3.0
249	Miscellaneous Education Professionals	48	55	72	86	97	4.0	3.0
251	Health Diagnostic and Promotion Professionals	117	138	135	159	179	1.4	2.9
252	Health Therapy Professionals	5	5	5	5	6	-0.5	1.4
253	Medical Practitioners	12	13	10	11	12	-1.6	1.6
254	Midwifery and Nursing Professionals	33	34	31	36	41	-0.6	2.7
261	Business and Systems Analysts, and Programmers	2830	3365	5307	5625	6039	6.5	1.3
262	Database and Systems Administrators, and ICT Security Specialists	380	486	609	654	709	4.8	1.5
263	ICT Network and Support Professionals	710	815	1440	1546	1669	7.3	1.5
271	Legal Professionals	1806	2282	3035	3499	3859	5.3	2.4
272	Social and Welfare Professionals	366	407	384	470	543	0.5	3.5

**Table 14.60 Professional, Scientific and Technical Services (M) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	241	235	303	373	439	2.3	3.8
312	Building and Engineering Technicians	980	1182	1390	1617	1833	3.6	2.8
313	ICT and Telecommunications Technicians	815	826	1273	1364	1486	4.6	1.6
321	Automotive Electricians and Mechanics	13	17	12	15	18	-0.4	4.1
322	Fabrication Engineering Trades Workers	24	41	27	31	36	1.1	3.0
323	Mechanical Engineering Trades Workers	57	55	44	54	63	-2.4	3.6
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	23	29	31	37	42	3.1	3.1
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	4	6	7	9	11	6.5	4.3
341	Electricians	45	67	59	68	78	2.6	2.8
342	Electronics and Telecommunications Trades Workers	180	253	175	188	206	-0.3	1.6
351	Food Trades Workers	19	25	20	23	26	0.7	2.6
361	Animal Attendants and Trainers, and Shearers	269	403	506	617	741	6.5	3.9
362	Horticultural Trades Workers	41	38	43	51	59	0.5	3.1
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	26	23	23	27	30	-1.1	2.6
393	Textile, Clothing and Footwear Trades Workers	5	3	4	6	8	-1.7	6.4
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	211	323	312	375	438	4.0	3.5
411	Health and Welfare Support Workers	23	26	21	24	25	-0.7	1.8
421	Child Carers	27	31	16	18	20	-4.9	1.9
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	9	9	8	9	10	-1.8	2.5
431	Hospitality Workers	0	0	0	0	0	0.0	0.0
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	17	20	25	29	32	3.9	2.6
451	Personal Service and Travel Workers	8	12	9	11	12	2.0	2.0
452	Sports and Fitness Workers	6	7	7	7	8	1.6	1.7
511	Contract, Program and Project Administrators	382	507	436	488	539	1.3	2.1
512	Office and Practice Managers	646	702	652	748	844	0.1	2.6
521	Personal Assistants and Secretaries	1315	1022	813	948	1077	-4.7	2.9
531	General Clerks	641	664	657	760	863	0.3	2.8
532	Keyboard Operators	214	175	161	190	216	-2.8	3.0
541	Call or Contact Centre Information Clerks	221	204	212	237	260	-0.4	2.0
542	Receptionists	470	432	359	438	511	-2.7	3.6
551	Accounting Clerks and Bookkeepers	1945	1825	1612	1892	2185	-1.9	3.1
552	Financial and Insurance Clerks	68	66	57	67	76	-1.7	2.8

**Table 14.60 Professional, Scientific and Technical Services (M) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	507	402	295	346	391	-5.3	2.9
591	Logistics Clerks	108	138	128	149	169	1.7	2.8
599	Miscellaneous Clerical and Administrative Workers	1025	1174	1163	1399	1628	1.3	3.4
611	Insurance Agents and Sales Representatives	218	252	166	192	216	-2.7	2.6
612	Real Estate Sales Agents	20	28	33	42	50	4.9	4.3
621	Sales Assistants and Salespersons	135	199	156	172	188	1.5	1.8
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	163	235	154	183	210	-0.6	3.2
711	Machine Operators	22	25	23	26	28	0.5	2.1
712	Stationary Plant Operators	10	11	11	14	17	0.9	3.8
721	Mobile Plant Operators	5	6	4	6	8	-2.8	6.7
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	0	0	0	0	0	0.0	0.0
733	Truck Drivers	4	6	5	7	9	2.5	6.4
741	Storepersons	37	52	50	58	66	3.1	2.8
811	Cleaners and Laundry Workers	37	38	28	34	38	-2.8	3.1
821	Construction and Mining Labourers	68	98	65	74	83	-0.5	2.5
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	10	14	8	11	13	-2.1	4.4
839	Miscellaneous Factory Process Workers	47	60	40	45	51	-1.6	2.6
841	Farm, Forestry and Garden Workers	6	7	3	3	4	-6.1	1.4
851	Food Preparation Assistants	14	15	13	16	18	-0.4	3.4
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	110	144	105	122	137	-0.5	2.7
	<b>Total</b>	<b>32021</b>	<b>37439</b>	<b>45294</b>	<b>51365</b>	<b>57081</b>	<b>3.5</b>	<b>2.3</b>

Source: NIEIR.

**Table 14.61 Administrative and Support Services (N) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	145	199	202	229	248	3.4	2.1
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	173	197	243	272	286	3.4	1.7
132	Business Administration Managers	207	243	338	370	385	5.0	1.3
133	Construction, Distribution and Production Managers	81	112	130	151	164	4.9	2.3
134	Education, Health and Welfare Services Managers	38	39	44	48	48	1.6	0.9
135	ICT Managers	25	42	43	48	50	5.6	1.4
139	Miscellaneous Specialist Managers	42	55	74	83	88	5.7	1.8
141	Accommodation and Hospitality Managers	27	36	25	31	35	-0.6	3.3
142	Retail Managers	89	107	90	98	99	0.1	0.9
149	Miscellaneous Hospitality, Retail and Service Managers	427	538	543	611	646	2.4	1.7
211	Arts Professionals	7	8	13	14	14	6.1	0.2
212	Media Professionals	38	58	97	103	102	9.9	0.5
221	Accountants, Auditors and Company Secretaries	112	134	150	168	174	3.0	1.5
222	Financial Brokers and Dealers, and Investment Advisers	23	27	27	29	28	1.3	0.6
223	Human Resource and Training Professionals	943	880	952	1047	1065	0.1	1.1
224	Information and Organisation Professionals	97	114	172	184	185	5.9	0.7
225	Sales, Marketing and Public Relations Professionals	66	95	112	123	127	5.4	1.3
231	Air and Marine Transport Professionals	3	5	3	4	4	0.3	2.4
232	Architects, Designers, Planners and Surveyors	54	62	84	90	91	4.5	0.8
233	Engineering Professionals	40	53	63	70	74	4.7	1.6
234	Natural and Physical Science Professionals	0	0	0	0	0	0.0	0.0
241	School Teachers	66	61	75	83	84	1.2	1.2
242	Tertiary Education Teachers	10	10	11	12	11	1.5	0.1
249	Miscellaneous Education Professionals	8	9	12	12	12	3.2	0.5
251	Health Diagnostic and Promotion Professionals	19	29	30	36	37	4.5	2.1
252	Health Therapy Professionals	0	0	0	0	0	0.0	0.0
253	Medical Practitioners	5	6	5	5	5	0.5	0.3
254	Midwifery and Nursing Professionals	138	156	190	218	220	3.3	1.5
261	Business and Systems Analysts, and Programmers	82	82	128	140	140	4.6	0.9
262	Database and Systems Administrators, and ICT Security Specialists	25	25	31	33	33	2.4	0.5
263	ICT Network and Support Professionals	53	50	89	96	95	5.2	0.7
271	Legal Professionals	24	27	36	38	38	4.3	0.3
272	Social and Welfare Professionals	46	46	40	43	43	-1.3	0.5



**Table 14.61 Administrative and Support Services (N) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	3	4	4	4	4	1.7	0.3
312	Building and Engineering Technicians	27	35	37	41	43	3.3	1.4
313	ICT and Telecommunications Technicians	67	61	88	95	96	2.8	0.9
321	Automotive Electricians and Mechanics	14	25	17	21	25	1.9	3.5
322	Fabrication Engineering Trades Workers	15	26	20	23	24	2.8	2.1
323	Mechanical Engineering Trades Workers	81	84	73	85	91	-1.1	2.3
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	62	79	75	84	91	1.9	1.9
332	Floor Finishers and Painting Trades Workers	14	14	12	15	17	-1.7	3.5
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	9	11	10	11	12	1.0	1.9
341	Electricians	54	79	74	82	86	3.3	1.5
342	Electronics and Telecommunications Trades Workers	40	49	31	33	34	-2.5	0.8
351	Food Trades Workers	41	56	51	58	63	2.1	2.1
361	Animal Attendants and Trainers, and Shearers	0	0	0	0	0	0.0	0.0
362	Horticultural Trades Workers	941	996	1379	1710	2000	3.9	3.8
391	Hairdressers	13	19	16	17	17	2.0	0.7
392	Printing Trades Workers	27	23	22	24	25	-2.3	1.2
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	15	21	22	24	23	3.8	0.6
411	Health and Welfare Support Workers	98	117	116	130	132	1.6	1.4
421	Child Carers	56	71	44	49	51	-2.4	1.5
422	Education Aides	9	8	16	17	18	5.7	1.2
423	Personal Carers and Assistants	227	238	275	323	345	1.9	2.3
431	Hospitality Workers	56	85	75	89	98	3.1	2.7
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	55	73	107	128	139	7.0	2.6
451	Personal Service and Travel Workers	728	802	691	741	745	-0.5	0.8
452	Sports and Fitness Workers	0	0	0	0	0	0.0	0.0
511	Contract, Program and Project Administrators	80	106	87	97	102	0.9	1.6
512	Office and Practice Managers	209	231	218	247	264	0.4	1.9
521	Personal Assistants and Secretaries	250	194	147	161	167	-5.2	1.3
531	General Clerks	395	427	410	461	482	0.4	1.6
532	Keyboard Operators	215	172	155	170	171	-3.2	1.0
541	Call or Contact Centre Information Clerks	610	551	542	602	612	-1.2	1.2
542	Receptionists	175	166	136	154	160	-2.5	1.6
551	Accounting Clerks and Bookkeepers	500	504	471	542	582	-0.6	2.1
552	Financial and Insurance Clerks	79	78	60	67	67	-2.7	1.0

**Table 14.61 Administrative and Support Services (N) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	137	108	68	75	75	-6.8	1.0
591	Logistics Clerks	81	105	95	109	115	1.6	1.9
599	Miscellaneous Clerical and Administrative Workers	199	230	219	246	252	1.0	1.4
611	Insurance Agents and Sales Representatives	113	135	95	109	116	-1.8	2.1
612	Real Estate Sales Agents	14	21	16	18	19	1.6	1.6
621	Sales Assistants and Salespersons	79	110	77	87	92	-0.2	1.8
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	181	247	162	177	178	-1.1	0.9
711	Machine Operators	58	80	73	86	94	2.4	2.5
712	Stationary Plant Operators	13	16	12	14	14	-0.4	1.2
721	Mobile Plant Operators	179	224	179	211	229	0.0	2.5
731	Automobile, Bus and Rail Drivers	17	32	34	39	41	7.2	1.9
732	Delivery Drivers	13	22	30	38	44	8.8	3.7
733	Truck Drivers	59	119	110	134	150	6.4	3.2
741	Storepersons	141	213	200	233	246	3.6	2.1
811	Cleaners and Laundry Workers	4108	4974	4521	5656	6551	1.0	3.8
821	Construction and Mining Labourers	105	133	111	124	131	0.5	1.7
831	Food Process Workers	62	72	57	67	71	-0.8	2.2
832	Packers and Product Assemblers	249	372	244	291	322	-0.2	2.8
839	Miscellaneous Factory Process Workers	9	9	7	8	8	-3.2	1.4
841	Farm, Forestry and Garden Workers	359	418	360	448	513	0.0	3.6
851	Food Preparation Assistants	91	119	98	118	130	0.8	2.8
891	Freight Handlers and Shelf Fillers	36	46	39	43	43	0.6	1.0
899	Miscellaneous Labourers	297	387	362	438	488	2.0	3.0
	<b>Total</b>	<b>14881</b>	<b>17107</b>	<b>16705</b>	<b>19561</b>	<b>21336</b>	<b>1.2</b>	<b>2.5</b>

Source: NIEIR.

**Table 14.62 Public Administration and Safety (O) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	230	291	299	345	378	2.7	2.4
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	123	130	170	193	208	3.3	2.1
132	Business Administration Managers	823	971	1487	1705	1864	6.1	2.3
133	Construction, Distribution and Production Managers	208	251	296	350	382	3.6	2.6
134	Education, Health and Welfare Services Managers	153	160	205	235	260	3.0	2.4
135	ICT Managers	111	175	198	224	243	5.9	2.1
139	Miscellaneous Specialist Managers	609	727	998	1297	1432	5.1	3.7
141	Accommodation and Hospitality Managers	6	9	8	10	11	3.0	2.9
142	Retail Managers	5	6	4	5	5	-1.3	3.0
149	Miscellaneous Hospitality, Retail and Service Managers	356	428	492	567	624	3.3	2.4
211	Arts Professionals	25	26	34	46	53	3.2	4.3
212	Media Professionals	44	62	109	127	137	9.6	2.4
221	Accountants, Auditors and Company Secretaries	391	446	551	634	700	3.5	2.4
222	Financial Brokers and Dealers, and Investment Advisers	53	66	72	88	97	3.2	2.9
223	Human Resource and Training Professionals	592	527	614	750	830	0.4	3.1
224	Information and Organisation Professionals	1272	1488	2580	2935	3193	7.3	2.2
225	Sales, Marketing and Public Relations Professionals	191	272	358	405	440	6.5	2.1
231	Air and Marine Transport Professionals	22	33	37	42	44	5.5	1.8
232	Architects, Designers, Planners and Surveyors	496	588	873	990	1081	5.8	2.2
233	Engineering Professionals	309	354	502	606	679	5.0	3.1
234	Natural and Physical Science Professionals	405	384	584	675	735	3.7	2.3
241	School Teachers	166	145	226	266	302	3.1	2.9
242	Tertiary Education Teachers	9	8	6	8	8	-3.2	2.6
249	Miscellaneous Education Professionals	42	42	60	69	74	3.7	2.1
251	Health Diagnostic and Promotion Professionals	218	271	314	361	395	3.7	2.3
252	Health Therapy Professionals	49	51	68	78	85	3.5	2.2
253	Medical Practitioners	9	10	10	11	12	0.4	1.8
254	Midwifery and Nursing Professionals	347	375	442	514	570	2.5	2.6
261	Business and Systems Analysts, and Programmers	217	232	440	508	559	7.3	2.4
262	Database and Systems Administrators, and ICT Security Specialists	183	209	274	318	348	4.1	2.4
263	ICT Network and Support Professionals	102	96	203	241	266	7.1	2.7
271	Legal Professionals	564	692	1018	1149	1240	6.1	2.0
272	Social and Welfare Professionals	708	743	760	871	960	0.7	2.4

**Table 14.62 Public Administration and Safety (O) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	107	96	159	183	199	4.0	2.3
312	Building and Engineering Technicians	225	249	315	374	413	3.4	2.7
313	ICT and Telecommunications Technicians	237	202	318	378	422	3.0	2.9
321	Automotive Electricians and Mechanics	53	64	47	56	63	-1.2	2.9
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	159	154	137	157	167	-1.5	2.0
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	5	6	8	10	11	5.5	3.6
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	48	57	49	57	61	0.2	2.2
341	Electricians	28	37	37	42	45	2.8	2.0
342	Electronics and Telecommunications Trades Workers	356	390	189	242	267	-6.1	3.5
351	Food Trades Workers	24	26	22	26	29	-0.9	2.5
361	Animal Attendants and Trainers, and Shearers	7	9	10	12	13	4.4	2.4
362	Horticultural Trades Workers	272	252	338	390	435	2.2	2.6
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	5	2	2	2	3	-7.7	3.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	133	196	221	257	280	5.2	2.4
411	Health and Welfare Support Workers	549	638	718	833	923	2.7	2.5
421	Child Carers	135	177	135	159	179	0.0	2.9
422	Education Aides	39	35	71	84	96	6.1	3.1
423	Personal Carers and Assistants	1251	1225	1505	1769	1999	1.9	2.9
431	Hospitality Workers	13	16	14	16	17	1.1	1.7
441	Defence Force Members, Fire Fighters and Police	2602	3330	3657	4387	4727	3.5	2.6
442	Prison and Security Officers	2158	2695	4140	4721	5011	6.7	1.9
451	Personal Service and Travel Workers	36	32	21	27	30	-5.1	3.5
452	Sports and Fitness Workers	145	171	173	206	233	1.8	3.0
511	Contract, Program and Project Administrators	1069	1333	1262	1458	1602	1.7	2.4
512	Office and Practice Managers	316	331	349	400	436	1.0	2.2
521	Personal Assistants and Secretaries	463	352	312	359	397	-3.9	2.4
531	General Clerks	1395	1412	1564	1822	2014	1.1	2.6
532	Keyboard Operators	377	307	347	400	438	-0.8	2.3
541	Call or Contact Centre Information Clerks	1096	962	1071	1235	1366	-0.2	2.5
542	Receptionists	143	127	117	136	152	-2.0	2.6
551	Accounting Clerks and Bookkeepers	627	576	573	669	738	-0.9	2.6
552	Financial and Insurance Clerks	89	82	77	87	95	-1.4	2.1

**Table 14.62 Public Administration and Safety (O) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	396	313	262	300	327	-4.1	2.2
591	Logistics Clerks	264	285	264	323	357	0.0	3.1
599	Miscellaneous Clerical and Administrative Workers	1592	1774	1941	2244	2488	2.0	2.5
611	Insurance Agents and Sales Representatives	39	41	33	37	39	-1.6	1.7
612	Real Estate Sales Agents	15	22	25	29	33	5.1	2.9
621	Sales Assistants and Salespersons	6	8	8	9	9	2.3	1.9
631	Checkout Operators and Office Cashiers	34	43	32	37	41	-0.7	2.6
639	Miscellaneous Sales Support Workers	10	12	11	12	14	0.6	2.4
711	Machine Operators	2	1	1	1	2	-3.9	3.0
712	Stationary Plant Operators	35	34	19	24	26	-6.1	3.4
721	Mobile Plant Operators	107	113	96	113	128	-1.1	2.9
731	Automobile, Bus and Rail Drivers	34	58	71	83	94	7.7	2.9
732	Delivery Drivers	46	65	83	96	108	6.1	2.6
733	Truck Drivers	165	234	185	225	255	1.1	3.3
741	Storepersons	17	23	23	27	29	2.9	2.4
811	Cleaners and Laundry Workers	97	93	86	99	109	-1.2	2.4
821	Construction and Mining Labourers	60	75	66	78	88	0.9	3.0
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	2	4	2	2	2	-4.2	3.0
839	Miscellaneous Factory Process Workers	4	5	2	3	3	-6.2	4.0
841	Farm, Forestry and Garden Workers	96	89	75	87	98	-2.4	2.7
851	Food Preparation Assistants	17	21	18	21	24	0.9	2.7
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	687	884	798	926	1033	1.5	2.6
	<b>Total</b>	<b>26922</b>	<b>30004</b>	<b>36352</b>	<b>42354</b>	<b>46382</b>	<b>3.0</b>	<b>2.5</b>

Source: NIEIR.

**Table 14.63 Education and Training (P) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	120	183	185	207	235	4.4	2.4
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	210	265	320	367	408	4.3	2.4
132	Business Administration Managers	374	513	685	784	869	6.2	2.4
133	Construction, Distribution and Production Managers	35	54	61	70	78	5.7	2.5
134	Education, Health and Welfare Services Managers	1117	1484	1495	1651	1782	3.0	1.8
135	ICT Managers	83	150	143	164	182	5.6	2.5
139	Miscellaneous Specialist Managers	112	165	228	259	289	7.3	2.4
141	Accommodation and Hospitality Managers	70	94	56	61	65	-2.2	1.6
142	Retail Managers	2	2	1	1	1	-4.7	1.5
149	Miscellaneous Hospitality, Retail and Service Managers	290	395	385	437	488	2.9	2.4
211	Arts Professionals	110	152	296	321	357	10.4	1.9
212	Media Professionals	75	135	212	242	264	10.9	2.2
221	Accountants, Auditors and Company Secretaries	186	249	264	307	352	3.6	2.9
222	Financial Brokers and Dealers, and Investment Advisers	4	4	6	6	7	2.6	2.2
223	Human Resource and Training Professionals	527	553	641	736	836	2.0	2.7
224	Information and Organisation Professionals	488	656	927	1069	1175	6.6	2.4
225	Sales, Marketing and Public Relations Professionals	211	346	378	438	484	6.0	2.5
231	Air and Marine Transport Professionals	25	40	43	50	66	5.5	4.3
232	Architects, Designers, Planners and Surveyors	120	163	209	243	271	5.7	2.7
233	Engineering Professionals	37	50	64	74	80	5.5	2.3
234	Natural and Physical Science Professionals	553	572	715	843	932	2.6	2.7
241	School Teachers	13034	15719	17610	18709	19716	3.1	1.1
242	Tertiary Education Teachers	3998	4519	5576	6527	7256	3.4	2.7
249	Miscellaneous Education Professionals	1911	2486	3699	4141	4818	6.8	2.7
251	Health Diagnostic and Promotion Professionals	71	99	92	107	119	2.7	2.6
252	Health Therapy Professionals	138	198	214	229	238	4.5	1.1
253	Medical Practitioners	14	14	13	14	15	-1.3	1.8
254	Midwifery and Nursing Professionals	151	198	182	205	222	1.9	2.0
261	Business and Systems Analysts, and Programmers	189	217	327	387	431	5.7	2.8
262	Database and Systems Administrators, and ICT Security Specialists	154	209	228	265	295	4.0	2.6
263	ICT Network and Support Professionals	121	147	236	272	299	6.9	2.4
271	Legal Professionals	30	41	49	57	63	4.8	2.5
272	Social and Welfare Professionals	740	973	792	893	982	0.7	2.2



**Table 14.63 Education and Training (P) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	259	295	313	355	385	1.9	2.1
312	Building and Engineering Technicians	15	25	28	32	36	6.3	2.5
313	ICT and Telecommunications Technicians	318	334	439	509	562	3.3	2.5
321	Automotive Electricians and Mechanics	0	0	0	0	0	0.0	0.0
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	0	0	0	0	0	0.0	0.0
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	20	38	32	35	37	4.9	1.5
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	16	20	20	24	26	2.5	2.7
341	Electricians	31	47	35	41	44	1.3	2.4
342	Electronics and Telecommunications Trades Workers	70	109	45	49	51	-4.4	1.3
351	Food Trades Workers	74	116	88	98	106	1.8	1.8
361	Animal Attendants and Trainers, and Shearers	21	33	38	51	86	6.2	8.6
362	Horticultural Trades Workers	120	142	133	145	153	1.0	1.4
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	3	5	3	4	4	0.6	2.1
393	Textile, Clothing and Footwear Trades Workers	4	5	3	3	4	-4.7	3.6
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	203	389	332	370	398	5.0	1.8
411	Health and Welfare Support Workers	145	212	204	230	261	3.5	2.5
421	Child Carers	937	1676	859	940	995	-0.9	1.5
422	Education Aides	2308	2891	4176	4567	4847	6.1	1.5
423	Personal Carers and Assistants	89	112	138	161	189	4.5	3.2
431	Hospitality Workers	62	103	75	82	87	1.8	1.5
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	41	51	72	86	96	5.9	2.9
451	Personal Service and Travel Workers	263	355	367	433	551	3.4	4.1
452	Sports and Fitness Workers	946	1489	1519	1699	2056	4.8	3.1
511	Contract, Program and Project Administrators	552	794	636	736	813	1.4	2.5
512	Office and Practice Managers	386	493	431	482	531	1.1	2.1
521	Personal Assistants and Secretaries	455	416	297	335	368	-4.2	2.2
531	General Clerks	1132	1402	1259	1428	1571	1.1	2.2
532	Keyboard Operators	179	168	163	187	208	-0.9	2.5
541	Call or Contact Centre Information Clerks	257	252	251	295	330	-0.2	2.8
542	Receptionists	425	465	363	409	456	-1.6	2.3
551	Accounting Clerks and Bookkeepers	726	831	639	709	768	-1.3	1.9
552	Financial and Insurance Clerks	15	14	13	14	16	-1.7	2.2

**Table 14.63 Education and Training (P) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	72	67	42	49	55	-5.3	2.7
591	Logistics Clerks	43	59	50	57	62	1.6	2.1
599	Miscellaneous Clerical and Administrative Workers	279	364	335	382	423	1.8	2.4
611	Insurance Agents and Sales Representatives	31	42	27	29	33	-1.4	2.0
612	Real Estate Sales Agents	7	11	9	9	9	3.1	0.4
621	Sales Assistants and Salespersons	43	70	58	65	71	3.0	2.1
631	Checkout Operators and Office Cashiers	0	0	0	0	0	0.0	0.0
639	Miscellaneous Sales Support Workers	12	21	12	15	17	0.2	3.2
711	Machine Operators	0	0	0	0	0	0.0	0.0
712	Stationary Plant Operators	0	0	0	0	0	0.0	0.0
721	Mobile Plant Operators	0	0	0	0	0	0.0	0.0
731	Automobile, Bus and Rail Drivers	27	66	62	70	77	8.8	2.2
732	Delivery Drivers	0	0	0	0	0	0.0	0.0
733	Truck Drivers	0	0	0	0	0	0.0	0.0
741	Storepersons	10	15	18	21	23	5.9	2.4
811	Cleaners and Laundry Workers	269	355	232	255	275	-1.5	1.7
821	Construction and Mining Labourers	0	0	0	0	0	0.0	0.0
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	5	5	3	3	3	-4.8	1.5
839	Miscellaneous Factory Process Workers	0	0	0	0	0	0.0	0.0
841	Farm, Forestry and Garden Workers	51	57	35	40	49	-3.7	3.3
851	Food Preparation Assistants	61	95	58	64	68	-0.5	1.6
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	153	246	162	178	190	0.6	1.6
	<b>Total</b>	<b>36433</b>	<b>45801</b>	<b>50403</b>	<b>55882</b>	<b>61065</b>	<b>3.3</b>	<b>1.9</b>

Source: NIEIR.

**Table 14.64 Health Care and Social Assistance (Q) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	267	394	609	675	725	8.6	1.8
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	122	158	287	324	349	9.0	2.0
132	Business Administration Managers	302	401	786	893	958	10.0	2.0
133	Construction, Distribution and Production Managers	58	87	136	156	171	8.9	2.3
134	Education, Health and Welfare Services Managers	879	1043	1791	2052	2227	7.4	2.2
135	ICT Managers	41	75	117	133	144	11.1	2.1
139	Miscellaneous Specialist Managers	96	145	302	344	378	12.2	2.3
141	Accommodation and Hospitality Managers	81	120	115	136	151	3.5	2.8
142	Retail Managers	66	94	107	125	140	5.0	2.7
149	Miscellaneous Hospitality, Retail and Service Managers	162	223	327	372	407	7.3	2.2
211	Arts Professionals	23	28	92	96	100	14.8	0.8
212	Media Professionals	27	42	125	133	139	16.7	1.1
221	Accountants, Auditors and Company Secretaries	209	275	406	475	520	6.9	2.5
222	Financial Brokers and Dealers, and Investment Advisers	10	11	16	19	19	5.0	1.9
223	Human Resource and Training Professionals	286	291	487	549	586	5.5	1.9
224	Information and Organisation Professionals	301	407	893	1042	1142	11.5	2.5
225	Sales, Marketing and Public Relations Professionals	149	247	443	498	547	11.5	2.1
231	Air and Marine Transport Professionals	3	4	6	7	8	9.2	3.1
232	Architects, Designers, Planners and Surveyors	32	43	92	101	109	11.0	1.7
233	Engineering Professionals	33	48	75	92	101	8.5	3.1
234	Natural and Physical Science Professionals	745	857	1492	1804	2023	7.2	3.1
241	School Teachers	325	317	733	809	860	8.5	1.6
242	Tertiary Education Teachers	37	40	77	85	90	7.5	1.6
249	Miscellaneous Education Professionals	63	77	145	168	179	8.7	2.1
251	Health Diagnostic and Promotion Professionals	1164	1626	2137	2560	2853	6.3	2.9
252	Health Therapy Professionals	2252	2875	4435	5332	6052	7.0	3.2
253	Medical Practitioners	2013	2718	3093	3789	4259	4.4	3.2
254	Midwifery and Nursing Professionals	9380	11455	14802	18340	20554	4.7	3.3
261	Business and Systems Analysts, and Programmers	68	78	160	189	208	8.9	2.7
262	Database and Systems Administrators, and ICT Security Specialists	66	80	156	178	192	9.1	2.1
263	ICT Network and Support Professionals	22	29	65	72	78	11.5	1.9
271	Legal Professionals	31	40	96	103	108	12.0	1.2
272	Social and Welfare Professionals	3050	3630	4892	5537	6015	4.8	2.1

**Table 14.64 Health Care and Social Assistance (Q) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	949	1081	1624	2005	2303	5.5	3.6
312	Building and Engineering Technicians	27	41	67	79	91	9.4	3.1
313	ICT and Telecommunications Technicians	133	130	230	276	302	5.6	2.8
321	Automotive Electricians and Mechanics	0	0	0	0	0	0.0	0.0
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	21	24	25	30	33	1.7	3.0
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	3	1	1	2	2	-7.9	3.8
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	10	12	13	15	16	2.3	2.6
341	Electricians	12	15	20	25	27	5.9	3.0
342	Electronics and Telecommunications Trades Workers	14	19	15	18	20	0.4	3.1
351	Food Trades Workers	353	514	628	725	797	5.9	2.4
361	Animal Attendants and Trainers, and Shearers	11	20	32	37	39	11.8	2.0
362	Horticultural Trades Workers	36	43	82	90	95	8.4	1.6
391	Hairdressers	10	19	24	28	34	9.9	3.3
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	0	0	0	0	0	0.0	0.0
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	160	312	391	468	551	9.3	3.5
411	Health and Welfare Support Workers	2807	3886	4849	5687	6361	5.6	2.8
421	Child Carers	3273	4812	4820	5559	5955	3.9	2.1
422	Education Aides	59	57	160	178	192	10.6	1.8
423	Personal Carers and Assistants	7272	8632	11156	13301	14796	4.4	2.9
431	Hospitality Workers	69	106	114	131	140	5.2	2.1
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	51	70	131	161	178	9.8	3.1
451	Personal Service and Travel Workers	201	285	347	408	464	5.6	2.9
452	Sports and Fitness Workers	38	58	78	87	93	7.4	1.8
511	Contract, Program and Project Administrators	336	470	624	701	763	6.4	2.0
512	Office and Practice Managers	870	1100	1348	1587	1807	4.5	3.0
521	Personal Assistants and Secretaries	570	497	536	633	707	-0.6	2.8
531	General Clerks	914	1060	1453	1705	1888	4.7	2.7
532	Keyboard Operators	567	524	618	741	828	0.9	3.0
541	Call or Contact Centre Information Clerks	231	233	300	351	388	2.6	2.6
542	Receptionists	3528	3774	3829	4616	5290	0.8	3.3
551	Accounting Clerks and Bookkeepers	724	775	943	1107	1236	2.7	2.7
552	Financial and Insurance Clerks	22	21	29	32	34	2.7	1.7

**Table 14.64 Health Care and Social Assistance (Q) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	432	384	329	399	449	-2.7	3.1
591	Logistics Clerks	93	126	152	178	193	5.1	2.4
599	Miscellaneous Clerical and Administrative Workers	128	165	214	250	272	5.3	2.4
611	Insurance Agents and Sales Representatives	22	30	24	28	33	0.9	2.9
612	Real Estate Sales Agents	24	45	48	53	55	7.2	1.4
621	Sales Assistants and Salespersons	150	242	253	290	323	5.3	2.5
631	Checkout Operators and Office Cashiers	24	39	37	42	44	4.7	1.7
639	Miscellaneous Sales Support Workers	19	30	30	33	35	4.4	1.5
711	Machine Operators	131	180	213	262	292	5.0	3.2
712	Stationary Plant Operators	0	0	0	0	0	0.0	0.0
721	Mobile Plant Operators	11	12	23	25	29	7.9	2.5
731	Automobile, Bus and Rail Drivers	32	56	78	85	89	9.2	1.3
732	Delivery Drivers	9	13	28	30	31	12.5	1.1
733	Truck Drivers	9	17	18	21	22	7.4	2.3
741	Storepersons	91	132	169	199	217	6.4	2.6
811	Cleaners and Laundry Workers	720	882	842	1009	1121	1.6	2.9
821	Construction and Mining Labourers	0	0	0	0	0	0.0	0.0
831	Food Process Workers	5	4	3	4	4	-3.7	3.2
832	Packers and Product Assemblers	172	232	227	247	263	2.8	1.5
839	Miscellaneous Factory Process Workers	50	68	76	84	98	4.3	2.5
841	Farm, Forestry and Garden Workers	10	11	12	13	15	1.5	2.1
851	Food Preparation Assistants	751	1090	1023	1235	1371	3.1	3.0
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	91	143	128	150	162	3.5	2.4
	<b>Total</b>	<b>48607</b>	<b>60452</b>	<b>77907</b>	<b>92604</b>	<b>102943</b>	<b>4.8</b>	<b>2.8</b>

Source: NIEIR.

**Table 14.65 Arts and Recreational Services (R) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	103	139	116	138	151	1.2	2.6
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	105	126	124	147	159	1.7	2.5
132	Business Administration Managers	103	125	149	171	189	3.8	2.4
133	Construction, Distribution and Production Managers	16	24	27	33	35	5.2	2.8
134	Education, Health and Welfare Services Managers	22	26	20	24	26	-1.1	2.7
135	ICT Managers	9	16	14	15	16	4.8	0.9
139	Miscellaneous Specialist Managers	159	217	257	318	359	4.9	3.4
141	Accommodation and Hospitality Managers	86	102	73	78	82	-1.5	1.1
142	Retail Managers	44	51	41	37	36	-0.7	-1.4
149	Miscellaneous Hospitality, Retail and Service Managers	492	653	560	683	754	1.3	3.0
211	Arts Professionals	913	982	1147	1191	1249	2.3	0.9
212	Media Professionals	315	463	502	513	528	4.8	0.5
221	Accountants, Auditors and Company Secretaries	74	89	80	93	101	0.9	2.3
222	Financial Brokers and Dealers, and Investment Advisers	0	0	0	0	0	0.0	0.0
223	Human Resource and Training Professionals	103	100	92	107	117	-1.1	2.5
224	Information and Organisation Professionals	132	153	208	256	296	4.7	3.6
225	Sales, Marketing and Public Relations Professionals	115	166	162	187	200	3.5	2.1
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	173	200	197	218	230	1.3	1.6
233	Engineering Professionals	24	31	28	31	32	1.5	1.3
234	Natural and Physical Science Professionals	78	82	91	118	148	1.5	5.0
241	School Teachers	2	2	3	3	4	2.4	3.6
242	Tertiary Education Teachers	0	0	0	0	0	0.0	0.0
249	Miscellaneous Education Professionals	53	55	59	71	84	1.1	3.7
251	Health Diagnostic and Promotion Professionals	14	20	19	24	26	3.1	3.1
252	Health Therapy Professionals	11	11	8	9	9	-3.1	1.9
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	0	0	0	0	0	0.0	0.0
261	Business and Systems Analysts, and Programmers	101	97	142	128	125	3.4	-1.3
262	Database and Systems Administrators, and ICT Security Specialists	30	36	40	39	39	2.9	-0.2
263	ICT Network and Support Professionals	16	16	24	24	24	4.1	0.3
271	Legal Professionals	18	22	22	26	27	2.4	2.0
272	Social and Welfare Professionals	30	36	26	32	35	-1.3	2.9



**Table 14.65 Arts and Recreational Services (R) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	0	0	0	0	0	0.0	0.0
312	Building and Engineering Technicians	3	4	4	4	3	2.2	-2.1
313	ICT and Telecommunications Technicians	32	33	60	59	60	6.5	-0.1
321	Automotive Electricians and Mechanics	12	18	10	13	14	-1.7	3.4
322	Fabrication Engineering Trades Workers	0	0	0	0	0	0.0	0.0
323	Mechanical Engineering Trades Workers	14	12	10	12	13	-3.3	3.3
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	0	0	0	0	0	0.0	0.0
331	Bricklayers, and Carpenters and Joiners	17	20	18	21	23	0.7	2.3
332	Floor Finishers and Painting Trades Workers	0	0	0	0	0	0.0	0.0
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	0	0	0	0	0	0.0	0.0
341	Electricians	0	0	0	0	0	0.0	0.0
342	Electronics and Telecommunications Trades Workers	19	27	15	14	15	-2.7	0.3
351	Food Trades Workers	89	114	99	96	101	1.0	0.2
361	Animal Attendants and Trainers, and Shearers	88	134	156	205	248	5.9	4.8
362	Horticultural Trades Workers	264	274	304	390	461	1.4	4.2
391	Hairdressers	0	0	0	0	0	0.0	0.0
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	10	8	5	6	6	-6.7	2.6
394	Wood Trades Workers	0	0	0	0	0	0.0	0.0
399	Miscellaneous Technicians and Trades Workers	118	172	124	137	143	0.4	1.5
411	Health and Welfare Support Workers	20	24	18	22	24	-1.0	3.1
421	Child Carers	33	45	31	40	44	-0.4	3.5
422	Education Aides	0	0	0	0	0	0.0	0.0
423	Personal Carers and Assistants	0	0	0	0	0	0.0	0.0
431	Hospitality Workers	745	998	787	761	778	0.5	-0.1
441	Defence Force Members, Fire Fighters and Police	0	0	0	0	0	0.0	0.0
442	Prison and Security Officers	82	100	143	144	157	5.7	0.9
451	Personal Service and Travel Workers	112	124	99	125	145	-1.3	3.9
452	Sports and Fitness Workers	1132	1738	1333	1694	1862	1.7	3.4
511	Contract, Program and Project Administrators	76	103	77	98	116	0.1	4.2
512	Office and Practice Managers	49	59	49	63	70	0.1	3.5
521	Personal Assistants and Secretaries	48	42	28	34	37	-5.3	2.9
531	General Clerks	112	121	116	140	154	0.3	2.8
532	Keyboard Operators	17	13	8	9	9	-6.9	1.0
541	Call or Contact Centre Information Clerks	150	139	134	154	168	-1.1	2.3
542	Receptionists	219	217	157	192	208	-3.3	2.9
551	Accounting Clerks and Bookkeepers	113	113	90	109	119	-2.2	2.8
552	Financial and Insurance Clerks	12	9	10	8	7	-1.5	-2.8

**Table 14.65 Arts and Recreational Services (R) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	113	88	65	55	54	-5.4	-1.8
591	Logistics Clerks	13	15	16	18	19	2.6	1.5
599	Miscellaneous Clerical and Administrative Workers	24	29	22	28	32	-0.8	3.9
611	Insurance Agents and Sales Representatives	26	31	17	21	24	-4.1	3.3
612	Real Estate Sales Agents	0	0	0	0	0	0.0	0.0
621	Sales Assistants and Salespersons	192	277	190	221	242	-0.1	2.5
631	Checkout Operators and Office Cashiers	59	92	54	59	64	-0.9	1.6
639	Miscellaneous Sales Support Workers	82	120	68	79	87	-1.8	2.5
711	Machine Operators	6	7	4	5	5	-3.7	2.9
712	Stationary Plant Operators	0	0	0	0	0	0.0	0.0
721	Mobile Plant Operators	0	0	0	0	0	0.0	0.0
731	Automobile, Bus and Rail Drivers	0	0	0	0	0	0.0	0.0
732	Delivery Drivers	0	0	0	0	0	0.0	0.0
733	Truck Drivers	1	2	1	2	2	0.4	2.5
741	Storepersons	8	11	16	15	16	8.0	-0.4
811	Cleaners and Laundry Workers	132	143	104	112	116	-2.4	1.1
821	Construction and Mining Labourers	5	8	5	5	5	-0.8	-0.2
831	Food Process Workers	0	0	0	0	0	0.0	0.0
832	Packers and Product Assemblers	0	0	0	0	0	0.0	0.0
839	Miscellaneous Factory Process Workers	0	0	0	0	0	0.0	0.0
841	Farm, Forestry and Garden Workers	124	126	92	121	144	-2.9	4.6
851	Food Preparation Assistants	38	46	42	42	44	1.0	0.3
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	255	333	238	270	296	-0.7	2.2
	<b>Total</b>	<b>8004</b>	<b>10031</b>	<b>9052</b>	<b>10318</b>	<b>11218</b>	<b>1.2</b>	<b>2.2</b>

Source: NIEIR.

**Table 14.66 Other Services (S) resident employment by occupation (minor group) – Melbourne's North**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	143	166	202	223	229	3.6	1.2
121	Farmers and Farm Managers	0	0	0	0	0	0.0	0.0
131	Advertising, Public Relations and Sales Managers	140	143	214	235	242	4.3	1.2
132	Business Administration Managers	156	172	295	327	335	6.5	1.3
133	Construction, Distribution and Production Managers	44	56	82	92	95	6.3	1.6
134	Education, Health and Welfare Services Managers	24	25	32	37	38	3.1	1.8
135	ICT Managers	8	13	15	16	16	5.8	1.2
139	Miscellaneous Specialist Managers	38	46	70	77	78	6.3	1.1
141	Accommodation and Hospitality Managers	5	6	5	6	5	0.0	0.5
142	Retail Managers	313	347	384	434	459	2.0	1.8
149	Miscellaneous Hospitality, Retail and Service Managers	350	392	555	622	650	4.7	1.6
211	Arts Professionals	21	24	42	46	46	7.1	0.9
212	Media Professionals	23	34	57	63	62	9.8	0.8
221	Accountants, Auditors and Company Secretaries	95	106	144	163	171	4.2	1.7
222	Financial Brokers and Dealers, and Investment Advisers	5	4	5	6	5	0.1	0.5
223	Human Resource and Training Professionals	318	284	342	390	416	0.7	2.0
224	Information and Organisation Professionals	100	115	189	215	227	6.6	1.8
225	Sales, Marketing and Public Relations Professionals	129	177	238	263	265	6.3	1.1
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	45	58	76	84	84	5.4	1.0
233	Engineering Professionals	58	60	138	146	150	9.0	0.9
234	Natural and Physical Science Professionals	44	40	60	66	67	3.1	1.1
241	School Teachers	2	1	2	2	2	1.0	0.5
242	Tertiary Education Teachers	23	23	35	38	39	4.3	1.1
249	Miscellaneous Education Professionals	25	27	38	42	43	4.2	1.3
251	Health Diagnostic and Promotion Professionals	19	21	21	24	26	0.9	1.9
252	Health Therapy Professionals	6	7	19	22	23	12.9	2.0
253	Medical Practitioners	0	0	0	0	0	0.0	0.0
254	Midwifery and Nursing Professionals	27	30	43	51	54	4.7	2.2
261	Business and Systems Analysts, and Programmers	17	15	27	30	32	4.7	1.8
262	Database and Systems Administrators, and ICT Security Specialists	38	46	60	70	73	4.7	1.9
263	ICT Network and Support Professionals	44	41	98	108	111	8.3	1.3
271	Legal Professionals	12	13	18	20	19	4.5	0.5
272	Social and Welfare Professionals	437	475	501	587	629	1.4	2.3

**Table 14.66 Other Services (S) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
311	Agricultural, Medical and Science Technicians	18	14	33	37	37	6.1	1.3
312	Building and Engineering Technicians	27	27	54	61	65	7.1	1.7
313	ICT and Telecommunications Technicians	68	56	114	128	133	5.3	1.6
321	Automotive Electricians and Mechanics	2292	2602	2891	3172	3276	2.4	1.3
322	Fabrication Engineering Trades Workers	40	56	75	83	86	6.4	1.4
323	Mechanical Engineering Trades Workers	475	406	640	702	725	3.0	1.3
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	1131	1118	1412	1561	1610	2.2	1.3
331	Bricklayers, and Carpenters and Joiners	27	33	31	38	42	1.4	3.1
332	Floor Finishers and Painting Trades Workers	3	1	1	2	2	-6.9	2.2
333	Glaziers, Plasterers and Tilers	0	0	0	0	0	0.0	0.0
334	Plumbers	50	56	77	85	91	4.4	1.7
341	Electricians	232	259	462	497	513	7.1	1.1
342	Electronics and Telecommunications Trades Workers	609	610	773	837	865	2.4	1.1
351	Food Trades Workers	18	21	18	21	23	0.2	2.3
361	Animal Attendants and Trainers, and Shearers	256	370	502	591	646	7.0	2.6
362	Horticultural Trades Workers	34	30	38	44	45	1.3	1.7
391	Hairdressers	1845	2440	2403	2868	3145	2.7	2.7
392	Printing Trades Workers	0	0	0	0	0	0.0	0.0
393	Textile, Clothing and Footwear Trades Workers	160	135	256	279	288	4.8	1.2
394	Wood Trades Workers	24	30	28	30	31	1.6	0.8
399	Miscellaneous Technicians and Trades Workers	113	158	242	275	293	7.9	2.0
411	Health and Welfare Support Workers	122	142	153	178	188	2.3	2.1
421	Child Carers	206	374	527	685	664	9.9	2.3
422	Education Aides	9	9	15	17	18	4.8	2.0
423	Personal Carers and Assistants	112	109	138	163	176	2.1	2.4
431	Hospitality Workers	30	39	39	45	46	2.8	1.6
441	Defence Force Members, Fire Fighters and Police	3	3	3	3	3	0.7	0.5
442	Prison and Security Officers	3	4	6	6	6	5.7	0.5
451	Personal Service and Travel Workers	1228	1371	1321	1559	1694	0.7	2.5
452	Sports and Fitness Workers	431	562	548	630	662	2.4	1.9
511	Contract, Program and Project Administrators	145	174	167	188	198	1.4	1.7
512	Office and Practice Managers	264	255	352	391	409	2.9	1.5
521	Personal Assistants and Secretaries	270	192	191	212	218	-3.4	1.4
531	General Clerks	288	281	365	408	423	2.4	1.5
532	Keyboard Operators	86	66	84	93	95	-0.3	1.3
541	Call or Contact Centre Information Clerks	179	146	220	245	252	2.1	1.4
542	Receptionists	318	275	319	362	378	0.0	1.7
551	Accounting Clerks and Bookkeepers	516	434	625	689	724	2.0	1.5
552	Financial and Insurance Clerks	9	10	8	10	10	-0.6	1.9

**Table 14.66 Other Services (S) resident employment by occupation (minor group) – Melbourne's North (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
561	Clerical and Office Support Workers	47	37	33	37	39	-3.5	1.6
591	Logistics Clerks	48	52	66	74	76	3.3	1.3
599	Miscellaneous Clerical and Administrative Workers	41	48	56	65	68	3.0	1.9
611	Insurance Agents and Sales Representatives	49	52	46	51	52	-0.7	1.4
612	Real Estate Sales Agents	3	5	3	3	3	0.6	0.5
621	Sales Assistants and Salespersons	191	232	237	264	272	2.2	1.4
631	Checkout Operators and Office Cashiers	5	8	5	5	5	-0.5	0.5
639	Miscellaneous Sales Support Workers	10	15	9	10	11	-2.0	2.2
711	Machine Operators	36	40	57	64	68	4.7	1.7
712	Stationary Plant Operators	12	13	22	22	22	5.6	0.3
721	Mobile Plant Operators	11	11	17	19	19	4.4	1.3
731	Automobile, Bus and Rail Drivers	20	37	57	67	71	11.2	2.2
732	Delivery Drivers	50	66	100	115	121	7.2	1.9
733	Truck Drivers	48	79	89	105	112	6.3	2.3
741	Storepersons	34	42	65	73	75	6.8	1.4
811	Cleaners and Laundry Workers	1061	979	1096	1239	1296	0.3	1.7
821	Construction and Mining Labourers	52	48	50	56	57	-0.4	1.2
831	Food Process Workers	7	10	6	8	10	-0.8	4.4
832	Packers and Product Assemblers	98	105	115	128	132	1.6	1.4
839	Miscellaneous Factory Process Workers	29	30	32	36	36	1.1	1.3
841	Farm, Forestry and Garden Workers	6	5	7	7	7	1.5	0.5
851	Food Preparation Assistants	10	9	11	12	13	1.3	2.1
891	Freight Handlers and Shelf Fillers	0	0	0	0	0	0.0	0.0
899	Miscellaneous Labourers	407	431	566	637	667	3.3	1.7
	<b>Total</b>	<b>16626</b>	<b>18186</b>	<b>21885</b>	<b>24800</b>	<b>26003</b>	<b>2.8</b>	<b>1.7</b>

Source: NIEIR.

## 14.4 Youth unemployment

Youth unemployment is of particular concern within Melbourne's North, particularly throughout the pandemic as many occupations that would typically be available to young people have been restricted by lockdowns and allowed activity. This includes workers in Retail, and Hospitality (e.g. Hospitality Workers, Food Preparation Assistants, Sales Assistants and Sales Persons). In the short-term, these conditions will continue to improve post re-opening. Already it seems that Hospitality Workers are in strong demand (demonstrated by job listings) as businesses look to fill vacancies now that restrictions on patronage have largely been removed.

In addition, over the next ten years young people will need to be encouraged into different industries as demand for jobs changes under the new economic environment.

One of the main pathways to employment for young people, particular young men, is by seeking training and employment through the construction industry. This is often completed through an apprenticeship, which also

involves completing certificate level education through the VET system. With the expected contraction in construction over the next five years, employment prospects in construction will be weaker than what has been the case in the previous ten years with strong migration and a booming property market. This will place further pressure on youth unemployment if apprenticeships are over-subscribed.

Concurrently, the manufacturing industries will continue to decline, which means technicians and trades employment growth within manufacturing will also be weak/in decline.

Potential means to address the structural shift in occupations, in context of young people entering the workforce includes the following.

1. More will need to be done to encourage young people into alternative pathways within growth industries in Melbourne's North away from construction or manufacturing under business-as-usual forecasts. Initiatives such as the Melbourne's North Advanced Manufacturing Group are important in this respect.

2. Further development of local industries to provide more jobs for resident workers, which will increase place-of-work employment beyond the NIEIR business-as-usual forecasts.

Growth industries that could be promoted to young people include Health and Social Assistance, Transport, Postal and Warehousing. Young people may also need to seek higher skilled training than previous years to move into more professional career pathways to train for more digital and information-based careers.

Further development of local manufacturing industries and attraction of manufacturing businesses may also be beneficial to Melbourne's North to attempt to stop further declines in the industry (BAU case) and enable more pathways for Trades and Technicians workers for young people. The manufacturing sector is particularly important in a future context as it provides supply chain security, high value adding potential and contributes significant research and innovation capacity to the region. Food security will become an even more important consideration and that provides more opportunities for Melbourne's North.

## 14.5 Local jobs for local residents

Melbourne's North needs to plan for business-as-usual forecast employment increases over the coming years. Beyond BAU forecasts, Melbourne's North could work to encourage the creation of local jobs to serve local residents who currently commute to regions outside of Melbourne's North for work. This approach is consistent with, for example, 20-minute neighbourhoods proposed in Plan Melbourne 2017 to 2050. 20-minute neighbourhoods are designed so that residents can meet most of their daily needs within a 20-minute walk of home, including groceries, work, and local transport options. Now that many people have also been able to experience the benefits of working from home, and many businesses are now offering working from home options, this could be more achievable than prior to the pandemic.

Encouraging more local jobs to serve the local population will reduce the long standing and increasing gap between the number of workers living within the region, and the number of jobs available. The gap between the resident workforce and place-of-work workforce is projected to be as follows:

- 158,820 in 2021;
- 174,581 in 2026;
- 181,781 in 2031; and
- 191,574 in 2036.

The gap between local jobs and resident employment can be reduced through two methods:

- reduce net residential and place-of-work employment by encouraging development of industries and occupations where Melbourne's North already has a comparative advantage; and/or
- attract industries and occupations that Melbourne's North is weak in to increase industrial diversity and employment opportunity.

For existing businesses, transport links across Melbourne's North need to be fixed to connect local workers to local jobs, including improvement to East-West public transport. Other initiatives need to be directed toward attracting new businesses and job creation to Melbourne's North, such as planning health precincts, commercial space for professional services and other cluster development.

Figure 14.13 shows the difference between place-of-work employment and resident employment by 2031 within Melbourne's North by industry sub-division. Net positive numbers show that there is a surplus of local jobs compared to resident industry workers. While net negative numbers show that there is a lack of local jobs to serve local workers. While Figure 14.14 shows the same gap by occupation major group.

Most industries within Melbourne's North are expected to retain a net outflow of workers over the forecasting period. Only a small number of industries have a net inflow of workers to the region. The industries that will have a net inflow of workers include around half of the manufacturing related industries, air transport and transport support services.

Business professionals or other professions that primarily deal with information continue to have a large difference between resident and place-of-work employment (Industries J to O). These industries likely had a high level of people working from home over the past few years compared to other industries which require more physical presence. Industries J to O will have a gap of around 86,000 workers by 2031. Information and digital occupations will also have larger influence in other industries.

The Food and Beverage services industry has a large gap between resident and industry employment with a net outflow of 13,000 workers by 2031 commuting to regions outside of Melbourne's North. Given one of the key industries promoted for development in Melbourne's North is the Food industry, employment gap may have potential to be closed.

Manufacturing employment is relatively local with only a small gap between place-of-work and resident employment. But if developed further, could encourage higher net inflows of workers.

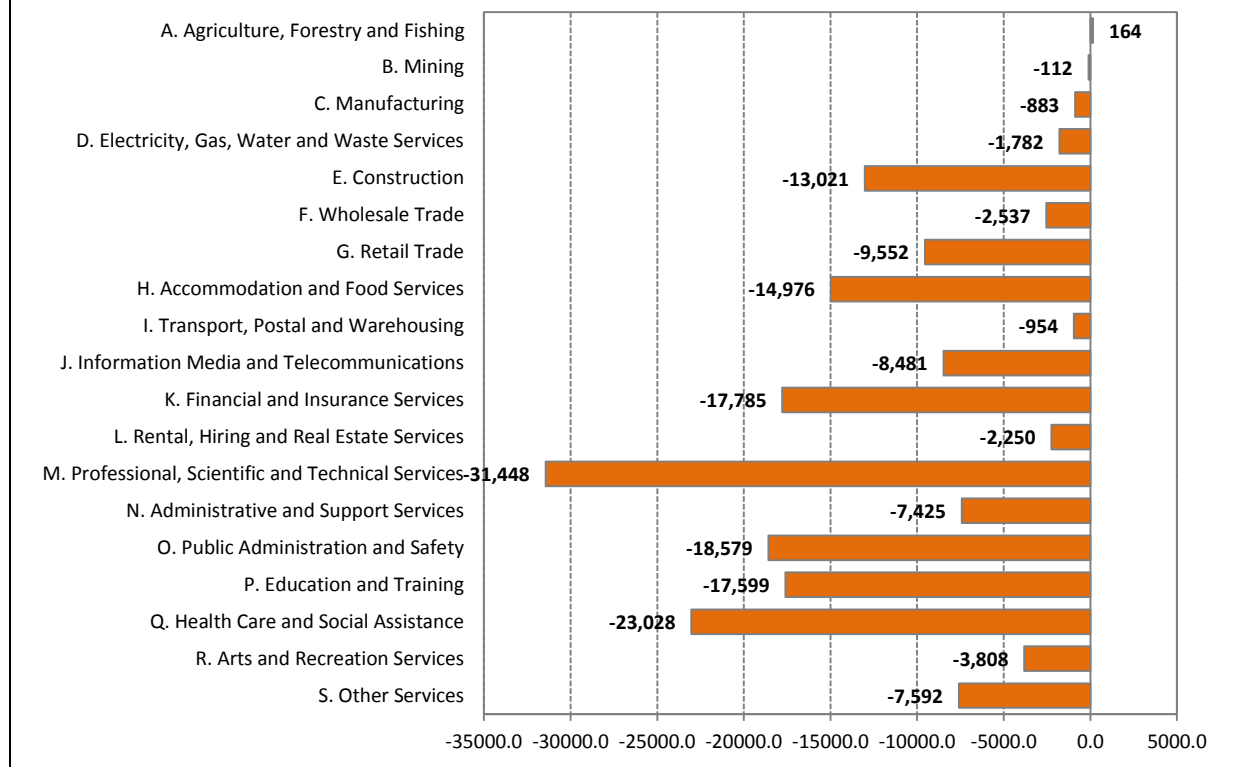
Despite being one of the highest employing industries within Melbourne's North a net of 23,028 Health Care and



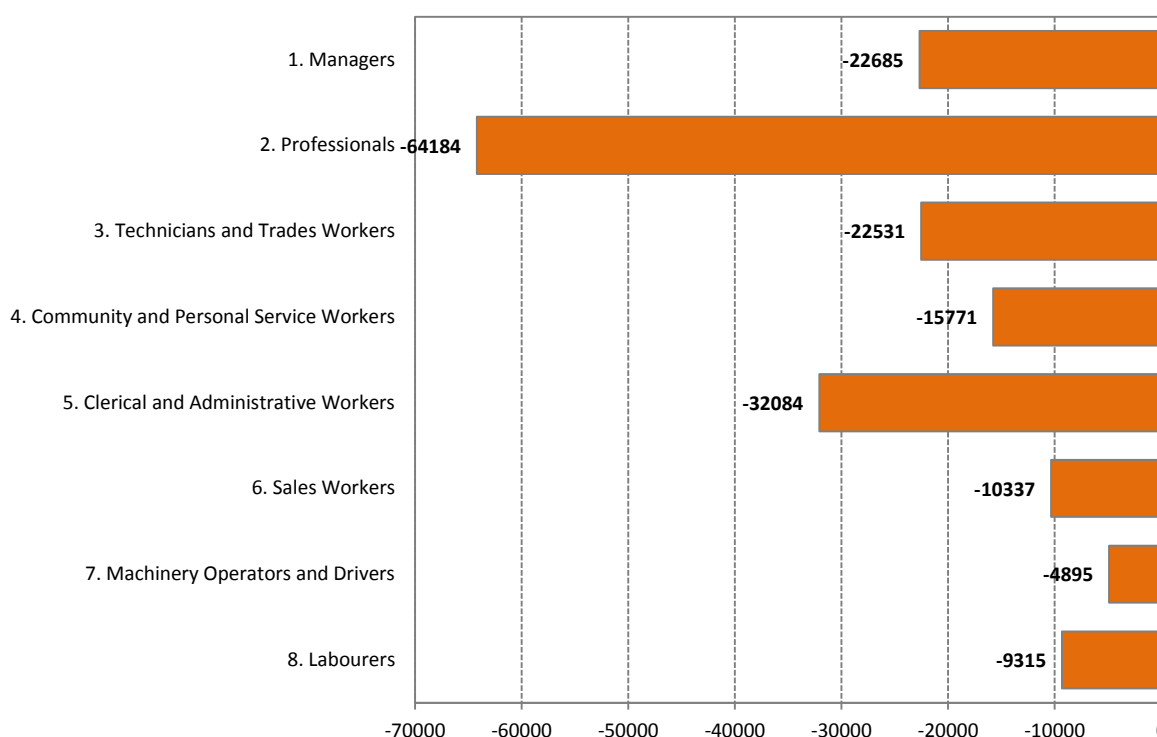
Social Assistance commute to regions outside of the North for work, this includes major hospitals around the CBD which are within easy access from the inner north. More could be done to attract both public and private beds to

Melbourne's North, including the proposed new hospital, given that Melbourne's North generally has less service on offer compared to other Greater Melbourne sub-regions (as highlighted by Northern Horizons).

**Figure 14.13: Difference between place-of-work and resident employment by industry division – 2031**



**Figure 14.14: Difference between place-of-work and resident employment by occupation major group – 2031**



## Chapter 15: Industry and occupation forecasts by Local Government Area

- Hume and Whittlesea will remain the largest LGA economies within Melbourne's North over the next ten years. These two LGAs will add the most jobs to the region.
- The resident workforce is much larger than place-of-work employment within each LGA with the exception of Hume (C), which will continue to have more jobs than local workers.
- The inner northern regions of Banyule (C), Darebin (C) and Moreland (C) will each continue to have significantly more resident workers than local jobs given better access to employment opportunities within the CBD and surrounding areas of Melbourne.
- Banyule (C) and Whittlesea (C) will both benefit from a strong demand for health care workers. In addition, there is expected to be significant growth in health jobs within Hume (C).
- The Construction industry within most regions will be steady or in decline over the next ten years. Mitchell (S) and Nillumbik (S) will fair slightly better than other regions in terms of growth, but will still retain relatively small workforces compared to larger regions.
- Professional occupations within Melbourne's North are expected to grow by 27,977 jobs by 2031 with Banyule (C), Hume (C) and Whittlesea (C) having the largest workforces.
- Technicians and Trades will grow by only 3,286 new jobs out to 2031 with the most scope for new growth in Whittlesea (C), Mitchell (S) and Nillumbik (S).

# 15. Industry and occupation forecasts by Local Government Area

The overall outlook for Melbourne's North is one of lesser growth over the coming years compared to the previous decade. Both employment growth and population growth will be below that of the pre-COVID economy over the forecasts. This chapter presents economic and employment forecasts for each of the seven Local Government Areas (LGAs) that make up Melbourne's North. The LGAs covered in this chapter are:

- Banyule (C);
- Darebin (C);
- Hume (C);
- Mitchel (S);
- Moreland (C);

- Nillumbik (S); and
- Whittlesea (C).

Section 15.1 shows forecasts of key economic indicators by LGA. Section 15.2 presents employment by industry division and subdivision, while Section 15.3 presents forecasts of employment by industry and occupation.

## 15.1 Key economic indicators by LGA

This section outlines key economic indicators for each of the seven LGAs that make up Melbourne's North out to 2031. A summary of forecast growth rates over 2021 to 2031 is provided in Table 15.1.

	GRP	Population	Resident employment	Place-of-work employment	Business and public investment	Residential investment
Banyule (C)	1.6	0.4	0.8	0.9	0.4	-2.2
Darebin (C)	2.3	0.8	1.2	1.0	4.7	0.3
Hume (C)	2.8	1.3	1.6	1.1	0.7	-5.3
Mitchell (S)	5.1	2.7	3.7	4.6	6.4	0.3
Moreland (C)	3.2	0.8	1.3	1.4	7.6	-1.2
Nillumbik (S)	6.2	0.2	0.6	4.8	10.8	0.8
Whittlesea (C)	2.1	1.6	1.9	2.0	4.0	-3.4
<b>Melbourne's North</b>	<b>2.8</b>	<b>1.1</b>	<b>1.5</b>	<b>1.6</b>	<b>3.6</b>	<b>-2.4</b>

Source: NIEIR.

### 15.1.1 Gross Regional Product

The following tables show total Gross Regional Product (GRP) and productivity (GRP per hour worked) out to 2031 by LGA within Melbourne's North.

Melbourne's North economy will grow by an average of 2.8 per cent per annum from 2021 to 2031. The outer regions of Hume and Whittlesea will remain the largest economies over the next ten years. Hume (C) will have an annual economy worth \$20.5 billion by 2031 and Whittlesea will have GRP of \$12.0 billion, through Whittlesea will be growing at a slower rate than recent years, while Hume (C) GRP growth will be similar to that of the previous ten years.

The inner regions of Darebin (C) and Moreland (C) are expected to have an increased rate of GRP growth over the 2021 to 2031 period compared to 2011 to 2021. However, both of these regions seemed to be harder hit by industry closures and reduced activity during the 2021 financial year compared to 2020 financial year. This means that a larger part of the reported growth in GRP for these regions is economic activity returning post-lockdowns, rather than expanded economic activity. In contrast, the outer regions showed more overall economic resilience during this period compared to all other regions.

**Table 15.2 GRP at market prices by region by LGA (\$ billion)**

	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
Banyule (C)	4.7	5.2	5.6	5.9	6.2	6.8	7.3	1.1	1.6
Darebin (C)	5.6	6.2	6.7	7.5	7.5	8.6	9.5	1.2	2.3
Hume (C)	7.9	10.0	12.0	14.2	15.6	19.7	20.5	2.7	2.8
Mitchell (S)	1.2	1.3	1.5	1.6	1.8	2.0	2.9	1.7	5.1
Moreland (C)	4.3	4.8	5.6	6.3	6.5	7.3	8.9	1.5	3.2
Nillumbik (S)	1.7	1.8	2.0	2.0	1.9	2.4	3.5	-0.2	6.2
Whittlesea (C)	4.4	5.2	6.8	8.2	9.8	9.6	12.0	3.7	2.1
<b>Melbourne's North</b>	<b>29.7</b>	<b>34.6</b>	<b>40.1</b>	<b>45.7</b>	<b>49.3</b>	<b>56.4</b>	<b>64.7</b>	<b>2.1</b>	<b>2.8</b>

Source: NIEIR.

**Table 15.3 GRP per hour worked by LGA**

	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
Banyule (C)	69.1	75.3	77.5	83.1	83.9	86.4	90.9	0.8	0.8
Darebin (C)	64.0	72.3	76.4	83.6	83.2	88.3	94.3	0.9	1.3
Hume (C)	59.9	69.4	72.5	76.9	75.4	80.3	86.9	0.4	1.4
Mitchell (S)	80.9	85.8	84.5	87.3	89.2	89.1	94.2	0.5	0.5
Moreland (C)	68.0	76.5	80.8	88.9	90.4	95.9	105.9	1.1	1.6
Nillumbik (S)	73.9	82.2	84.2	88.6	90.5	92.9	101.8	0.7	1.2
Whittlesea (C)	67.4	77.9	81.2	82.8	87.0	84.8	87.5	0.7	0.1
<b>Melbourne's North</b>	<b>65.7</b>	<b>74.1</b>	<b>77.3</b>	<b>82.2</b>	<b>82.6</b>	<b>85.6</b>	<b>91.9</b>	<b>0.7</b>	<b>1.1</b>

Source: NIEIR.

### 15.1.2 Population and households

Melbourne's North is home to 1,073,600 people in 2021, over the next ten years another 124,200 people will be living within the region. Melbourne's North total population is expected to grow by 1.1 per cent on average each year from 2021 to 2031. This is under half the growth rate of the previous decade, which saw annual average population growth of around 2.4 per cent each year.

The fastest growing regions over 2021 to 2031 include Mitchell, Hume and Whittlesea LGAs as these outer regions contain the most opportunities for urban growth. The remaining regions will have relatively slow population growth with annual growth rates of under 1 per cent each year as there is less opportunity for greenfield urban expansion.

Working age population growth will be strongest in Mitchell (S) with 2.6 per cent growth per annum, followed by Whittlesea with 1.6 per cent average growth per year out to 2031.

Banyule (C) and Nillumbik (S) will both have slow growth in both total and working age population, with Nillumbik projected to have slight declines in working age population over the next ten years. Growth in the number of households shows a similar pattern to population growth between the LGAs.

Table 15.4 Total population by region by LGA ('000)									
	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
Banyule (C)	118.0	117.7	122.9	126.9	130.3	132.8	135.9	0.6	0.4
Darebin (C)	126.9	131.6	142.5	153.9	163.9	169.9	177.4	1.4	0.8
Hume (C)	133.6	151.4	173.0	203.7	243.5	259.6	276.0	3.5	1.3
Mitchell (S)	27.5	30.6	34.6	41.2	48.0	53.5	62.5	3.3	2.7
Moreland (C)	135.3	140.2	153.5	170.6	186.3	193.2	202.0	2.0	0.8
Nillumbik (S)	60.2	61.4	62.8	64.0	64.3	64.9	65.8	0.2	0.2
Whittlesea (C)	116.3	127.5	157.7	203.2	237.3	255.2	278.1	4.2	1.6
<b>Melbourne's North</b>	<b>717.8</b>	<b>760.4</b>	<b>847.0</b>	<b>963.5</b>	<b>1073.6</b>	<b>1129.1</b>	<b>1197.8</b>	<b>2.4</b>	<b>1.1</b>

Source: NIEIR.

Table 15.5 Working age population 18 to 70 by LGA ('000)									
	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
Banyule (C)	76.4	76.9	80.4	81.0	82.0	82.0	84.1	0.2	0.3
Darebin (C)	85.0	88.9	98.2	106.5	115.6	119.4	124.5	1.6	0.7
Hume (C)	83.7	95.3	111.2	130.4	155.1	161.3	169.2	3.4	0.9
Mitchell (S)	16.7	18.9	21.7	25.6	30.0	33.1	38.7	3.3	2.6
Moreland (C)	89.5	93.6	105.4	118.9	132.3	136.9	143.0	2.3	0.8
Nillumbik (S)	38.5	39.9	41.1	41.0	40.1	39.3	39.3	-0.3	-0.2
Whittlesea (C)	75.7	83.1	103.9	131.8	152.6	160.2	173.7	3.9	1.3
<b>Melbourne's North</b>	<b>465.4</b>	<b>496.6</b>	<b>562.0</b>	<b>635.3</b>	<b>707.7</b>	<b>732.3</b>	<b>772.5</b>	<b>2.3</b>	<b>0.9</b>

Source: NIEIR.

Table 15.6 Households by LGA ('000)									
	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
Banyule (C)	42.1	43.4	44.8	46.7	49.3	50.1	51.0	1.0	0.3
Darebin (C)	49.0	51.2	53.9	58.4	62.6	64.7	67.4	1.5	0.7
Hume (C)	40.3	47.0	53.4	62.1	76.6	81.5	86.3	3.7	1.2
Mitchell (S)	9.2	10.6	12.1	14.4	17.2	18.9	21.5	3.6	2.2
Moreland (C)	52.2	54.7	58.1	64.7	71.6	74.1	77.0	2.1	0.7
Nillumbik (S)	18.3	19.1	19.7	20.2	20.8	21.4	21.9	0.5	0.5
Whittlesea (C)	35.2	40.3	50.5	65.4	78.0	82.6	88.4	4.5	1.3
<b>Melbourne's North</b>	<b>246.4</b>	<b>266.2</b>	<b>292.6</b>	<b>331.8</b>	<b>376.1</b>	<b>393.3</b>	<b>413.5</b>	<b>2.5</b>	<b>1.0</b>

Source: NIEIR.

### 15.1.3 Employment

Total resident and place-of-work employment forecasts are shown in Tables 15.7 and 15.8 respectively.

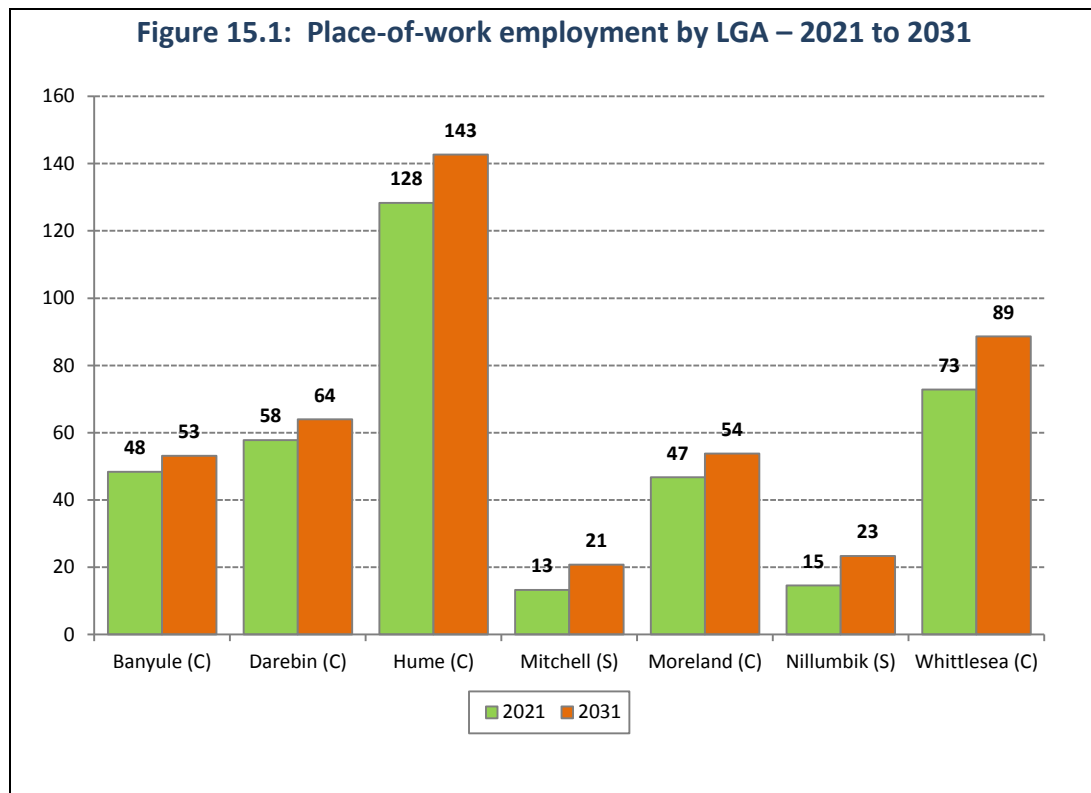
Total employment for each LGA in 2021 and 2031 is shown in Figures 15.1 and 15.2. Hume (C) has the highest number of employed working within the LGA with around 128,000 in 2021, growing out to 143,000 by 2031, an increase of around 15,000 jobs. While Whittlesea (C) is also expected to gain a similar amount, increasing by 16,000 jobs from 73,000 in 2021 to 89,000 in 2031.

In contrast, the resident workforce is larger in each LGA, with the exception of Hume (C), which has a 19,000 more jobs in the region than workers as of 2021. This gap is

expected to narrow slightly by 2031 down to 15,000 more jobs than resident employed.

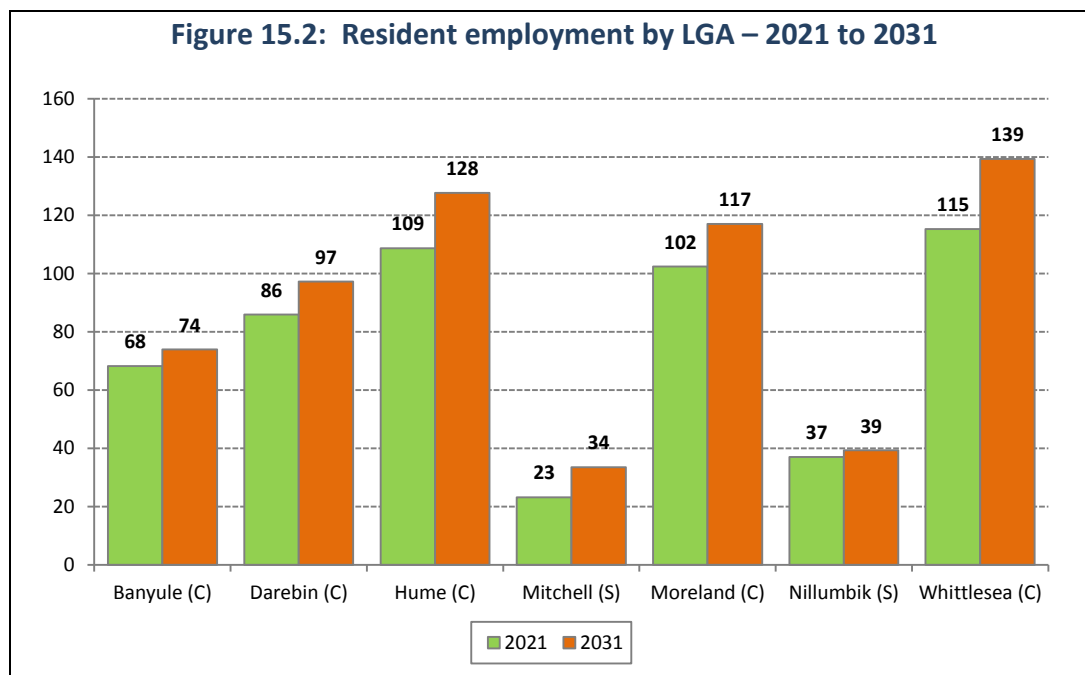
The inner northern regions of Banyule (C), Darebin (C) and Moreland (C) will each continue to have significantly more resident workers than local jobs given better access to employment opportunities within the CBD and surrounding areas of Melbourne.

Moreland (C) will have the largest difference between both employment series in 2031 with 63,000 more workers than there are jobs within the region, followed by Whittlesea (C) which will 50,000 more workers living in the LGA than jobs. While Moreland (C) benefits from proximity to jobs in the CBD, Whittlesea (C) has had large residential developments within proportional increases in job creation.





**Figure 15.2: Resident employment by LGA – 2021 to 2031**



**Table 15.7 Resident employment by LGA ('000)**

	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
Banyule (C)	60.1	61.2	65.3	65.9	68.2	71.2	73.9	0.4	0.8
Darebin (C)	56.4	61.0	70.8	78.1	85.9	93.4	97.3	2.0	1.2
Hume (C)	56.7	66.4	78.0	89.6	108.7	123.9	127.7	3.4	1.6
Mitchell (S)	12.4	14.7	17.2	19.8	23.2	27.1	33.5	3.0	3.7
Moreland (C)	58.7	65.2	77.7	89.6	102.4	111.5	117.0	2.8	1.3
Nillumbik (S)	34.0	35.3	37.3	36.7	37.0	37.4	39.3	-0.1	0.6
Whittlesea (C)	53.8	60.0	77.4	97.7	115.3	125.9	139.3	4.1	1.9
<b>Melbourne's North</b>	<b>332.0</b>	<b>363.8</b>	<b>423.8</b>	<b>477.6</b>	<b>540.8</b>	<b>590.4</b>	<b>628.0</b>	<b>2.5</b>	<b>1.5</b>

Source: NIEIR.

**Table 15.8 Place-of-work employment by LGA ('000)**

	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
Banyule (C)	40.9	42.6	45.9	46.4	48.4	51.6	53.1	0.5	0.9
Darebin (C)	50.5	50.4	52.4	56.1	57.8	61.5	63.9	1.0	1.0
Hume (C)	72.6	81.2	94.7	108.0	128.3	147.3	142.7	3.1	1.1
Mitchell (S)	8.7	9.9	11.6	12.1	13.3	15.3	20.8	1.3	4.6
Moreland (C)	36.0	37.5	41.8	45.1	46.7	48.5	53.8	1.1	1.4
Nillumbik (S)	14.5	14.3	15.4	15.5	14.6	17.6	23.3	-0.6	4.8
Whittlesea (C)	37.0	39.6	50.8	62.2	72.9	74.0	88.6	3.7	2.0
<b>Melbourne's North</b>	<b>260.3</b>	<b>275.5</b>	<b>312.6</b>	<b>345.3</b>	<b>381.9</b>	<b>415.8</b>	<b>446.2</b>	<b>2.0</b>	<b>1.6</b>

Source: NIEIR.

## 15.1.4 Investment

Table 15.9 shows total business and public investment by LGA out to 2031, the region will have annual investment of \$14.5 billion by 2031, up from 10.2 billion in 2021. In terms of average annual growth, both Moreland (C) and Darebin (C) will have strong per cent gains.

In contrast, residential investment (new homes and renovations) is expected to contract over the next ten years due to slower population growth eventually feeding into slower demand for new housing. The worst impact regions will be Hume (C) and Whittlesea (C), which have previously benefited from large migration pre-COVID.

	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
Banyule (C)	0.5	0.7	0.9	0.8	1.4	1.3	1.5	5.0	0.4
Darebin (C)	0.7	0.9	1.0	1.0	1.1	1.5	1.8	1.4	4.7
Hume (C)	1.2	2.0	2.4	2.7	3.6	4.8	3.9	4.3	0.7
Mitchell (S)	0.2	0.3	0.4	0.4	0.6	0.6	1.0	3.1	6.4
Moreland (C)	0.5	0.8	0.9	0.9	1.1	1.6	2.4	2.5	7.6
Nillumbik (S)	0.2	0.3	0.4	0.3	0.3	0.5	0.9	-1.4	10.8
Whittlesea (C)	0.7	1.2	1.5	1.5	2.0	1.8	3.0	2.9	4.0
<b>Melbourne's North</b>	<b>4.0</b>	<b>6.2</b>	<b>7.4</b>	<b>7.6</b>	<b>10.2</b>	<b>12.2</b>	<b>14.5</b>	<b>3.3</b>	<b>3.6</b>

Source: NIEIR.

	2001	2006	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
Banyule (C)	0.3	0.3	0.4	0.5	0.5	0.4	0.4	4.0	-2.2
Darebin (C)	0.3	0.4	0.5	0.7	0.5	0.6	0.6	-0.1	0.3
Hume (C)	0.4	0.5	0.6	0.9	1.3	0.8	0.7	7.9	-5.3
Mitchell (S)	0.1	0.1	0.2	0.2	0.3	0.2	0.3	2.7	0.3
Moreland (C)	0.4	0.4	0.6	0.9	0.7	0.7	0.6	1.7	-1.2
Nillumbik (S)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-1.7	0.8
Whittlesea (C)	0.3	0.4	1.1	1.0	1.0	0.7	0.7	-0.4	-3.4
<b>Melbourne's North</b>	<b>1.9</b>	<b>2.4</b>	<b>3.6</b>	<b>4.3</b>	<b>4.5</b>	<b>3.6</b>	<b>3.5</b>	<b>2.3</b>	<b>-2.4</b>

Source: NIEIR.

## 15.2 Employment by industry

This section summarises forecasts place-of-work and resident employment by 19 industry divisions and 86 industry sub-divisions for each LGA within Melbourne's North out to 2031.

### 15.2.1 Place-of-work employment by industry division and LGA

Forecasts for place-of-work employment by industry sub-division are shown in Tables 15.11 to 15.17. Health Care and Social Assistance is one of the key job growth industries during the forecasting period. Banyule (C) will continue to have the greatest number of Health jobs, followed by Whittlesea (C) as both benefit from major hospital within their regions.

- Banyule (C) will add another 3,864 jobs by 2026 to meet short-term demand, while new job creation is expected to plateau in the next five years out to 2031.
- Whittlesea (C) will gradually add jobs over the next ten years with an increase of 4,512 workers by 2031.
- Hume is expected to have the greatest growth in Health jobs with the workforce almost doubling in the next ten years from 6,179 to 12,196 local jobs.
- Moreland (C) and Darebin (C) both will continue to have strong Health workforces with annual average growth 2.3 and 2.0 per cent.
- Both Mitchell (S) and Nillumbik (S) will retain smaller workforces, but undergo strong growth in Health workers with over 5.0 per cent growth on average out to 2031.

Professional, Scientific and Technical Services are expected to undergo significant growth over the next ten years.

- Hume (C) will see another 4,807 workers in the region over the next ten years starting from a workforce of only 2,814 in 2021;

- Whittlesea (C) will add another 1,942 workers by 2031.
- Mitchell (S) will go from 373 to 1,021 workers.
- Other LGAs have established workforces that will continue to grow at relatively strong rates.

The Construction industry within most regions will be steady or in decline over the next ten years. Mitchell (S) and Nillumbik (S) will fair slightly better than other regions in terms of growth, but will still retain relatively small workforces compared to larger regions. LGAs with established manufacturing industries are all expected to continue to decline over the next ten years. While those with more niche manufacturing industries are expected to retain similar levels of employment across the next ten years (Mitchell, Nillumbik).

Education and Training employment growth will be particularly strong in the outer regions when compared to the inner north.

The Transport, Postal and Warehousing industry will continue to gain over the next ten years. Employment gains will be on top of the additional employment demand throughout the pandemic to cater for freight demand (exception of Air Transport).

**Table 15.11 Place-of-work employment by industry division – Banyule (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	69	85	55	71	121	-2.3	8.2
B	Mining	13	32	8	127	122	-5.4	32.1
C	Manufacturing	3,525	2,736	2,352	2,172	2,207	-4.0	-0.6
D	Electricity, Gas, Water and Waste Services	145	110	101	174	258	-3.6	9.8
E	Construction	4,243	3,548	3,797	2,068	2,165	-1.1	-5.5
F	Wholesale Trade	1,225	901	880	937	893	-3.3	0.2
G	Retail Trade	5,119	4,728	4,377	4,390	4,389	-1.6	0.0
H	Accommodation and Food Services	2,609	2,679	2,239	2,537	2,988	-1.5	2.9
I	Transport, Postal and Warehousing	787	775	1,698	1,319	1,408	8.0	-1.9
J	Information Media and Telecommunications	345	330	311	277	321	-1.0	0.3
K	Financial and Insurance Services	700	577	577	582	718	-1.9	2.2
L	Rental, Hiring and Real Estate Services	575	562	452	485	537	-2.4	1.7
M	Professional, Scientific and Technical Services	2,589	2,778	2,815	2,968	3,209	0.8	1.3
N	Administrative and Support Services	1,210	1,361	1,164	1,271	1,333	-0.4	1.4
O	Public Administration and Safety	2,526	2,629	2,470	3,053	3,311	-0.2	3.0
P	Education and Training	4,549	5,198	4,861	4,664	5,004	0.7	0.3
Q	Health Care and Social Assistance	13,338	14,783	17,658	21,522	20,826	2.8	1.7
R	Arts and Recreation Services	469	742	666	813	932	3.6	3.4
S	Other Services	1,860	1,799	1,956	2,220	2,373	0.5	2.0
	<b>Total</b>	<b>45,897</b>	<b>46,353</b>	<b>48,434</b>	<b>51,650</b>	<b>53,113</b>		

Source: NIEIR.

**Table 15.12 Place-of-work employment by industry division – Darebin (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	78	162	126	175	310	4.9	9.4
B	Mining	348	195	87	257	253	-12.9	11.2
C	Manufacturing	6,689	5,579	5,395	4,554	4,276	-2.1	-2.3
D	Electricity, Gas, Water and Waste Services	108	238	225	380	492	7.6	8.1
E	Construction	4,985	4,985	4,499	4,872	4,793	-1.0	0.6
F	Wholesale Trade	3,151	2,525	2,513	2,413	2,300	-2.2	-0.9
G	Retail Trade	7,082	7,481	7,242	7,132	6,692	0.2	-0.8
H	Accommodation and Food Services	3,165	3,941	3,520	4,551	4,989	1.1	3.5
I	Transport, Postal and Warehousing	1,928	1,747	2,526	2,990	3,325	2.7	2.8
J	Information Media and Telecommunications	713	661	648	701	685	-1.0	0.6
K	Financial and Insurance Services	860	939	914	977	1,097	0.6	1.8
L	Rental, Hiring and Real Estate Services	651	861	718	760	840	1.0	1.6
M	Professional, Scientific and Technical Services	2,403	2,905	3,026	3,595	3,967	2.3	2.7
N	Administrative and Support Services	1,428	1,726	1,452	1,703	1,830	0.2	2.3
O	Public Administration and Safety	2,750	3,180	3,090	3,671	3,809	1.2	2.1
P	Education and Training	6,932	8,187	9,062	9,312	9,456	2.7	0.4
Q	Health Care and Social Assistance	5,721	7,088	8,812	9,327	10,768	4.4	2.0
R	Arts and Recreation Services	982	1,111	989	1,131	1,199	0.1	1.9
S	Other Services	2,404	2,569	2,947	3,039	2,861	2.1	-0.3
	<b>Total</b>	<b>52,378</b>	<b>56,081</b>	<b>57,791</b>	<b>61,540</b>	<b>63,944</b>	<b>1.0</b>	<b>1.0</b>

Source: NIEIR.

**Table 15.13 Place-of-work employment by industry division – Hume (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	338	659	428	868	1,282	2.4	11.6
B	Mining	133	115	76	937	762	-5.4	25.9
C	Manufacturing	20,534	18,949	26,422	22,801	21,131	2.6	-2.2
D	Electricity, Gas, Water and Waste Services	1,213	1,750	1,778	2,225	2,447	3.9	3.2
E	Construction	10,536	14,124	19,403	21,476	13,828	6.3	-3.3
F	Wholesale Trade	5,096	4,711	5,811	5,769	5,145	1.3	-1.2
G	Retail Trade	7,701	8,810	9,567	9,960	9,504	2.2	-0.1
H	Accommodation and Food Services	4,881	5,655	5,491	6,075	6,143	1.2	1.1
I	Transport, Postal and Warehousing	19,988	22,823	23,830	31,486	29,492	1.8	2.2
J	Information Media and Telecommunications	745	704	808	704	784	0.8	-0.3
K	Financial and Insurance Services	802	826	1,176	1,385	1,818	3.9	4.5
L	Rental, Hiring and Real Estate Services	1,178	1,364	1,170	1,250	1,294	-0.1	1.0
M	Professional, Scientific and Technical Services	1,791	2,102	2,814	5,271	7,621	4.6	10.5
N	Administrative and Support Services	2,642	3,532	3,912	5,482	5,553	4.0	3.6
O	Public Administration and Safety	4,280	5,129	7,272	7,972	8,516	5.4	1.6
P	Education and Training	5,471	6,916	7,073	8,242	9,178	2.6	2.6
Q	Health Care and Social Assistance	4,066	5,685	6,179	9,376	12,196	4.3	7.0
R	Arts and Recreation Services	494	830	1,250	1,238	1,296	9.7	0.4
S	Other Services	2,768	3,346	3,847	4,745	4,686	3.3	2.0
	<b>Total</b>	<b>94,656</b>	<b>108,030</b>	<b>128,307</b>	<b>147,262</b>	<b>142,674</b>	<b>3.1</b>	<b>1.1</b>

Source: NIEIR.

**Table 15.14 Place-of-work employment by industry division – Mitchell (S)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	562	533	760	622	561	3.1	-3.0
B	Mining	87	54	40	100	114	-7.5	11.1
C	Manufacturing	780	629	627	638	683	-2.2	0.9
D	Electricity, Gas, Water and Waste Services	94	89	78	121	179	-2.0	8.7
E	Construction	1,396	1,310	1,667	1,241	2,392	1.8	3.7
F	Wholesale Trade	177	183	212	234	286	1.8	3.0
G	Retail Trade	1,298	1,268	1,219	1,505	1,697	-0.6	3.4
H	Accommodation and Food Services	944	1,230	1,022	1,230	1,659	0.8	5.0
I	Transport, Postal and Warehousing	551	473	633	755	874	1.4	3.3
J	Information Media and Telecommunications	66	58	76	57	99	1.4	2.7
K	Financial and Insurance Services	93	123	129	158	274	3.4	7.8
L	Rental, Hiring and Real Estate Services	139	112	87	124	201	-4.5	8.7
M	Professional, Scientific and Technical Services	345	361	373	554	1,021	0.8	10.6
N	Administrative and Support Services	311	390	381	435	593	2.0	4.5
O	Public Administration and Safety	1,632	1,661	1,653	2,499	2,881	0.1	5.7
P	Education and Training	1,180	1,420	1,419	1,699	2,281	1.9	4.9
Q	Health Care and Social Assistance	1,371	1,582	2,225	2,492	3,720	5.0	5.3
R	Arts and Recreation Services	213	197	217	299	384	0.2	5.9
S	Other Services	400	407	487	584	917	2.0	6.5
	<b>Total</b>	<b>11,641</b>	<b>12,078</b>	<b>13,304</b>	<b>15,346</b>	<b>20,817</b>	<b>1.3</b>	<b>4.6</b>

Source: NIEIR.

**Table 15.15 Place-of-work employment by industry division – Moreland (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	54	83	48	87	180	-1.3	14.2
B	Mining	17	18	34	24	62	7.6	6.1
C	Manufacturing	5,878	4,372	3,868	3,365	3,312	-4.1	-1.5
D	Electricity, Gas, Water and Waste Services	88	156	165	243	372	6.5	8.5
E	Construction	4,258	4,199	4,107	3,531	4,122	-0.4	0.0
F	Wholesale Trade	2,332	1,654	1,733	1,593	1,560	-2.9	-1.0
G	Retail Trade	4,819	5,231	5,522	5,425	5,650	1.4	0.2
H	Accommodation and Food Services	2,585	3,431	3,053	3,306	3,549	1.7	1.5
I	Transport, Postal and Warehousing	1,620	1,663	1,825	2,075	2,637	1.2	3.8
J	Information Media and Telecommunications	400	563	490	558	608	2.0	2.2
K	Financial and Insurance Services	568	501	516	559	800	-1.0	4.5
L	Rental, Hiring and Real Estate Services	563	617	521	600	706	-0.8	3.1
M	Professional, Scientific and Technical Services	2,167	2,574	2,732	3,082	3,805	2.3	3.4
N	Administrative and Support Services	1,095	1,262	1,002	1,149	1,387	-0.9	3.3
O	Public Administration and Safety	2,187	2,439	2,391	3,140	3,563	0.9	4.1
P	Education and Training	3,827	4,992	5,196	5,144	5,466	3.1	0.5
Q	Health Care and Social Assistance	6,134	7,685	9,603	10,670	12,105	4.6	2.3
R	Arts and Recreation Services	847	1,089	1,085	1,133	1,195	2.5	1.0
S	Other Services	2,371	2,564	2,892	2,806	2,684	2.0	-0.7
	<b>Total</b>	<b>41,810</b>	<b>45,095</b>	<b>46,783</b>	<b>48,487</b>	<b>53,766</b>	<b>1.1</b>	<b>1.4</b>

Source: NIEIR.

**Table 15.16 Place-of-work employment by industry division – Nillumbik (S)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	187	207	174	156	211	-0.8	2.0
B	Mining	32	6	1	4	6	-33.8	27.9
C	Manufacturing	649	523	448	454	540	-3.6	1.9
D	Electricity, Gas, Water and Waste Services	127	89	87	91	126	-3.7	3.7
E	Construction	2,654	2,311	2,168	3,146	4,715	-2.0	8.1
F	Wholesale Trade	387	264	196	211	261	-6.6	2.9
G	Retail Trade	1,891	1,696	1,427	1,803	1,967	-2.8	3.3
H	Accommodation and Food Services	1,207	1,411	1,111	1,258	1,840	-0.8	5.2
I	Transport, Postal and Warehousing	338	345	399	514	697	1.7	5.7
J	Information Media and Telecommunications	115	133	111	108	153	-0.3	3.3
K	Financial and Insurance Services	214	207	212	210	310	-0.1	3.9
L	Rental, Hiring and Real Estate Services	245	254	209	195	225	-1.6	0.7
M	Professional, Scientific and Technical Services	1,257	1,264	1,235	1,390	1,826	-0.2	4.0
N	Administrative and Support Services	507	564	437	534	680	-1.5	4.5
O	Public Administration and Safety	619	676	635	834	1,044	0.3	5.1
P	Education and Training	2,119	2,280	2,039	2,231	2,837	-0.4	3.4
Q	Health Care and Social Assistance	1,611	1,811	2,211	2,691	3,662	3.2	5.2
R	Arts and Recreation Services	466	580	532	751	941	1.3	5.9
S	Other Services	800	856	956	999	1,293	1.8	3.1
	<b>Total</b>	<b>15,422</b>	<b>15,476</b>	<b>14,587</b>	<b>17,580</b>	<b>23,333</b>	<b>-0.6</b>	<b>4.8</b>

Source: NIEIR.

**Table 15.17 Place-of-work employment by industry division – Whittlesea (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	598	938	901	741	1,033	4.2	1.4
B	Mining	120	104	261	744	815	8.1	12.1
C	Manufacturing	8,832	8,276	7,842	6,967	7,092	-1.2	-1.0
D	Electricity, Gas, Water and Waste Services	759	661	908	871	999	1.8	1.0
E	Construction	7,769	8,216	8,773	4,388	9,628	1.2	0.9
F	Wholesale Trade	2,692	2,881	4,366	3,826	3,716	5.0	-1.6
G	Retail Trade	6,659	8,413	11,081	10,658	10,681	5.2	-0.4
H	Accommodation and Food Services	2,551	3,650	3,418	3,885	4,510	3.0	2.8
I	Transport, Postal and Warehousing	2,069	2,922	4,319	4,975	4,932	7.6	1.3
J	Information Media and Telecommunications	318	383	478	400	544	4.1	1.3
K	Financial and Insurance Services	595	789	953	997	1,356	4.8	3.6
L	Rental, Hiring and Real Estate Services	490	667	600	746	926	2.0	4.4
M	Professional, Scientific and Technical Services	1,197	1,768	2,242	2,672	4,184	6.5	6.4
N	Administrative and Support Services	1,473	1,905	1,933	2,185	2,535	2.8	2.7
O	Public Administration and Safety	1,600	2,121	2,509	3,430	4,678	4.6	6.4
P	Education and Training	4,528	6,201	6,802	7,925	9,244	4.2	3.1
Q	Health Care and Social Assistance	6,147	9,376	12,126	14,358	16,638	7.0	3.2
R	Arts and Recreation Services	579	685	943	1,155	1,464	5.0	4.5
S	Other Services	1,823	2,290	2,624	3,102	3,627	3.7	3.3
	<b>Total</b>	<b>50,800</b>	<b>62,246</b>	<b>73,079</b>	<b>74,025</b>	<b>88,601</b>	<b>3.7</b>	<b>1.9</b>

Source: NIEIR.



## 15.2.2 Resident employment by industry division and LGA

The following tables contain resident employment forecasts by industry division for each LGA out to 2031.

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	158	198	177	182	267	1.1	4.2
B	Mining	311	192	97	277	286	-11.0	11.4
C	Manufacturing	5,318	4,638	3,993	3,604	3,459	-2.8	-1.4
D	Electricity, Gas, Water and Waste Services	583	643	294	428	515	-6.6	5.8
E	Construction	5,536	4,906	5,628	4,398	4,679	0.2	-1.8
F	Wholesale Trade	2,690	2,251	2,154	2,015	1,840	-2.2	-1.6
G	Retail Trade	6,342	6,134	5,761	5,516	5,328	-1.0	-0.8
H	Accommodation and Food Services	3,268	3,383	3,154	3,568	3,978	-0.4	2.3
I	Transport, Postal and Warehousing	2,524	2,453	2,748	2,968	2,973	0.9	0.8
J	Information Media and Telecommunications	1,660	1,585	1,845	1,835	1,776	1.1	-0.4
K	Financial and Insurance Services	3,112	3,098	3,099	2,998	2,985	0.0	-0.4
L	Rental, Hiring and Real Estate Services	968	1,115	899	972	1,035	-0.7	1.4
M	Professional, Scientific and Technical Services	6,301	6,719	7,461	7,901	8,246	1.7	1.0
N	Administrative and Support Services	2,025	2,074	1,828	1,993	2,083	-1.0	1.3
O	Public Administration and Safety	4,632	4,739	4,574	5,245	5,641	-0.1	2.1
P	Education and Training	7,019	7,785	8,139	8,553	9,091	1.5	1.1
Q	Health Care and Social Assistance	9,363	10,129	12,589	14,490	15,199	3.0	1.9
R	Arts and Recreation Services	1,186	1,552	1,256	1,476	1,629	0.6	2.6
S	Other Services	2,320	2,321	2,544	2,793	2,867	0.9	1.2
	<b>Total</b>	<b>65,316</b>	<b>65,916</b>	<b>68,239</b>	<b>71,210</b>	<b>73,877</b>		

Source: NIEIR.

**Table 15.19 Resident employment by industry division – Darebin (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	183	341	306	356	524	5.3	5.5
B	Mining	137	154	58	120	131	-8.2	8.5
C	Manufacturing	6,149	5,398	5,351	5,010	4,887	-1.4	-0.9
D	Electricity, Gas, Water and Waste Services	652	764	552	751	846	-1.7	4.4
E	Construction	4,678	5,144	4,887	4,614	4,648	0.4	-0.5
F	Wholesale Trade	2,860	2,209	2,403	2,327	2,166	-1.7	-1.0
G	Retail Trade	6,712	7,561	7,279	7,208	6,944	0.8	-0.5
H	Accommodation and Food Services	5,114	6,099	5,711	6,810	7,421	1.1	2.7
I	Transport, Postal and Warehousing	3,214	3,092	3,631	4,383	4,620	1.2	2.4
J	Information Media and Telecommunications	2,306	2,330	2,509	2,735	2,648	0.8	0.5
K	Financial and Insurance Services	3,421	3,478	3,860	3,899	3,923	1.2	0.2
L	Rental, Hiring and Real Estate Services	865	1,091	1,006	1,129	1,207	1.5	1.8
M	Professional, Scientific and Technical Services	6,926	8,071	9,936	11,014	11,577	3.7	1.5
N	Administrative and Support Services	2,716	2,979	2,842	3,207	3,451	0.5	2.0
O	Public Administration and Safety	4,713	5,158	6,478	7,328	7,831	3.2	1.9
P	Education and Training	7,104	8,854	9,731	10,648	11,387	3.2	1.6
Q	Health Care and Social Assistance	8,765	10,485	14,301	16,230	17,419	5.0	2.0
R	Arts and Recreation Services	1,699	2,178	1,946	2,167	2,261	1.4	1.5
S	Other Services	2,545	2,759	3,146	3,421	3,377	2.1	0.7
	<b>Total</b>	<b>70,758</b>	<b>78,144</b>	<b>85,932</b>	<b>93,359</b>	<b>97,269</b>	<b>2.0</b>	<b>1.2</b>

Source: NIEIR.

**Table 15.20 Resident employment by industry division – Hume (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	336	516	81	273	504	-13.3	20.1
B	Mining	211	166	91	655	630	-8.1	21.4
C	Manufacturing	10,951	9,411	11,053	10,303	9,757	0.1	-1.2
D	Electricity, Gas, Water and Waste Services	765	1,053	1,102	1,413	1,596	3.7	3.8
E	Construction	8,085	12,672	17,633	18,059	16,289	8.1	-0.8
F	Wholesale Trade	3,472	3,167	4,178	4,165	3,876	1.9	-0.7
G	Retail Trade	8,570	9,367	11,781	12,117	11,843	3.2	0.1
H	Accommodation and Food Services	4,915	5,551	7,408	8,425	8,743	4.2	1.7
I	Transport, Postal and Warehousing	8,472	9,985	11,439	14,405	14,129	3.0	2.1
J	Information Media and Telecommunications	1,243	1,275	1,059	1,063	1,076	-1.6	0.2
K	Financial and Insurance Services	2,913	2,884	4,293	4,608	4,967	4.0	1.5
L	Rental, Hiring and Real Estate Services	1,088	1,257	801	966	1,057	-3.0	2.8
M	Professional, Scientific and Technical Services	3,446	3,968	4,314	6,096	7,626	2.3	5.9
N	Administrative and Support Services	2,882	3,343	3,340	4,288	4,545	1.5	3.1
O	Public Administration and Safety	4,381	4,810	7,397	8,451	9,085	5.4	2.1
P	Education and Training	4,657	6,070	6,812	7,994	8,769	3.9	2.6
Q	Health Care and Social Assistance	7,105	9,464	10,160	13,815	16,205	3.6	4.8
R	Arts and Recreation Services	981	1,204	1,015	1,134	1,218	0.3	1.8
S	Other Services	3,565	3,476	4,767	5,632	5,746	3.0	1.9
	<b>Total</b>	<b>78,037</b>	<b>89,638</b>	<b>108,724</b>	<b>123,863</b>	<b>127,662</b>	<b>3.4</b>	<b>1.6</b>

Source: NIEIR.

**Table 15.21 Resident employment by industry division – Mitchell (S)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	576	539	801	713	698	3.4	-1.4
B	Mining	91	107	110	379	414	1.9	14.2
C	Manufacturing	2,131	2,016	2,273	2,195	2,255	0.6	-0.1
D	Electricity, Gas, Water and Waste Services	200	268	289	355	455	3.8	4.6
E	Construction	2,289	2,660	3,665	3,470	4,649	4.8	2.4
F	Wholesale Trade	628	608	702	736	790	1.1	1.2
G	Retail Trade	1,671	1,908	1,856	2,151	2,393	1.1	2.6
H	Accommodation and Food Services	927	1,233	1,011	1,269	1,716	0.9	5.4
I	Transport, Postal and Warehousing	1,263	1,487	1,808	2,289	2,509	3.7	3.3
J	Information Media and Telecommunications	159	198	166	165	199	0.4	1.9
K	Financial and Insurance Services	316	368	337	394	538	0.7	4.8
L	Rental, Hiring and Real Estate Services	209	239	212	264	355	0.2	5.3
M	Professional, Scientific and Technical Services	602	720	922	1,237	1,824	4.4	7.1
N	Administrative and Support Services	463	646	684	848	1,079	4.0	4.7
O	Public Administration and Safety	1,896	2,022	2,149	3,046	3,615	1.3	5.3
P	Education and Training	1,169	1,544	1,589	1,949	2,538	3.1	4.8
Q	Health Care and Social Assistance	1,666	2,137	3,300	3,904	5,242	7.1	4.7
R	Arts and Recreation Services	234	280	389	486	594	5.2	4.3
S	Other Services	716	846	1,031	1,254	1,637	3.7	4.7
	<b>Total</b>	<b>17,206</b>	<b>19,825</b>	<b>23,294</b>	<b>27,103</b>	<b>33,500</b>	<b>3.1</b>	<b>3.7</b>

Source: NIEIR.

**Table 15.22 Resident employment by industry division – Moreland (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	101	277	110	155	304	0.9	10.7
B	Mining	155	182	60	140	159	-9.0	10.2
C	Manufacturing	6,400	5,438	6,461	6,267	6,180	0.1	-0.4
D	Electricity, Gas, Water and Waste Services	687	903	1,091	1,342	1,516	4.7	3.3
E	Construction	5,559	5,815	6,038	5,507	5,559	0.8	-0.8
F	Wholesale Trade	2,986	2,511	3,039	2,949	2,761	0.2	-1.0
G	Retail Trade	6,823	8,123	8,135	8,075	7,957	1.8	-0.2
H	Accommodation and Food Services	5,715	7,329	7,287	8,391	9,018	2.5	2.2
I	Transport, Postal and Warehousing	4,446	4,731	5,620	6,726	7,027	2.4	2.3
J	Information Media and Telecommunications	2,520	2,829	2,605	2,855	2,778	0.3	0.6
K	Financial and Insurance Services	3,918	4,181	5,223	5,319	5,436	2.9	0.4
L	Rental, Hiring and Real Estate Services	911	1,174	1,064	1,207	1,301	1.6	2.0
M	Professional, Scientific and Technical Services	7,675	9,763	12,324	13,642	14,501	4.8	1.6
N	Administrative and Support Services	2,943	3,324	3,335	3,716	4,010	1.3	1.9
O	Public Administration and Safety	5,210	5,943	7,531	8,521	9,150	3.8	2.0
P	Education and Training	7,864	10,299	11,728	13,077	14,081	4.1	1.8
Q	Health Care and Social Assistance	8,690	10,827	15,026	17,348	18,928	5.6	2.3
R	Arts and Recreation Services	2,261	2,688	2,216	2,435	2,519	-0.2	1.3
S	Other Services	2,882	3,224	3,471	3,833	3,841	1.9	1.0
	<b>Total</b>	<b>77,745</b>	<b>89,562</b>	<b>102,366</b>	<b>111,504</b>	<b>117,027</b>	<b>2.8</b>	<b>1.3</b>

Source: NIEIR.

**Table 15.23 Resident employment by industry division – Nillumbik (S)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	202	239	217	192	254	0.7	1.6
B	Mining	184	136	63	135	137	-10.2	8.1
C	Manufacturing	3,352	2,810	2,429	2,038	1,881	-3.2	-2.5
D	Electricity, Gas, Water and Waste Services	360	396	186	233	278	-6.4	4.1
E	Construction	4,689	4,773	4,620	4,356	5,095	-0.1	1.0
F	Wholesale Trade	1,776	1,403	1,265	1,101	992	-3.3	-2.4
G	Retail Trade	3,658	3,462	3,146	2,983	2,823	-1.5	-1.1
H	Accommodation and Food Services	1,605	1,702	1,474	1,596	1,881	-0.8	2.5
I	Transport, Postal and Warehousing	1,368	1,285	1,397	1,549	1,534	0.2	0.9
J	Information Media and Telecommunications	760	741	855	794	762	1.2	-1.1
K	Financial and Insurance Services	1,430	1,345	1,339	1,216	1,208	-0.6	-1.0
L	Rental, Hiring and Real Estate Services	511	574	441	436	447	-1.5	0.1
M	Professional, Scientific and Technical Services	3,323	3,264	3,702	3,805	4,074	1.1	1.0
N	Administrative and Support Services	1,130	1,089	990	1,072	1,150	-1.3	1.5
O	Public Administration and Safety	2,140	2,195	2,132	2,316	2,402	0.0	1.2
P	Education and Training	4,056	4,281	4,432	4,477	4,741	0.9	0.7
Q	Health Care and Social Assistance	4,570	4,697	6,061	6,657	6,997	2.9	1.4
R	Arts and Recreation Services	726	895	746	873	956	0.3	2.5
S	Other Services	1,446	1,444	1,561	1,598	1,674	0.8	0.7
	<b>Total</b>	<b>37,285</b>	<b>36,731</b>	<b>37,054</b>	<b>37,427</b>	<b>39,287</b>	<b>-0.1</b>	<b>0.6</b>

Source: NIEIR.

**Table 15.24 Resident employment by industry division – Whittlesea (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	408	592	723	722	984	5.9	3.1
B	Mining	207	148	75	473	488	-9.7	20.6
C	Manufacturing	11,106	10,954	12,774	11,893	11,706	1.4	-0.9
D	Electricity, Gas, Water and Waste Services	964	1,250	755	1,144	1,449	-2.4	6.7
E	Construction	9,553	11,705	12,970	11,240	13,746	3.1	0.6
F	Wholesale Trade	3,585	3,549	4,572	4,431	4,274	2.5	-0.7
G	Retail Trade	9,279	11,519	12,646	12,744	12,842	3.1	0.2
H	Accommodation and Food Services	4,088	5,793	5,814	6,884	7,897	3.6	3.1
I	Transport, Postal and Warehousing	5,423	7,026	9,183	11,057	11,528	5.4	2.3
J	Information Media and Telecommunications	1,395	1,595	2,398	2,352	2,433	5.6	0.1
K	Financial and Insurance Services	2,984	3,517	4,464	4,666	5,101	4.1	1.3
L	Rental, Hiring and Real Estate Services	954	1,338	1,180	1,375	1,576	2.1	2.9
M	Professional, Scientific and Technical Services	3,749	4,934	6,635	7,670	9,233	5.9	3.4
N	Administrative and Support Services	2,723	3,652	3,685	4,439	5,018	3.1	3.1
O	Public Administration and Safety	3,949	5,137	6,092	7,448	8,657	4.4	3.6
P	Education and Training	4,563	6,968	7,974	9,183	10,458	5.7	2.7
Q	Health Care and Social Assistance	8,448	12,714	16,471	20,160	22,952	6.9	3.4
R	Arts and Recreation Services	917	1,235	1,484	1,746	2,041	4.9	3.2
S	Other Services	3,152	4,116	5,397	6,302	6,892	5.5	2.5
	<b>Total</b>	<b>77,449</b>	<b>97,742</b>	<b>115,289</b>	<b>125,931</b>	<b>139,276</b>	<b>4.1</b>	<b>1.9</b>

Source: NIEIR.

### 15.2.3 Place-of-work employment by industry subdivision and LGA

The following tables contain more detailed forecasts of place-of-work employment for each LGA by industry subdivision out to 2031.

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	44	58	45	55	94	0.2	7.7
		2	Aquaculture	0	0	0	0	0	0.0	0.0
		3	Forestry and Logging	10	3	1	6	7	-18.9	18.2
		4	Fishing, Hunting and Trapping	0	0	0	0	0	0.0	0.0
		5	Agriculture, Forestry and Fishing Support Services	14	24	9	10	19	-5.0	8.6
B	Mining	6	Coal Mining	0	0	0	0	0	0.0	0.0
		7	Oil and Gas Extraction	0	0	0	0	0	0.0	0.0
		8	Metal Ore Mining	0	0	0	0	0	0.0	0.0
		9	Non-Metallic Mineral Mining and Quarrying	0	0	0	0	0	0.0	0.0
		10	Exploration and Other Mining Support Services	13	32	8	127	122	-5.4	32.1
C	Manufacturing	11	Food Product Manufacturing	509	486	410	477	523	-2.1	2.4
		12	Beverage and Tobacco Product Manufacturing	16	16	14	30	41	-1.3	11.6
		13	Textile, Leather, Clothing and Footwear Manufacturing	225	178	122	52	49	-5.9	-8.7
		14	Wood Product Manufacturing	113	93	80	79	76	-3.3	-0.5
		15	Pulp, Paper and Converted Paper Product Manufacturing	166	136	155	134	118	-0.7	-2.7
		16	Printing (including the Reproduction of Recorded Media)	440	407	375	325	312	-1.6	-1.8
		17	Petroleum and Coal Product Manufacturing	1	1	0	0	0	-100.0	0.0
		18	Basic Chemical and Chemical Product Manufacturing	98	65	64	41	49	-4.2	-2.6
		19	Polymer Product and Rubber Product Manufacturing	190	88	75	62	54	-8.8	-3.3
		20	Non-Metallic Mineral Product Manufacturing	60	23	18	21	25	-11.2	3.1
		21	Primary Metal and Metal Product Manufacturing	305	253	181	225	218	-5.1	1.9
		22	Fabricated Metal Product Manufacturing	341	275	242	214	189	-3.4	-2.4
		23	Transport Equipment Manufacturing	208	86	85	78	93	-8.6	0.9
		24	Machinery and Equipment Manufacturing	560	381	264	172	177	-7.3	-3.9
		25	Furniture and Other Manufacturing	292	247	267	262	283	-0.9	0.6

**Table 15.25 Place-of-work employment by industry subdivision – Banyule (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	35	34	27	68	121	-2.5	16.0
		27	Gas Supply	8	1	20	15	16	9.5	-2.0
		28	Water Supply, Sewerage and Drainage Services	28	8	1	14	22	-29.9	39.3
		29	Waste Collection, Treatment and Disposal Services	75	68	53	77	99	-3.3	6.5
E	Construction	30	Building Construction	883	740	969	461	490	0.9	-6.6
		31	Heavy and Civil Engineering Construction	130	120	164	66	86	2.3	-6.3
		32	Construction Services	3230	2688	2665	1541	1590	-1.9	-5.0
F	Wholesale Trade	33	Basic Material Wholesaling	237	231	177	209	197	-2.9	1.1
		34	Machinery and Equipment Wholesaling	401	284	271	285	260	-3.9	-0.4
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	54	32	31	37	42	-5.2	2.9
		36	Grocery, Liquor and Tobacco Product Wholesaling	147	92	74	108	121	-6.7	5.1
		37	Other Goods Wholesaling	385	254	316	284	257	-2.0	-2.0
		38	Commission-Based Wholesaling	1	8	11	13	17	27.1	4.1
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	457	445	414	251	252	-1.0	-4.9
		40	Fuel Retailing	78	89	82	73	72	0.6	-1.3
		41	Food Retailing	1856	1837	1527	1625	1680	-1.9	1.0
		42	Other Store-Based Retailing	2679	2327	2256	2385	2312	-1.7	0.2
		43	Non-Store Retailing and Retail Commission Based Buying	49	29	98	56	74	7.1	-2.7
H	Accommodation and Food Services	44	Accommodation	84	97	76	102	142	-1.1	6.5
		45	Food and Beverage Services	2524	2582	2163	2435	2846	-1.5	2.8
I	Transport, Postal and Warehousing	46	Road Transport	475	429	833	665	770	5.8	-0.8
		47	Rail Transport	23	34	107	78	114	16.4	0.7
		48	Water Transport	1	0	0	3	3	-100.0	0.0
		49	Air and Space Transport	1	21	32	12	22	43.1	-3.9
		50	Other Transport	8	11	40	13	11	17.0	-12.5
		51	Postal and Courier Pick-up and Delivery Services	214	196	521	423	308	9.3	-5.1
		52	Transport Support Services	22	24	49	39	65	8.2	2.7
		53	Warehousing and Storage Services	41	59	114	85	116	10.8	0.2
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	75	48	39	35	35	-6.4	-0.9
		55	Motion Picture and Sound Recording Activities	83	87	74	62	60	-1.2	-2.2
		56	Broadcasting (except Internet)	7	7	6	13	23	-1.9	14.7
		57	Internet Publishing and Broadcasting	18	0	0	0	0	-100.0	0.0
		58	Telecommunications Services	79	119	132	92	115	5.3	-1.4
		59	Internet Service Providers, Web Search Portals and Data Processing Services	18	19	17	17	24	-0.2	3.1
		60	Library and Other Information Services	66	50	43	58	64	-4.1	4.0



**Table 15.25 Place-of-work employment by industry subdivision – Banyule (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
K	Financial and Insurance Services	62	Finance	338	246	217	236	298	-4.3	3.2
		63	Insurance and Superannuation Funds	102	82	100	92	141	-0.2	3.5
		64	Auxiliary Finance and Insurance Services	260	249	259	253	279	0.0	0.7
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	75	25	15	24	33	-15.1	8.6
		67	Property Operators and Real Estate Services	500	537	437	461	504	-1.3	1.4
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	2302	2465	2394	2497	2646	0.4	1.0
		70	Computer System Design and Related Services	288	313	421	470	562	3.9	2.9
N	Administrative and Support Services	72	Administrative Services	568	621	488	500	497	-1.5	0.2
		73	Building Cleaning, Pest Control and Other Support Services	642	740	675	771	836	0.5	2.2
O	Public Administration and Safety	75	Public Administration	1250	1328	1349	1607	1811	0.8	3.0
		76	Defence	880	814	662	863	883	-2.8	2.9
		77	Public Order, Safety and Regulatory Services	396	487	459	583	617	1.5	3.0
P	Education and Training	80	Preschool and School Education	3438	4034	3678	3389	3369	0.7	-0.9
		81	Tertiary Education	456	408	372	419	577	-2.0	4.5
		82	Adult, Community and Other Education	655	756	811	856	1058	2.2	2.7
Q	Health Care and Social Assistance	84	Hospitals	7389	8055	9846	12759	11714	2.9	1.8
		85	Medical and Other Health Care Services	3205	3818	4431	5351	5629	3.3	2.4
		86	Residential Care Services	1178	1168	1025	1153	1170	-1.4	1.3
		87	Social Assistance Services	1566	1742	2356	2259	2312	4.2	-0.2
R	Arts and Recreation Services	89	Heritage Activities	7	16	16	34	71	8.5	16.1
		90	Creative and Performing Arts Activities	155	183	153	168	170	-0.2	1.1
		91	Sports and Recreation Activities	275	524	475	596	664	5.6	3.4
		92	Gambling Activities	32	19	22	16	27	-3.5	2.1
S	Other Services	94	Repair and Maintenance	834	765	995	928	910	1.8	-0.9
		95	Personal and Other Services	991	968	868	1145	1318	-1.3	4.3
		96	Private Households Employing Staff and Undifferentiated Goods	35	66	94	147	145	10.4	4.5

Source: NIEIR.

**Table 15.26 Place-of-work employment by industry subdivision – Darebin (C)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	67	124	108	154	277	4.9	9.9
		2	Aquaculture	0	0	0	0	0	0.0	0.0
		3	Forestry and Logging	0	0	0	0	0	0.0	0.0
		4	Fishing, Hunting and Trapping	0	0	0	0	0	0.0	0.0
		5	Agriculture, Forestry and Fishing Support Services	11	37	18	21	33	5.3	6.3
B	Mining	6	Coal Mining	0	0	0	0	0	0.0	0.0
		7	Oil and Gas Extraction	15	2	0	3	4	-100.0	0.0
		8	Metal Ore Mining	58	64	61	25	24	0.5	-9.0
		9	Non-Metallic Mineral Mining and Quarrying	15	6	0	9	10	-100.0	0.0
		10	Exploration and Other Mining Support Services	260	123	27	221	216	-20.4	23.3
C	Manufacturing	11	Food Product Manufacturing	758	878	775	828	861	0.2	1.1
		12	Beverage and Tobacco Product Manufacturing	36	83	75	104	116	7.6	4.4
		13	Textile, Leather, Clothing and Footwear Manufacturing	867	710	547	353	306	-4.5	-5.6
		14	Wood Product Manufacturing	193	113	107	109	99	-5.7	-0.8
		15	Pulp, Paper and Converted Paper Product Manufacturing	835	531	677	557	478	-2.1	-3.4
		16	Printing (including the Reproduction of Recorded Media)	336	290	285	233	197	-1.7	-3.6
		17	Petroleum and Coal Product Manufacturing	11	2	0	0	0	-100.0	0.0
		18	Basic Chemical and Chemical Product Manufacturing	259	252	274	234	231	0.6	-1.7
		19	Polymer Product and Rubber Product Manufacturing	657	617	649	542	510	-0.1	-2.4
		20	Non-Metallic Mineral Product Manufacturing	213	160	178	173	146	-1.8	-2.0
		21	Primary Metal and Metal Product Manufacturing	281	236	177	218	206	-4.5	1.5
		22	Fabricated Metal Product Manufacturing	436	404	355	338	317	-2.0	-1.1
		23	Transport Equipment Manufacturing	424	231	247	141	125	-5.3	-6.5
		24	Machinery and Equipment Manufacturing	688	539	418	269	264	-4.9	-4.5
		25	Furniture and Other Manufacturing	694	534	632	457	420	-0.9	-4.0
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	23	113	111	205	260	16.9	8.9
		27	Gas Supply	4	0	18	18	18	17.3	0.0
		28	Water Supply, Sewerage and Drainage Services	17	42	34	57	88	7.3	9.9
		29	Waste Collection, Treatment and Disposal Services	64	83	62	100	125	-0.3	7.3
E	Construction	30	Building Construction	1289	1399	1501	1570	1569	1.5	0.4
		31	Heavy and Civil Engineering Construction	125	109	149	194	196	1.7	2.8
		32	Construction Services	3571	3477	2849	3108	3028	-2.2	0.6

**Table 15.26 Place-of-work employment by industry subdivision – Darebin (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	337	262	205	225	218	-4.9	0.6
		34	Machinery and Equipment Wholesaling	639	471	414	399	362	-4.2	-1.3
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	192	183	185	202	201	-0.4	0.9
		36	Grocery, Liquor and Tobacco Product Wholesaling	592	587	509	530	531	-1.5	0.4
		37	Other Goods Wholesaling	1347	1002	1176	1033	964	-1.4	-2.0
		38	Commission-Based Wholesaling	44	21	24	24	24	-5.9	-0.3
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	347	417	409	274	289	1.7	-3.4
		40	Fuel Retailing	105	96	91	78	71	-1.4	-2.4
		41	Food Retailing	2056	2146	1841	1985	1981	-1.1	0.7
		42	Other Store-Based Retailing	4501	4740	4614	4604	4197	0.2	-0.9
		43	Non-Store Retailing and Retail Commission Based Buying	74	82	287	190	154	14.6	-6.0
H	Accommodation and Food Services	44	Accommodation	309	255	191	231	283	-4.7	4.0
		45	Food and Beverage Services	2856	3686	3329	4320	4706	1.5	3.5
I	Transport, Postal and Warehousing	46	Road Transport	1158	890	1161	1318	1512	0.0	2.7
		47	Rail Transport	28	61	102	116	164	13.9	4.9
		48	Water Transport	0	6	7	7	13	0.0	6.6
		49	Air and Space Transport	1	5	4	11	21	10.7	18.5
		50	Other Transport	32	22	49	37	32	4.6	-4.1
		51	Postal and Courier Pick-up and Delivery Services	485	476	754	1035	1060	4.5	3.5
		52	Transport Support Services	39	40	41	55	90	0.4	8.2
		53	Warehousing and Storage Services	186	247	408	412	433	8.2	0.6
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	129	108	87	97	99	-3.9	1.3
		55	Motion Picture and Sound Recording Activities	175	213	185	237	197	0.5	0.6
		56	Broadcasting (except Internet)	18	15	13	21	33	-2.9	9.5
		57	Internet Publishing and Broadcasting	3	11	1	10	14	-15.8	37.5
		58	Telecommunications Services	224	156	145	116	135	-4.3	-0.7
		59	Internet Service Providers, Web Search Portals and Data Processing Services	57	66	56	61	57	-0.2	0.2
		60	Library and Other Information Services	106	92	162	159	150	4.3	-0.7
K	Financial and Insurance Services	62	Finance	579	620	566	595	613	-0.2	0.8
		63	Insurance and Superannuation Funds	118	82	96	101	150	-2.1	4.6
		64	Auxiliary Finance and Insurance Services	163	238	253	280	335	4.5	2.8
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	152	185	149	119	109	-0.2	-3.0
		67	Property Operators and Real Estate Services	499	676	569	642	731	1.3	2.5

**Table 15.26 Place-of-work employment by industry subdivision – Darebin (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	2054	2404	2387	2851	3130	1.5	2.7
		70	Computer System Design and Related Services	349	502	639	744	837	6.2	2.7
N	Administrative and Support Services	72	Administrative Services	476	725	613	636	653	2.6	0.6
		73	Building Cleaning, Pest Control and Other Support Services	952	1001	839	1066	1177	-1.3	3.4
O	Public Administration and Safety	75	Public Administration	1857	2063	2084	2545	2667	1.2	2.5
		76	Defence	4	3	2	48	65	-4.1	39.3
		77	Public Order, Safety and Regulatory Services	890	1113	1004	1078	1077	1.2	0.7
P	Education and Training	80	Preschool and School Education	2518	3080	3234	2955	2965	2.5	-0.9
		81	Tertiary Education	3813	4169	4535	5150	5189	1.7	1.4
		82	Adult, Community and Other Education	602	938	1293	1207	1301	8.0	0.1
Q	Health Care and Social Assistance	84	Hospitals	704	692	834	1117	1711	1.7	7.5
		85	Medical and Other Health Care Services	1808	2398	2913	2975	3373	4.9	1.5
		86	Residential Care Services	1152	1498	1451	1675	1749	2.3	1.9
		87	Social Assistance Services	2057	2501	3614	3559	3933	5.8	0.9
R	Arts and Recreation Services	89	Heritage Activities	33	49	54	79	115	5.0	7.9
		90	Creative and Performing Arts Activities	451	516	505	512	500	1.1	-0.1
		91	Sports and Recreation Activities	436	510	401	513	548	-0.8	3.2
		92	Gambling Activities	62	37	28	27	36	-7.5	2.3
S	Other Services	94	Repair and Maintenance	1225	1164	1517	1448	1323	2.2	-1.4
		95	Personal and Other Services	1154	1316	1279	1411	1391	1.0	0.8
		96	Private Households Employing Staff and Undifferentiated Goods	25	89	150	180	147	19.7	-0.2

Source: NIEIR.

**Table 15.27 Place-of-work employment by industry subdivision – Hume (C)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	306	482	370	741	1137	1.9	11.9
		2	Aquaculture	0	0	0	0	0	0.0	0.0
		3	Forestry and Logging	13	50	32	79	72	9.2	8.4
		4	Fishing, Hunting and Trapping	0	61	3	1	1	0.0	-6.5
		5	Agriculture, Forestry and Fishing Support Services	19	66	22	47	72	1.9	12.4
B	Mining	6	Coal Mining	2	4	0	1	0	-100.0	0.0
		7	Oil and Gas Extraction	0	7	5	10	14	0.0	9.8
		8	Metal Ore Mining	9	12	8	37	34	-0.9	15.0
		9	Non-Metallic Mineral Mining and Quarrying	102	85	61	811	635	-5.0	26.4
		10	Exploration and Other Mining Support Services	20	7	1	79	78	-26.3	55.7
C	Manufacturing	11	Food Product Manufacturing	2443	2685	3967	3865	4049	5.0	0.2
		12	Beverage and Tobacco Product Manufacturing	58	40	51	74	93	-1.2	6.1
		13	Textile, Leather, Clothing and Footwear Manufacturing	769	672	1066	656	523	3.3	-6.9
		14	Wood Product Manufacturing	808	771	1308	1021	814	4.9	-4.6
		15	Pulp, Paper and Converted Paper Product Manufacturing	1315	1311	2818	2112	1602	7.9	-5.5
		16	Printing (including the Reproduction of Recorded Media)	783	787	1275	1176	1012	5.0	-2.3
		17	Petroleum and Coal Product Manufacturing	61	19	37	15	22	-4.8	-5.1
		18	Basic Chemical and Chemical Product Manufacturing	1110	1582	2704	2923	3447	9.3	2.5
		19	Polymer Product and Rubber Product Manufacturing	1256	951	1694	1088	691	3.0	-8.6
		20	Non-Metallic Mineral Product Manufacturing	773	563	958	823	521	2.2	-5.9
		21	Primary Metal and Metal Product Manufacturing	1184	972	1299	1628	1655	0.9	2.4
		22	Fabricated Metal Product Manufacturing	1238	1177	1728	1615	1417	3.4	-2.0
		23	Transport Equipment Manufacturing	5967	4916	3710	2859	2352	-4.6	-4.5
		24	Machinery and Equipment Manufacturing	1557	1352	1859	1391	1321	1.8	-3.4
		25	Furniture and Other Manufacturing	1215	1152	1948	1553	1614	4.8	-1.9
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	134	354	448	630	683	12.8	4.3
		27	Gas Supply	267	128	157	167	231	-5.2	3.9
		28	Water Supply, Sewerage and Drainage Services	190	255	223	270	293	1.6	2.7
		29	Waste Collection, Treatment and Disposal Services	622	1013	949	1157	1241	4.3	2.7
E	Construction	30	Building Construction	2387	2711	4281	4174	2654	6.0	-4.7
		31	Heavy and Civil Engineering Construction	954	1094	2334	2577	1430	9.4	-4.8
		32	Construction Services	7195	10319	12788	14725	9745	5.9	-2.7

**Table 15.27 Place-of-work employment by industry subdivision – Hume (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	1064	974	977	980	845	-0.8	-1.4
		34	Machinery and Equipment Wholesaling	1104	1025	1169	1077	922	0.6	-2.3
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	850	869	1102	1245	1207	2.6	0.9
		36	Grocery, Liquor and Tobacco Product Wholesaling	833	773	895	936	859	0.7	-0.4
		37	Other Goods Wholesaling	1175	1001	1563	1420	1210	2.9	-2.5
		38	Commission-Based Wholesaling	70	69	105	110	101	4.2	-0.5
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	666	840	832	588	637	2.3	-2.6
		40	Fuel Retailing	218	245	313	255	214	3.7	-3.8
		41	Food Retailing	2676	2954	3475	3508	3486	2.6	0.0
		42	Other Store-Based Retailing	4066	4717	4826	5511	5062	1.7	0.5
		43	Non-Store Retailing and Retail Commission Based Buying	75	53	121	98	105	5.0	-1.4
H	Accommodation and Food Services	44	Accommodation	472	448	377	408	440	-2.2	1.6
		45	Food and Beverage Services	4409	5207	5114	5668	5703	1.5	1.1
I	Transport, Postal and Warehousing	46	Road Transport	5690	6037	7135	8065	7418	2.3	0.4
		47	Rail Transport	92	203	217	364	436	9.0	7.2
		48	Water Transport	121	91	73	95	98	-5.0	3.1
		49	Air and Space Transport	6695	7478	5493	10000	8783	-2.0	4.8
		50	Other Transport	64	35	29	57	68	-7.8	9.0
		51	Postal and Courier Pick-up and Delivery Services	1416	1676	1944	2786	2972	3.2	4.3
		52	Transport Support Services	4311	5714	6105	6917	6590	3.5	0.8
		53	Warehousing and Storage Services	1599	1591	2833	3202	3127	5.9	1.0
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	301	70	53	46	47	-16.0	-1.2
		55	Motion Picture and Sound Recording Activities	67	108	117	97	112	5.7	-0.5
		56	Broadcasting (except Internet)	36	16	14	71	112	-8.7	22.8
		57	Internet Publishing and Broadcasting	0	0	0	0	0	0.0	0.0
		58	Telecommunications Services	297	456	553	397	378	6.4	-3.7
		59	Internet Service Providers, Web Search Portals and Data Processing Services	19	32	29	47	63	4.3	8.1
		60	Library and Other Information Services	24	22	43	47	72	5.7	5.4
K	Financial and Insurance Services	62	Finance	539	542	768	791	936	3.6	2.0
		63	Insurance and Superannuation Funds	95	96	192	188	276	7.3	3.7
		64	Auxiliary Finance and Insurance Services	168	188	216	406	606	2.6	10.8
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	754	783	646	563	518	-1.5	-2.2
		67	Property Operators and Real Estate Services	424	582	523	687	776	2.1	4.0



**Table 15.27 Place-of-work employment by industry subdivision – Hume (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	1489	1736	2322	4499	6528	4.5	10.9
		70	Computer System Design and Related Services	302	366	493	771	1092	5.0	8.3
N	Administrative and Support Services	72	Administrative Services	1176	1677	1661	2714	2806	3.5	5.4
		73	Building Cleaning, Pest Control and Other Support Services	1466	1855	2251	2768	2747	4.4	2.0
O	Public Administration and Safety	75	Public Administration	2230	2647	3685	4138	4590	5.2	2.2
		76	Defence	58	61	79	182	356	3.1	16.3
		77	Public Order, Safety and Regulatory Services	1992	2421	3508	3653	3569	5.8	0.2
P	Education and Training	80	Preschool and School Education	4270	5632	5613	6332	6431	2.8	1.4
		81	Tertiary Education	608	498	457	657	988	-2.8	8.0
		82	Adult, Community and Other Education	593	787	1004	1253	1758	5.4	5.8
Q	Health Care and Social Assistance	84	Hospitals	570	591	605	1318	2333	0.6	14.5
		85	Medical and Other Health Care Services	1462	1920	1876	3061	4255	2.5	8.5
		86	Residential Care Services	542	877	894	1251	1661	5.1	6.4
		87	Social Assistance Services	1493	2297	2805	3746	3947	6.5	3.5
R	Arts and Recreation Services	89	Heritage Activities	28	29	46	61	129	5.1	10.8
		90	Creative and Performing Arts Activities	48	64	112	125	188	8.9	5.3
		91	Sports and Recreation Activities	341	648	858	931	863	9.7	0.1
		92	Gambling Activities	77	88	234	121	117	11.7	-6.7
S	Other Services	94	Repair and Maintenance	1847	2042	2436	2999	2760	2.8	1.3
		95	Personal and Other Services	921	1304	1412	1746	1926	4.4	3.2
		96	Private Households Employing Staff and Undifferentiated Goods	0	0	0	0	0	0.0	0.0

Source: NIEIR.

**Table 15.28 Place-of-work employment by industry subdivision – Mitchell (\$)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	503	484	718	575	513	3.6	-3.3
		2	Aquaculture	2	0	2	0	2	-1.7	-3.0
		3	Forestry and Logging	9	7	5	10	10	-5.4	7.1
		4	Fishing, Hunting and Trapping	0	0	0	0	0	0.0	0.0
		5	Agriculture, Forestry and Fishing Support Services	47	43	35	37	36	-3.1	0.5
B	Mining	6	Coal Mining	0	0	0	0	0	0.0	0.0
		7	Oil and Gas Extraction	0	6	0	0	0	-100.0	0.0
		8	Metal Ore Mining	6	6	3	3	5	-8.7	6.2
		9	Non-Metallic Mineral Mining and Quarrying	64	41	35	95	107	-6.0	11.8
		10	Exploration and Other Mining Support Services	16	1	2	2	2	-17.3	0.0
C	Manufacturing	11	Food Product Manufacturing	379	384	368	357	361	-0.3	-0.2
		12	Beverage and Tobacco Product Manufacturing	25	15	14	21	26	-6.0	6.8
		13	Textile, Leather, Clothing and Footwear Manufacturing	32	10	9	2	2	-12.0	-12.2
		14	Wood Product Manufacturing	32	26	32	36	37	-0.3	1.7
		15	Pulp, Paper and Converted Paper Product Manufacturing	20	19	29	24	22	3.5	-2.6
		16	Printing (including the Reproduction of Recorded Media)	17	17	17	19	26	-0.3	4.6
		17	Petroleum and Coal Product Manufacturing	0	0	0	0	0	0.0	0.0
		18	Basic Chemical and Chemical Product Manufacturing	6	1	1	7	7	-14.9	20.5
		19	Polymer Product and Rubber Product Manufacturing	1	4	2	2	2	7.2	0.0
		20	Non-Metallic Mineral Product Manufacturing	69	48	51	44	46	-2.9	-1.1
		21	Primary Metal and Metal Product Manufacturing	25	20	17	24	27	-4.2	4.9
		22	Fabricated Metal Product Manufacturing	32	24	26	28	30	-2.0	1.4
		23	Transport Equipment Manufacturing	21	12	12	18	23	-5.4	6.8
		24	Machinery and Equipment Manufacturing	107	27	24	16	22	-13.9	-1.0
		25	Furniture and Other Manufacturing	13	22	26	40	50	7.3	6.9
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	31	31	23	48	74	-3.0	12.6
		27	Gas Supply	0	0	0	0	0	0.0	0.0
		28	Water Supply, Sewerage and Drainage Services	36	26	28	37	54	-2.5	6.7
		29	Waste Collection, Treatment and Disposal Services	27	31	26	36	50	-0.3	6.6
E	Construction	30	Building Construction	249	178	261	161	282	0.5	0.8
		31	Heavy and Civil Engineering Construction	202	217	284	191	453	3.5	4.8
		32	Construction Services	946	914	1121	889	1657	1.7	4.0

**Table 15.28 Place-of-work employment by industry subdivision – Mitchell (S) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	96	96	119	108	119	2.1	0.0
		34	Machinery and Equipment Wholesaling	14	6	9	19	30	-4.4	13.4
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	9	1	2	7	10	-14.7	18.3
		36	Grocery, Liquor and Tobacco Product Wholesaling	33	66	59	71	80	6.0	3.0
		37	Other Goods Wholesaling	17	11	20	25	42	1.6	7.7
		38	Commission-Based Wholesaling	9	2	3	3	5	-8.9	3.2
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	92	125	127	104	126	3.3	-0.1
		40	Fuel Retailing	98	81	87	81	75	-1.2	-1.5
		41	Food Retailing	630	655	529	636	724	-1.7	3.2
		42	Other Store-Based Retailing	471	394	402	654	746	-1.6	6.4
		43	Non-Store Retailing and Retail Commission Based Buying	6	13	74	29	26	28.7	-9.8
H	Accommodation and Food Services	44	Accommodation	105	112	86	86	97	-2.0	1.2
		45	Food and Beverage Services	839	1118	935	1144	1562	1.1	5.3
I	Transport, Postal and Warehousing	46	Road Transport	341	251	358	357	375	0.5	0.5
		47	Rail Transport	53	62	70	106	111	2.8	4.7
		48	Water Transport	0	0	0	0	0	0.0	0.0
		49	Air and Space Transport	0	0	0	0	0	0.0	0.0
		50	Other Transport	5	1	0	1	2	-100.0	0.0
		51	Postal and Courier Pick-up and Delivery Services	133	132	176	252	311	2.8	5.9
		52	Transport Support Services	11	19	19	22	38	5.2	7.4
		53	Warehousing and Storage Services	7	8	11	17	37	3.7	13.5
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	54	35	25	29	33	-7.5	3.0
		55	Motion Picture and Sound Recording Activities	0	5	8	5	10	0.0	2.2
		56	Broadcasting (except Internet)	1	2	27	5	13	36.9	-7.2
		57	Internet Publishing and Broadcasting	0	0	0	0	0	0.0	0.0
		58	Telecommunications Services	11	11	9	11	28	-1.2	11.6
		59	Internet Service Providers, Web Search Portals and Data Processing Services	0	0	0	0	0	0.0	0.0
		60	Library and Other Information Services	0	5	6	7	14	30.7	8.5
K	Financial and Insurance Services	62	Finance	71	82	84	97	151	1.7	6.1
		63	Insurance and Superannuation Funds	6	19	24	33	67	15.2	11.0
		64	Auxiliary Finance and Insurance Services	16	22	22	29	56	2.9	9.8
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	24	11	7	10	15	-12.0	8.4
		67	Property Operators and Real Estate Services	115	102	81	114	186	-3.5	8.7

**Table 15.28 Place-of-work employment by industry subdivision – Mitchell (S) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	324	328	329	482	878	0.2	10.3
		70	Computer System Design and Related Services	21	33	43	72	144	7.3	12.8
N	Administrative and Support Services	72	Administrative Services	78	123	95	101	154	2.0	4.9
		73	Building Cleaning, Pest Control and Other Support Services	233	268	285	334	439	2.1	4.4
O	Public Administration and Safety	75	Public Administration	421	420	436	684	955	0.4	8.2
		76	Defence	1004	1010	979	1498	1569	-0.2	4.8
		77	Public Order, Safety and Regulatory Services	207	231	238	317	357	1.4	4.1
P	Education and Training	80	Preschool and School Education	1014	1203	1168	1346	1574	1.4	3.0
		81	Tertiary Education	48	65	80	111	232	5.3	11.2
		82	Adult, Community and Other Education	119	152	171	241	475	3.7	10.7
Q	Health Care and Social Assistance	84	Hospitals	388	334	486	590	923	2.3	6.6
		85	Medical and Other Health Care Services	407	670	779	971	1436	6.7	6.3
		86	Residential Care Services	143	223	327	295	457	8.6	3.4
		87	Social Assistance Services	433	355	634	637	904	3.9	3.6
R	Arts and Recreation Services	89	Heritage Activities	13	9	14	10	16	1.1	1.3
		90	Creative and Performing Arts Activities	11	8	22	14	26	6.9	2.0
		91	Sports and Recreation Activities	186	177	177	270	331	-0.5	6.4
		92	Gambling Activities	3	3	4	4	10	2.0	11.0
S	Other Services	94	Repair and Maintenance	199	208	280	271	369	3.5	2.8
		95	Personal and Other Services	201	199	208	312	549	0.3	10.2
		96	Private Households Employing Staff and Undifferentiated Goods	0	0	0	0	0	0.0	0.0

Source: NIEIR.

**Table 15.29 Place-of-work employment by industry subdivision – Moreland (C)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	47	72	39	82	157	-1.7	14.9
		2	Aquaculture	0	0	0	0	0	0.0	0.0
		3	Forestry and Logging	0	0	0	0	0	0.0	0.0
		4	Fishing, Hunting and Trapping	0	0	0	0	0	0.0	0.0
		5	Agriculture, Forestry and Fishing Support Services	8	12	8	5	23	0.9	10.6
B	Mining	6	Coal Mining	0	0	0	0	0	0.0	0.0
		7	Oil and Gas Extraction	1	4	2	4	7	5.7	12.7
		8	Metal Ore Mining	0	0	0	0	0	0.0	0.0
		9	Non-Metallic Mineral Mining and Quarrying	0	12	0	0	0	-100.0	0.0
		10	Exploration and Other Mining Support Services	15	2	32	20	55	8.0	5.5
C	Manufacturing	11	Food Product Manufacturing	1349	1145	973	969	981	-3.2	0.1
		12	Beverage and Tobacco Product Manufacturing	12	33	34	55	70	10.7	7.4
		13	Textile, Leather, Clothing and Footwear Manufacturing	1037	602	454	280	240	-7.9	-6.2
		14	Wood Product Manufacturing	214	137	101	107	99	-7.3	-0.2
		15	Pulp, Paper and Converted Paper Product Manufacturing	161	44	38	37	34	-13.5	-1.0
		16	Printing (including the Reproduction of Recorded Media)	313	308	262	231	220	-1.8	-1.7
		17	Petroleum and Coal Product Manufacturing	25	2	0	3	3	-100.0	0.0
		18	Basic Chemical and Chemical Product Manufacturing	168	157	133	111	139	-2.3	0.4
		19	Polymer Product and Rubber Product Manufacturing	666	634	658	545	510	-0.1	-2.5
		20	Non-Metallic Mineral Product Manufacturing	169	128	118	106	97	-3.5	-2.0
		21	Primary Metal and Metal Product Manufacturing	213	139	105	130	121	-6.9	1.5
		22	Fabricated Metal Product Manufacturing	311	274	248	218	200	-2.2	-2.1
		23	Transport Equipment Manufacturing	271	60	44	38	51	-16.7	1.6
		24	Machinery and Equipment Manufacturing	462	367	281	193	219	-4.9	-2.4
		25	Furniture and Other Manufacturing	507	342	420	341	327	-1.9	-2.5
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	16	13	15	55	136	-0.8	24.7
		27	Gas Supply	10	1	12	3	3	1.5	-14.0
		28	Water Supply, Sewerage and Drainage Services	0	15	27	35	62	0.0	8.5
		29	Waste Collection, Treatment and Disposal Services	61	126	110	150	172	6.1	4.5
E	Construction	30	Building Construction	1097	1140	1324	1059	1284	1.9	-0.3
		31	Heavy and Civil Engineering Construction	68	94	137	131	219	7.3	4.8
		32	Construction Services	3093	2966	2646	2341	2619	-1.5	-0.1

**Table 15.29 Place-of-work employment by industry subdivision – Moreland (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	242	192	170	179	198	-3.5	1.6
		34	Machinery and Equipment Wholesaling	399	250	229	231	240	-5.4	0.5
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	131	66	69	74	87	-6.2	2.3
		36	Grocery, Liquor and Tobacco Product Wholesaling	708	594	590	565	553	-1.8	-0.6
		37	Other Goods Wholesaling	844	546	668	533	469	-2.3	-3.5
		38	Commission-Based Wholesaling	9	7	8	10	14	-1.0	5.5
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	417	419	463	266	291	1.0	-4.5
		40	Fuel Retailing	111	118	130	97	91	1.6	-3.5
		41	Food Retailing	1899	2245	2201	2189	2225	1.5	0.1
		42	Other Store-Based Retailing	2360	2417	2579	2790	2959	0.9	1.4
		43	Non-Store Retailing and Retail Commission Based Buying	32	33	149	82	83	16.7	-5.7
H	Accommodation and Food Services	44	Accommodation	195	188	142	159	194	-3.1	3.2
		45	Food and Beverage Services	2390	3243	2912	3146	3355	2.0	1.4
I	Transport, Postal and Warehousing	46	Road Transport	1262	1105	1178	1438	1775	-0.7	4.2
		47	Rail Transport	12	28	32	49	84	10.4	10.3
		48	Water Transport	1	0	0	0	0	-100.0	0.0
		49	Air and Space Transport	8	9	8	8	17	0.0	8.4
		50	Other Transport	2	13	31	22	29	33.4	-0.9
		51	Postal and Courier Pick-up and Delivery Services	141	152	164	224	330	1.5	7.2
		52	Transport Support Services	56	236	219	195	214	14.7	-0.2
		53	Warehousing and Storage Services	139	120	193	139	189	3.4	-0.2
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	91	89	78	88	94	-1.6	1.9
		55	Motion Picture and Sound Recording Activities	109	243	204	279	253	6.4	2.2
		56	Broadcasting (except Internet)	37	46	40	41	49	0.7	2.1
		57	Internet Publishing and Broadcasting	49	38	9	3	3	-15.6	-10.1
		58	Telecommunications Services	79	106	96	80	112	2.0	1.5
		59	Internet Service Providers, Web Search Portals and Data Processing Services	5	18	19	19	29	13.2	4.3
		60	Library and Other Information Services	30	24	45	47	68	4.0	4.2
K	Financial and Insurance Services	62	Finance	330	246	222	255	349	-3.9	4.6
		63	Insurance and Superannuation Funds	80	79	99	109	179	2.1	6.2
		64	Auxiliary Finance and Insurance Services	159	176	196	195	272	2.1	3.4
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	98	47	34	38	49	-10.1	3.7
		67	Property Operators and Real Estate Services	464	570	488	563	657	0.5	3.0



**Table 15.29 Place-of-work employment by industry subdivision – Moreland (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	1880	2181	2230	2461	2963	1.7	2.9
		70	Computer System Design and Related Services	287	393	503	621	842	5.8	5.3
N	Administrative and Support Services	72	Administrative Services	469	523	437	436	499	-0.7	1.3
		73	Building Cleaning, Pest Control and Other Support Services	627	739	565	713	888	-1.0	4.6
O	Public Administration and Safety	75	Public Administration	1499	1636	1637	2120	2458	0.9	4.1
		76	Defence	7	5	7	64	103	-1.0	31.4
		77	Public Order, Safety and Regulatory Services	680	799	747	956	1001	0.9	3.0
P	Education and Training	80	Preschool and School Education	2665	3629	3460	3453	3419	2.6	-0.1
		81	Tertiary Education	528	468	421	514	727	-2.2	5.6
		82	Adult, Community and Other Education	634	894	1315	1176	1320	7.6	0.0
Q	Health Care and Social Assistance	84	Hospitals	719	907	1035	1423	2054	3.7	7.1
		85	Medical and Other Health Care Services	1959	2340	2569	3058	3462	2.7	3.0
		86	Residential Care Services	1302	1787	1936	2275	2319	4.0	1.8
		87	Social Assistance Services	2155	2651	4063	3914	4270	6.5	0.5
R	Arts and Recreation Services	89	Heritage Activities	84	58	69	80	120	-2.0	5.8
		90	Creative and Performing Arts Activities	446	557	619	591	561	3.3	-1.0
		91	Sports and Recreation Activities	270	438	355	430	471	2.8	2.9
		92	Gambling Activities	47	36	43	32	43	-0.9	0.0
S	Other Services	94	Repair and Maintenance	1208	1174	1516	1312	1204	2.3	-2.3
		95	Personal and Other Services	1144	1370	1365	1482	1464	1.8	0.7
		96	Private Households Employing Staff and Undifferentiated Goods	20	20	11	13	15	-5.6	3.3

Source: NIEIR.

**Table 15.30 Place-of-work employment by industry subdivision – Nillumbik (S)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	135	144	139	107	146	0.3	0.5
		2	Aquaculture	0	0	0	0	0	0.0	0.0
		3	Forestry and Logging	0	0	0	0	0	0.0	0.0
		4	Fishing, Hunting and Trapping	4	2	0	3	7	-100.0	0.0
		5	Agriculture, Forestry and Fishing Support Services	48	62	35	46	57	-3.2	5.1
B	Mining	6	Coal Mining	0	0	0	0	0	0.0	0.0
		7	Oil and Gas Extraction	15	1	0	2	4	-100.0	0.0
		8	Metal Ore Mining	16	4	1	1	2	-29.3	14.6
		9	Non-Metallic Mineral Mining and Quarrying	0	0	0	0	0	0.0	0.0
		10	Exploration and Other Mining Support Services	0	0	0	0	0	0.0	0.0
C	Manufacturing	11	Food Product Manufacturing	135	145	130	166	208	-0.4	4.8
		12	Beverage and Tobacco Product Manufacturing	20	19	19	29	34	-0.8	6.3
		13	Textile, Leather, Clothing and Footwear Manufacturing	47	46	41	10	19	-1.2	-7.6
		14	Wood Product Manufacturing	60	32	25	28	28	-8.3	1.0
		15	Pulp, Paper and Converted Paper Product Manufacturing	5	5	5	6	7	-0.5	2.8
		16	Printing (including the Reproduction of Recorded Media)	51	42	37	38	38	-3.1	0.3
		17	Petroleum and Coal Product Manufacturing	0	6	3	5	10	0.0	14.9
		18	Basic Chemical and Chemical Product Manufacturing	25	11	9	3	4	-10.0	-8.3
		19	Polymer Product and Rubber Product Manufacturing	19	9	8	8	9	-8.1	1.6
		20	Non-Metallic Mineral Product Manufacturing	19	16	16	18	22	-1.6	3.3
		21	Primary Metal and Metal Product Manufacturing	11	11	11	13	13	-0.6	2.2
		22	Fabricated Metal Product Manufacturing	36	11	9	10	11	-13.2	2.2
		23	Transport Equipment Manufacturing	14	14	14	14	19	0.2	2.7
		24	Machinery and Equipment Manufacturing	86	70	45	30	43	-6.3	-0.5
		25	Furniture and Other Manufacturing	120	88	76	74	75	-4.5	-0.2
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	11	12	13	21	35	1.3	10.6
		27	Gas Supply	0	0	0	0	0	0.0	0.0
		28	Water Supply, Sewerage and Drainage Services	53	49	57	46	52	0.7	-0.9
		29	Waste Collection, Treatment and Disposal Services	63	28	18	24	39	-11.8	8.1
E	Construction	30	Building Construction	507	428	499	694	1054	-0.2	7.8
		31	Heavy and Civil Engineering Construction	137	102	128	241	451	-0.7	13.5
		32	Construction Services	2009	1781	1541	2211	3210	-2.6	7.6

**Table 15.30 Place-of-work employment by industry subdivision – Nillumbik (S) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	134	145	101	95	100	-2.8	-0.1
		34	Machinery and Equipment Wholesaling	80	24	15	24	39	-15.2	9.7
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	22	13	12	14	20	-6.2	5.2
		36	Grocery, Liquor and Tobacco Product Wholesaling	40	28	22	29	45	-5.8	7.2
		37	Other Goods Wholesaling	95	45	41	41	48	-8.1	1.8
		38	Commission-Based Wholesaling	14	9	5	8	10	-9.9	6.5
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	37	35	32	33	45	-1.4	3.5
		40	Fuel Retailing	40	31	25	31	34	-4.3	3.0
		41	Food Retailing	929	826	637	775	911	-3.7	3.6
		42	Other Store-Based Retailing	830	783	679	927	911	-2.0	3.0
		43	Non-Store Retailing and Retail Commission Based Buying	56	21	54	37	65	-0.4	2.0
H	Accommodation and Food Services	44	Accommodation	52	54	40	42	58	-2.6	3.8
		45	Food and Beverage Services	1155	1357	1071	1216	1782	-0.8	5.2
I	Transport, Postal and Warehousing	46	Road Transport	196	160	150	192	249	-2.6	5.2
		47	Rail Transport	23	42	62	73	92	10.4	4.1
		48	Water Transport	0	9	10	13	10	0.0	0.3
		49	Air and Space Transport	0	4	3	2	5	0.0	6.8
		50	Other Transport	0	0	0	0	0	0.0	0.0
		51	Postal and Courier Pick-up and Delivery Services	104	96	134	188	261	2.6	6.9
		52	Transport Support Services	14	16	16	20	32	1.7	6.7
		53	Warehousing and Storage Services	1	19	23	27	48	43.0	7.5
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	24	26	21	22	26	-1.0	2.1
		55	Motion Picture and Sound Recording Activities	23	35	27	23	28	1.5	0.4
		56	Broadcasting (except Internet)	0	13	12	10	15	0.0	2.5
		57	Internet Publishing and Broadcasting	0	0	0	0	0	0.0	0.0
		58	Telecommunications Services	22	22	22	17	41	-0.2	6.7
		59	Internet Service Providers, Web Search Portals and Data Processing Services	11	6	4	4	9	-10.3	9.4
		60	Library and Other Information Services	35	31	26	31	33	-2.9	2.6
K	Financial and Insurance Services	62	Finance	113	96	89	90	135	-2.3	4.2
		63	Insurance and Superannuation Funds	23	12	11	16	34	-7.4	12.1
		64	Auxiliary Finance and Insurance Services	78	100	112	104	140	3.7	2.3
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	52	43	31	26	27	-5.1	-1.2
		67	Property Operators and Real Estate Services	193	211	178	169	198	-0.8	1.1

**Table 15.30 Place-of-work employment by industry subdivision – Nillumbik (S) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	1102	1111	1055	1195	1562	-0.4	4.0
		70	Computer System Design and Related Services	155	153	180	195	264	1.5	3.9
N	Administrative and Support Services	72	Administrative Services	139	190	154	153	180	1.0	1.6
		73	Building Cleaning, Pest Control and Other Support Services	368	375	283	381	500	-2.6	5.9
O	Public Administration and Safety	75	Public Administration	456	480	450	605	780	-0.1	5.6
		76	Defence	0	0	0	0	0	0.0	0.0
		77	Public Order, Safety and Regulatory Services	163	196	185	229	265	1.3	3.6
P	Education and Training	80	Preschool and School Education	1657	1827	1605	1711	1955	-0.3	2.0
		81	Tertiary Education	89	58	49	81	175	-5.8	13.5
		82	Adult, Community and Other Education	372	395	385	439	707	0.4	6.3
Q	Health Care and Social Assistance	84	Hospitals	26	32	45	214	451	5.8	25.9
		85	Medical and Other Health Care Services	777	865	1068	1102	1618	3.2	4.2
		86	Residential Care Services	197	327	319	422	527	5.0	5.1
		87	Social Assistance Services	612	587	778	953	1066	2.4	3.2
R	Arts and Recreation Services	89	Heritage Activities	14	15	13	21	37	-0.2	10.7
		90	Creative and Performing Arts Activities	122	143	136	126	128	1.1	-0.6
		91	Sports and Recreation Activities	329	417	377	600	763	1.4	7.3
		92	Gambling Activities	1	4	6	5	13	21.6	8.7
S	Other Services	94	Repair and Maintenance	334	291	397	377	468	1.7	1.7
		95	Personal and Other Services	450	518	463	517	754	0.3	5.0
		96	Private Households Employing Staff and Undifferentiated Goods	15	47	95	106	71	20.6	-3.0

Source: NIEIR.

**Table 15.31 Place-of-work employment by industry subdivision – Whittlesea (C)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	530	884	859	723	983	5.0	1.4
		2	Aquaculture	8	0	21	5	13	10.9	-4.7
		3	Forestry and Logging	0	0	0	0	0	0.0	0.0
		4	Fishing, Hunting and Trapping	42	12	1	3	4	-34.8	20.9
		5	Agriculture, Forestry and Fishing Support Services	19	42	21	9	33	1.0	4.8
B	Mining	6	Coal Mining	0	15	6	5	6	0.0	-0.4
		7	Oil and Gas Extraction	0	6	4	7	9	0.0	8.2
		8	Metal Ore Mining	2	13	14	11	22	19.5	4.6
		9	Non-Metallic Mineral Mining and Quarrying	68	67	47	531	587	-3.6	28.8
		10	Exploration and Other Mining Support Services	50	3	190	190	190	14.2	0.0
C	Manufacturing	11	Food Product Manufacturing	2198	2543	2360	2528	2789	0.7	1.7
		12	Beverage and Tobacco Product Manufacturing	117	137	125	190	204	0.7	5.0
		13	Textile, Leather, Clothing and Footwear Manufacturing	756	722	626	438	413	-1.9	-4.1
		14	Wood Product Manufacturing	277	180	194	153	144	-3.5	-2.9
		15	Pulp, Paper and Converted Paper Product Manufacturing	207	166	197	184	160	-0.5	-2.0
		16	Printing (including the Reproduction of Recorded Media)	249	254	248	216	208	0.0	-1.7
		17	Petroleum and Coal Product Manufacturing	22	3	0	13	13	-100.0	0.0
		18	Basic Chemical and Chemical Product Manufacturing	164	121	132	77	90	-2.1	-3.8
		19	Polymer Product and Rubber Product Manufacturing	570	411	418	337	313	-3.0	-2.9
		20	Non-Metallic Mineral Product Manufacturing	494	460	495	439	402	0.0	-2.0
		21	Primary Metal and Metal Product Manufacturing	466	301	235	290	276	-6.6	1.6
		22	Fabricated Metal Product Manufacturing	692	576	547	487	456	-2.3	-1.8
		23	Transport Equipment Manufacturing	860	816	878	569	549	0.2	-4.6
		24	Machinery and Equipment Manufacturing	1123	1026	787	564	600	-3.5	-2.7
		25	Furniture and Other Manufacturing	638	562	602	483	476	-0.6	-2.3
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	532	309	256	423	479	-7.1	6.5
		27	Gas Supply	66	150	374	154	130	18.9	-10.0
		28	Water Supply, Sewerage and Drainage Services	34	55	105	97	155	12.1	4.0
		29	Waste Collection, Treatment and Disposal Services	127	147	174	197	235	3.2	3.1
E	Construction	30	Building Construction	1784	1579	1978	860	1941	1.0	-0.2
		31	Heavy and Civil Engineering Construction	565	536	763	300	1016	3.1	2.9
		32	Construction Services	5420	6101	6032	3229	6671	1.1	1.0

**Table 15.31 Place-of-work employment by industry subdivision – Whittlesea (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	787	598	676	588	575	-1.5	-1.6
		34	Machinery and Equipment Wholesaling	516	337	464	387	417	-1.1	-1.0
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	186	240	390	380	388	7.7	0.0
		36	Grocery, Liquor and Tobacco Product Wholesaling	590	1125	1658	1544	1520	10.9	-0.9
		37	Other Goods Wholesaling	604	578	1171	917	801	6.8	-3.7
		38	Commission-Based Wholesaling	9	4	7	9	14	-2.1	6.8
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	332	550	800	459	555	9.2	-3.6
		40	Fuel Retailing	149	196	258	188	170	5.6	-4.1
		41	Food Retailing	2372	3308	3556	3885	3923	4.1	1.0
		42	Other Store-Based Retailing	3730	4324	6281	6025	5916	5.3	-0.6
		43	Non-Store Retailing and Retail Commission Based Buying	76	35	186	100	116	9.4	-4.6
H	Accommodation and Food Services	44	Accommodation	58	105	90	119	157	4.6	5.6
		45	Food and Beverage Services	2493	3545	3328	3766	4353	2.9	2.7
I	Transport, Postal and Warehousing	46	Road Transport	1450	1726	2359	2688	2689	5.0	1.3
		47	Rail Transport	121	148	241	288	326	7.1	3.1
		48	Water Transport	2	11	11	20	29	19.1	10.2
		49	Air and Space Transport	7	12	11	17	31	5.2	11.0
		50	Other Transport	118	154	239	332	101	7.3	-8.3
		51	Postal and Courier Pick-up and Delivery Services	214	469	837	1115	1148	14.6	3.2
		52	Transport Support Services	72	134	177	159	206	9.4	1.5
		53	Warehousing and Storage Services	85	269	444	356	403	17.9	-1.0
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	36	25	25	14	21	-3.5	-1.6
		55	Motion Picture and Sound Recording Activities	50	85	117	83	97	8.9	-1.8
		56	Broadcasting (except Internet)	17	14	14	26	47	-1.6	12.7
		57	Internet Publishing and Broadcasting	26	1	0	1	23	-100.0	0.0
		58	Telecommunications Services	97	142	206	124	174	7.8	-1.6
		59	Internet Service Providers, Web Search Portals and Data Processing Services	10	24	25	25	43	10.2	5.5
		60	Library and Other Information Services	83	92	91	126	137	0.8	4.2
K	Financial and Insurance Services	62	Finance	439	485	554	563	686	2.4	2.2
		63	Insurance and Superannuation Funds	60	77	126	127	219	7.7	5.7
		64	Auxiliary Finance and Insurance Services	96	227	273	308	452	11.1	5.2
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	80	77	61	70	87	-2.6	3.6
		67	Property Operators and Real Estate Services	411	589	539	676	839	2.8	4.5



**Table 15.31 Place-of-work employment by industry subdivision – Whittlesea (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	997	1477	1762	2142	3434	5.9	6.9
		70	Computer System Design and Related Services	200	291	480	530	750	9.1	4.6
N	Administrative and Support Services	72	Administrative Services	596	649	545	594	730	-0.9	3.0
		73	Building Cleaning, Pest Control and Other Support Services	877	1256	1388	1591	1805	4.7	2.7
O	Public Administration and Safety	75	Public Administration	1116	1471	1787	2389	3273	4.8	6.2
		76	Defence	6	39	55	142	295	24.7	18.2
		77	Public Order, Safety and Regulatory Services	477	611	667	899	1111	3.4	5.2
P	Education and Training	80	Preschool and School Education	3230	4512	4795	5515	6141	4.0	2.5
		81	Tertiary Education	878	1070	1188	1310	1512	3.1	2.4
		82	Adult, Community and Other Education	421	619	819	1101	1591	6.9	6.9
Q	Health Care and Social Assistance	84	Hospitals	2474	3397	4517	4940	5440	6.2	1.9
		85	Medical and Other Health Care Services	1609	2662	3449	3985	5180	7.9	4.1
		86	Residential Care Services	970	1345	1303	1734	2047	3.0	4.6
		87	Social Assistance Services	1095	1973	2857	3698	3970	10.1	3.3
R	Arts and Recreation Services	89	Heritage Activities	25	33	52	62	118	7.4	8.6
		90	Creative and Performing Arts Activities	54	65	56	104	180	0.4	12.3
		91	Sports and Recreation Activities	470	543	723	936	1091	4.4	4.2
		92	Gambling Activities	30	45	112	54	75	14.2	-4.0
S	Other Services	94	Repair and Maintenance	1120	1255	1679	1675	1703	4.1	0.1
		95	Personal and Other Services	697	1018	935	1413	1906	3.0	7.4
		96	Private Households Employing Staff and Undifferentiated Goods	6	17	10	14	17	4.9	5.8

Source: NIEIR.

### 15.2.4 Resident employment by industry subdivision and LGA

The following tables contain more detailed forecasts of resident employment for each LGA by industry sub-division out to 2031.

**Table 15.32 Resident employment by industry subdivision – Banyule (C)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	114	148	158	151	220	3.3	3.4
		2	Aquaculture	2	2	2	2	2	0.0	0.0
		3	Forestry and Logging	9	6	5	12	12	-6.4	10.1
		4	Fishing, Hunting and Trapping	12	6	5	5	5	-8.6	0.0
		5	Agriculture, Forestry and Fishing Support Services	21	36	7	13	27	-10.4	14.5
B	Mining	6	Coal Mining	6	11	34	34	34	19.2	0.0
		7	Oil and Gas Extraction	79	37	34	39	42	-8.2	2.3
		8	Metal Ore Mining	99	80	17	-14	8	-16.4	-6.9
		9	Non-Metallic Mineral Mining and Quarrying	10	10	4	4	4	-9.2	0.0
		10	Exploration and Other Mining Support Services	116	53	8	213	197	-23.3	37.4
C	Manufacturing	11	Food Product Manufacturing	694	706	696	729	763	0.0	0.9
		12	Beverage and Tobacco Product Manufacturing	123	166	95	148	167	-2.6	5.8
		13	Textile, Leather, Clothing and Footwear Manufacturing	385	368	259	174	147	-3.9	-5.5
		14	Wood Product Manufacturing	180	100	92	85	74	-6.4	-2.2
		15	Pulp, Paper and Converted Paper Product Manufacturing	244	177	194	151	113	-2.2	-5.3
		16	Printing (including the Reproduction of Recorded Media)	422	352	368	324	298	-1.3	-2.1
		17	Petroleum and Coal Product Manufacturing	30	32	8	6	8	-12.6	0.5
		18	Basic Chemical and Chemical Product Manufacturing	353	310	333	339	377	-0.6	1.2
		19	Polymer Product and Rubber Product Manufacturing	281	220	205	145	116	-3.1	-5.5
		20	Non-Metallic Mineral Product Manufacturing	203	143	144	131	113	-3.4	-2.4
		21	Primary Metal and Metal Product Manufacturing	258	200	133	176	168	-6.4	2.4
		22	Fabricated Metal Product Manufacturing	325	289	215	195	165	-4.0	-2.6
		23	Transport Equipment Manufacturing	638	481	440	333	289	-3.7	-4.1
		24	Machinery and Equipment Manufacturing	774	751	483	406	397	-4.6	-1.9
		25	Furniture and Other Manufacturing	407	344	327	262	262	-2.2	-2.2
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	305	350	155	251	279	-6.6	6.1
		27	Gas Supply	87	59	31	10	7	-9.7	-14.4
		28	Water Supply, Sewerage and Drainage Services	87	124	47	72	112	-5.8	9.0
		29	Waste Collection, Treatment and Disposal Services	105	111	60	95	117	-5.3	6.8
E	Construction	30	Building Construction	1463	1295	1681	1216	1239	1.4	-3.0
		31	Heavy and Civil Engineering Construction	316	287	568	408	423	6.0	-2.9
		32	Construction Services	3756	3324	3379	2774	3018	-1.1	-1.1

**Table 15.32 Resident employment by industry subdivision – Banyule (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	490	488	327	330	298	-4.0	-0.9
		34	Machinery and Equipment Wholesaling	761	584	540	489	443	-3.4	-1.9
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	219	176	179	189	185	-2.0	0.3
		36	Grocery, Liquor and Tobacco Product Wholesaling	341	314	254	270	258	-2.9	0.2
		37	Other Goods Wholesaling	828	655	819	697	615	-0.1	-2.8
		38	Commission-Based Wholesaling	50	33	35	40	40	-3.5	1.5
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	393	451	410	237	250	0.4	-4.8
		40	Fuel Retailing	129	79	69	59	55	-6.0	-2.3
		41	Food Retailing	1935	1862	1560	1653	1667	-2.1	0.7
		42	Other Store-Based Retailing	3765	3689	3529	3441	3223	-0.6	-0.9
		43	Non-Store Retailing and Retail Commission Based Buying	120	53	193	126	134	4.9	-3.6
H	Accommodation and Food Services	44	Accommodation	315	302	214	249	306	-3.8	3.7
		45	Food and Beverage Services	2953	3081	2940	3319	3671	0.0	2.2
I	Transport, Postal and Warehousing	46	Road Transport	967	766	735	765	828	-2.7	1.2
		47	Rail Transport	149	200	325	325	347	8.1	0.7
		48	Water Transport	43	39	16	22	24	-9.4	4.3
		49	Air and Space Transport	317	308	173	303	253	-5.9	3.9
		50	Other Transport	51	44	106	101	66	7.7	-4.7
		51	Postal and Courier Pick-up and Delivery Services	448	473	745	830	818	5.2	0.9
		52	Transport Support Services	414	419	483	468	469	1.6	-0.3
		53	Warehousing and Storage Services	137	202	164	155	167	1.8	0.2
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	340	234	207	242	226	-4.9	0.9
		55	Motion Picture and Sound Recording Activities	165	206	207	223	204	2.3	-0.2
		56	Broadcasting (except Internet)	138	135	123	139	143	-1.2	1.5
		57	Internet Publishing and Broadcasting	50	8	6	12	13	-19.2	8.5
		58	Telecommunications Services	753	735	1089	971	923	3.8	-1.6
		59	Internet Service Providers, Web Search Portals and Data Processing Services	88	148	116	113	103	2.8	-1.2
		60	Library and Other Information Services	126	120	98	136	164	-2.5	5.3
K	Financial and Insurance Services	62	Finance	1431	1436	1280	1223	1150	-1.1	-1.1
		63	Insurance and Superannuation Funds	725	722	920	909	952	2.4	0.3
		64	Auxiliary Finance and Insurance Services	955	940	899	866	883	-0.6	-0.2
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	208	191	86	66	68	-8.5	-2.3
		67	Property Operators and Real Estate Services	761	925	813	906	968	0.7	1.8

**Table 15.32 Resident employment by industry subdivision – Banyule (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	5025	5201	5155	5624	5931	0.3	1.4
		70	Computer System Design and Related Services	1276	1518	2306	2277	2316	6.1	0.0
N	Administrative and Support Services	72	Administrative Services	1217	1198	1019	1019	983	-1.8	-0.4
		73	Building Cleaning, Pest Control and Other Support Services	808	876	809	974	1100	0.0	3.1
O	Public Administration and Safety	75	Public Administration	2745	2864	2996	3347	3622	0.9	1.9
		76	Defence	795	718	474	643	700	-5.0	4.0
		77	Public Order, Safety and Regulatory Services	1092	1158	1104	1255	1319	0.1	1.8
P	Education and Training	80	Preschool and School Education	4045	4529	4413	4424	4533	0.9	0.3
		81	Tertiary Education	2195	2306	2673	2989	3188	2.0	1.8
		82	Adult, Community and Other Education	779	950	1053	1140	1371	3.1	2.7
Q	Health Care and Social Assistance	84	Hospitals	3823	4005	5217	6294	6428	3.2	2.1
		85	Medical and Other Health Care Services	2844	3224	4068	4688	5137	3.6	2.4
		86	Residential Care Services	939	1130	970	1138	1195	0.3	2.1
		87	Social Assistance Services	1758	1770	2335	2371	2439	2.9	0.4
R	Arts and Recreation Services	89	Heritage Activities	124	142	107	147	203	-1.5	6.7
		90	Creative and Performing Arts Activities	233	268	225	234	226	-0.3	0.0
		91	Sports and Recreation Activities	637	941	743	950	1064	1.6	3.6
		92	Gambling Activities	192	201	181	146	136	-0.6	-2.8
S	Other Services	94	Repair and Maintenance	906	833	1130	1159	1186	2.2	0.5
		95	Personal and Other Services	1381	1423	1304	1496	1541	-0.6	1.7
		96	Private Households Employing Staff and Undifferentiated Goods	33	65	110	138	140	12.9	2.4

Source: NIEIR.

**Table 15.33 Resident employment by industry subdivision – Darebin (C)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	131	237	274	292	424	7.6	4.4
		2	Aquaculture	4	37	2	31	49	-5.0	35.3
		3	Forestry and Logging	18	22	3	8	9	-15.8	11.4
		4	Fishing, Hunting and Trapping	0	3	3	3	3	56.0	0.0
		5	Agriculture, Forestry and Fishing Support Services	30	42	23	21	38	-2.8	5.2
B	Mining	6	Coal Mining	5	1	1	-1	0	-11.0	-19.8
		7	Oil and Gas Extraction	36	37	26	36	42	-3.1	4.8
		8	Metal Ore Mining	39	53	15	-12	-1	-9.3	0.0
		9	Non-Metallic Mineral Mining and Quarrying	8	5	2	2	2	-11.3	0.0
		10	Exploration and Other Mining Support Services	50	58	13	95	87	-12.4	20.7
C	Manufacturing	11	Food Product Manufacturing	988	1067	998	1055	1108	0.1	1.1
		12	Beverage and Tobacco Product Manufacturing	160	189	186	244	263	1.5	3.6
		13	Textile, Leather, Clothing and Footwear Manufacturing	741	631	446	328	275	-4.9	-4.7
		14	Wood Product Manufacturing	217	136	133	134	118	-4.8	-1.2
		15	Pulp, Paper and Converted Paper Product Manufacturing	306	207	318	252	204	0.4	-4.3
		16	Printing (including the Reproduction of Recorded Media)	349	309	322	293	269	-0.8	-1.8
		17	Petroleum and Coal Product Manufacturing	30	28	60	61	69	7.0	1.4
		18	Basic Chemical and Chemical Product Manufacturing	360	385	410	445	513	1.3	2.3
		19	Polymer Product and Rubber Product Manufacturing	337	273	282	231	207	-1.8	-3.1
		20	Non-Metallic Mineral Product Manufacturing	217	169	183	166	131	-1.7	-3.3
		21	Primary Metal and Metal Product Manufacturing	252	171	135	172	168	-6.0	2.2
		22	Fabricated Metal Product Manufacturing	302	220	230	212	193	-2.7	-1.7
		23	Transport Equipment Manufacturing	727	513	526	425	374	-3.2	-3.4
		24	Machinery and Equipment Manufacturing	677	665	464	413	414	-3.7	-1.1
		25	Furniture and Other Manufacturing	485	434	659	581	579	3.1	-1.3
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	345	428	345	467	485	0.0	3.5
		27	Gas Supply	82	64	31	35	46	-9.2	4.0
		28	Water Supply, Sewerage and Drainage Services	105	137	93	116	147	-1.2	4.7
		29	Waste Collection, Treatment and Disposal Services	121	135	83	134	167	-3.7	7.2
E	Construction	30	Building Construction	1420	1711	1840	1613	1609	2.6	-1.3
		31	Heavy and Civil Engineering Construction	261	269	406	299	292	4.5	-3.3
		32	Construction Services	2997	3164	2641	2702	2747	-1.3	0.4

**Table 15.33 Resident employment by industry subdivision – Darebin (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	382	305	335	336	317	-1.3	-0.5
		34	Machinery and Equipment Wholesaling	686	515	583	558	525	-1.6	-1.0
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	162	178	192	210	210	1.7	0.9
		36	Grocery, Liquor and Tobacco Product Wholesaling	553	447	458	481	460	-1.9	0.0
		37	Other Goods Wholesaling	1043	733	792	697	612	-2.7	-2.5
		38	Commission-Based Wholesaling	34	32	43	45	42	2.2	-0.2
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	324	378	508	374	391	4.6	-2.6
		40	Fuel Retailing	199	141	143	128	118	-3.2	-1.9
		41	Food Retailing	1879	2244	1674	1837	1825	-1.1	0.9
		42	Other Store-Based Retailing	4196	4726	4640	4626	4388	1.0	-0.6
		43	Non-Store Retailing and Retail Commission Based Buying	114	73	314	243	222	10.6	-3.4
H	Accommodation and Food Services	44	Accommodation	624	627	463	554	681	-2.9	3.9
		45	Food and Beverage Services	4490	5473	5249	6256	6740	1.6	2.5
I	Transport, Postal and Warehousing	46	Road Transport	1465	1131	1249	1503	1644	-1.6	2.8
		47	Rail Transport	158	207	362	382	433	8.7	1.8
		48	Water Transport	35	28	29	30	35	-1.9	2.1
		49	Air and Space Transport	266	288	156	315	272	-5.2	5.7
		50	Other Transport	23	36	59	72	39	9.9	-4.0
		51	Postal and Courier Pick-up and Delivery Services	568	639	1006	1281	1365	5.9	3.1
		52	Transport Support Services	423	491	440	458	472	0.4	0.7
		53	Warehousing and Storage Services	276	272	329	341	360	1.8	0.9
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	560	400	416	502	482	-2.9	1.5
		55	Motion Picture and Sound Recording Activities	333	457	543	650	593	5.0	0.9
		56	Broadcasting (except Internet)	240	242	281	309	305	1.6	0.8
		57	Internet Publishing and Broadcasting	13	47	5	40	55	-8.2	26.2
		58	Telecommunications Services	923	896	970	869	813	0.5	-1.8
		59	Internet Service Providers, Web Search Portals and Data Processing Services	110	177	115	127	109	0.4	-0.5
		60	Library and Other Information Services	127	111	178	240	291	3.4	5.0
K	Financial and Insurance Services	62	Finance	1663	1675	1678	1661	1566	0.1	-0.7
		63	Insurance and Superannuation Funds	836	846	1153	1186	1263	3.3	0.9
		64	Auxiliary Finance and Insurance Services	922	956	1029	1052	1094	1.1	0.6
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	241	205	181	150	146	-2.8	-2.1
		67	Property Operators and Real Estate Services	624	885	825	980	1061	2.8	2.6



**Table 15.33 Resident employment by industry subdivision – Darebin (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	5444	6322	7137	8173	8704	2.7	2.0
		70	Computer System Design and Related Services	1482	1749	2799	2841	2873	6.6	0.3
N	Administrative and Support Services	72	Administrative Services	1544	1578	1469	1523	1497	-0.5	0.2
		73	Building Cleaning, Pest Control and Other Support Services	1172	1402	1373	1684	1954	1.6	3.6
O	Public Administration and Safety	75	Public Administration	3613	3867	5273	5841	6208	3.9	1.6
		76	Defence	143	158	147	237	278	0.3	6.5
		77	Public Order, Safety and Regulatory Services	958	1134	1057	1250	1346	1.0	2.4
P	Education and Training	80	Preschool and School Education	3282	4261	4103	4264	4449	2.3	0.8
		81	Tertiary Education	2972	3374	4114	4768	5130	3.3	2.2
		82	Adult, Community and Other Education	851	1219	1514	1615	1808	5.9	1.8
Q	Health Care and Social Assistance	84	Hospitals	3040	3486	4496	5495	5915	4.0	2.8
		85	Medical and Other Health Care Services	2366	3127	4305	4888	5388	6.2	2.3
		86	Residential Care Services	1100	1397	1478	1728	1828	3.0	2.1
		87	Social Assistance Services	2260	2474	4021	4119	4287	5.9	0.6
R	Arts and Recreation Services	89	Heritage Activities	312	374	393	507	587	2.3	4.1
		90	Creative and Performing Arts Activities	580	745	764	772	748	2.8	-0.2
		91	Sports and Recreation Activities	526	739	486	618	673	-0.8	3.3
		92	Gambling Activities	281	319	302	271	254	0.7	-1.7
S	Other Services	94	Repair and Maintenance	865	882	1204	1289	1312	3.4	0.9
		95	Personal and Other Services	1631	1780	1722	1862	1813	0.5	0.5
		96	Private Households Employing Staff and Undifferentiated Goods	49	97	220	269	252	16.2	1.4

Source: NIEIR.

**Table 15.34 Resident employment by industry subdivision – Hume (C)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	314	376	64	221	441	-14.7	21.2
		2	Aquaculture	0	0	0	0	0	0.0	0.0
		3	Forestry and Logging	5	25	6	30	26	2.0	15.6
		4	Fishing, Hunting and Trapping	1	63	4	3	3	14.6	-3.6
		5	Agriculture, Forestry and Fishing Support Services	15	52	6	19	34	-8.9	19.2
B	Mining	6	Coal Mining	7	16	9	5	9	2.2	0.6
		7	Oil and Gas Extraction	57	27	19	27	35	-10.2	6.0
		8	Metal Ore Mining	51	61	17	51	77	-10.2	16.1
		9	Non-Metallic Mineral Mining and Quarrying	37	40	45	446	386	1.8	24.1
		10	Exploration and Other Mining Support Services	59	21	1	125	124	-36.5	69.7
C	Manufacturing	11	Food Product Manufacturing	1725	2016	2223	2317	2454	2.6	1.0
		12	Beverage and Tobacco Product Manufacturing	195	206	201	293	324	0.3	4.9
		13	Textile, Leather, Clothing and Footwear Manufacturing	567	391	732	587	512	2.6	-3.5
		14	Wood Product Manufacturing	402	349	632	567	497	4.6	-2.4
		15	Pulp, Paper and Converted Paper Product Manufacturing	518	425	554	371	221	0.7	-8.8
		16	Printing (including the Reproduction of Recorded Media)	513	441	581	556	497	1.3	-1.5
		17	Petroleum and Coal Product Manufacturing	43	53	104	61	75	9.1	-3.1
		18	Basic Chemical and Chemical Product Manufacturing	489	451	511	586	687	0.4	3.0
		19	Polymer Product and Rubber Product Manufacturing	804	611	831	629	496	0.3	-5.0
		20	Non-Metallic Mineral Product Manufacturing	438	364	468	428	315	0.7	-3.9
		21	Primary Metal and Metal Product Manufacturing	556	372	490	611	600	-1.2	2.0
		22	Fabricated Metal Product Manufacturing	699	590	671	650	579	-0.4	-1.5
		23	Transport Equipment Manufacturing	2179	1618	1750	1505	1335	-2.2	-2.7
		24	Machinery and Equipment Manufacturing	926	691	756	675	672	-2.0	-1.2
		25	Furniture and Other Manufacturing	899	834	551	468	494	-4.8	-1.1
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	260	399	499	677	737	6.7	4.0
		27	Gas Supply	116	75	294	275	297	9.8	0.1
		28	Water Supply, Sewerage and Drainage Services	109	145	144	172	210	2.9	3.8
		29	Waste Collection, Treatment and Disposal Services	280	435	164	289	353	-5.2	7.9
E	Construction	30	Building Construction	1894	2601	4173	3828	3479	8.2	-1.8
		31	Heavy and Civil Engineering Construction	467	512	1339	1269	1161	11.1	-1.4
		32	Construction Services	5724	9560	12120	12962	11649	7.8	-0.4

**Table 15.34 Resident employment by industry subdivision – Hume (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	627	749	760	760	702	1.9	-0.8
		34	Machinery and Equipment Wholesaling	776	665	694	664	605	-1.1	-1.4
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	460	458	867	943	928	6.5	0.7
		36	Grocery, Liquor and Tobacco Product Wholesaling	655	568	719	752	710	0.9	-0.1
		37	Other Goods Wholesaling	905	671	1077	976	865	1.8	-2.2
		38	Commission-Based Wholesaling	49	57	60	70	66	2.1	0.9
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	723	861	877	566	635	1.9	-3.2
		40	Fuel Retailing	249	216	432	398	367	5.7	-1.6
		41	Food Retailing	2929	3294	4721	4953	4922	4.9	0.4
		42	Other Store-Based Retailing	4625	4942	5563	6032	5750	1.9	0.3
		43	Non-Store Retailing and Retail Commission Based Buying	44	54	189	168	169	15.7	-1.1
H	Accommodation and Food Services	44	Accommodation	512	531	398	491	592	-2.5	4.1
		45	Food and Beverage Services	4403	5020	7011	7934	8151	4.8	1.5
I	Transport, Postal and Warehousing	46	Road Transport	3775	4279	4563	5591	5471	1.9	1.8
		47	Rail Transport	303	416	197	316	399	-4.2	7.3
		48	Water Transport	97	99	31	43	44	-10.6	3.3
		49	Air and Space Transport	1160	1314	1056	1877	1639	-0.9	4.5
		50	Other Transport	40	42	35	66	50	-1.3	3.6
		51	Postal and Courier Pick-up and Delivery Services	848	1016	1144	1714	1897	3.0	5.2
		52	Transport Support Services	1486	1937	2124	2361	2241	3.6	0.5
		53	Warehousing and Storage Services	764	881	2289	2435	2390	11.6	0.4
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	259	138	155	179	174	-5.0	1.2
		55	Motion Picture and Sound Recording Activities	94	113	132	122	129	3.4	-0.2
		56	Broadcasting (except Internet)	94	74	45	98	132	-7.2	11.5
		57	Internet Publishing and Broadcasting	3	5	9	16	18	12.3	6.6
		58	Telecommunications Services	702	785	645	554	517	-0.9	-2.2
		59	Internet Service Providers, Web Search Portals and Data Processing Services	58	124	40	57	55	-3.7	3.2
		60	Library and Other Information Services	32	36	34	37	51	0.7	4.0
K	Financial and Insurance Services	62	Finance	1516	1435	2160	2233	2287	3.6	0.6
		63	Insurance and Superannuation Funds	804	779	1576	1649	1780	7.0	1.2
		64	Auxiliary Finance and Insurance Services	594	670	557	725	900	-0.6	4.9
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	449	445	286	239	220	-4.4	-2.6
		67	Property Operators and Real Estate Services	638	812	515	727	837	-2.1	5.0

**Table 15.34 Resident employment by industry subdivision – Hume (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	2716	2986	3378	4936	6253	2.2	6.4
		70	Computer System Design and Related Services	731	981	936	1161	1373	2.5	3.9
N	Administrative and Support Services	72	Administrative Services	1378	1546	1491	1869	1882	0.8	2.4
		73	Building Cleaning, Pest Control and Other Support Services	1504	1797	1849	2418	2663	2.1	3.7
O	Public Administration and Safety	75	Public Administration	2588	2662	3115	3732	4197	1.9	3.0
		76	Defence	181	142	386	444	490	7.9	2.4
		77	Public Order, Safety and Regulatory Services	1612	2007	3896	4276	4398	9.2	1.2
P	Education and Training	80	Preschool and School Education	3190	4318	4606	5210	5354	3.7	1.5
		81	Tertiary Education	886	992	976	1277	1521	1.0	4.5
		82	Adult, Community and Other Education	582	759	1231	1507	1895	7.8	4.4
Q	Health Care and Social Assistance	84	Hospitals	1979	2362	2538	3532	4298	2.5	5.4
		85	Medical and Other Health Care Services	1886	2442	2114	3246	4193	1.1	7.1
		86	Residential Care Services	1176	1706	2081	2627	3008	5.9	3.8
		87	Social Assistance Services	2065	2954	3428	4410	4705	5.2	3.2
R	Arts and Recreation Services	89	Heritage Activities	81	124	83	119	163	0.2	7.0
		90	Creative and Performing Arts Activities	73	81	79	90	131	0.8	5.2
		91	Sports and Recreation Activities	545	720	540	681	693	-0.1	2.5
		92	Gambling Activities	282	279	314	245	232	1.1	-3.0
S	Other Services	94	Repair and Maintenance	2125	1884	2518	2964	2944	1.7	1.6
		95	Personal and Other Services	1428	1583	2241	2656	2786	4.6	2.2
		96	Private Households Employing Staff and Undifferentiated Goods	11	10	8	12	16	-3.3	6.8

Source: NIEIR.

**Table 15.35 Resident employment by industry subdivision – Mitchell (S)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	500	489	767	671	655	4.4	-1.6
		2	Aquaculture	7	1	1	1	1	-18.4	0.0
		3	Forestry and Logging	25	8	6	11	11	-13.6	6.4
		4	Fishing, Hunting and Trapping	1	1	1	1	1	0.0	0.0
		5	Agriculture, Forestry and Fishing Support Services	44	41	27	29	30	-4.7	1.2
B	Mining	6	Coal Mining	0	0	0	0	0	0.0	0.0
		7	Oil and Gas Extraction	0	0	0	0	0	0.0	0.0
		8	Metal Ore Mining	22	32	45	44	58	7.6	2.4
		9	Non-Metallic Mineral Mining and Quarrying	57	65	63	333	355	1.1	18.9
		10	Exploration and Other Mining Support Services	13	11	1	1	1	-20.1	0.0
C	Manufacturing	11	Food Product Manufacturing	459	496	510	521	556	1.1	0.9
		12	Beverage and Tobacco Product Manufacturing	74	72	74	101	118	0.0	4.8
		13	Textile, Leather, Clothing and Footwear Manufacturing	68	36	36	16	13	-6.2	-10.0
		14	Wood Product Manufacturing	94	77	101	90	82	0.7	-2.1
		15	Pulp, Paper and Converted Paper Product Manufacturing	128	106	199	164	140	4.5	-3.5
		16	Printing (including the Reproduction of Recorded Media)	111	103	81	78	80	-3.1	-0.1
		17	Petroleum and Coal Product Manufacturing	9	7	5	5	5	-6.3	0.0
		18	Basic Chemical and Chemical Product Manufacturing	61	65	82	94	119	3.1	3.7
		19	Polymer Product and Rubber Product Manufacturing	112	118	136	114	104	2.0	-2.6
		20	Non-Metallic Mineral Product Manufacturing	152	140	174	159	144	1.4	-1.9
		21	Primary Metal and Metal Product Manufacturing	104	103	109	151	165	0.5	4.2
		22	Fabricated Metal Product Manufacturing	150	141	139	140	138	-0.7	-0.1
		23	Transport Equipment Manufacturing	268	286	292	259	249	0.9	-1.6
		24	Machinery and Equipment Manufacturing	257	146	199	164	180	-2.5	-1.0
		25	Furniture and Other Manufacturing	86	121	136	140	163	4.7	1.8
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	69	95	50	105	143	-3.3	11.1
		27	Gas Supply	10	25	85	56	63	23.5	-3.0
		28	Water Supply, Sewerage and Drainage Services	50	31	34	43	64	-3.7	6.5
		29	Waste Collection, Treatment and Disposal Services	70	117	120	151	185	5.6	4.4
E	Construction	30	Building Construction	451	479	788	676	848	5.7	0.7
		31	Heavy and Civil Engineering Construction	253	285	473	397	624	6.5	2.8
		32	Construction Services	1586	1896	2405	2396	3178	4.3	2.8

**Table 15.35 Resident employment by industry subdivision – Mitchell (S) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	195	200	241	234	247	2.1	0.3
		34	Machinery and Equipment Wholesaling	135	122	144	154	166	0.7	1.4
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	97	97	110	131	141	1.3	2.5
		36	Grocery, Liquor and Tobacco Product Wholesaling	83	92	65	77	87	-2.5	2.9
		37	Other Goods Wholesaling	105	91	136	132	141	2.6	0.4
		38	Commission-Based Wholesaling	12	6	6	7	8	-7.1	2.9
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	156	247	240	182	219	4.4	-0.9
		40	Fuel Retailing	110	96	109	99	93	-0.1	-1.6
		41	Food Retailing	643	738	592	719	824	-0.8	3.4
		42	Other Store-Based Retailing	744	810	812	1093	1202	0.9	4.0
		43	Non-Store Retailing and Retail Commission Based Buying	18	17	102	57	54	18.8	-6.1
H	Accommodation and Food Services	44	Accommodation	136	134	89	96	117	-4.2	2.8
		45	Food and Beverage Services	792	1099	922	1173	1599	1.5	5.7
I	Transport, Postal and Warehousing	46	Road Transport	702	729	947	1113	1190	3.0	2.3
		47	Rail Transport	108	136	140	192	219	2.7	4.5
		48	Water Transport	5	4	4	4	4	-2.4	0.0
		49	Air and Space Transport	57	107	174	244	237	11.8	3.1
		50	Other Transport	4	6	11	16	5	9.8	-7.7
		51	Postal and Courier Pick-up and Delivery Services	184	209	256	388	477	3.3	6.4
		52	Transport Support Services	115	166	131	153	173	1.3	2.8
		53	Warehousing and Storage Services	88	131	146	179	206	5.2	3.5
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	56	46	27	35	40	-7.2	4.0
		55	Motion Picture and Sound Recording Activities	0	23	31	29	35	52.5	1.2
		56	Broadcasting (except Internet)	12	13	7	8	8	-4.8	0.9
		57	Internet Publishing and Broadcasting	0	0	0	0	0	0.0	0.0
		58	Telecommunications Services	77	101	90	81	98	1.6	0.8
		59	Internet Service Providers, Web Search Portals and Data Processing Services	6	10	4	5	5	-4.0	2.0
		60	Library and Other Information Services	8	5	6	7	14	-2.8	9.1
K	Financial and Insurance Services	62	Finance	184	212	189	216	279	0.3	3.9
		63	Insurance and Superannuation Funds	66	94	81	101	151	2.1	6.5
		64	Auxiliary Finance and Insurance Services	65	62	67	77	108	0.2	4.9
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	53	68	33	32	40	-4.6	1.9
		67	Property Operators and Real Estate Services	156	171	179	232	315	1.4	5.8



**Table 15.35 Resident employment by industry subdivision – Mitchell (S) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	530	611	788	1063	1564	4.0	7.1
		70	Computer System Design and Related Services	72	109	134	174	260	6.4	6.9
N	Administrative and Support Services	72	Administrative Services	200	286	226	270	343	1.2	4.2
		73	Building Cleaning, Pest Control and Other Support Services	263	360	458	578	737	5.7	4.9
O	Public Administration and Safety	75	Public Administration	638	643	761	1057	1393	1.8	6.2
		76	Defence	887	924	793	1260	1398	-1.1	5.8
		77	Public Order, Safety and Regulatory Services	371	454	596	729	824	4.8	3.3
P	Education and Training	80	Preschool and School Education	861	1131	1065	1272	1510	2.1	3.6
		81	Tertiary Education	158	207	317	386	517	7.2	5.0
		82	Adult, Community and Other Education	151	206	208	291	510	3.3	9.4
Q	Health Care and Social Assistance	84	Hospitals	536	562	912	1129	1509	5.5	5.2
		85	Medical and Other Health Care Services	424	741	850	1117	1584	7.2	6.4
		86	Residential Care Services	227	338	557	593	783	9.4	3.5
		87	Social Assistance Services	478	496	981	1066	1365	7.4	3.4
R	Arts and Recreation Services	89	Heritage Activities	16	23	33	35	45	7.5	3.1
		90	Creative and Performing Arts Activities	12	16	36	32	53	11.4	3.8
		91	Sports and Recreation Activities	184	213	297	403	474	4.9	4.8
		92	Gambling Activities	22	28	22	16	22	0.2	-0.1
S	Other Services	94	Repair and Maintenance	435	506	678	764	901	4.5	2.9
		95	Personal and Other Services	279	309	322	458	705	1.4	8.2
		96	Private Households Employing Staff and Undifferentiated Goods	2	31	31	31	31	29.4	0.0

Source: NIEIR.

**Table 15.36 Resident employment by industry subdivision – Moreland (C)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	88	242	93	138	268	0.5	11.2
		2	Aquaculture	0	0	0	0	0	0.0	0.0
		3	Forestry and Logging	1	3	3	3	3	20.4	0.0
		4	Fishing, Hunting and Trapping	0	4	4	4	4	64.2	0.0
		5	Agriculture, Forestry and Fishing Support Services	12	28	10	10	28	-1.4	10.6
B	Mining	6	Coal Mining	2	4	4	4	4	3.6	0.0
		7	Oil and Gas Extraction	39	33	18	27	35	-7.3	6.8
		8	Metal Ore Mining	29	60	20	-9	7	-3.5	-9.4
		9	Non-Metallic Mineral Mining and Quarrying	12	7	0	58	57	-31.2	69.8
		10	Exploration and Other Mining Support Services	73	79	18	60	56	-13.0	11.8
C	Manufacturing	11	Food Product Manufacturing	1069	1095	1133	1177	1226	0.6	0.8
		12	Beverage and Tobacco Product Manufacturing	173	213	204	282	313	1.7	4.4
		13	Textile, Leather, Clothing and Footwear Manufacturing	521	398	477	391	342	-0.9	-3.3
		14	Wood Product Manufacturing	206	147	156	137	112	-2.7	-3.3
		15	Pulp, Paper and Converted Paper Product Manufacturing	218	154	250	205	172	1.4	-3.7
		16	Printing (including the Reproduction of Recorded Media)	354	356	385	361	337	0.8	-1.3
		17	Petroleum and Coal Product Manufacturing	26	45	128	128	146	17.2	1.3
		18	Basic Chemical and Chemical Product Manufacturing	502	609	569	643	751	1.3	2.8
		19	Polymer Product and Rubber Product Manufacturing	364	272	462	397	362	2.4	-2.4
		20	Non-Metallic Mineral Product Manufacturing	233	177	200	184	149	-1.5	-2.9
		21	Primary Metal and Metal Product Manufacturing	267	201	213	271	268	-2.2	2.3
		22	Fabricated Metal Product Manufacturing	308	256	289	265	237	-0.6	-2.0
		23	Transport Equipment Manufacturing	905	650	677	575	512	-2.9	-2.8
		24	Machinery and Equipment Manufacturing	568	481	508	492	495	-1.1	-0.3
		25	Furniture and Other Manufacturing	686	384	810	759	758	1.7	-0.7
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	366	546	731	935	1065	7.2	3.8
		27	Gas Supply	103	87	140	120	117	3.1	-1.8
		28	Water Supply, Sewerage and Drainage Services	96	104	144	164	184	4.1	2.5
		29	Waste Collection, Treatment and Disposal Services	121	166	75	121	150	-4.6	7.1
E	Construction	30	Building Construction	1673	1889	2200	1819	1858	2.8	-1.7
		31	Heavy and Civil Engineering Construction	307	341	636	510	456	7.6	-3.3
		32	Construction Services	3579	3585	3203	3178	3245	-1.1	0.1

**Table 15.36 Resident employment by industry subdivision – Moreland (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	391	340	505	509	487	2.6	-0.4
		34	Machinery and Equipment Wholesaling	678	633	588	553	510	-1.4	-1.4
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	241	210	280	306	309	1.5	1.0
		36	Grocery, Liquor and Tobacco Product Wholesaling	624	529	696	711	680	1.1	-0.2
		37	Other Goods Wholesaling	1015	759	935	831	740	-0.8	-2.3
		38	Commission-Based Wholesaling	38	41	35	39	34	-0.8	-0.2
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	410	476	577	398	425	3.5	-3.0
		40	Fuel Retailing	161	144	146	117	106	-1.0	-3.1
		41	Food Retailing	1983	2405	2072	2198	2188	0.4	0.5
		42	Other Store-Based Retailing	4211	5013	4975	5067	4959	1.7	0.0
		43	Non-Store Retailing and Retail Commission Based Buying	58	86	365	294	279	20.1	-2.7
H	Accommodation and Food Services	44	Accommodation	801	885	639	772	955	-2.2	4.1
		45	Food and Beverage Services	4914	6444	6648	7620	8063	3.1	1.9
I	Transport, Postal and Warehousing	46	Road Transport	1721	1617	2141	2578	2794	2.2	2.7
		47	Rail Transport	187	270	211	256	310	1.2	3.9
		48	Water Transport	87	58	66	70	69	-2.7	0.5
		49	Air and Space Transport	540	574	450	748	655	-1.8	3.8
		50	Other Transport	30	30	77	68	74	9.7	-0.4
		51	Postal and Courier Pick-up and Delivery Services	619	699	957	1251	1407	4.5	3.9
		52	Transport Support Services	683	1137	800	821	779	1.6	-0.3
		53	Warehousing and Storage Services	580	346	918	936	939	4.7	0.2
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	617	477	531	641	618	-1.5	1.5
		55	Motion Picture and Sound Recording Activities	353	540	595	709	655	5.4	1.0
		56	Broadcasting (except Internet)	214	295	245	275	250	1.4	0.2
		57	Internet Publishing and Broadcasting	148	112	25	40	48	-16.4	6.9
		58	Telecommunications Services	929	1061	759	651	588	-2.0	-2.5
		59	Internet Service Providers, Web Search Portals and Data Processing Services	118	205	75	84	73	-4.4	-0.3
		60	Library and Other Information Services	140	139	375	455	547	10.3	3.8
K	Financial and Insurance Services	62	Finance	1927	2030	2197	2199	2106	1.3	-0.4
		63	Insurance and Superannuation Funds	1047	1167	1934	1994	2119	6.3	0.9
		64	Auxiliary Finance and Insurance Services	945	984	1092	1127	1211	1.5	1.0
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	277	269	255	224	225	-0.8	-1.3
		67	Property Operators and Real Estate Services	634	905	808	984	1077	2.5	2.9

**Table 15.36 Resident employment by industry subdivision – Moreland (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	6143	7539	9901	11134	11875	4.9	1.8
		70	Computer System Design and Related Services	1532	2224	2423	2508	2626	4.7	0.8
N	Administrative and Support Services	72	Administrative Services	1847	1860	1969	2051	2019	0.6	0.3
		73	Building Cleaning, Pest Control and Other Support Services	1096	1464	1367	1665	1992	2.2	3.8
O	Public Administration and Safety	75	Public Administration	3830	4296	5173	5807	6256	3.1	1.9
		76	Defence	157	179	399	509	580	9.8	3.8
		77	Public Order, Safety and Regulatory Services	1224	1468	1959	2204	2314	4.8	1.7
P	Education and Training	80	Preschool and School Education	3791	5228	5952	6277	6460	4.6	0.8
		81	Tertiary Education	3149	3998	3559	4456	5058	1.2	3.6
		82	Adult, Community and Other Education	924	1073	2218	2343	2562	9.1	1.5
Q	Health Care and Social Assistance	84	Hospitals	3144	3835	4428	5592	6347	3.5	3.7
		85	Medical and Other Health Care Services	2383	3060	3590	4345	4878	4.2	3.1
		86	Residential Care Services	1037	1411	2048	2313	2418	7.0	1.7
		87	Social Assistance Services	2126	2521	4961	5098	5285	8.8	0.6
R	Arts and Recreation Services	89	Heritage Activities	430	460	552	685	783	2.5	3.6
		90	Creative and Performing Arts Activities	770	862	786	773	737	0.2	-0.6
		91	Sports and Recreation Activities	728	969	524	662	712	-3.2	3.1
		92	Gambling Activities	334	396	355	315	287	0.6	-2.1
S	Other Services	94	Repair and Maintenance	1053	1041	1304	1451	1514	2.2	1.5
		95	Personal and Other Services	1796	2132	2136	2306	2242	1.7	0.5
		96	Private Households Employing Staff and Undifferentiated Goods	33	51	31	75	85	-0.6	10.6

Source: NIEIR.

**Table 15.37 Resident employment by industry subdivision – Nillumbik (S)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	154	189	203	170	223	2.8	1.0
		2	Aquaculture	1	1	1	1	1	0.0	0.0
		3	Forestry and Logging	2	5	-1	1	1	0.0	0.0
		4	Fishing, Hunting and Trapping	4	1	1	1	1	-18.3	0.0
		5	Agriculture, Forestry and Fishing Support Services	41	44	13	19	28	-10.5	7.7
B	Mining	6	Coal Mining	5	10	32	32	32	21.5	0.0
		7	Oil and Gas Extraction	41	25	17	19	21	-8.4	2.0
		8	Metal Ore Mining	47	37	6	-4	3	-19.2	-6.8
		9	Non-Metallic Mineral Mining and Quarrying	8	11	3	3	3	-10.0	0.0
		10	Exploration and Other Mining Support Services	84	53	6	85	79	-23.7	30.3
C	Manufacturing	11	Food Product Manufacturing	390	404	387	404	424	-0.1	0.9
		12	Beverage and Tobacco Product Manufacturing	83	82	68	93	98	-2.0	3.7
		13	Textile, Leather, Clothing and Footwear Manufacturing	178	163	139	82	75	-2.5	-6.0
		14	Wood Product Manufacturing	139	93	95	85	75	-3.7	-2.4
		15	Pulp, Paper and Converted Paper Product Manufacturing	161	108	116	70	40	-3.2	-10.2
		16	Printing (including the Reproduction of Recorded Media)	300	174	195	166	146	-4.2	-2.8
		17	Petroleum and Coal Product Manufacturing	34	28	12	10	16	-9.9	3.2
		18	Basic Chemical and Chemical Product Manufacturing	195	188	201	185	194	0.3	-0.3
		19	Polymer Product and Rubber Product Manufacturing	194	138	136	96	75	-3.5	-5.8
		20	Non-Metallic Mineral Product Manufacturing	119	74	71	62	54	-5.0	-2.8
		21	Primary Metal and Metal Product Manufacturing	196	135	95	111	99	-7.0	0.5
		22	Fabricated Metal Product Manufacturing	213	205	141	103	70	-4.0	-6.8
		23	Transport Equipment Manufacturing	361	286	256	195	168	-3.4	-4.1
		24	Machinery and Equipment Manufacturing	527	518	326	236	219	-4.7	-3.9
		25	Furniture and Other Manufacturing	263	213	191	140	128	-3.1	-4.0
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	167	198	80	129	139	-7.0	5.6
		27	Gas Supply	31	42	20	8	12	-4.2	-4.8
		28	Water Supply, Sewerage and Drainage Services	91	73	46	40	53	-6.5	1.4
		29	Waste Collection, Treatment and Disposal Services	71	83	38	56	73	-6.0	6.7
E	Construction	30	Building Construction	1138	1147	1316	1104	1235	1.5	-0.6
		31	Heavy and Civil Engineering Construction	213	214	337	274	355	4.7	0.5
		32	Construction Services	3338	3413	2967	2978	3504	-1.2	1.7

**Table 15.37 Resident employment by industry subdivision – Nillumbik (S) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	438	423	290	247	216	-4.0	-2.9
		34	Machinery and Equipment Wholesaling	511	374	334	286	257	-4.2	-2.6
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	142	124	141	143	134	-0.1	-0.5
		36	Grocery, Liquor and Tobacco Product Wholesaling	180	144	114	111	113	-4.5	-0.1
		37	Other Goods Wholesaling	483	315	365	290	248	-2.8	-3.8
		38	Commission-Based Wholesaling	22	22	22	25	25	-0.1	1.2
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	228	293	221	91	98	-0.3	-7.8
		40	Fuel Retailing	44	32	24	20	19	-5.8	-2.5
		41	Food Retailing	1192	1114	936	981	990	-2.4	0.6
		42	Other Store-Based Retailing	2128	1994	1865	1821	1624	-1.3	-1.4
		43	Non-Store Retailing and Retail Commission Based Buying	66	29	99	70	93	4.1	-0.7
H	Accommodation and Food Services	44	Accommodation	138	127	90	96	113	-4.3	2.3
		45	Food and Beverage Services	1467	1575	1385	1500	1768	-0.6	2.5
I	Transport, Postal and Warehousing	46	Road Transport	503	391	367	401	419	-3.1	1.3
		47	Rail Transport	80	93	174	174	179	8.1	0.3
		48	Water Transport	13	18	8	11	7	-5.2	-1.2
		49	Air and Space Transport	237	220	128	208	161	-6.0	2.4
		50	Other Transport	25	23	45	50	42	6.2	-0.7
		51	Postal and Courier Pick-up and Delivery Services	218	200	347	408	441	4.7	2.4
		52	Transport Support Services	238	247	268	251	231	1.2	-1.5
		53	Warehousing and Storage Services	54	91	59	45	52	0.9	-1.3
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	155	97	83	92	87	-6.1	0.5
		55	Motion Picture and Sound Recording Activities	93	109	125	123	114	3.0	-0.9
		56	Broadcasting (except Internet)	41	53	35	33	32	-1.5	-0.9
		57	Internet Publishing and Broadcasting	2	5	6	9	8	14.2	2.8
		58	Telecommunications Services	358	373	513	436	418	3.7	-2.0
		59	Internet Service Providers, Web Search Portals and Data Processing Services	47	55	57	55	52	2.1	-1.0
		60	Library and Other Information Services	64	50	36	47	51	-5.7	3.6
K	Financial and Insurance Services	62	Finance	671	612	561	503	465	-1.8	-1.9
		63	Insurance and Superannuation Funds	323	300	379	360	385	1.6	0.2
		64	Auxiliary Finance and Insurance Services	436	433	399	352	358	-0.9	-1.1
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	137	123	57	38	35	-8.4	-4.9
		67	Property Operators and Real Estate Services	373	451	384	398	413	0.3	0.7



**Table 15.37 Resident employment by industry subdivision – Nillumbik (S) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	2676	2636	2617	2766	3014	-0.2	1.4
		70	Computer System Design and Related Services	647	627	1085	1039	1060	5.3	-0.2
N	Administrative and Support Services	72	Administrative Services	630	587	510	487	473	-2.1	-0.8
		73	Building Cleaning, Pest Control and Other Support Services	500	502	480	585	677	-0.4	3.5
O	Public Administration and Safety	75	Public Administration	1325	1354	1379	1497	1581	0.4	1.4
		76	Defence	110	100	65	81	85	-5.2	2.9
		77	Public Order, Safety and Regulatory Services	704	741	688	738	736	-0.2	0.7
P	Education and Training	80	Preschool and School Education	2532	2764	2673	2592	2576	0.5	-0.4
		81	Tertiary Education	999	994	1167	1253	1338	1.6	1.4
		82	Adult, Community and Other Education	525	524	591	632	827	1.2	3.4
Q	Health Care and Social Assistance	84	Hospitals	1529	1557	2123	2461	2529	3.3	1.8
		85	Medical and Other Health Care Services	1606	1726	2248	2426	2694	3.4	1.8
		86	Residential Care Services	465	488	462	524	541	-0.1	1.6
		87	Social Assistance Services	970	927	1228	1245	1233	2.4	0.0
R	Arts and Recreation Services	89	Heritage Activities	69	78	56	67	83	-2.0	3.9
		90	Creative and Performing Arts Activities	163	160	146	131	125	-1.1	-1.6
		91	Sports and Recreation Activities	417	582	476	620	690	1.3	3.8
		92	Gambling Activities	77	75	67	55	59	-1.3	-1.4
S	Other Services	94	Repair and Maintenance	713	643	855	822	832	1.8	-0.3
		95	Personal and Other Services	717	782	653	719	798	-0.9	2.0
		96	Private Households Employing Staff and Undifferentiated Goods	16	18	52	57	44	12.5	-1.7

Source: NIEIR.

**Table 15.38 Resident employment by industry subdivision – Whittlesea (C)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
A	Agriculture, Forestry and Fishing	1	Agriculture	344	524	672	662	912	6.9	3.1
		2	Aquaculture	20	14	24	24	24	2.0	0.0
		3	Forestry and Logging	15	14	12	21	20	-2.0	5.4
		4	Fishing, Hunting and Trapping	8	5	5	5	5	-4.1	0.0
		5	Agriculture, Forestry and Fishing Support Services	23	36	10	9	23	-7.9	8.6
B	Mining	6	Coal Mining	0	15	15	15	15	97.6	0.0
		7	Oil and Gas Extraction	11	9	7	9	10	-4.1	3.1
		8	Metal Ore Mining	62	40	18	2	13	-11.8	-3.3
		9	Non-Metallic Mineral Mining and Quarrying	52	45	26	348	352	-6.8	30.0
		10	Exploration and Other Mining Support Services	82	39	9	98	98	-20.2	27.6
C	Manufacturing	11	Food Product Manufacturing	1816	2206	2609	2763	2991	3.7	1.4
		12	Beverage and Tobacco Product Manufacturing	218	198	248	323	348	1.3	3.5
		13	Textile, Leather, Clothing and Footwear Manufacturing	1040	954	920	727	660	-1.2	-3.3
		14	Wood Product Manufacturing	364	300	444	421	381	2.0	-1.5
		15	Pulp, Paper and Converted Paper Product Manufacturing	610	488	784	611	478	2.5	-4.8
		16	Printing (including the Reproduction of Recorded Media)	505	522	654	613	581	2.6	-1.2
		17	Petroleum and Coal Product Manufacturing	43	35	17	9	19	-9.2	1.2
		18	Basic Chemical and Chemical Product Manufacturing	402	496	679	709	831	5.4	2.0
		19	Polymer Product and Rubber Product Manufacturing	746	622	766	616	542	0.3	-3.4
		20	Non-Metallic Mineral Product Manufacturing	434	393	562	515	420	2.6	-2.9
		21	Primary Metal and Metal Product Manufacturing	547	479	404	547	550	-3.0	3.1
		22	Fabricated Metal Product Manufacturing	725	725	714	672	609	-0.2	-1.6
		23	Transport Equipment Manufacturing	1817	1618	2097	1789	1664	1.4	-2.3
		24	Machinery and Equipment Manufacturing	1092	1196	971	807	831	-1.2	-1.5
		25	Furniture and Other Manufacturing	748	720	905	771	801	1.9	-1.2
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply	503	651	352	646	774	-3.5	8.2
		27	Gas Supply	109	99	95	63	109	-1.3	1.3
		28	Water Supply, Sewerage and Drainage Services	78	117	60	76	128	-2.6	7.9
		29	Waste Collection, Treatment and Disposal Services	274	384	248	359	439	-1.0	5.9
E	Construction	30	Building Construction	2291	2861	3657	2934	3464	4.8	-0.5
		31	Heavy and Civil Engineering Construction	586	724	1161	963	1145	7.1	-0.1
		32	Construction Services	6676	8120	8152	7344	9137	2.0	1.1

**Table 15.38 Resident employment by industry subdivision – Whittlesea (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
F	Wholesale Trade	33	Basic Material Wholesaling	732	832	728	724	698	0.0	-0.4
		34	Machinery and Equipment Wholesaling	792	756	929	879	860	1.6	-0.8
		35	Motor Vehicle and Motor Vehicle Parts Wholesaling	322	394	516	571	579	4.8	1.2
		36	Grocery, Liquor and Tobacco Product Wholesaling	712	659	765	780	768	0.7	0.0
		37	Other Goods Wholesaling	994	886	1598	1433	1324	4.9	-1.9
		38	Commission-Based Wholesaling	34	23	35	44	46	0.3	2.8
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing	668	919	1043	674	768	4.5	-3.0
		40	Fuel Retailing	197	267	260	205	184	2.8	-3.4
		41	Food Retailing	3154	4128	3748	4211	4342	1.7	1.5
		42	Other Store-Based Retailing	5165	6134	7255	7413	7301	3.5	0.1
		43	Non-Store Retailing and Retail Commission Based Buying	95	71	340	242	247	13.6	-3.1
H	Accommodation and Food Services	44	Accommodation	355	479	340	434	564	-0.4	5.2
		45	Food and Beverage Services	3733	5315	5474	6450	7333	3.9	3.0
I	Transport, Postal and Warehousing	46	Road Transport	2910	3233	4209	5000	5238	3.8	2.2
		47	Rail Transport	289	383	866	931	1021	11.6	1.7
		48	Water Transport	66	63	66	75	79	-0.1	1.9
		49	Air and Space Transport	368	546	299	622	551	-2.1	6.3
		50	Other Transport	14	39	54	64	17	14.4	-10.6
		51	Postal and Courier Pick-up and Delivery Services	767	1048	1922	2476	2667	9.6	3.3
		52	Transport Support Services	717	1059	1238	1304	1322	5.6	0.7
		53	Warehousing and Storage Services	294	655	530	585	632	6.1	1.8
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)	253	172	205	229	233	-2.1	1.3
		55	Motion Picture and Sound Recording Activities	111	140	215	201	209	6.9	-0.3
		56	Broadcasting (except Internet)	92	80	105	135	159	1.4	4.3
		57	Internet Publishing and Broadcasting	61	16	28	31	33	-7.4	1.4
		58	Telecommunications Services	726	923	1589	1451	1462	8.1	-0.8
		59	Internet Service Providers, Web Search Portals and Data Processing Services	93	194	192	214	229	7.5	1.7
		60	Library and Other Information Services	60	69	64	90	109	0.6	5.5
K	Financial and Insurance Services	62	Finance	1608	1896	2136	2202	2286	2.9	0.7
		63	Insurance and Superannuation Funds	729	829	1401	1462	1655	6.8	1.7
		64	Auxiliary Finance and Insurance Services	647	791	926	1001	1161	3.7	2.3
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)	271	326	166	138	144	-4.8	-1.4
		67	Property Operators and Real Estate Services	683	1012	1014	1237	1433	4.0	3.5

**Table 15.38 Resident employment by industry subdivision – Whittlesea (C) (continued)**

				Number					Annual growth (%)	
				2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	2865	3587	4234	5142	6445	4.0	4.3
		70	Computer System Design and Related Services	884	1347	2401	2528	2788	10.5	1.5
N	Administrative and Support Services	72	Administrative Services	1337	1719	1644	1850	1953	2.1	1.7
		73	Building Cleaning, Pest Control and Other Support Services	1386	1934	2041	2589	3065	3.9	4.2
O	Public Administration and Safety	75	Public Administration	2477	3076	4017	4862	5732	5.0	3.6
		76	Defence	222	264	195	310	404	-1.3	7.6
		77	Public Order, Safety and Regulatory Services	1249	1796	1880	2276	2521	4.2	3.0
P	Education and Training	80	Preschool and School Education	2878	4605	4717	5296	5832	5.1	2.1
		81	Tertiary Education	1196	1585	2229	2593	2875	6.4	2.6
		82	Adult, Community and Other Education	489	778	1028	1294	1752	7.7	5.5
Q	Health Care and Social Assistance	84	Hospitals	2871	3989	5716	7040	7838	7.1	3.2
		85	Medical and Other Health Care Services	2079	3253	4449	5345	6459	7.9	3.8
		86	Residential Care Services	1512	2473	2365	3045	3476	4.6	3.9
		87	Social Assistance Services	1986	3000	3940	4729	5178	7.1	2.8
R	Arts and Recreation Services	89	Heritage Activities	46	83	56	82	134	1.9	9.2
		90	Creative and Performing Arts Activities	65	100	93	144	225	3.6	9.3
		91	Sports and Recreation Activities	574	745	1010	1251	1413	5.8	3.4
		92	Gambling Activities	232	306	326	270	270	3.5	-1.9
S	Other Services	94	Repair and Maintenance	1632	1953	3253	3507	3634	7.1	1.1
		95	Personal and Other Services	1504	2109	2064	2691	3163	3.2	4.4
		96	Private Households Employing Staff and Undifferentiated Goods	17	54	79	104	95	16.9	1.8

Source: NIEIR.

## 15.3 Employment by occupation

Employment forecasts to 2031 by occupations for each of the seven LGAs within Melbourne's North are presented within this section on a resident and place-of-work basis. Each section starts by giving an overview of occupations by the eight major groups, followed by a more detailed set of forecasts by 97 occupation minor groups.

### 15.3.1 Place-of-work employment by occupation and LGA

Place-of-work employment forecasts for each of the seven LGAs are presented within this section.

Table 15.39 shows comparisons between LGAs for each major group of occupation. At this level of occupation for the total of Melbourne's North, most occupations are expected to experience slower growth over the next ten years compared within the previous ten years.

Place-of-work employment within Melbourne's North is expected to change from 2021 to 2031 by:

- Managers (5,807);
- Professionals (30,574);
- Technicians and Trades Workers (7,463);
- Community and Personal Service Workers (15,224);
- Clerical and Administrative Workers (8,747);
- Sales Workers (1,825);
- Machinery Operators and Drivers (1,226); and
- Labourers (3,480).

Employment for managers is fairly evenly spread out between the LGAs, with the exception of Nillumbik and Mitchell, each LGA had close to 10,000 managers employed within each respective region. Over the next ten years growth in Managers will slightly favour the outer regions of Hume, Whittlesea and Mitchell over all other LGAs.

Demand for Professionals is expected to remain strong for each LGA over the forecasts, backed by growth in Health Care and Social Assistance and Professional, Scientific and Technical Services.

Melbourne's North will require another 3,286 Technicians and Trades Workers by 2031 with most LGAs requiring less than 1,000 new workers. Whittlesea will require the most

additional Technicians and Trades workers with a further 2,872 employed and Mitchell (S) will require 1,506 new workers.

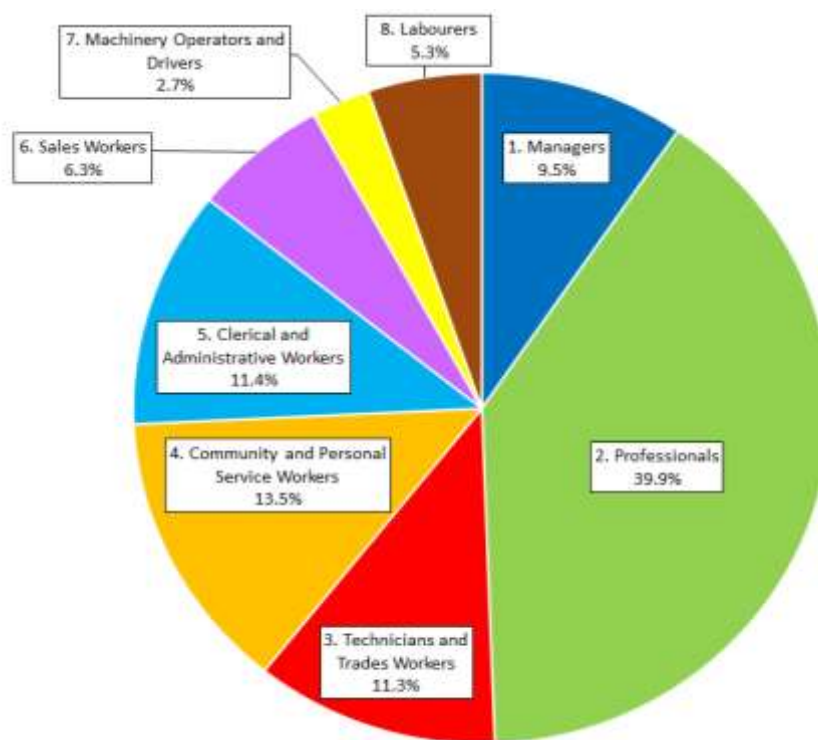
Community and Personal Service workers will add the second greatest number of employed out of the occupational major groups. Employment growth will be solid across all LGAs, but slightly favour outer growth areas.

Employment growth in Clerical and Administrative Workers is expected to be higher over 2021 to 2031 than it was for 2011 to 2021 across Melbourne's North. All LGAs are expected to grow beyond the previous ten years with the exception of Hume and Whittlesea, which will still see relatively strong growth. Similarly, growth in Sales workers over the forecasts is expected to outpace the previous ten years.

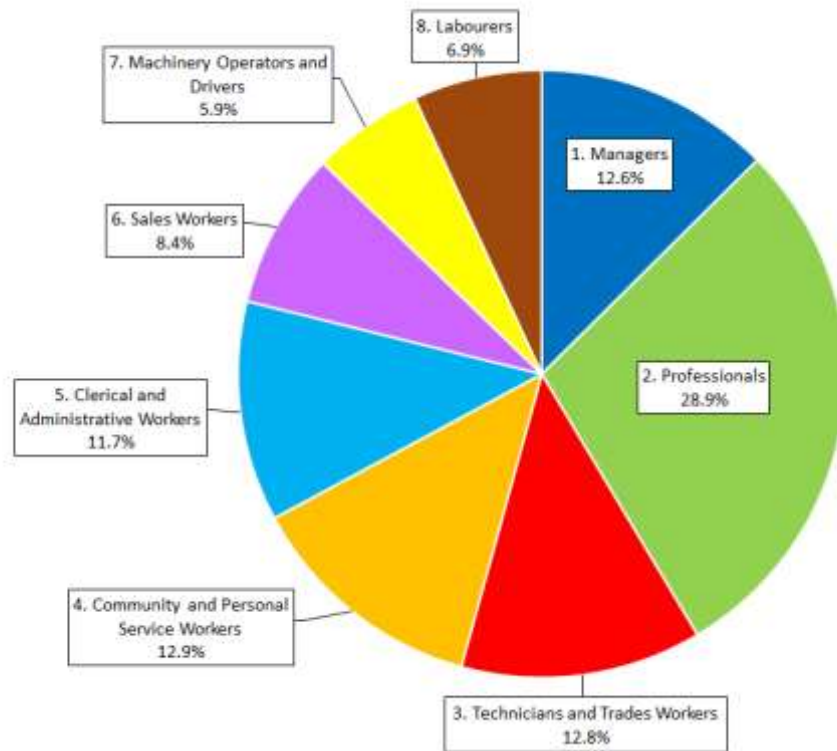
Machinery Operator and Driver growth is expected to remain below that of previous years as Manufacturing industry continues to contract. Labourers are expected to grow at a similar, albeit lower rate, than the previous ten years.

Figures 15.3 to 15.9 show the share of occupations within each LGA at the major group level as of 2031. This shows the composition of occupations for each LGA on a place-of-work basis.

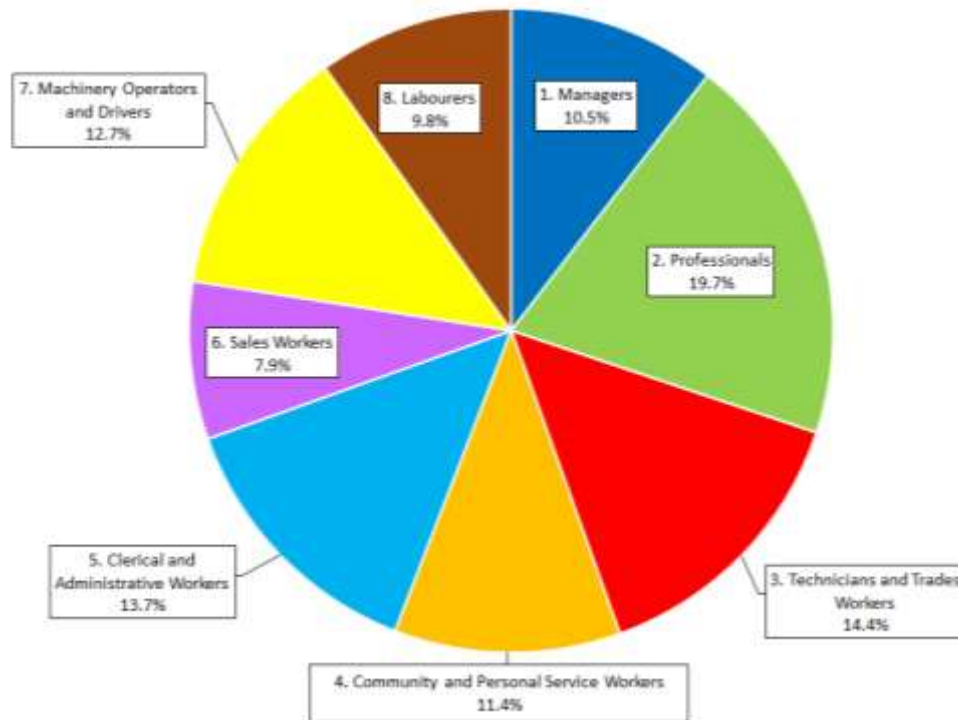
**Figure 15.3: Melbourne's North share of place-of-work employment by occupation major group – Banyule – 2031**



**Figure 15.4: Melbourne's North share of place-of-work employment by occupation major group – Darebin – 2031**

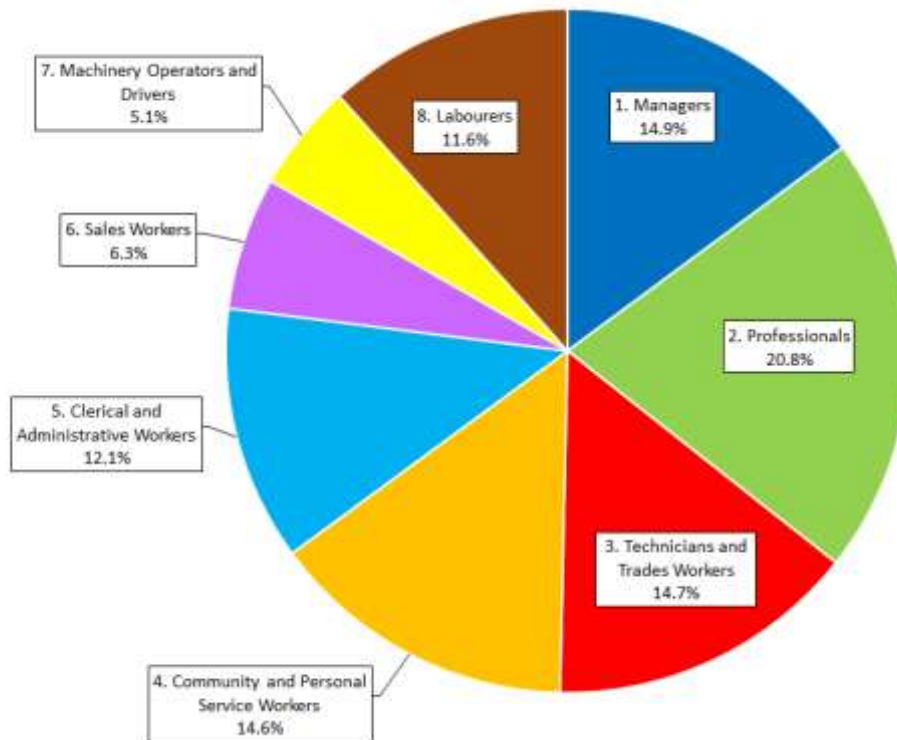


**Figure 15.5: Melbourne's North share of place-of-work employment by occupation major group – Hume – 2031**

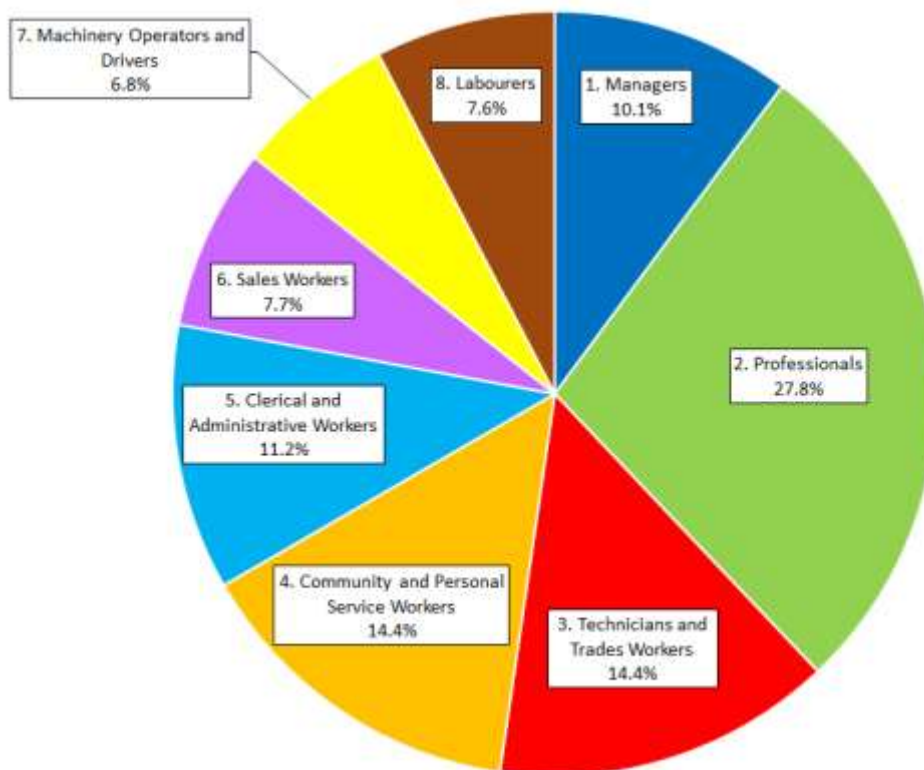




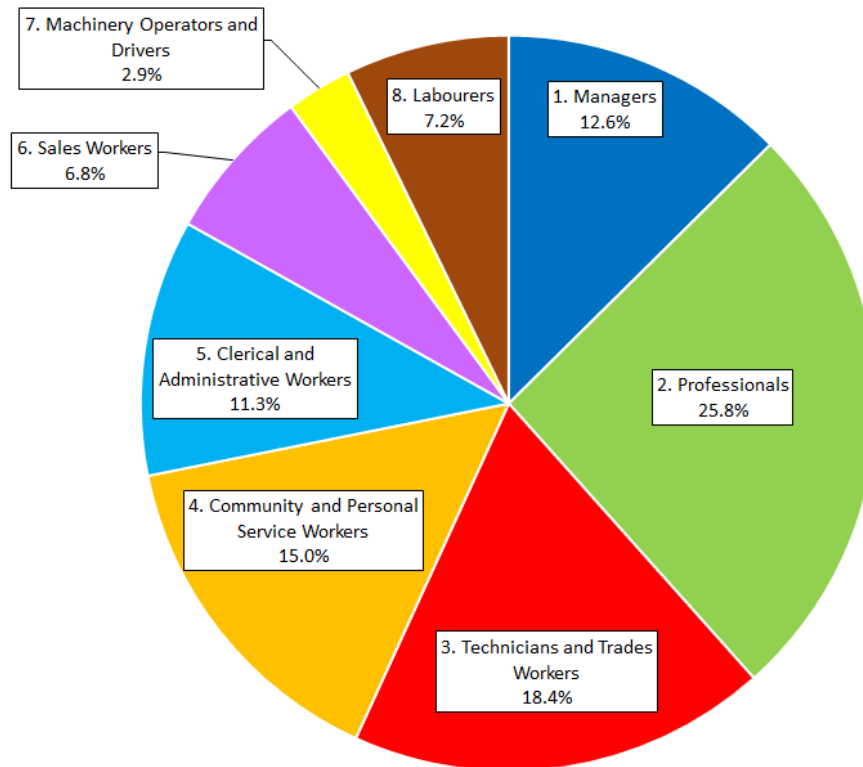
**Figure 15.6: Melbourne's North share of place-of-work employment by occupation major group – Mitchell – 2031**



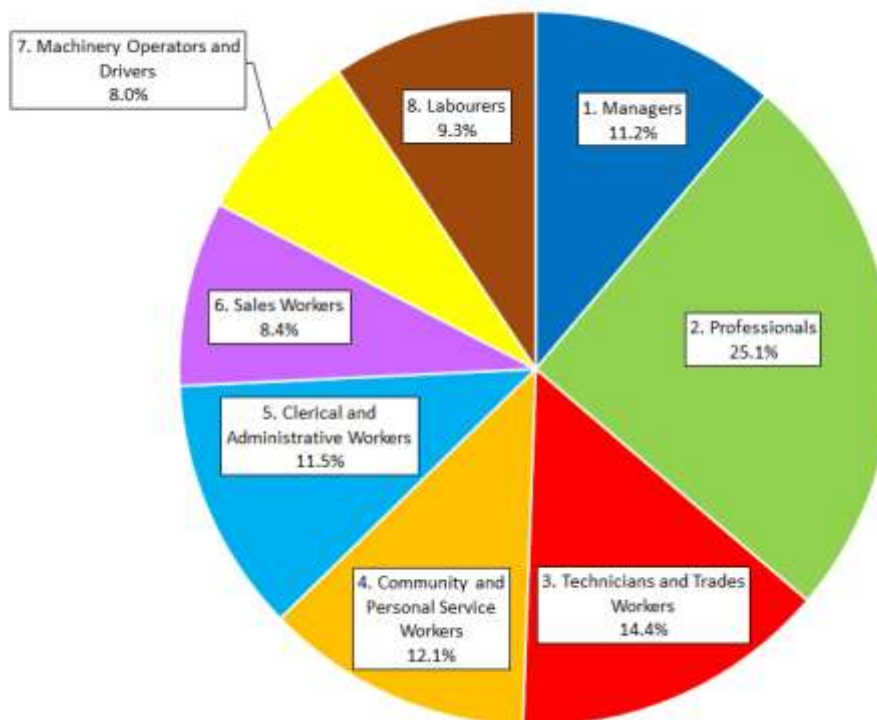
**Figure 15.7: Melbourne's North share of place-of-work employment by occupation major group – Moreland – 2031**



**Figure 15.8: Melbourne's North share of place-of-work employment by occupation major group – Nillumbik – 2031**



**Figure 15.9: Melbourne's North share of place-of-work employment by occupation major group – Whittlesea – 2031**



**Table 15.39 Place-of-work employment by occupation major group and LGA**

	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
<b>1. Managers</b>							
Banyule (C)	3,974	4,066	4,616	4,756	5,048	1.5	0.9
Darebin (C)	5,986	6,681	7,411	7,805	8,032	2.2	0.8
Hume (C)	10,059	11,440	13,953	15,444	14,915	3.3	0.7
Mitchell (S)	1,471	1,495	2,231	2,564	3,094	4.2	3.3
Moreland (C)	4,551	4,791	4,818	4,886	5,443	0.6	1.2
Nillumbik (S)	1,616	1,693	1,831	2,193	2,935	1.3	4.8
Whittlesea (C)	5,155	6,420	8,670	8,411	9,869	5.3	1.3
<b>Sub-total</b>	<b>32,811</b>	<b>36,586</b>	<b>43,529</b>	<b>46,060</b>	<b>49,336</b>	<b>2.9</b>	<b>1.3</b>
<b>2. Professionals</b>							
Banyule (C)	13,714	14,845	18,117	20,967	21,196	2.8	1.6
Darebin (C)	11,145	12,810	15,867	17,168	18,461	3.6	1.5
Hume (C)	11,874	14,763	19,090	24,514	28,084	4.9	3.9
Mitchell (S)	1,866	1,974	2,251	2,933	4,321	1.9	6.7
Moreland (C)	8,675	10,016	11,937	13,001	14,925	3.2	2.3
Nillumbik (S)	3,196	3,358	3,936	4,540	6,022	2.1	4.3
Whittlesea (C)	8,558	11,680	15,977	18,032	22,145	6.4	3.3
<b>Sub-total</b>	<b>59,027</b>	<b>69,446</b>	<b>87,175</b>	<b>101,154</b>	<b>115,152</b>	<b>4.0</b>	<b>2.8</b>
<b>3. Technicians and Trade Workers</b>							
Banyule (C)	7,096	6,798	6,520	5,770	6,011	-0.8	-0.8
Darebin (C)	8,183	8,023	7,855	8,250	8,205	-0.4	0.4
Hume (C)	16,880	17,731	21,528	23,761	20,505	2.5	-0.5
Mitchell (S)	1,741	1,814	1,986	2,048	3,065	1.3	4.4
Moreland (C)	7,197	7,344	7,500	7,141	7,724	0.4	0.3
Nillumbik (S)	2,943	2,830	2,445	3,097	4,295	-1.8	5.8
Whittlesea (C)	8,636	9,812	11,381	9,367	12,697	2.8	1.1
<b>Sub-total</b>	<b>52,676</b>	<b>54,352</b>	<b>59,216</b>	<b>59,433</b>	<b>62,502</b>	<b>1.2</b>	<b>0.5</b>
<b>4. Community and Personal Service Workers</b>							
Banyule (C)	5,336	6,219	6,289	6,951	7,183	1.7	1.3
Darebin (C)	5,626	7,139	7,273	7,798	8,218	2.6	1.2
Hume (C)	7,740	10,577	12,791	15,903	16,210	5.2	2.4
Mitchell (S)	1,481	1,792	1,947	2,345	3,031	2.8	4.5
Moreland (C)	4,722	6,529	6,796	7,279	7,710	3.7	1.3
Nillumbik (S)	1,946	2,446	2,242	2,744	3,505	1.4	4.6
Whittlesea (C)	4,104	6,389	7,570	9,245	10,715	6.3	3.5
<b>Sub-total</b>	<b>30,954</b>	<b>41,091</b>	<b>44,907</b>	<b>52,264</b>	<b>56,571</b>	<b>3.8</b>	<b>2.3</b>
<b>5. Clerical and Administrative Workers</b>							
Banyule (C)	6,384	5,738	5,547	5,904	6,078	-1.4	0.9
Darebin (C)	6,828	6,733	6,546	7,115	7,498	-0.4	1.4
Hume (C)	13,320	15,073	17,316	19,800	19,503	2.7	1.2
Mitchell (S)	1,338	1,296	1,445	1,740	2,512	0.8	5.7
Moreland (C)	5,358	5,061	4,962	5,300	6,040	-0.8	2.0
Nillumbik (S)	2,086	1,825	1,632	1,940	2,630	-2.4	4.9
Whittlesea (C)	6,567	7,304	8,264	8,360	10,198	2.3	2.1
<b>Sub-total</b>	<b>41,881</b>	<b>43,030</b>	<b>45,712</b>	<b>50,160</b>	<b>54,458</b>	<b>0.9</b>	<b>1.8</b>

**Table 15.39 Place-of-work employment by occupation major group and LGA (continued)**

	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
<b>6. Sales Workers</b>							
Banyule (C)	4,235	4,123	3,208	3,275	3,341	-2.7	0.4
Darebin (C)	6,181	6,688	5,287	5,461	5,340	-1.6	0.1
Hume (C)	8,898	10,673	10,897	12,040	11,288	2.0	0.4
Mitchell (S)	1,156	1,299	902	1,073	1,308	-2.4	3.8
Moreland (C)	4,012	4,441	3,899	3,924	4,141	-0.3	0.6
Nillumbik (S)	1,651	1,568	1,124	1,337	1,586	-3.8	3.5
Whittlesea (C)	6,287	8,095	7,269	7,125	7,408	1.5	0.2
<b>Sub-total</b>	<b>32,420</b>	<b>36,888</b>	<b>32,586</b>	<b>34,236</b>	<b>34,411</b>	<b>0.1</b>	<b>0.5</b>
<b>7. Machinery Operators and Drivers</b>							
Banyule (C)	1,616	1,375	1,495	1,369	1,449	-0.8	-0.3
Darebin (C)	3,687	3,400	3,743	3,727	3,788	0.2	0.1
Hume (C)	13,274	14,997	18,468	20,353	18,171	3.4	-0.2
Mitchell (S)	790	715	767	822	1,059	-0.3	3.3
Moreland (C)	3,037	2,805	3,163	3,221	3,633	0.4	1.4
Nillumbik (S)	510	425	392	500	668	-2.6	5.5
Whittlesea (C)	4,511	5,152	6,622	6,569	7,108	3.9	0.7
<b>Sub-total</b>	<b>27,425</b>	<b>28,870</b>	<b>34,650</b>	<b>36,561</b>	<b>35,876</b>	<b>2.4</b>	<b>0.3</b>
<b>8. Labourers</b>							
Banyule (C)	3,543	3,188	2,623	2,658	2,809	-3.0	0.7
Darebin (C)	4,743	4,606	3,791	4,204	4,389	-2.2	1.5
Hume (C)	12,612	12,776	14,265	15,447	13,998	1.2	-0.2
Mitchell (S)	1,798	1,682	1,729	1,818	2,422	-0.4	3.4
Moreland (C)	4,257	4,096	3,663	3,716	4,096	-1.5	1.1
Nillumbik (S)	1,474	1,331	984	1,224	1,681	-4.0	5.5
Whittlesea (C)	6,981	7,393	7,114	6,717	8,255	0.2	1.5
<b>Sub-total</b>	<b>35,408</b>	<b>35,072</b>	<b>34,170</b>	<b>35,784</b>	<b>37,650</b>	<b>-0.4</b>	<b>1.0</b>
<b>Grand total</b>	<b>312,603</b>	<b>345,334</b>	<b>381,945</b>	<b>415,653</b>	<b>445,956</b>	<b>2.0</b>	<b>1.6</b>

Source: NIEIR.

**Table 15.40 Total industry place-of-work employment by occupation (minor group) – Banyule (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	373	359	369	388	419	-0.1	1.3
121	Farmers and Farm Managers	15	6	6	6	7	-9.0	1.1
131	Advertising, Public Relations and Sales Managers	269	281	342	387	418	2.5	2.0
132	Business Administration Managers	322	327	442	505	551	3.2	2.2
133	Construction, Distribution and Production Managers	700	726	871	702	727	2.2	-1.8
134	Education, Health and Welfare Services Managers	383	398	468	513	518	2.0	1.0
135	ICT Managers	52	71	75	93	110	3.7	3.9
139	Miscellaneous Specialist Managers	188	236	316	394	418	5.3	2.8
141	Accommodation and Hospitality Managers	292	295	265	300	347	-1.0	2.8
142	Retail Managers	969	915	983	986	1006	0.1	0.2
149	Miscellaneous Hospitality, Retail and Service Managers	410	450	479	483	528	1.6	1.0
211	Arts Professionals	229	200	271	292	304	1.7	1.2
212	Media Professionals	128	137	178	186	204	3.4	1.4
221	Accountants, Auditors and Company Secretaries	543	637	741	770	821	3.1	1.0
222	Financial Brokers and Dealers, and Investment Advisers	243	255	278	277	321	1.4	1.5
223	Human Resource and Training Professionals	280	232	268	316	340	-0.4	2.4
224	Information and Organisation Professionals	302	363	553	652	732	6.2	2.8
225	Sales, Marketing and Public Relations Professionals	274	333	408	435	467	4.1	1.4
231	Air and Marine Transport Professionals	4	0	0	1	3	-100.0	0.0
232	Architects, Designers, Planners and Surveyors	436	476	628	632	672	3.7	0.7
233	Engineering Professionals	227	282	369	342	366	5.0	-0.1
234	Natural and Physical Science Professionals	825	777	1046	1235	1256	2.4	1.9
241	School Teachers	2218	2305	2577	2399	2405	1.5	-0.7
242	Tertiary Education Teachers	194	180	212	238	306	0.9	3.7
249	Miscellaneous Education Professionals	275	333	453	473	553	5.1	2.0
251	Health Diagnostic and Promotion Professionals	649	714	845	1027	986	2.7	1.6
252	Health Therapy Professionals	577	707	1011	1233	1245	5.8	2.1
253	Medical Practitioners	1219	1414	1493	1921	1870	2.0	2.3
254	Midwifery and Nursing Professionals	3834	4143	5098	6587	6223	2.9	2.0
261	Business and Systems Analysts, and Programmers	192	214	323	391	482	5.4	4.1
262	Database and Systems Administrators, and ICT Security Specialists	70	79	101	122	132	3.8	2.7
263	ICT Network and Support Professionals	80	70	109	129	151	3.2	3.3
271	Legal Professionals	141	197	261	290	317	6.4	2.0
272	Social and Welfare Professionals	777	799	896	1020	1039	1.4	1.5
311	Agricultural, Medical and Science Technicians	512	512	679	816	794	2.9	1.6

**Table 15.40 Total industry place-of-work employment by occupation (minor group) – Banyule (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	281	306	376	306	322	3.0	-1.6
313	ICT and Telecommunications Technicians	126	131	176	205	221	3.4	2.3
321	Automotive Electricians and Mechanics	409	359	315	277	278	-2.6	-1.2
322	Fabrication Engineering Trades Workers	255	253	188	173	168	-3.0	-1.1
323	Mechanical Engineering Trades Workers	314	272	238	196	204	-2.7	-1.6
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	147	121	119	111	109	-2.2	-0.8
331	Bricklayers, and Carpenters and Joiners	748	743	746	432	449	0.0	-5.0
332	Floor Finishers and Painting Trades Workers	258	257	228	131	136	-1.3	-5.1
333	Glaziers, Plasterers and Tilers	289	258	217	125	130	-2.9	-4.9
334	Plumbers	593	455	374	219	227	-4.5	-4.9
341	Electricians	642	676	613	406	440	-0.5	-3.3
342	Electronics and Telecommunications Trades Workers	467	471	296	294	292	-4.4	-0.1
351	Food Trades Workers	606	558	557	628	699	-0.8	2.3
361	Animal Attendants and Trainers, and Shearers	47	77	88	103	112	6.4	2.4
362	Horticultural Trades Workers	508	382	409	423	471	-2.1	1.4
391	Hairdressers	272	314	270	341	376	-0.1	3.3
392	Printing Trades Workers	184	172	194	168	159	0.5	-2.0
393	Textile, Clothing and Footwear Trades Workers	69	48	45	37	37	-4.2	-2.1
394	Wood Trades Workers	168	205	193	177	180	1.4	-0.7
399	Miscellaneous Technicians and Trades Workers	201	229	198	202	208	-0.1	0.5
411	Health and Welfare Support Workers	665	730	806	924	919	1.9	1.3
421	Child Carers	611	711	592	631	638	-0.3	0.7
422	Education Aides	330	410	515	481	486	4.5	-0.6
423	Personal Carers and Assistants	1680	1771	2005	2208	2177	1.8	0.8
431	Hospitality Workers	806	904	806	906	1055	0.0	2.7
441	Defence Force Members, Fire Fighters and Police	314	389	379	465	462	1.9	2.0
442	Prison and Security Officers	131	149	193	242	247	4.0	2.5
451	Personal Service and Travel Workers	347	422	374	404	437	0.8	1.5
452	Sports and Fitness Workers	451	733	617	690	763	3.2	2.1
511	Contract, Program and Project Administrators	246	249	215	240	262	-1.4	2.0
512	Office and Practice Managers	587	626	639	650	675	0.8	0.6
521	Personal Assistants and Secretaries	529	404	337	360	369	-4.4	0.9
531	General Clerks	838	845	882	952	970	0.5	1.0
532	Keyboard Operators	402	272	265	296	300	-4.1	1.3
541	Call or Contact Centre Information Clerks	195	229	246	270	287	2.3	1.6
542	Receptionists	1113	1037	977	1144	1144	-1.3	1.6
551	Accounting Clerks and Bookkeepers	1242	953	882	873	912	-3.4	0.3
552	Financial and Insurance Clerks	252	186	169	177	221	-3.9	2.7
561	Clerical and Office Support Workers	471	375	355	337	294	-2.8	-1.9



**Table 15.40 Total industry place-of-work employment by occupation (minor group) – Banyule (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	238	290	302	288	296	2.4	-0.2
599	Miscellaneous Clerical and Administrative Workers	270	273	277	317	347	0.3	2.3
611	Insurance Agents and Sales Representatives	349	241	176	171	178	-6.6	0.1
612	Real Estate Sales Agents	273	335	238	243	257	-1.3	0.8
621	Sales Assistants and Salespersons	2857	2806	2354	2397	2419	-1.9	0.3
631	Checkout Operators and Office Cashiers	643	666	394	420	433	-4.8	0.9
639	Miscellaneous Sales Support Workers	113	75	45	44	53	-8.8	1.6
711	Machine Operators	256	261	283	271	262	1.0	-0.8
712	Stationary Plant Operators	181	98	85	83	84	-7.2	-0.2
721	Mobile Plant Operators	183	91	75	75	83	-8.6	1.0
731	Automobile, Bus and Rail Drivers	273	285	338	254	297	2.2	-1.3
732	Delivery Drivers	171	143	187	172	174	0.9	-0.7
733	Truck Drivers	239	178	149	137	156	-4.6	0.4
741	Storepersons	313	318	378	378	394	1.9	0.4
811	Cleaners and Laundry Workers	860	766	641	710	732	-2.9	1.3
821	Construction and Mining Labourers	366	377	350	214	232	-0.4	-4.0
831	Food Process Workers	112	52	42	49	54	-9.3	2.5
832	Packers and Product Assemblers	264	211	134	138	143	-6.6	0.6
839	Miscellaneous Factory Process Workers	133	114	83	86	92	-4.6	1.0
841	Farm, Forestry and Garden Workers	99	57	30	31	34	-11.4	1.3
851	Food Preparation Assistants	803	783	679	779	838	-1.7	2.1
891	Freight Handlers and Shelf Fillers	324	268	214	228	232	-4.1	0.8
899	Miscellaneous Labourers	582	558	450	423	452	-2.5	0.0
	<b>Total</b>	<b>45897</b>	<b>46352</b>	<b>48414</b>	<b>51650</b>	<b>53113</b>	<b>0.5</b>	<b>0.9</b>

Source: NIEIR.

**Table 15.41 Total industry place-of-work employment by occupation (minor group) – Darebin (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	495	589	596	605	624	1.9	0.5
121	Farmers and Farm Managers	12	22	27	44	87	8.6	12.5
131	Advertising, Public Relations and Sales Managers	551	597	709	741	761	2.5	0.7
132	Business Administration Managers	428	502	690	769	840	4.9	2.0
133	Construction, Distribution and Production Managers	1248	1321	1546	1508	1483	2.2	-0.4
134	Education, Health and Welfare Services Managers	421	497	584	605	644	3.3	1.0
135	ICT Managers	83	137	140	167	187	5.4	2.9
139	Miscellaneous Specialist Managers	165	212	275	316	333	5.2	1.9
141	Accommodation and Hospitality Managers	410	497	429	533	577	0.5	3.0
142	Retail Managers	1503	1528	1607	1648	1586	0.7	-0.1
149	Miscellaneous Hospitality, Retail and Service Managers	670	779	808	870	909	1.9	1.2
211	Arts Professionals	466	457	625	660	671	3.0	0.7
212	Media Professionals	242	372	512	575	574	7.8	1.1
221	Accountants, Auditors and Company Secretaries	509	586	659	735	793	2.6	1.9
222	Financial Brokers and Dealers, and Investment Advisers	212	303	330	352	396	4.5	1.8
223	Human Resource and Training Professionals	291	288	330	370	401	1.3	2.0
224	Information and Organisation Professionals	370	484	748	908	1024	7.3	3.2
225	Sales, Marketing and Public Relations Professionals	431	583	705	738	771	5.1	0.9
231	Air and Marine Transport Professionals	5	1	0	1	2	-100.0	0.0
232	Architects, Designers, Planners and Surveyors	778	839	1103	1175	1210	3.5	0.9
233	Engineering Professionals	287	311	391	403	427	3.1	0.9
234	Natural and Physical Science Professionals	681	830	1119	1370	1417	5.1	2.4
241	School Teachers	1752	1972	2194	2020	2038	2.3	-0.7
242	Tertiary Education Teachers	1352	1367	1604	1791	1815	1.7	1.2
249	Miscellaneous Education Professionals	411	547	766	742	777	6.4	0.1
251	Health Diagnostic and Promotion Professionals	350	410	478	495	515	3.2	0.8
252	Health Therapy Professionals	414	521	739	768	885	6.0	1.8
253	Medical Practitioners	238	237	241	278	359	0.1	4.1
254	Midwifery and Nursing Professionals	619	661	806	976	1271	2.7	4.7
261	Business and Systems Analysts, and Programmers	300	331	498	587	667	5.2	3.0
262	Database and Systems Administrators, and ICT Security Specialists	115	137	173	195	210	4.2	1.9
263	ICT Network and Support Professionals	114	127	208	242	269	6.2	2.6
271	Legal Professionals	153	182	231	295	339	4.2	3.9
272	Social and Welfare Professionals	1057	1263	1407	1493	1631	2.9	1.5
311	Agricultural, Medical and Science Technicians	199	212	280	316	333	3.5	1.8

**Table 15.41 Total industry place-of-work employment by occupation (minor group) – Darebin (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	326	373	472	538	550	3.8	1.5
313	ICT and Telecommunications Technicians	216	219	313	350	370	3.8	1.7
321	Automotive Electricians and Mechanics	526	498	431	397	369	-2.0	-1.5
322	Fabrication Engineering Trades Workers	316	217	150	153	149	-7.2	0.0
323	Mechanical Engineering Trades Workers	548	454	413	350	331	-2.8	-2.2
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	217	216	210	202	190	-0.3	-1.0
331	Bricklayers, and Carpenters and Joiners	1036	993	1017	1057	1021	-0.2	0.0
332	Floor Finishers and Painting Trades Workers	323	354	312	340	332	-0.3	0.6
333	Glaziers, Plasterers and Tilers	434	406	338	362	351	-2.5	0.4
334	Plumbers	435	436	389	422	416	-1.1	0.7
341	Electricians	717	627	579	617	607	-2.1	0.5
342	Electronics and Telecommunications Trades Workers	343	328	221	225	224	-4.3	0.1
351	Food Trades Workers	825	971	984	1179	1262	1.8	2.5
361	Animal Attendants and Trainers, and Shearers	49	72	84	94	95	5.5	1.3
362	Horticultural Trades Workers	337	339	422	492	518	2.3	2.1
391	Hairdressers	281	341	296	315	302	0.5	0.2
392	Printing Trades Workers	276	240	263	228	204	-0.5	-2.5
393	Textile, Clothing and Footwear Trades Workers	148	93	94	79	73	-4.4	-2.6
394	Wood Trades Workers	340	308	279	229	211	-1.9	-2.7
399	Miscellaneous Technicians and Trades Workers	290	328	308	303	296	0.6	-0.4
411	Health and Welfare Support Workers	718	927	1027	1067	1167	3.6	1.3
421	Child Carers	728	893	737	751	768	0.1	0.4
422	Education Aides	269	336	434	412	417	4.9	-0.4
423	Personal Carers and Assistants	1866	2119	2448	2559	2734	2.8	1.1
431	Hospitality Workers	919	1196	1063	1361	1483	1.5	3.4
441	Defence Force Members, Fire Fighters and Police	279	347	332	349	341	1.7	0.3
442	Prison and Security Officers	137	229	302	326	329	8.3	0.8
451	Personal Service and Travel Workers	319	513	454	459	451	3.6	-0.1
452	Sports and Fitness Workers	391	579	475	514	529	2.0	1.1
511	Contract, Program and Project Administrators	424	530	460	558	604	0.8	2.8
512	Office and Practice Managers	564	612	612	642	674	0.8	1.0
521	Personal Assistants and Secretaries	404	295	242	274	294	-5.0	2.0
531	General Clerks	939	1068	1133	1212	1267	1.9	1.1
532	Keyboard Operators	254	213	213	234	254	-1.7	1.8
541	Call or Contact Centre Information Clerks	242	369	400	462	501	5.2	2.3
542	Receptionists	824	721	659	684	751	-2.2	1.3
551	Accounting Clerks and Bookkeepers	1341	1150	1087	1125	1149	-2.1	0.6
552	Financial and Insurance Clerks	404	359	333	347	368	-1.9	1.0
561	Clerical and Office Support Workers	486	406	382	497	504	-2.4	2.8

**Table 15.41 Total industry place-of-work employment by occupation (minor group) – Darebin (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	577	632	645	639	645	1.1	0.0
599	Miscellaneous Clerical and Administrative Workers	371	379	379	442	487	0.2	2.5
611	Insurance Agents and Sales Representatives	702	575	444	449	450	-4.5	0.1
612	Real Estate Sales Agents	292	397	301	326	358	0.3	1.7
621	Sales Assistants and Salespersons	4150	4568	3812	3900	3753	-0.8	-0.2
631	Checkout Operators and Office Cashiers	801	890	551	594	589	-3.7	0.7
639	Miscellaneous Sales Support Workers	237	258	179	192	191	-2.8	0.6
711	Machine Operators	681	592	618	503	457	-1.0	-3.0
712	Stationary Plant Operators	271	194	185	164	155	-3.7	-1.8
721	Mobile Plant Operators	539	355	308	295	290	-5.4	-0.6
731	Automobile, Bus and Rail Drivers	598	486	574	656	775	-0.4	3.0
732	Delivery Drivers	311	323	450	510	520	3.8	1.4
733	Truck Drivers	465	433	382	434	468	-1.9	2.0
741	Storepersons	823	1018	1225	1165	1124	4.1	-0.9
811	Cleaners and Laundry Workers	1233	1089	890	1004	1043	-3.2	1.6
821	Construction and Mining Labourers	635	577	538	579	583	-1.7	0.8
831	Food Process Workers	203	200	180	197	208	-1.2	1.4
832	Packers and Product Assemblers	520	591	424	398	400	-2.0	-0.6
839	Miscellaneous Factory Process Workers	336	245	167	152	144	-6.7	-1.5
841	Farm, Forestry and Garden Workers	122	125	83	104	147	-3.9	6.0
851	Food Preparation Assistants	753	881	766	954	1031	0.2	3.0
891	Freight Handlers and Shelf Fillers	336	288	239	256	255	-3.4	0.7
899	Miscellaneous Labourers	605	610	504	560	577	-1.8	1.4
	<b>Total</b>	<b>52378</b>	<b>56081</b>	<b>57773</b>	<b>61529</b>	<b>63930</b>	<b>1.0</b>	<b>1.0</b>

Source: NIEIR.

**Table 15.42 Total industry place-of-work employment by occupation (minor group) – Hume (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	783	929	1000	1148	1117	2.5	1.1
121	Farmers and Farm Managers	90	83	92	201	337	0.2	13.9
131	Advertising, Public Relations and Sales Managers	991	989	1265	1440	1412	2.5	1.1
132	Business Administration Managers	792	903	1444	1661	1720	6.2	1.8
133	Construction, Distribution and Production Managers	3367	3801	4896	5082	4376	3.8	-1.1
134	Education, Health and Welfare Services Managers	306	370	477	609	699	4.5	3.9
135	ICT Managers	110	184	191	253	310	5.7	5.0
139	Miscellaneous Specialist Managers	445	606	897	1020	1071	7.3	1.8
141	Accommodation and Hospitality Managers	437	472	372	419	416	-1.6	1.1
142	Retail Managers	1494	1623	1747	1822	1747	1.6	0.0
149	Miscellaneous Hospitality, Retail and Service Managers	1244	1480	1572	1788	1710	2.4	0.8
211	Arts Professionals	76	91	169	278	398	8.3	9.0
212	Media Professionals	77	82	111	141	189	3.8	5.4
221	Accountants, Auditors and Company Secretaries	726	961	1185	1467	1672	5.0	3.5
222	Financial Brokers and Dealers, and Investment Advisers	157	214	240	346	467	4.4	6.9
223	Human Resource and Training Professionals	440	473	606	853	917	3.2	4.2
224	Information and Organisation Professionals	335	493	940	1278	1576	10.9	5.3
225	Sales, Marketing and Public Relations Professionals	551	722	947	1049	1121	5.6	1.7
231	Air and Marine Transport Professionals	1394	1630	1595	2434	2301	1.4	3.7
232	Architects, Designers, Planners and Surveyors	493	576	858	1012	1094	5.7	2.5
233	Engineering Professionals	1251	1652	2347	2475	2393	6.5	0.2
234	Natural and Physical Science Professionals	299	396	637	793	992	7.8	4.5
241	School Teachers	2860	3398	3807	4336	4459	2.9	1.6
242	Tertiary Education Teachers	352	303	379	497	645	0.8	5.4
249	Miscellaneous Education Professionals	235	327	525	658	870	8.4	5.2
251	Health Diagnostic and Promotion Professionals	441	569	743	862	871	5.4	1.6
252	Health Therapy Professionals	268	353	575	892	1206	7.9	7.7
253	Medical Practitioners	220	312	336	568	822	4.3	9.3
254	Midwifery and Nursing Professionals	511	738	969	1595	2368	6.6	9.3
261	Business and Systems Analysts, and Programmers	279	347	613	852	1085	8.2	5.9
262	Database and Systems Administrators, and ICT Security Specialists	138	168	205	263	308	4.1	4.1
263	ICT Network and Support Professionals	190	167	327	436	527	5.6	4.9
271	Legal Professionals	81	127	187	324	457	8.7	9.3
272	Social and Welfare Professionals	501	663	787	1104	1346	4.6	5.5
311	Agricultural, Medical and Science Technicians	624	397	581	674	775	-0.7	2.9

**Table 15.42 Total industry place-of-work employment by occupation (minor group) – Hume (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	856	981	1452	1640	1427	5.4	-0.2
313	ICT and Telecommunications Technicians	204	274	492	621	726	9.2	4.0
321	Automotive Electricians and Mechanics	1007	1173	1269	1431	1310	2.3	0.3
322	Fabrication Engineering Trades Workers	1231	1200	1089	1112	959	-1.2	-1.3
323	Mechanical Engineering Trades Workers	3016	2207	2365	2822	2518	-2.4	0.6
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	688	812	1002	1014	882	3.8	-1.3
331	Bricklayers, and Carpenters and Joiners	1511	1790	2368	2493	1714	4.6	-3.2
332	Floor Finishers and Painting Trades Workers	401	558	633	722	484	4.7	-2.6
333	Glaziers, Plasterers and Tilers	644	678	734	830	558	1.3	-2.7
334	Plumbers	844	1089	1296	1489	1021	4.4	-2.4
341	Electricians	1408	1624	2063	2300	1654	3.9	-2.2
342	Electronics and Telecommunications Trades Workers	765	826	743	858	748	-0.3	0.1
351	Food Trades Workers	910	1153	1425	1537	1587	4.6	1.1
361	Animal Attendants and Trainers, and Shearers	146	192	305	444	551	7.6	6.1
362	Horticultural Trades Workers	487	473	814	976	828	5.3	0.2
391	Hairdressers	229	307	385	463	489	5.3	2.4
392	Printing Trades Workers	556	438	546	450	365	-0.2	-3.9
393	Textile, Clothing and Footwear Trades Workers	151	143	204	169	169	3.1	-1.9
394	Wood Trades Workers	842	939	1132	933	824	3.0	-3.1
399	Miscellaneous Technicians and Trades Workers	357	477	629	783	915	5.8	3.8
411	Health and Welfare Support Workers	453	653	855	1117	1331	6.5	4.5
421	Child Carers	876	1763	1674	2146	2237	6.7	2.9
422	Education Aides	550	755	1340	1525	1574	9.3	1.6
423	Personal Carers and Assistants	703	1011	1574	2055	2455	8.4	4.6
431	Hospitality Workers	1167	1521	1644	1829	1833	3.5	1.1
441	Defence Force Members, Fire Fighters and Police	495	739	859	910	918	5.7	0.7
442	Prison and Security Officers	941	1275	2034	2096	1988	8.0	-0.2
451	Personal Service and Travel Workers	2265	2289	2171	3514	3135	-0.4	3.7
452	Sports and Fitness Workers	290	569	641	710	739	8.3	1.4
511	Contract, Program and Project Administrators	482	676	671	786	775	3.4	1.5
512	Office and Practice Managers	933	1099	1301	1461	1367	3.4	0.5
521	Personal Assistants and Secretaries	492	427	397	472	475	-2.1	1.8
531	General Clerks	1632	1787	2243	2507	2396	3.2	0.7
532	Keyboard Operators	535	465	576	676	669	0.7	1.5
541	Call or Contact Centre Information Clerks	675	885	1114	1267	1289	5.1	1.5
542	Receptionists	1027	1168	1208	1454	1532	1.6	2.4
551	Accounting Clerks and Bookkeepers	2273	2345	2641	3004	2846	1.5	0.8
552	Financial and Insurance Clerks	307	411	467	488	588	4.3	2.3
561	Clerical and Office Support Workers	1100	1396	1515	1903	1916	3.3	2.4



**Table 15.42 Total industry place-of-work employment by occupation (minor group) – Hume (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	2898	3293	3889	4191	3860	3.0	-0.1
599	Miscellaneous Clerical and Administrative Workers	965	1121	1294	1591	1790	3.0	3.3
611	Insurance Agents and Sales Representatives	1499	1296	1191	1236	1135	-2.3	-0.5
612	Real Estate Sales Agents	207	320	394	477	482	6.6	2.0
621	Sales Assistants and Salespersons	4675	6296	6591	6928	6536	3.5	-0.1
631	Checkout Operators and Office Cashiers	1019	1095	1276	1335	1298	2.3	0.2
639	Miscellaneous Sales Support Workers	1497	1667	1446	2064	1837	-0.3	2.4
711	Machine Operators	1300	1499	1869	1669	1412	3.7	-2.8
712	Stationary Plant Operators	822	622	675	741	615	-2.0	-0.9
721	Mobile Plant Operators	4064	3630	3749	4524	3734	-0.8	0.0
731	Automobile, Bus and Rail Drivers	968	1373	1974	2303	2209	7.4	1.1
732	Delivery Drivers	646	814	1432	1621	1591	8.3	1.1
733	Truck Drivers	2698	3486	3771	4264	3780	3.4	0.0
741	Storepersons	2776	3574	4999	5231	4830	6.1	-0.3
811	Cleaners and Laundry Workers	2048	2234	2334	2702	2597	1.3	1.1
821	Construction and Mining Labourers	2025	2086	2563	2854	1897	2.4	-3.0
831	Food Process Workers	796	881	953	960	1005	1.8	0.5
832	Packers and Product Assemblers	2458	2146	1905	1780	1673	-2.5	-1.3
839	Miscellaneous Factory Process Workers	1041	1005	919	863	786	-1.2	-1.6
841	Farm, Forestry and Garden Workers	239	227	217	305	376	-1.0	5.7
851	Food Preparation Assistants	1783	1851	2365	2689	2696	2.9	1.3
891	Freight Handlers and Shelf Fillers	952	986	1324	1486	1391	3.4	0.5
899	Miscellaneous Labourers	1271	1360	1686	1809	1577	2.9	-0.7
	<b>Total</b>	<b>94656</b>	<b>108030</b>	<b>128307</b>	<b>147262</b>	<b>142674</b>	<b>3.1</b>	<b>1.1</b>

Source: NIEIR.

**Table 15.43 Total industry place-of-work employment by occupation (minor group) – Mitchell (S)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	84	77	87	103	150	0.3	5.6
121	Farmers and Farm Managers	338	290	474	386	349	3.5	-3.0
131	Advertising, Public Relations and Sales Managers	33	23	38	63	78	1.4	7.4
132	Business Administration Managers	65	55	102	137	217	4.5	7.9
133	Construction, Distribution and Production Managers	159	177	295	287	408	6.4	3.3
134	Education, Health and Welfare Services Managers	84	79	116	126	174	3.3	4.1
135	ICT Managers	3	8	11	18	35	15.1	12.8
139	Miscellaneous Specialist Managers	208	248	370	540	552	5.9	4.1
141	Accommodation and Hospitality Managers	119	112	122	137	181	0.2	4.0
142	Retail Managers	279	282	409	520	616	3.9	4.2
149	Miscellaneous Hospitality, Retail and Service Managers	100	144	207	246	333	7.5	4.9
211	Arts Professionals	16	26	43	57	104	10.1	9.3
212	Media Professionals	31	21	25	32	49	-2.2	7.0
221	Accountants, Auditors and Company Secretaries	55	66	69	97	170	2.2	9.4
222	Financial Brokers and Dealers, and Investment Advisers	22	31	30	38	65	3.0	8.0
223	Human Resource and Training Professionals	164	116	117	165	197	-3.3	5.3
224	Information and Organisation Professionals	54	62	102	164	267	6.7	10.1
225	Sales, Marketing and Public Relations Professionals	31	28	31	49	79	-0.2	9.8
231	Air and Marine Transport Professionals	0	7	7	11	12	0.0	6.0
232	Architects, Designers, Planners and Surveyors	67	41	47	75	114	-3.4	9.2
233	Engineering Professionals	33	27	33	53	86	-0.1	10.1
234	Natural and Physical Science Professionals	56	73	105	142	218	6.5	7.6
241	School Teachers	629	652	679	791	961	0.8	3.5
242	Tertiary Education Teachers	20	23	27	42	89	3.4	12.5
249	Miscellaneous Education Professionals	31	37	53	77	131	5.6	9.4
251	Health Diagnostic and Promotion Professionals	54	70	81	121	172	4.1	7.8
252	Health Therapy Professionals	49	81	127	158	235	10.0	6.3
253	Medical Practitioners	47	61	61	86	143	2.6	8.9
254	Midwifery and Nursing Professionals	300	338	380	444	684	2.4	6.1
261	Business and Systems Analysts, and Programmers	9	15	23	52	111	10.1	17.0
262	Database and Systems Administrators, and ICT Security Specialists	12	16	16	29	51	2.4	12.4
263	ICT Network and Support Professionals	11	13	25	33	44	8.2	5.8
271	Legal Professionals	21	23	26	44	76	2.0	11.4
272	Social and Welfare Professionals	152	146	144	174	264	-0.5	6.3
311	Agricultural, Medical and Science Technicians	35	27	39	54	76	1.0	6.9

**Table 15.43 Total industry place-of-work employment by occupation (minor group) – Mitchell (S) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	49	64	85	91	147	5.7	5.7
313	ICT and Telecommunications Technicians	20	15	24	37	60	2.1	9.5
321	Automotive Electricians and Mechanics	147	173	168	155	213	1.3	2.4
322	Fabrication Engineering Trades Workers	80	82	64	59	82	-2.1	2.4
323	Mechanical Engineering Trades Workers	90	110	106	103	135	1.6	2.4
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	30	34	37	36	49	2.0	2.8
331	Bricklayers, and Carpenters and Joiners	229	180	207	154	269	-1.0	2.7
332	Floor Finishers and Painting Trades Workers	44	61	60	48	90	3.1	4.1
333	Glaziers, Plasterers and Tilers	95	46	37	30	58	-8.9	4.5
334	Plumbers	113	126	132	104	196	1.6	4.0
341	Electricians	85	114	132	109	193	4.4	3.9
342	Electronics and Telecommunications Trades Workers	75	85	59	77	131	-2.3	8.3
351	Food Trades Workers	185	197	213	243	321	1.4	4.2
361	Animal Attendants and Trainers, and Shearers	88	106	138	182	277	4.5	7.2
362	Horticultural Trades Workers	191	196	281	313	392	4.0	3.4
391	Hairdressers	54	74	72	104	175	2.9	9.2
392	Printing Trades Workers	17	17	17	19	28	-0.3	5.3
393	Textile, Clothing and Footwear Trades Workers	32	10	12	6	6	-8.9	-7.0
394	Wood Trades Workers	24	37	40	48	59	5.2	4.1
399	Miscellaneous Technicians and Trades Workers	57	60	62	74	108	0.8	5.7
411	Health and Welfare Support Workers	150	215	249	271	389	5.2	4.6
421	Child Carers	180	206	170	173	241	-0.5	3.5
422	Education Aides	108	142	201	235	277	6.4	3.3
423	Personal Carers and Assistants	189	229	286	294	435	4.2	4.3
431	Hospitality Workers	209	248	242	289	394	1.5	5.0
441	Defence Force Members, Fire Fighters and Police	399	485	529	712	744	2.9	3.5
442	Prison and Security Officers	49	55	71	97	109	3.9	4.3
451	Personal Service and Travel Workers	102	97	85	115	197	-1.8	8.8
452	Sports and Fitness Workers	95	114	113	160	246	1.8	8.1
511	Contract, Program and Project Administrators	45	41	45	64	106	0.0	8.8
512	Office and Practice Managers	121	143	167	194	290	3.3	5.6
521	Personal Assistants and Secretaries	100	61	52	63	95	-6.4	6.3
531	General Clerks	233	231	267	319	459	1.4	5.5
532	Keyboard Operators	47	37	44	57	77	-0.7	5.9
541	Call or Contact Centre Information Clerks	21	27	34	44	66	4.9	7.0
542	Receptionists	168	171	172	202	293	0.2	5.5
551	Accounting Clerks and Bookkeepers	278	269	322	357	510	1.5	4.7
552	Financial and Insurance Clerks	61	63	64	75	120	0.5	6.5
561	Clerical and Office Support Workers	143	121	122	165	206	-1.6	5.4

**Table 15.43 Total industry place-of-work employment by occupation (minor group) – Mitchell (S) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	58	65	83	96	121	3.6	3.9
599	Miscellaneous Clerical and Administrative Workers	63	68	73	107	170	1.5	8.8
611	Insurance Agents and Sales Representatives	44	44	28	34	54	-4.3	6.6
612	Real Estate Sales Agents	70	59	35	49	78	-6.6	8.2
621	Sales Assistants and Salespersons	823	935	700	816	966	-1.6	3.3
631	Checkout Operators and Office Cashiers	189	228	119	145	172	-4.5	3.7
639	Miscellaneous Sales Support Workers	30	33	19	30	38	-4.2	6.9
711	Machine Operators	31	34	38	40	57	1.8	4.2
712	Stationary Plant Operators	63	54	53	61	74	-1.7	3.5
721	Mobile Plant Operators	182	108	98	87	145	-6.0	4.0
731	Automobile, Bus and Rail Drivers	103	100	121	132	145	1.6	1.9
732	Delivery Drivers	35	35	56	61	83	4.6	4.1
733	Truck Drivers	301	303	309	342	407	0.3	2.8
741	Storepersons	74	81	94	99	147	2.4	4.6
811	Cleaners and Laundry Workers	334	339	318	352	475	-0.5	4.1
821	Construction and Mining Labourers	281	287	320	278	479	1.3	4.1
831	Food Process Workers	201	199	197	201	207	-0.2	0.5
832	Packers and Product Assemblers	42	68	69	73	90	4.9	2.7
839	Miscellaneous Factory Process Workers	52	30	27	27	36	-6.5	3.1
841	Farm, Forestry and Garden Workers	262	207	187	189	215	-3.3	1.4
851	Food Preparation Assistants	321	311	327	374	508	0.2	4.5
891	Freight Handlers and Shelf Fillers	127	87	107	127	141	-1.7	2.8
899	Miscellaneous Labourers	178	155	177	195	272	0.0	4.4
	<b>Total</b>	<b>11640</b>	<b>12067</b>	<b>13259</b>	<b>15343</b>	<b>20813</b>	<b>1.3</b>	<b>4.6</b>

Source: NIEIR.

**Table 15.44 Total industry place-of-work employment by occupation (minor group) – Moreland (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	374	430	408	397	445	0.9	0.9
121	Farmers and Farm Managers	17	5	3	11	27	-15.7	24.6
131	Advertising, Public Relations and Sales Managers	328	324	351	371	426	0.7	2.0
132	Business Administration Managers	311	301	393	443	539	2.4	3.2
133	Construction, Distribution and Production Managers	1068	1023	1106	994	1082	0.4	-0.2
134	Education, Health and Welfare Services Managers	324	407	471	485	531	3.8	1.2
135	ICT Managers	68	92	85	99	127	2.3	4.1
139	Miscellaneous Specialist Managers	130	144	180	205	238	3.3	2.8
141	Accommodation and Hospitality Managers	380	456	332	360	388	-1.3	1.6
142	Retail Managers	1106	1070	995	1002	1054	-1.1	0.6
149	Miscellaneous Hospitality, Retail and Service Managers	445	538	494	520	587	1.0	1.7
211	Arts Professionals	346	491	715	702	730	7.5	0.2
212	Media Professionals	262	434	553	601	608	7.8	0.9
221	Accountants, Auditors and Company Secretaries	480	554	579	628	740	1.9	2.5
222	Financial Brokers and Dealers, and Investment Advisers	144	136	124	127	175	-1.4	3.5
223	Human Resource and Training Professionals	242	214	237	258	307	-0.2	2.6
224	Information and Organisation Professionals	270	376	613	723	906	8.5	4.0
225	Sales, Marketing and Public Relations Professionals	319	370	412	430	491	2.6	1.8
231	Air and Marine Transport Professionals	9	1	0	1	2	-100.0	0.0
232	Architects, Designers, Planners and Surveyors	696	807	1015	1072	1203	3.8	1.7
233	Engineering Professionals	207	241	293	296	344	3.5	1.6
234	Natural and Physical Science Professionals	169	157	208	255	326	2.1	4.6
241	School Teachers	1684	1931	2075	2059	2063	2.1	-0.1
242	Tertiary Education Teachers	264	251	280	313	410	0.6	3.9
249	Miscellaneous Education Professionals	341	373	509	477	531	4.1	0.4
251	Health Diagnostic and Promotion Professionals	329	371	414	455	510	2.3	2.1
252	Health Therapy Professionals	427	516	741	833	945	5.7	2.5
253	Medical Practitioners	287	380	373	461	555	2.7	4.0
254	Midwifery and Nursing Professionals	868	1021	1185	1473	1842	3.2	4.5
261	Business and Systems Analysts, and Programmers	215	257	393	484	652	6.2	5.2
262	Database and Systems Administrators, and ICT Security Specialists	73	58	58	75	97	-2.2	5.3
263	ICT Network and Support Professionals	85	65	104	121	153	2.1	4.0
271	Legal Professionals	123	142	167	207	265	3.1	4.7
272	Social and Welfare Professionals	836	870	890	952	1070	0.6	1.9
311	Agricultural, Medical and Science Technicians	187	192	253	273	317	3.1	2.3

**Table 15.44 Total industry place-of-work employment by occupation (minor group) – Moreland (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	259	320	393	371	444	4.3	1.3
313	ICT and Telecommunications Technicians	110	114	152	176	221	3.3	3.8
321	Automotive Electricians and Mechanics	564	554	499	425	400	-1.2	-2.2
322	Fabrication Engineering Trades Workers	253	185	137	133	132	-5.9	-0.4
323	Mechanical Engineering Trades Workers	316	226	209	187	185	-4.1	-1.2
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	289	234	233	202	187	-2.1	-2.2
331	Bricklayers, and Carpenters and Joiners	907	960	1008	861	965	1.1	-0.4
332	Floor Finishers and Painting Trades Workers	348	301	269	240	270	-2.5	0.1
333	Glaziers, Plasterers and Tilers	416	431	387	333	375	-0.7	-0.3
334	Plumbers	371	450	439	403	449	1.7	0.2
341	Electricians	412	437	460	448	568	1.1	2.1
342	Electronics and Telecommunications Trades Workers	224	199	146	134	144	-4.2	-0.1
351	Food Trades Workers	857	1077	1115	1161	1217	2.7	0.9
361	Animal Attendants and Trainers, and Shearers	66	79	89	95	99	3.0	1.1
362	Horticultural Trades Workers	350	382	500	560	631	3.7	2.3
391	Hairdressers	271	305	299	314	303	1.0	0.1
392	Printing Trades Workers	219	171	180	154	145	-2.0	-2.2
393	Textile, Clothing and Footwear Trades Workers	188	157	168	129	119	-1.1	-3.4
394	Wood Trades Workers	320	294	281	244	237	-1.3	-1.7
399	Miscellaneous Technicians and Trades Workers	270	274	284	298	317	0.5	1.1
411	Health and Welfare Support Workers	587	742	814	879	972	3.3	1.8
421	Child Carers	711	1232	1037	1004	1080	3.8	0.4
422	Education Aides	322	416	576	574	575	6.0	0.0
423	Personal Carers and Assistants	1373	1666	2006	2189	2300	3.9	1.4
431	Hospitality Workers	654	1005	951	1026	1111	3.8	1.6
441	Defence Force Members, Fire Fighters and Police	391	473	456	570	578	1.6	2.4
442	Prison and Security Officers	113	121	167	221	238	4.0	3.6
451	Personal Service and Travel Workers	320	373	320	335	347	0.0	0.8
452	Sports and Fitness Workers	251	502	469	480	508	6.4	0.8
511	Contract, Program and Project Administrators	254	258	224	250	294	-1.3	2.8
512	Office and Practice Managers	551	575	592	613	675	0.7	1.3
521	Personal Assistants and Secretaries	329	253	207	227	263	-4.5	2.4
531	General Clerks	774	730	768	808	906	-0.1	1.7
532	Keyboard Operators	175	131	137	147	169	-2.4	2.1
541	Call or Contact Centre Information Clerks	254	289	314	362	419	2.2	2.9
542	Receptionists	791	799	738	817	911	-0.7	2.1
551	Accounting Clerks and Bookkeepers	1069	943	928	926	1017	-1.4	0.9
552	Financial and Insurance Clerks	227	214	202	224	306	-1.2	4.2
561	Clerical and Office Support Workers	230	191	177	200	245	-2.6	3.3



**Table 15.44 Total industry place-of-work employment by occupation (minor group) – Moreland (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	435	381	375	363	403	-1.5	0.7
599	Miscellaneous Clerical and Administrative Workers	270	298	300	362	433	1.1	3.7
611	Insurance Agents and Sales Representatives	572	426	334	318	335	-5.2	0.0
612	Real Estate Sales Agents	317	395	362	397	445	1.4	2.1
621	Sales Assistants and Salespersons	2442	2858	2551	2549	2667	0.4	0.4
631	Checkout Operators and Office Cashiers	571	622	546	547	563	-0.4	0.3
639	Miscellaneous Sales Support Workers	110	140	107	113	131	-0.3	2.1
711	Machine Operators	517	382	394	315	306	-2.7	-2.5
712	Stationary Plant Operators	133	59	51	50	52	-9.1	0.2
721	Mobile Plant Operators	306	240	210	197	218	-3.7	0.4
731	Automobile, Bus and Rail Drivers	996	1050	1249	1407	1689	2.3	3.1
732	Delivery Drivers	302	304	428	445	481	3.6	1.2
733	Truck Drivers	303	308	287	320	367	-0.6	2.5
741	Storepersons	480	462	543	487	519	1.2	-0.4
811	Cleaners and Laundry Workers	904	825	701	771	865	-2.5	2.1
821	Construction and Mining Labourers	611	648	632	563	680	0.3	0.7
831	Food Process Workers	290	277	254	256	263	-1.3	0.3
832	Packers and Product Assemblers	562	460	338	321	331	-5.0	-0.2
839	Miscellaneous Factory Process Workers	261	171	128	109	105	-6.9	-2.0
841	Farm, Forestry and Garden Workers	68	85	67	91	149	-0.2	8.2
851	Food Preparation Assistants	676	799	773	839	892	1.3	1.4
891	Freight Handlers and Shelf Fillers	270	252	236	237	245	-1.4	0.4
899	Miscellaneous Labourers	615	579	534	528	567	-1.4	0.6
	<b>Total</b>	<b>41810</b>	<b>45082</b>	<b>46739</b>	<b>48468</b>	<b>53710</b>	<b>1.1</b>	<b>1.4</b>

Source: NIEIR.

**Table 15.45 Total industry place-of-work employment by occupation (minor group) – Nillumbik (S)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	152	147	146	180	246	-0.4	5.3
121	Farmers and Farm Managers	104	73	71	65	88	-3.7	2.1
131	Advertising, Public Relations and Sales Managers	102	122	144	164	214	3.5	4.1
132	Business Administration Managers	94	78	92	125	189	-0.2	7.5
133	Construction, Distribution and Production Managers	345	352	393	482	699	1.3	5.9
134	Education, Health and Welfare Services Managers	106	138	166	193	231	4.6	3.3
135	ICT Managers	15	24	26	34	55	5.4	7.8
139	Miscellaneous Specialist Managers	39	48	61	82	112	4.6	6.2
141	Accommodation and Hospitality Managers	127	144	127	143	205	0.0	4.9
142	Retail Managers	350	367	394	469	553	1.2	3.5
149	Miscellaneous Hospitality, Retail and Service Managers	182	200	210	256	343	1.4	5.0
211	Arts Professionals	117	143	191	209	244	5.0	2.5
212	Media Professionals	71	111	140	149	207	7.0	4.0
221	Accountants, Auditors and Company Secretaries	161	185	206	245	335	2.5	5.0
222	Financial Brokers and Dealers, and Investment Advisers	75	87	93	86	117	2.1	2.3
223	Human Resource and Training Professionals	60	55	61	78	122	0.1	7.3
224	Information and Organisation Professionals	124	152	211	265	366	5.5	5.7
225	Sales, Marketing and Public Relations Professionals	98	98	111	134	185	1.3	5.2
231	Air and Marine Transport Professionals	0	0	0	0	0	0.0	0.0
232	Architects, Designers, Planners and Surveyors	260	228	275	332	414	0.6	4.2
233	Engineering Professionals	116	157	199	242	347	5.6	5.7
234	Natural and Physical Science Professionals	98	109	136	168	223	3.4	5.0
241	School Teachers	1001	1039	1123	1215	1403	1.2	2.2
242	Tertiary Education Teachers	60	37	38	48	83	-4.3	8.1
249	Miscellaneous Education Professionals	119	146	193	218	315	4.9	5.1
251	Health Diagnostic and Promotion Professionals	86	74	83	107	130	-0.4	4.6
252	Health Therapy Professionals	129	165	223	228	326	5.6	3.9
253	Medical Practitioners	84	110	119	127	196	3.5	5.1
254	Midwifery and Nursing Professionals	187	129	142	225	369	-2.7	10.0
261	Business and Systems Analysts, and Programmers	96	65	81	99	148	-1.6	6.2
262	Database and Systems Administrators, and ICT Security Specialists	17	19	24	31	44	3.9	6.1
263	ICT Network and Support Professionals	24	23	33	39	55	3.0	5.4
271	Legal Professionals	16	18	22	32	51	3.2	8.9
272	Social and Welfare Professionals	199	209	231	263	342	1.5	4.0
311	Agricultural, Medical and Science Technicians	43	44	54	64	82	2.3	4.3

**Table 15.45 Total industry place-of-work employment by occupation (minor group) – Nillumbik (S) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	136	144	161	211	310	1.7	6.8
313	ICT and Telecommunications Technicians	41	38	44	51	68	0.6	4.6
321	Automotive Electricians and Mechanics	113	135	113	111	139	0.0	2.0
322	Fabrication Engineering Trades Workers	48	32	21	24	26	-8.0	2.3
323	Mechanical Engineering Trades Workers	60	65	48	47	59	-2.2	2.1
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	70	46	39	36	45	-5.7	1.6
331	Bricklayers, and Carpenters and Joiners	601	390	325	454	665	-6.0	7.4
332	Floor Finishers and Painting Trades Workers	77	124	108	155	225	3.4	7.7
333	Glaziers, Plasterers and Tilers	152	94	69	97	142	-7.6	7.5
334	Plumbers	371	365	289	407	589	-2.4	7.4
341	Electricians	256	295	228	319	467	-1.1	7.4
342	Electronics and Telecommunications Trades Workers	82	82	44	52	75	-5.9	5.3
351	Food Trades Workers	188	252	251	297	398	2.9	4.7
361	Animal Attendants and Trainers, and Shearers	92	118	114	123	165	2.2	3.8
362	Horticultural Trades Workers	322	287	288	386	513	-1.1	5.9
391	Hairdressers	83	136	114	122	172	3.2	4.2
392	Printing Trades Workers	31	23	23	23	24	-3.1	0.5
393	Textile, Clothing and Footwear Trades Workers	18	15	12	3	5	-3.8	-7.6
394	Wood Trades Workers	80	50	36	39	45	-7.8	2.5
399	Miscellaneous Technicians and Trades Workers	80	92	67	74	82	-1.8	2.1
411	Health and Welfare Support Workers	161	194	208	262	353	2.6	5.4
421	Child Carers	351	453	368	434	437	0.5	1.7
422	Education Aides	189	190	222	240	275	1.6	2.2
423	Personal Carers and Assistants	258	310	347	493	685	3.0	7.0
431	Hospitality Workers	333	470	406	472	671	2.0	5.1
441	Defence Force Members, Fire Fighters and Police	104	113	101	120	133	-0.3	2.7
442	Prison and Security Officers	5	42	61	75	86	27.3	3.6
451	Personal Service and Travel Workers	181	188	156	161	218	-1.5	3.4
452	Sports and Fitness Workers	363	486	374	487	646	0.3	5.6
511	Contract, Program and Project Administrators	65	66	54	73	102	-1.8	6.6
512	Office and Practice Managers	272	282	267	309	413	-0.2	4.5
521	Personal Assistants and Secretaries	162	128	102	124	175	-4.5	5.6
531	General Clerks	325	300	288	348	453	-1.2	4.7
532	Keyboard Operators	75	45	41	47	64	-6.0	4.6
541	Call or Contact Centre Information Clerks	35	30	28	44	62	-2.1	8.3
542	Receptionists	253	249	224	240	333	-1.2	4.0
551	Accounting Clerks and Bookkeepers	614	460	386	457	615	-4.5	4.8
552	Financial and Insurance Clerks	71	68	62	63	96	-1.4	4.5
561	Clerical and Office Support Workers	107	85	77	104	139	-3.2	6.1

**Table 15.45 Total industry place-of-work employment by occupation (minor group) – Nillumbik (S) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	49	49	44	58	73	-1.0	5.2
599	Miscellaneous Clerical and Administrative Workers	59	62	59	75	104	-0.1	5.9
611	Insurance Agents and Sales Representatives	133	98	64	81	97	-7.1	4.3
612	Real Estate Sales Agents	114	125	81	75	86	-3.3	0.6
621	Sales Assistants and Salespersons	1097	1069	831	997	1183	-2.7	3.6
631	Checkout Operators and Office Cashiers	261	246	130	160	188	-6.7	3.8
639	Miscellaneous Sales Support Workers	46	31	18	24	31	-9.1	5.8
711	Machine Operators	26	29	30	36	53	1.4	5.9
712	Stationary Plant Operators	37	15	9	10	13	-13.0	3.5
721	Mobile Plant Operators	124	84	65	91	133	-6.3	7.4
731	Automobile, Bus and Rail Drivers	120	85	84	105	134	-3.5	4.8
732	Delivery Drivers	45	58	73	90	117	4.9	4.8
733	Truck Drivers	125	111	82	108	145	-4.2	5.9
741	Storepersons	33	44	50	62	73	4.3	3.9
811	Cleaners and Laundry Workers	243	211	164	205	265	-3.9	4.9
821	Construction and Mining Labourers	261	224	184	274	420	-3.4	8.6
831	Food Process Workers	0	4	4	5	7	0.0	6.1
832	Packers and Product Assemblers	45	33	17	20	28	-9.2	4.8
839	Miscellaneous Factory Process Workers	19	17	11	9	11	-5.7	0.6
841	Farm, Forestry and Garden Workers	174	148	87	98	133	-6.8	4.4
851	Food Preparation Assistants	349	341	267	307	433	-2.6	4.9
891	Freight Handlers and Shelf Fillers	153	115	79	96	111	-6.4	3.5
899	Miscellaneous Labourers	230	238	171	211	274	-2.9	4.8
	<b>Total</b>	<b>15422</b>	<b>15476</b>	<b>14587</b>	<b>17575</b>	<b>23322</b>	<b>-0.6</b>	<b>4.8</b>

Source: NIEIR.

**Table 15.46 Total industry place-of-work employment by occupation (minor group) – Whittlesea (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	408	533	616	578	700	4.2	1.3
121	Farmers and Farm Managers	138	141	211	207	298	4.3	3.5
131	Advertising, Public Relations and Sales Managers	429	529	770	715	855	6.0	1.1
132	Business Administration Managers	306	394	650	671	874	7.8	3.0
133	Construction, Distribution and Production Managers	1492	1747	2437	2074	2507	5.0	0.3
134	Education, Health and Welfare Services Managers	262	369	512	621	704	6.9	3.2
135	ICT Managers	36	87	105	123	182	11.4	5.6
139	Miscellaneous Specialist Managers	150	203	304	342	420	7.3	3.3
141	Accommodation and Hospitality Managers	228	310	318	362	418	3.4	2.8
142	Retail Managers	1203	1435	1898	1822	1867	4.7	-0.2
149	Miscellaneous Hospitality, Retail and Service Managers	503	672	850	897	1044	5.4	2.1
211	Arts Professionals	71	80	126	165	253	6.0	7.2
212	Media Professionals	38	67	113	128	201	11.4	6.0
221	Accountants, Auditors and Company Secretaries	385	610	817	822	1114	7.8	3.1
222	Financial Brokers and Dealers, and Investment Advisers	126	232	316	337	467	9.6	4.0
223	Human Resource and Training Professionals	187	207	266	301	390	3.6	3.9
224	Information and Organisation Professionals	215	289	509	667	877	9.0	5.6
225	Sales, Marketing and Public Relations Professionals	304	425	572	542	668	6.5	1.6
231	Air and Marine Transport Professionals	0	4	5	8	13	0.0	10.9
232	Architects, Designers, Planners and Surveyors	250	398	629	701	959	9.7	4.3
233	Engineering Professionals	431	503	726	615	831	5.4	1.4
234	Natural and Physical Science Professionals	210	193	280	346	489	2.9	5.7
241	School Teachers	2157	2729	3351	3896	4376	4.5	2.7
242	Tertiary Education Teachers	406	478	623	703	840	4.4	3.0
249	Miscellaneous Education Professionals	167	266	432	551	743	10.0	5.6
251	Health Diagnostic and Promotion Professionals	411	511	686	728	827	5.3	1.9
252	Health Therapy Professionals	289	436	716	820	1029	9.5	3.7
253	Medical Practitioners	500	799	951	1074	1294	6.6	3.1
254	Midwifery and Nursing Professionals	1675	2464	3434	3832	4372	7.4	2.4
261	Business and Systems Analysts, and Programmers	182	198	341	398	588	6.5	5.6
262	Database and Systems Administrators, and ICT Security Specialists	36	70	114	146	192	12.3	5.3
263	ICT Network and Support Professionals	61	57	99	123	192	5.0	6.9
271	Legal Professionals	33	54	87	131	223	10.1	9.8
272	Social and Welfare Professionals	422	610	785	998	1203	6.4	4.4
311	Agricultural, Medical and Science Technicians	180	257	429	444	503	9.1	1.6

**Table 15.46 Total industry place-of-work employment by occupation (minor group) – Whittlesea (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	427	535	789	649	903	6.3	1.4
313	ICT and Telecommunications Technicians	79	129	246	266	350	12.0	3.6
321	Automotive Electricians and Mechanics	461	616	642	589	617	3.4	-0.4
322	Fabrication Engineering Trades Workers	530	525	434	379	413	-2.0	-0.5
323	Mechanical Engineering Trades Workers	574	562	592	592	636	0.3	0.7
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	223	275	322	299	305	3.7	-0.6
331	Bricklayers, and Carpenters and Joiners	1350	1122	1342	743	1381	-0.1	0.3
332	Floor Finishers and Painting Trades Workers	336	454	479	259	531	3.6	1.0
333	Glaziers, Plasterers and Tilers	502	471	467	252	507	-0.7	0.8
334	Plumbers	600	703	771	420	800	2.5	0.4
341	Electricians	867	1025	1167	728	1265	3.0	0.8
342	Electronics and Telecommunications Trades Workers	397	469	395	338	449	-0.1	1.3
351	Food Trades Workers	592	766	935	1032	1140	4.7	2.0
361	Animal Attendants and Trainers, and Shearers	99	146	204	232	305	7.4	4.1
362	Horticultural Trades Workers	313	372	586	566	749	6.5	2.5
391	Hairdressers	221	343	373	522	664	5.4	5.9
392	Printing Trades Workers	131	141	178	160	157	3.1	-1.2
393	Textile, Clothing and Footwear Trades Workers	107	110	151	135	142	3.5	-0.6
394	Wood Trades Workers	435	508	554	408	444	2.4	-2.2
399	Miscellaneous Technicians and Trades Workers	209	284	325	355	434	4.5	2.9
411	Health and Welfare Support Workers	441	620	764	919	1089	5.6	3.6
421	Child Carers	576	1272	1227	1558	1676	7.8	3.2
422	Education Aides	371	533	818	947	1065	8.2	2.7
423	Personal Carers and Assistants	1185	1599	2216	2710	3135	6.5	3.5
431	Hospitality Workers	534	857	900	1016	1180	5.4	2.8
441	Defence Force Members, Fire Fighters and Police	256	353	394	519	631	4.4	4.8
442	Prison and Security Officers	152	200	308	374	449	7.3	3.8
451	Personal Service and Travel Workers	273	454	455	576	717	5.2	4.7
452	Sports and Fitness Workers	315	502	487	627	773	4.5	4.7
511	Contract, Program and Project Administrators	221	319	318	332	454	3.7	3.6
512	Office and Practice Managers	604	793	930	905	1120	4.4	1.9
521	Personal Assistants and Secretaries	379	343	318	321	420	-1.7	2.8
531	General Clerks	905	1010	1216	1195	1473	3.0	1.9
532	Keyboard Operators	288	227	267	283	327	-0.7	2.0
541	Call or Contact Centre Information Clerks	578	397	461	529	637	-2.2	3.3
542	Receptionists	839	1043	1096	1172	1429	2.7	2.7
551	Accounting Clerks and Bookkeepers	1390	1437	1659	1547	1958	1.8	1.7
552	Financial and Insurance Clerks	312	337	362	361	459	1.5	2.4
561	Clerical and Office Support Workers	336	424	462	546	577	3.2	2.3



**Table 15.46 Total industry place-of-work employment by occupation (minor group) – Whittlesea (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	518	671	823	750	801	4.7	-0.3
599	Miscellaneous Clerical and Administrative Workers	196	303	351	420	543	6.0	4.5
611	Insurance Agents and Sales Representatives	733	742	648	570	623	-1.2	-0.4
612	Real Estate Sales Agents	292	393	329	383	469	1.2	3.6
621	Sales Assistants and Salespersons	4124	5472	5210	5050	5157	2.4	-0.1
631	Checkout Operators and Office Cashiers	975	1268	911	949	974	-0.7	0.7
639	Miscellaneous Sales Support Workers	163	220	171	172	184	0.5	0.8
711	Machine Operators	746	718	849	700	720	1.3	-1.6
712	Stationary Plant Operators	348	301	334	324	440	-0.4	2.8
721	Mobile Plant Operators	875	935	978	868	1049	1.1	0.7
731	Automobile, Bus and Rail Drivers	708	907	1392	1564	1597	7.0	1.4
732	Delivery Drivers	322	411	739	785	812	8.7	1.0
733	Truck Drivers	865	1027	1113	1235	1345	2.6	1.9
741	Storepersons	647	854	1217	1094	1145	6.5	-0.6
811	Cleaners and Laundry Workers	1059	1151	1085	1185	1332	0.2	2.1
821	Construction and Mining Labourers	1121	1187	1300	714	1465	1.5	1.2
831	Food Process Workers	716	757	778	818	893	0.8	1.4
832	Packers and Product Assemblers	1138	1206	988	964	1037	-1.4	0.5
839	Miscellaneous Factory Process Workers	386	323	262	230	256	-3.8	-0.2
841	Farm, Forestry and Garden Workers	565	564	425	376	486	-2.8	1.4
851	Food Preparation Assistants	819	1021	1056	1185	1354	2.6	2.5
891	Freight Handlers and Shelf Fillers	472	471	504	536	540	0.7	0.7
899	Miscellaneous Labourers	705	712	716	710	891	0.2	2.2
	<b>Total</b>	<b>50800</b>	<b>62246</b>	<b>72867</b>	<b>73826</b>	<b>88394</b>	<b>3.7</b>	<b>2.0</b>

Source: NIEIR.

### 15.3.2 Resident employment by occupation and LGA

The following tables contain detailed resident employment forecasts for each of the seven LGAs within Melbourne's North at the occupation minor group level.

**Table 15.47 Resident employment by occupation major group and LGA**

	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
<b>1. Managers</b>							
Banyule (C)	7,841	8,162	9,739	9,926	10,191	2.2	0.5
Darebin (C)	7,974	8,833	11,379	12,125	12,514	3.6	1.0
Hume (C)	7,435	8,444	9,337	10,413	10,614	2.3	1.3
Mitchell (S)	2,092	2,190	3,671	4,299	5,037	5.8	3.2
Moreland (C)	8,171	10,768	11,830	12,584	13,080	3.8	1.0
Nillumbik (S)	5,330	5,168	6,053	5,903	6,100	1.3	0.1
Whittlesea (C)	7,147	8,675	12,689	13,405	14,486	5.9	1.3
<b>Sub-total</b>	<b>45,990</b>	<b>52,240</b>	<b>64,699</b>	<b>68,654</b>	<b>72,021</b>	<b>3.5</b>	<b>1.1</b>
<b>2. Professionals</b>							
Banyule (C)	18,444	18,815	24,116	25,944	26,965	2.7	1.1
Darebin (C)	20,165	22,457	30,384	33,443	35,115	4.2	1.5
Hume (C)	10,560	14,807	19,263	23,351	26,104	6.2	3.1
Mitchell (S)	2,238	2,945	3,715	4,604	6,071	5.2	5.0
Moreland (C)	24,880	29,889	38,584	42,799	45,406	4.5	1.6
Nillumbik (S)	9,123	9,001	11,328	11,648	12,109	2.2	0.7
Whittlesea (C)	11,424	14,826	21,372	24,353	27,565	6.5	2.6
<b>Sub-total</b>	<b>96,834</b>	<b>112,741</b>	<b>148,762</b>	<b>166,141</b>	<b>179,336</b>	<b>4.4</b>	<b>1.9</b>
<b>3. Technicians and Trade Workers</b>							
Banyule (C)	9,523	9,529	8,201	7,806	8,176	-1.5	0.0
Darebin (C)	9,637	10,256	10,362	10,883	11,191	0.7	0.8
Hume (C)	12,927	12,456	17,331	18,791	18,266	3.0	0.5
Mitchell (S)	2,945	3,757	4,279	4,601	5,785	3.8	3.1
Moreland (C)	9,209	10,097	11,379	11,902	12,337	2.1	0.8
Nillumbik (S)	6,338	6,244	5,203	5,092	5,591	-2.0	0.7
Whittlesea (C)	13,580	17,253	20,815	20,982	23,688	4.4	1.3
<b>Sub-total</b>	<b>64,157</b>	<b>69,592</b>	<b>77,570</b>	<b>80,058</b>	<b>85,033</b>	<b>1.9</b>	<b>0.9</b>
<b>4. Community and Personal Service Workers</b>							
Banyule (C)	5,924	6,841	6,650	7,415	7,864	1.2	1.7
Darebin (C)	6,359	8,431	8,555	9,688	10,249	3.0	1.8
Hume (C)	7,804	9,621	12,820	15,478	16,661	5.1	2.7
Mitchell (S)	1,889	2,370	2,675	3,312	4,171	3.5	4.5
Moreland (C)	7,381	8,984	9,700	10,833	11,416	2.8	1.6
Nillumbik (S)	3,298	3,882	3,768	4,053	4,305	1.3	1.3
Whittlesea (C)	7,163	10,930	12,950	15,624	17,675	6.1	3.2
<b>Sub-total</b>	<b>39,817</b>	<b>51,058</b>	<b>57,118</b>	<b>66,403</b>	<b>72,342</b>	<b>3.7</b>	<b>2.4</b>
<b>5. Clerical and Administrative Workers</b>							
Banyule (C)	11,575	9,931	9,411	9,885	10,244	-2.0	0.9
Darebin (C)	11,567	10,443	10,144	11,067	11,554	-1.3	1.3
Hume (C)	14,044	15,239	16,311	18,609	19,335	1.5	1.7
Mitchell (S)	2,595	2,620	3,098	3,699	4,650	1.8	4.1
Moreland (C)	12,288	12,505	13,521	14,756	15,520	1.0	1.4
Nillumbik (S)	6,541	5,479	5,177	5,233	5,492	-2.3	0.6
Whittlesea (C)	13,889	14,458	16,002	17,746	19,747	1.4	2.1
<b>Sub-total</b>	<b>72,498</b>	<b>70,675</b>	<b>73,664</b>	<b>80,994</b>	<b>86,543</b>	<b>0.2</b>	<b>1.6</b>

**Table 15.47 Resident employment by occupation major group and LGA (continued)**

	2011	2016	2021	2026	2031	Annual growth 2011 – 2021 (%)	Annual growth 2021 – 2031 (%)
<b>6. Sales Workers</b>							
Banyule (C)	5,885	6,250	4,770	4,802	4,772	-2.1	0.0
Darebin (C)	6,021	7,654	5,948	6,207	6,169	-0.1	0.4
Hume (C)	8,553	10,113	10,788	11,680	11,583	2.3	0.7
Mitchell (S)	1,541	1,969	1,379	1,578	1,830	-1.1	2.9
Moreland (C)	6,582	7,505	7,142	7,467	7,487	0.8	0.5
Nillumbik (S)	3,568	3,623	2,767	2,711	2,669	-2.5	-0.4
Whittlesea (C)	8,539	11,419	9,374	9,859	10,239	0.9	0.9
<b>Sub-total</b>	<b>40,689</b>	<b>48,534</b>	<b>42,167</b>	<b>44,304</b>	<b>44,747</b>	<b>0.4</b>	<b>0.6</b>
<b>7. Machinery Operators and Drivers</b>							
Banyule (C)	2,361	2,203	2,153	2,108	2,117	-0.9	-0.2
Darebin (C)	3,588	3,474	3,827	4,099	4,213	0.6	1.0
Hume (C)	7,122	9,785	11,260	12,804	12,380	4.7	1.0
Mitchell (S)	1,595	1,762	2,011	2,271	2,577	2.3	2.5
Moreland (C)	3,638	3,673	4,349	4,787	4,925	1.8	1.3
Nillumbik (S)	1,142	1,099	1,042	1,015	1,057	-0.9	0.1
Whittlesea (C)	7,090	9,025	11,793	12,942	13,501	5.2	1.4
<b>Sub-total</b>	<b>26,535</b>	<b>31,022</b>	<b>36,435</b>	<b>40,026</b>	<b>40,771</b>	<b>3.2</b>	<b>1.1</b>
<b>8. Labourers</b>							
Banyule (C)	3,764	4,183	3,199	3,322	3,546	-1.6	1.0
Darebin (C)	5,448	6,595	5,329	5,845	6,260	-0.2	1.6
Hume (C)	9,593	9,173	11,600	12,718	12,700	1.9	0.9
Mitchell (S)	2,312	2,211	2,385	2,657	3,301	0.3	3.3
Moreland (C)	5,597	6,141	5,850	6,365	6,845	0.4	1.6
Nillumbik (S)	1,944	2,232	1,710	1,761	1,953	-1.3	1.3
Whittlesea (C)	8,617	11,155	10,277	11,005	12,360	1.8	1.9
<b>Sub-total</b>	<b>37,274</b>	<b>41,690</b>	<b>40,350</b>	<b>43,672</b>	<b>46,964</b>	<b>0.8</b>	<b>1.5</b>
<b>Grand total</b>	<b>423,795</b>	<b>477,552</b>	<b>540,764</b>	<b>590,253</b>	<b>627,758</b>	<b>2.5</b>	<b>1.5</b>

Source: NIEIR.

**Table 15.48 Total industry resident employment by occupation (minor group) – Banyule (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	706	800	900	994	1011	2.5	1.2
121	Farmers and Farm Managers	46	35	37	37	51	-2.1	3.3
131	Advertising, Public Relations and Sales Managers	947	886	1101	1091	1098	1.5	0.0
132	Business Administration Managers	1050	1135	1518	1579	1638	3.8	0.8
133	Construction, Distribution and Production Managers	1491	1498	1821	1646	1659	2.0	-0.9
134	Education, Health and Welfare Services Managers	435	511	631	681	711	3.8	1.2
135	ICT Managers	362	560	645	644	653	6.0	0.1
139	Miscellaneous Specialist Managers	417	489	682	756	793	5.0	1.5
141	Accommodation and Hospitality Managers	374	377	364	409	453	-0.3	2.2
142	Retail Managers	1082	955	1037	1034	1022	-0.4	-0.1
149	Miscellaneous Hospitality, Retail and Service Managers	930	916	1002	1057	1102	0.7	1.0
211	Arts Professionals	234	254	365	392	402	4.6	1.0
212	Media Professionals	307	308	411	455	456	3.0	1.0
221	Accountants, Auditors and Company Secretaries	1400	1334	1603	1676	1744	1.4	0.8
222	Financial Brokers and Dealers, and Investment Advisers	625	618	705	690	697	1.2	-0.1
223	Human Resource and Training Professionals	646	579	696	743	769	0.8	1.0
224	Information and Organisation Professionals	1007	1157	1750	1875	1965	5.7	1.2
225	Sales, Marketing and Public Relations Professionals	811	946	1212	1220	1233	4.1	0.2
231	Air and Marine Transport Professionals	60	74	78	101	95	2.7	2.0
232	Architects, Designers, Planners and Surveyors	894	891	1182	1199	1234	2.8	0.4
233	Engineering Professionals	806	823	1082	1060	1100	3.0	0.2
234	Natural and Physical Science Professionals	749	741	976	1230	1298	2.7	2.9
241	School Teachers	2800	2789	3237	3267	3378	1.5	0.4
242	Tertiary Education Teachers	841	800	986	1099	1178	1.6	1.8
249	Miscellaneous Education Professionals	380	441	608	657	744	4.8	2.0
251	Health Diagnostic and Promotion Professionals	541	575	709	794	826	2.7	1.5
252	Health Therapy Professionals	569	673	932	1070	1144	5.1	2.1
253	Medical Practitioners	613	694	820	966	1021	3.0	2.2
254	Midwifery and Nursing Professionals	2239	2150	2714	3235	3336	1.9	2.1
261	Business and Systems Analysts, and Programmers	1004	987	1461	1462	1484	3.8	0.2
262	Database and Systems Administrators, and ICT Security Specialists	226	218	286	291	298	2.4	0.4
263	ICT Network and Support Professionals	368	354	556	542	540	4.2	-0.3
271	Legal Professionals	498	533	694	756	797	3.4	1.4
272	Social and Welfare Professionals	827	874	1052	1165	1229	2.4	1.6
311	Agricultural, Medical and Science Technicians	393	355	392	444	467	0.0	1.8

**Table 15.48 Total industry resident employment by occupation (minor group) – Banyule (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	579	612	707	652	677	2.0	-0.4
313	ICT and Telecommunications Technicians	549	422	503	512	523	-0.9	0.4
321	Automotive Electricians and Mechanics	400	412	346	336	343	-1.4	-0.1
322	Fabrication Engineering Trades Workers	225	298	179	172	165	-2.2	-0.8
323	Mechanical Engineering Trades Workers	475	398	283	274	269	-5.0	-0.5
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	156	118	104	101	103	-4.0	-0.1
331	Bricklayers, and Carpenters and Joiners	1100	1067	940	744	776	-1.6	-1.9
332	Floor Finishers and Painting Trades Workers	306	294	248	203	220	-2.1	-1.2
333	Glaziers, Plasterers and Tilers	347	261	202	164	174	-5.3	-1.5
334	Plumbers	784	766	594	484	524	-2.7	-1.3
341	Electricians	936	1140	908	781	835	-0.3	-0.8
342	Electronics and Telecommunications Trades Workers	687	764	430	444	459	-4.6	0.7
351	Food Trades Workers	689	706	675	749	813	-0.2	1.9
361	Animal Attendants and Trainers, and Shearers	102	143	132	150	161	2.6	2.0
362	Horticultural Trades Workers	636	587	590	626	695	-0.7	1.7
391	Hairdressers	240	310	243	278	285	0.1	1.6
392	Printing Trades Workers	223	138	148	130	117	-4.1	-2.3
393	Textile, Clothing and Footwear Trades Workers	135	93	82	68	65	-4.9	-2.3
394	Wood Trades Workers	225	201	154	131	126	-3.7	-2.0
399	Miscellaneous Technicians and Trades Workers	335	444	341	362	378	0.2	1.0
411	Health and Welfare Support Workers	661	769	871	974	1033	2.8	1.7
421	Child Carers	724	758	644	685	704	-1.2	0.9
422	Education Aides	357	427	515	522	538	3.8	0.4
423	Personal Carers and Assistants	1219	1294	1348	1509	1583	1.0	1.6
431	Hospitality Workers	1097	1220	1102	1227	1347	0.0	2.0
441	Defence Force Members, Fire Fighters and Police	598	687	640	747	789	0.7	2.1
442	Prison and Security Officers	237	259	299	328	341	2.4	1.3
451	Personal Service and Travel Workers	491	541	485	560	570	-0.1	1.6
452	Sports and Fitness Workers	541	886	745	864	960	3.3	2.6
511	Contract, Program and Project Administrators	819	952	825	858	894	0.1	0.8
512	Office and Practice Managers	941	889	898	940	990	-0.5	1.0
521	Personal Assistants and Secretaries	1003	678	570	607	633	-5.5	1.0
531	General Clerks	1515	1351	1382	1461	1518	-0.9	0.9
532	Keyboard Operators	430	335	326	349	362	-2.8	1.1
541	Call or Contact Centre Information Clerks	651	547	549	572	592	-1.7	0.7
542	Receptionists	1281	1108	1055	1188	1264	-1.9	1.8
551	Accounting Clerks and Bookkeepers	2014	1560	1379	1400	1441	-3.7	0.4
552	Financial and Insurance Clerks	801	657	620	599	590	-2.5	-0.5
561	Clerical and Office Support Workers	669	476	458	510	515	-3.7	1.2

**Table 15.48 Total industry resident employment by occupation (minor group) – Banyule (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	706	641	589	584	584	-1.8	-0.1
599	Miscellaneous Clerical and Administrative Workers	745	736	761	817	862	0.2	1.3
611	Insurance Agents and Sales Representatives	905	773	556	535	530	-4.8	-0.5
612	Real Estate Sales Agents	345	537	375	416	444	0.8	1.7
621	Sales Assistants and Salespersons	3747	3803	3153	3128	3079	-1.7	-0.2
631	Checkout Operators and Office Cashiers	563	760	446	464	468	-2.3	0.5
639	Miscellaneous Sales Support Workers	325	377	240	260	251	-3.0	0.4
711	Machine Operators	225	228	249	221	212	1.0	-1.6
712	Stationary Plant Operators	190	168	147	139	133	-2.5	-1.0
721	Mobile Plant Operators	387	297	243	241	242	-4.5	0.0
731	Automobile, Bus and Rail Drivers	346	346	356	362	370	0.3	0.4
732	Delivery Drivers	213	217	263	275	284	2.1	0.8
733	Truck Drivers	432	455	354	365	382	-2.0	0.8
741	Storepersons	566	492	540	504	494	-0.5	-0.9
811	Cleaners and Laundry Workers	890	877	728	827	904	-2.0	2.2
821	Construction and Mining Labourers	551	627	505	407	428	-0.9	-1.6
831	Food Process Workers	103	97	85	96	101	-2.0	1.7
832	Packers and Product Assemblers	262	335	204	201	203	-2.5	0.0
839	Miscellaneous Factory Process Workers	150	172	114	103	98	-2.7	-1.5
841	Farm, Forestry and Garden Workers	152	196	117	128	156	-2.6	2.9
851	Food Preparation Assistants	711	757	615	696	758	-1.4	2.1
891	Freight Handlers and Shelf Fillers	312	352	262	275	274	-1.7	0.4
899	Miscellaneous Labourers	633	771	570	590	625	-1.0	0.9
	<b>Total</b>	<b>65316</b>	<b>65914</b>	<b>68237</b>	<b>71208</b>	<b>73875</b>	<b>0.4</b>	<b>0.8</b>

Source: NIEIR.



**Table 15.49 Total industry resident employment by occupation (minor group) – Darebin (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	574	753	877	940	968	4.3	1.0
121	Farmers and Farm Managers	39	46	63	70	98	4.9	4.4
131	Advertising, Public Relations and Sales Managers	1056	981	1403	1517	1560	2.9	1.1
132	Business Administration Managers	1037	1245	1925	2095	2186	6.4	1.3
133	Construction, Distribution and Production Managers	1271	1392	1856	1825	1826	3.9	-0.2
134	Education, Health and Welfare Services Managers	456	539	684	758	808	4.1	1.7
135	ICT Managers	364	546	639	665	674	5.8	0.5
139	Miscellaneous Specialist Managers	373	467	667	742	796	6.0	1.8
141	Accommodation and Hospitality Managers	549	601	598	709	758	0.8	2.4
142	Retail Managers	1273	1249	1496	1539	1517	1.6	0.1
149	Miscellaneous Hospitality, Retail and Service Managers	982	1014	1171	1267	1323	1.8	1.2
211	Arts Professionals	490	574	846	911	928	5.6	0.9
212	Media Professionals	653	745	1068	1214	1205	5.0	1.2
221	Accountants, Auditors and Company Secretaries	1176	1177	1448	1586	1652	2.1	1.3
222	Financial Brokers and Dealers, and Investment Advisers	513	500	600	622	637	1.6	0.6
223	Human Resource and Training Professionals	768	690	846	911	945	1.0	1.1
224	Information and Organisation Professionals	1289	1553	2431	2698	2852	6.6	1.6
225	Sales, Marketing and Public Relations Professionals	921	1268	1683	1783	1827	6.2	0.8
231	Air and Marine Transport Professionals	52	60	63	85	84	2.0	2.9
232	Architects, Designers, Planners and Surveyors	1485	1710	2443	2661	2759	5.1	1.2
233	Engineering Professionals	784	758	1023	1067	1110	2.7	0.8
234	Natural and Physical Science Professionals	902	878	1177	1402	1510	2.7	2.5
241	School Teachers	2489	2871	3455	3601	3771	3.3	0.9
242	Tertiary Education Teachers	1053	1186	1521	1752	1885	3.7	2.2
249	Miscellaneous Education Professionals	512	673	985	1074	1177	6.8	1.8
251	Health Diagnostic and Promotion Professionals	516	592	767	862	918	4.0	1.8
252	Health Therapy Professionals	580	759	1112	1273	1385	6.7	2.2
253	Medical Practitioners	472	621	762	905	983	4.9	2.6
254	Midwifery and Nursing Professionals	1597	1621	2104	2521	2712	2.8	2.6
261	Business and Systems Analysts, and Programmers	1216	1213	1878	1947	1977	4.4	0.5
262	Database and Systems Administrators, and ICT Security Specialists	244	241	371	399	414	4.3	1.1
263	ICT Network and Support Professionals	408	451	737	753	753	6.1	0.2
271	Legal Professionals	723	846	1250	1409	1494	5.6	1.8
272	Social and Welfare Professionals	1325	1471	1814	2008	2137	3.2	1.7
311	Agricultural, Medical and Science Technicians	363	332	462	525	565	2.4	2.0

**Table 15.49 Total industry resident employment by occupation (minor group) – Darebin (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	550	569	739	766	793	3.0	0.7
313	ICT and Telecommunications Technicians	602	453	678	709	721	1.2	0.6
321	Automotive Electricians and Mechanics	401	467	397	402	410	-0.1	0.3
322	Fabrication Engineering Trades Workers	253	272	189	184	177	-2.9	-0.6
323	Mechanical Engineering Trades Workers	448	329	270	277	276	-4.9	0.2
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	173	146	139	145	146	-2.2	0.5
331	Bricklayers, and Carpenters and Joiners	939	1003	1052	987	976	1.1	-0.7
332	Floor Finishers and Painting Trades Workers	344	350	300	302	306	-1.4	0.2
333	Glaziers, Plasterers and Tilers	435	467	392	384	388	-1.0	-0.1
334	Plumbers	416	492	453	461	468	0.8	0.3
341	Electricians	597	769	767	794	813	2.5	0.6
342	Electronics and Telecommunications Trades Workers	496	531	359	367	368	-3.2	0.2
351	Food Trades Workers	1431	1631	1603	1858	1988	1.1	2.2
361	Animal Attendants and Trainers, and Shearers	74	120	140	158	164	6.6	1.6
362	Horticultural Trades Workers	572	587	749	834	917	2.7	2.0
391	Hairdressers	284	386	328	355	346	1.4	0.5
392	Printing Trades Workers	235	141	153	139	127	-4.2	-1.9
393	Textile, Clothing and Footwear Trades Workers	245	206	232	205	192	-0.5	-1.9
394	Wood Trades Workers	343	309	271	249	241	-2.3	-1.2
399	Miscellaneous Technicians and Trades Workers	433	695	688	781	811	4.7	1.7
411	Health and Welfare Support Workers	798	993	1154	1275	1362	3.8	1.7
421	Child Carers	657	841	747	813	818	1.3	0.9
422	Education Aides	262	348	456	481	505	5.7	1.0
423	Personal Carers and Assistants	1475	1666	1861	2069	2191	2.4	1.6
431	Hospitality Workers	1698	2408	2218	2594	2792	2.7	2.3
441	Defence Force Members, Fire Fighters and Police	217	354	353	426	462	5.0	2.7
442	Prison and Security Officers	335	411	532	615	657	4.7	2.1
451	Personal Service and Travel Workers	513	669	608	706	696	1.7	1.4
452	Sports and Fitness Workers	404	743	625	710	766	4.5	2.1
511	Contract, Program and Project Administrators	1073	1225	1046	1135	1187	-0.3	1.3
512	Office and Practice Managers	751	737	757	828	871	0.1	1.4
521	Personal Assistants and Secretaries	830	651	572	632	666	-3.7	1.5
531	General Clerks	1346	1298	1368	1500	1576	0.2	1.4
532	Keyboard Operators	451	350	347	387	407	-2.6	1.6
541	Call or Contact Centre Information Clerks	1061	853	864	940	977	-2.0	1.2
542	Receptionists	1055	966	945	1062	1146	-1.1	1.9
551	Accounting Clerks and Bookkeepers	1666	1413	1315	1409	1462	-2.3	1.1
552	Financial and Insurance Clerks	960	797	760	762	755	-2.3	-0.1
561	Clerical and Office Support Workers	789	614	611	728	769	-2.5	2.3

**Table 15.49 Total industry resident employment by occupation (minor group) – Darebin (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	755	717	695	726	731	-0.8	0.5
599	Miscellaneous Clerical and Administrative Workers	831	823	865	956	1007	0.4	1.5
611	Insurance Agents and Sales Representatives	819	822	600	620	623	-3.1	0.4
612	Real Estate Sales Agents	253	492	349	406	439	3.2	2.3
621	Sales Assistants and Salespersons	3861	4739	4013	4097	4028	0.4	0.0
631	Checkout Operators and Office Cashiers	677	1013	606	652	652	-1.1	0.7
639	Miscellaneous Sales Support Workers	411	588	381	431	427	-0.8	1.1
711	Machine Operators	538	402	425	385	363	-2.3	-1.6
712	Stationary Plant Operators	211	186	182	175	170	-1.5	-0.6
721	Mobile Plant Operators	533	476	412	443	449	-2.5	0.9
731	Automobile, Bus and Rail Drivers	673	662	793	924	1004	1.7	2.4
732	Delivery Drivers	292	369	568	647	674	6.9	1.7
733	Truck Drivers	507	586	526	605	643	0.4	2.0
741	Storepersons	834	793	921	920	910	1.0	-0.1
811	Cleaners and Laundry Workers	1560	1731	1465	1707	1909	-0.6	2.7
821	Construction and Mining Labourers	703	852	730	691	696	0.4	-0.5
831	Food Process Workers	236	229	205	224	242	-1.4	1.7
832	Packers and Product Assemblers	590	654	413	407	409	-3.5	-0.1
839	Miscellaneous Factory Process Workers	295	298	194	186	182	-4.1	-0.6
841	Farm, Forestry and Garden Workers	164	267	174	190	251	0.6	3.7
851	Food Preparation Assistants	965	1291	1090	1289	1384	1.2	2.4
891	Freight Handlers and Shelf Fillers	302	440	383	416	417	2.4	0.9
899	Miscellaneous Labourers	632	832	675	734	770	0.7	1.3
	<b>Total</b>	<b>70758</b>	<b>78144</b>	<b>85927</b>	<b>93357</b>	<b>97266</b>	<b>2.0</b>	<b>1.2</b>

Source: NIEIR.

**Table 15.50 Total industry resident employment by occupation (minor group) – Hume (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	453	394	343	377	379	-2.7	1.0
121	Farmers and Farm Managers	90	112	122	285	480	3.1	14.7
131	Advertising, Public Relations and Sales Managers	732	630	755	807	809	0.3	0.7
132	Business Administration Managers	635	580	937	1049	1099	4.0	1.6
133	Construction, Distribution and Production Managers	1550	2088	2525	2699	2522	5.0	0.0
134	Education, Health and Welfare Services Managers	263	324	437	542	595	5.2	3.1
135	ICT Managers	231	329	279	307	324	1.9	1.5
139	Miscellaneous Specialist Managers	234	282	432	490	514	6.3	1.8
141	Accommodation and Hospitality Managers	541	560	402	456	473	-2.9	1.6
142	Retail Managers	1561	1748	1741	1866	1847	1.1	0.6
149	Miscellaneous Hospitality, Retail and Service Managers	1146	1396	1363	1535	1572	1.8	1.4
211	Arts Professionals	118	109	193	259	336	5.0	5.7
212	Media Professionals	93	141	204	255	295	8.2	3.7
221	Accountants, Auditors and Company Secretaries	883	1241	1432	1711	1896	5.0	2.9
222	Financial Brokers and Dealers, and Investment Advisers	370	564	609	702	793	5.1	2.7
223	Human Resource and Training Professionals	582	566	688	823	880	1.7	2.5
224	Information and Organisation Professionals	554	735	1396	1625	1764	9.7	2.4
225	Sales, Marketing and Public Relations Professionals	519	673	838	901	922	4.9	1.0
231	Air and Marine Transport Professionals	133	229	159	220	207	1.8	2.7
232	Architects, Designers, Planners and Surveyors	456	540	772	921	1027	5.4	2.9
233	Engineering Professionals	624	794	1078	1142	1166	5.6	0.8
234	Natural and Physical Science Professionals	291	349	552	733	885	6.6	4.8
241	School Teachers	1571	2364	2363	2701	2810	4.2	1.7
242	Tertiary Education Teachers	302	323	388	495	586	2.5	4.2
249	Miscellaneous Education Professionals	224	342	546	665	797	9.3	3.9
251	Health Diagnostic and Promotion Professionals	344	493	614	718	759	6.0	2.1
252	Health Therapy Professionals	170	288	485	703	876	11.1	6.1
253	Medical Practitioners	131	261	267	403	516	7.4	6.8
254	Midwifery and Nursing Professionals	1196	2244	2813	3811	4550	8.9	4.9
261	Business and Systems Analysts, and Programmers	678	847	1486	1704	1865	8.2	2.3
262	Database and Systems Administrators, and ICT Security Specialists	217	362	422	477	512	6.9	1.9
263	ICT Network and Support Professionals	379	338	757	829	872	7.2	1.4
271	Legal Professionals	146	247	352	459	548	9.2	4.5
272	Social and Welfare Professionals	578	756	850	1092	1242	3.9	3.9
311	Agricultural, Medical and Science Technicians	417	349	619	778	897	4.0	3.8

**Table 15.50 Total industry resident employment by occupation (minor group) – Hume (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	567	630	1088	1125	1090	6.7	0.0
313	ICT and Telecommunications Technicians	380	345	682	766	825	6.0	1.9
321	Automotive Electricians and Mechanics	868	962	1086	1185	1183	2.3	0.9
322	Fabrication Engineering Trades Workers	541	604	683	710	665	2.4	-0.3
323	Mechanical Engineering Trades Workers	1226	821	1120	1373	1301	-0.9	1.5
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	479	442	582	634	619	2.0	0.6
331	Bricklayers, and Carpenters and Joiners	1423	1406	2073	2107	1900	3.8	-0.9
332	Floor Finishers and Painting Trades Workers	602	634	713	757	682	1.7	-0.4
333	Glaziers, Plasterers and Tilers	765	544	615	646	581	-2.1	-0.6
334	Plumbers	669	729	998	1051	959	4.1	-0.4
341	Electricians	964	1017	1598	1707	1558	5.2	-0.3
342	Electronics and Telecommunications Trades Workers	596	549	601	652	618	0.1	0.3
351	Food Trades Workers	1033	1249	1580	1747	1806	4.3	1.3
361	Animal Attendants and Trainers, and Shearers	109	148	257	336	391	9.0	4.3
362	Horticultural Trades Workers	526	452	866	976	949	5.1	0.9
391	Hairdressers	382	445	547	647	677	3.7	2.2
392	Printing Trades Workers	371	197	251	216	178	-3.8	-3.4
393	Textile, Clothing and Footwear Trades Workers	188	115	181	171	167	-0.4	-0.8
394	Wood Trades Workers	505	432	593	543	507	1.6	-1.6
399	Miscellaneous Technicians and Trades Workers	316	384	599	663	712	6.6	1.7
411	Health and Welfare Support Workers	581	697	966	1249	1434	5.2	4.0
421	Child Carers	1031	2001	1824	2300	2452	5.9	3.0
422	Education Aides	632	669	1255	1436	1497	7.1	1.8
423	Personal Carers and Assistants	1820	1886	3025	3905	4454	5.2	3.9
431	Hospitality Workers	1301	1570	1756	1963	2023	3.0	1.4
441	Defence Force Members, Fire Fighters and Police	351	467	625	688	710	6.0	1.3
442	Prison and Security Officers	965	1105	2086	2293	2354	8.0	1.2
451	Personal Service and Travel Workers	647	646	657	882	891	0.2	3.1
452	Sports and Fitness Workers	477	581	625	762	846	2.8	3.1
511	Contract, Program and Project Administrators	444	809	758	835	857	5.5	1.2
512	Office and Practice Managers	921	1081	1212	1348	1370	2.8	1.2
521	Personal Assistants and Secretaries	865	573	467	554	595	-6.0	2.5
531	General Clerks	1154	1752	2194	2481	2544	6.6	1.5
532	Keyboard Operators	643	582	699	795	825	0.8	1.7
541	Call or Contact Centre Information Clerks	1260	1211	1374	1574	1644	0.9	1.8
542	Receptionists	1486	1556	1467	1804	2004	-0.1	3.2
551	Accounting Clerks and Bookkeepers	2463	2549	2704	2989	3016	0.9	1.1
552	Financial and Insurance Clerks	1237	1170	1227	1290	1354	-0.1	1.0
561	Clerical and Office Support Workers	987	919	845	1142	1240	-1.5	3.9

**Table 15.50 Total industry resident employment by occupation (minor group) – Hume (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	1819	1998	2191	2365	2292	1.9	0.5
599	Miscellaneous Clerical and Administrative Workers	764	1039	1172	1433	1592	4.4	3.1
611	Insurance Agents and Sales Representatives	808	924	955	992	973	1.7	0.2
612	Real Estate Sales Agents	360	508	669	828	903	6.4	3.0
621	Sales Assistants and Salespersons	5437	6435	6639	7030	6924	2.0	0.4
631	Checkout Operators and Office Cashiers	1352	1472	1793	1905	1886	2.9	0.5
639	Miscellaneous Sales Support Workers	597	774	731	926	897	2.1	2.1
711	Machine Operators	744	655	760	705	627	0.2	-1.9
712	Stationary Plant Operators	412	451	480	498	463	1.5	-0.4
721	Mobile Plant Operators	1579	1936	1802	2109	1967	1.3	0.9
731	Automobile, Bus and Rail Drivers	941	1671	2265	2749	2715	9.2	1.8
732	Delivery Drivers	418	549	891	1050	1061	7.9	1.8
733	Truck Drivers	1545	2480	2440	2918	2853	4.7	1.6
741	Storepersons	1483	2044	2622	2775	2694	5.9	0.3
811	Cleaners and Laundry Workers	2065	1962	2111	2566	2749	0.2	2.7
821	Construction and Mining Labourers	1390	1352	1976	2029	1841	3.6	-0.7
831	Food Process Workers	617	557	638	679	711	0.3	1.1
832	Packers and Product Assemblers	1506	1289	1395	1383	1342	-0.8	-0.4
839	Miscellaneous Factory Process Workers	536	495	530	509	470	-0.1	-1.2
841	Farm, Forestry and Garden Workers	257	270	289	344	360	1.2	2.2
851	Food Preparation Assistants	1506	1436	2001	2284	2358	2.9	1.7
891	Freight Handlers and Shelf Fillers	717	718	1092	1215	1197	4.3	0.9
899	Miscellaneous Labourers	999	1095	1568	1710	1671	4.6	0.6
	<b>Total</b>	<b>78037</b>	<b>89638</b>	<b>108710</b>	<b>123844</b>	<b>127641</b>	<b>3.4</b>	<b>1.6</b>

Source: NIEIR.



**Table 15.51 Total industry resident employment by occupation (minor group) – Mitchell (S)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	121	139	167	190	238	3.3	3.6
121	Farmers and Farm Managers	323	272	489	435	426	4.2	-1.4
131	Advertising, Public Relations and Sales Managers	107	80	152	221	262	3.6	5.6
132	Business Administration Managers	138	141	293	352	447	7.8	4.3
133	Construction, Distribution and Production Managers	395	421	769	816	951	6.9	2.1
134	Education, Health and Welfare Services Managers	93	106	179	206	260	6.8	3.8
135	ICT Managers	31	44	54	64	82	5.5	4.4
139	Miscellaneous Specialist Managers	221	272	454	687	795	7.5	5.8
141	Accommodation and Hospitality Managers	127	117	137	164	212	0.7	4.5
142	Retail Managers	321	329	543	650	748	5.4	3.3
149	Miscellaneous Hospitality, Retail and Service Managers	215	269	434	514	615	7.3	3.5
211	Arts Professionals	27	32	54	63	96	7.1	6.0
212	Media Professionals	35	33	44	53	68	2.1	4.5
221	Accountants, Auditors and Company Secretaries	132	184	206	275	394	4.6	6.7
222	Financial Brokers and Dealers, and Investment Advisers	44	74	77	94	122	5.7	4.8
223	Human Resource and Training Professionals	175	196	232	321	405	2.9	5.7
224	Information and Organisation Professionals	91	118	217	273	361	9.1	5.2
225	Sales, Marketing and Public Relations Professionals	84	110	134	154	189	4.8	3.5
231	Air and Marine Transport Professionals	13	35	31	43	47	8.9	4.3
232	Architects, Designers, Planners and Surveyors	80	82	108	125	161	3.1	4.1
233	Engineering Professionals	81	113	150	161	189	6.4	2.4
234	Natural and Physical Science Professionals	76	108	170	216	289	8.3	5.4
241	School Teachers	490	554	586	708	871	1.8	4.0
242	Tertiary Education Teachers	66	73	84	105	148	2.4	5.8
249	Miscellaneous Education Professionals	44	62	97	128	200	8.3	7.5
251	Health Diagnostic and Promotion Professionals	66	112	138	169	214	7.6	4.5
252	Health Therapy Professionals	41	57	95	123	173	8.7	6.2
253	Medical Practitioners	32	44	44	58	82	3.5	6.2
254	Midwifery and Nursing Professionals	410	575	725	885	1190	5.9	5.1
261	Business and Systems Analysts, and Programmers	40	84	147	181	251	14.0	5.5
262	Database and Systems Administrators, and ICT Security Specialists	20	41	47	55	70	8.8	4.2
263	ICT Network and Support Professionals	29	31	63	78	99	8.2	4.5
271	Legal Professionals	23	53	75	99	140	12.6	6.4
272	Social and Welfare Professionals	139	174	192	233	312	3.3	5.0
311	Agricultural, Medical and Science Technicians	67	63	96	127	165	3.7	5.5

**Table 15.51 Total industry resident employment by occupation (minor group) – Mitchell (S) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	133	179	249	272	348	6.5	3.4
313	ICT and Telecommunications Technicians	39	41	71	86	117	6.2	5.2
321	Automotive Electricians and Mechanics	263	332	335	355	426	2.4	2.4
322	Fabrication Engineering Trades Workers	204	291	250	256	293	2.0	1.6
323	Mechanical Engineering Trades Workers	259	326	338	361	394	2.7	1.5
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	88	129	150	159	184	5.4	2.1
331	Bricklayers, and Carpenters and Joiners	344	415	524	489	630	4.3	1.9
332	Floor Finishers and Painting Trades Workers	72	86	85	85	112	1.6	2.8
333	Glaziers, Plasterers and Tilers	113	115	107	105	137	-0.6	2.5
334	Plumbers	200	291	324	322	425	5.0	2.7
341	Electricians	189	263	313	321	417	5.2	2.9
342	Electronics and Telecommunications Trades Workers	135	191	156	169	213	1.5	3.1
351	Food Trades Workers	216	251	281	330	419	2.7	4.1
361	Animal Attendants and Trainers, and Shearers	102	123	166	218	304	5.0	6.2
362	Horticultural Trades Workers	209	251	377	435	548	6.1	3.8
391	Hairdressers	74	104	103	143	218	3.5	7.7
392	Printing Trades Workers	62	48	54	49	47	-1.3	-1.3
393	Textile, Clothing and Footwear Trades Workers	13	20	27	20	21	7.3	-2.3
394	Wood Trades Workers	87	101	107	103	114	2.1	0.7
399	Miscellaneous Technicians and Trades Workers	75	138	164	196	251	8.1	4.4
411	Health and Welfare Support Workers	177	265	304	363	488	5.5	4.9
421	Child Carers	217	290	251	279	355	1.5	3.5
422	Education Aides	122	149	211	251	301	5.6	3.6
423	Personal Carers and Assistants	341	425	537	613	810	4.7	4.2
431	Hospitality Workers	281	334	333	401	536	1.7	4.9
441	Defence Force Members, Fire Fighters and Police	430	503	589	816	919	3.2	4.5
442	Prison and Security Officers	96	133	188	224	255	6.9	3.1
451	Personal Service and Travel Workers	131	147	135	187	263	0.3	6.9
452	Sports and Fitness Workers	95	123	128	177	245	3.0	6.7
511	Contract, Program and Project Administrators	122	127	150	188	245	2.2	5.0
512	Office and Practice Managers	225	252	304	348	440	3.1	3.8
521	Personal Assistants and Secretaries	190	133	120	144	193	-4.5	4.9
531	General Clerks	440	451	546	650	814	2.2	4.1
532	Keyboard Operators	96	91	112	122	147	1.6	2.7
541	Call or Contact Centre Information Clerks	103	133	177	213	263	5.6	4.1
542	Receptionists	234	260	272	330	443	1.5	5.0
551	Accounting Clerks and Bookkeepers	449	436	552	626	782	2.1	3.6
552	Financial and Insurance Clerks	139	130	139	161	214	-0.1	4.4
561	Clerical and Office Support Workers	177	179	195	272	340	1.0	5.7

**Table 15.51 Total industry resident employment by occupation (minor group) – Mitchell (S) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	261	248	327	373	414	2.3	2.4
599	Miscellaneous Clerical and Administrative Workers	160	179	203	273	355	2.4	5.7
611	Insurance Agents and Sales Representatives	154	146	95	104	124	-4.8	2.8
612	Real Estate Sales Agents	65	95	58	75	101	-1.2	5.7
621	Sales Assistants and Salespersons	1086	1359	1028	1159	1331	-0.6	2.6
631	Checkout Operators and Office Cashiers	185	291	153	180	207	-1.9	3.0
639	Miscellaneous Sales Support Workers	50	77	45	60	67	-1.1	4.0
711	Machine Operators	122	136	154	165	172	2.4	1.1
712	Stationary Plant Operators	148	126	131	134	164	-1.2	2.2
721	Mobile Plant Operators	353	381	389	432	520	1.0	2.9
731	Automobile, Bus and Rail Drivers	129	167	217	264	289	5.4	2.9
732	Delivery Drivers	66	69	113	135	156	5.6	3.3
733	Truck Drivers	559	632	699	801	890	2.3	2.4
741	Storepersons	219	251	307	341	386	3.5	2.3
811	Cleaners and Laundry Workers	408	435	417	494	636	0.2	4.3
821	Construction and Mining Labourers	483	467	546	558	736	1.2	3.0
831	Food Process Workers	223	213	212	225	245	-0.5	1.4
832	Packers and Product Assemblers	124	133	139	148	163	1.2	1.6
839	Miscellaneous Factory Process Workers	93	82	82	80	89	-1.3	0.8
841	Farm, Forestry and Garden Workers	285	212	214	222	247	-2.8	1.5
851	Food Preparation Assistants	305	322	349	429	570	1.4	5.0
891	Freight Handlers and Shelf Fillers	154	106	136	166	188	-1.3	3.3
899	Miscellaneous Labourers	237	241	290	335	428	2.1	3.9
	<b>Total</b>	<b>17206</b>	<b>19824</b>	<b>23214</b>	<b>27020</b>	<b>33423</b>	<b>3.0</b>	<b>3.7</b>

Source: NIEIR.

**Table 15.52 Total industry resident employment by occupation (minor group) – Moreland (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	551	785	804	854	890	3.9	1.0
121	Farmers and Farm Managers	33	31	32	47	93	-0.4	11.2
131	Advertising, Public Relations and Sales Managers	996	1231	1464	1543	1585	3.9	0.8
132	Business Administration Managers	1071	1400	1991	2168	2282	6.4	1.4
133	Construction, Distribution and Production Managers	1444	1645	1914	1861	1870	2.9	-0.2
134	Education, Health and Welfare Services Managers	459	600	692	764	814	4.2	1.6
135	ICT Managers	332	686	716	765	800	8.0	1.1
139	Miscellaneous Specialist Managers	431	563	710	784	827	5.1	1.5
141	Accommodation and Hospitality Managers	585	894	689	791	846	1.7	2.1
142	Retail Managers	1211	1503	1458	1515	1517	1.9	0.4
149	Miscellaneous Hospitality, Retail and Service Managers	1057	1431	1359	1492	1557	2.5	1.4
211	Arts Professionals	630	662	1001	1057	1072	4.7	0.7
212	Media Professionals	705	1119	1542	1736	1713	8.1	1.1
221	Accountants, Auditors and Company Secretaries	1439	1724	1840	2000	2091	2.5	1.3
222	Financial Brokers and Dealers, and Investment Advisers	680	843	840	874	914	2.1	0.9
223	Human Resource and Training Professionals	1060	923	1056	1144	1187	0.0	1.2
224	Information and Organisation Professionals	1779	1963	3442	3844	4121	6.8	1.8
225	Sales, Marketing and Public Relations Professionals	1208	1610	1932	2068	2135	4.8	1.0
231	Air and Marine Transport Professionals	91	132	128	167	155	3.4	1.9
232	Architects, Designers, Planners and Surveyors	2018	2453	3309	3576	3721	5.1	1.2
233	Engineering Professionals	1064	1223	1545	1623	1700	3.8	1.0
234	Natural and Physical Science Professionals	1137	1023	1476	1743	1912	2.6	2.6
241	School Teachers	2783	3450	3952	4173	4312	3.6	0.9
242	Tertiary Education Teachers	1098	1372	1663	2019	2271	4.2	3.2
249	Miscellaneous Education Professionals	641	752	1116	1207	1306	5.7	1.6
251	Health Diagnostic and Promotion Professionals	617	870	1019	1168	1269	5.1	2.2
252	Health Therapy Professionals	658	774	1206	1436	1595	6.3	2.8
253	Medical Practitioners	447	678	678	839	947	4.3	3.4
254	Midwifery and Nursing Professionals	1698	2261	2681	3286	3673	4.7	3.2
261	Business and Systems Analysts, and Programmers	1617	1738	2829	2995	3125	5.8	1.0
262	Database and Systems Administrators, and ICT Security Specialists	407	478	504	544	570	2.1	1.2
263	ICT Network and Support Professionals	547	563	997	1037	1066	6.2	0.7
271	Legal Professionals	1006	1373	1790	2007	2139	5.9	1.8
272	Social and Welfare Professionals	1549	1902	2039	2257	2412	2.8	1.7
311	Agricultural, Medical and Science Technicians	343	405	507	586	639	4.0	2.3

**Table 15.52 Total industry resident employment by occupation (minor group) – Moreland (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	614	736	907	919	958	4.0	0.5
313	ICT and Telecommunications Technicians	475	566	790	853	900	5.2	1.3
321	Automotive Electricians and Mechanics	476	492	488	511	531	0.2	0.9
322	Fabrication Engineering Trades Workers	228	208	193	203	200	-1.6	0.4
323	Mechanical Engineering Trades Workers	414	309	324	352	347	-2.4	0.7
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	225	177	181	196	203	-2.1	1.1
331	Bricklayers, and Carpenters and Joiners	921	1034	1136	1045	1057	2.1	-0.7
332	Floor Finishers and Painting Trades Workers	346	397	399	390	398	1.4	0.0
333	Glaziers, Plasterers and Tilers	394	341	335	318	325	-1.6	-0.3
334	Plumbers	433	478	492	480	491	1.3	0.0
341	Electricians	622	708	850	863	887	3.2	0.4
342	Electronics and Telecommunications Trades Workers	397	411	386	407	416	-0.3	0.7
351	Food Trades Workers	1416	1822	2003	2252	2378	3.5	1.7
361	Animal Attendants and Trainers, and Shearers	90	134	169	191	200	6.5	1.7
362	Horticultural Trades Workers	401	421	568	632	706	3.5	2.2
391	Hairdressers	314	349	360	389	378	1.4	0.5
392	Printing Trades Workers	194	178	205	191	177	0.5	-1.5
393	Textile, Clothing and Footwear Trades Workers	193	130	146	137	133	-2.7	-1.0
394	Wood Trades Workers	259	242	256	238	231	-0.1	-1.0
399	Miscellaneous Technicians and Trades Workers	454	558	683	747	783	4.2	1.4
411	Health and Welfare Support Workers	805	1025	1167	1305	1400	3.8	1.8
421	Child Carers	699	1124	1002	1080	1128	3.7	1.2
422	Education Aides	326	472	658	704	732	7.3	1.1
423	Personal Carers and Assistants	1492	1473	1746	1934	2044	1.6	1.6
431	Hospitality Workers	1942	2606	2640	3004	3192	3.1	1.9
441	Defence Force Members, Fire Fighters and Police	281	340	385	435	458	3.2	1.8
442	Prison and Security Officers	567	596	802	898	946	3.5	1.7
451	Personal Service and Travel Workers	754	708	662	767	763	-1.3	1.4
452	Sports and Fitness Workers	514	641	640	706	752	2.2	1.6
511	Contract, Program and Project Administrators	1142	1440	1430	1568	1664	2.3	1.5
512	Office and Practice Managers	744	837	975	1060	1116	2.7	1.4
521	Personal Assistants and Secretaries	849	807	734	809	860	-1.5	1.6
531	General Clerks	1538	1598	1859	2044	2162	1.9	1.5
532	Keyboard Operators	506	381	433	468	489	-1.6	1.2
541	Call or Contact Centre Information Clerks	1238	1076	1268	1388	1458	0.2	1.4
542	Receptionists	1037	1106	1109	1265	1380	0.7	2.2
551	Accounting Clerks and Bookkeepers	1564	1545	1722	1836	1906	1.0	1.0
552	Financial and Insurance Clerks	1027	1009	1028	1046	1053	0.0	0.2
561	Clerical and Office Support Workers	786	635	643	766	834	-2.0	2.6

**Table 15.52 Total industry resident employment by occupation (minor group) – Moreland (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	833	934	1084	1133	1140	2.7	0.5
599	Miscellaneous Clerical and Administrative Workers	1024	1137	1235	1371	1458	1.9	1.7
611	Insurance Agents and Sales Representatives	969	924	837	859	864	-1.5	0.3
612	Real Estate Sales Agents	279	364	362	432	472	2.6	2.7
621	Sales Assistants and Salespersons	4202	4966	4780	4906	4893	1.3	0.2
631	Checkout Operators and Office Cashiers	657	681	654	686	686	0.0	0.5
639	Miscellaneous Sales Support Workers	474	570	509	584	572	0.7	1.2
711	Machine Operators	475	411	468	439	421	-0.1	-1.0
712	Stationary Plant Operators	203	154	157	156	154	-2.5	-0.2
721	Mobile Plant Operators	587	494	510	541	534	-1.4	0.4
731	Automobile, Bus and Rail Drivers	789	933	1153	1363	1464	3.9	2.4
732	Delivery Drivers	250	298	431	480	503	5.6	1.6
733	Truck Drivers	558	562	598	752	798	0.7	2.9
741	Storepersons	776	821	1032	1056	1051	2.9	0.2
811	Cleaners and Laundry Workers	1521	1904	1762	2047	2339	1.5	2.9
821	Construction and Mining Labourers	757	796	784	718	721	0.4	-0.8
831	Food Process Workers	252	275	263	288	305	0.4	1.5
832	Packers and Product Assemblers	538	438	370	372	376	-3.7	0.2
839	Miscellaneous Factory Process Workers	260	187	166	162	157	-4.4	-0.6
841	Farm, Forestry and Garden Workers	125	146	130	154	203	0.4	4.6
851	Food Preparation Assistants	1032	1232	1229	1403	1490	1.8	1.9
891	Freight Handlers and Shelf Fillers	381	362	364	388	390	-0.5	0.7
899	Miscellaneous Labourers	730	802	783	832	864	0.7	1.0
	<b>Total</b>	<b>77745</b>	<b>89562</b>	<b>102355</b>	<b>111494</b>	<b>117016</b>	<b>2.8</b>	<b>1.3</b>

Source: NIEIR.



**Table 15.53 Total industry resident employment by occupation (minor group) – Nillumbik (S)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	628	615	676	657	680	0.7	0.0
121	Farmers and Farm Managers	101	95	101	91	114	0.0	1.2
131	Advertising, Public Relations and Sales Managers	696	603	738	699	699	0.6	-0.5
132	Business Administration Managers	630	590	770	758	779	2.0	0.1
133	Construction, Distribution and Production Managers	1181	1125	1346	1216	1256	1.3	-0.7
134	Education, Health and Welfare Services Managers	304	327	396	418	434	2.7	0.9
135	ICT Managers	200	294	335	325	331	5.3	-0.1
139	Miscellaneous Specialist Managers	223	244	334	350	366	4.1	0.9
141	Accommodation and Hospitality Managers	180	171	162	175	203	-1.0	2.3
142	Retail Managers	645	563	604	582	579	-0.6	-0.4
149	Miscellaneous Hospitality, Retail and Service Managers	542	541	589	631	659	0.8	1.1
211	Arts Professionals	146	164	235	229	232	4.8	-0.1
212	Media Professionals	147	163	220	219	215	4.1	-0.2
221	Accountants, Auditors and Company Secretaries	598	548	649	660	698	0.8	0.7
222	Financial Brokers and Dealers, and Investment Advisers	293	289	327	300	303	1.1	-0.8
223	Human Resource and Training Professionals	315	264	313	320	332	-0.1	0.6
224	Information and Organisation Professionals	448	527	794	831	878	5.9	1.0
225	Sales, Marketing and Public Relations Professionals	430	502	639	614	615	4.0	-0.4
231	Air and Marine Transport Professionals	76	68	67	87	74	-1.2	1.0
232	Architects, Designers, Planners and Surveyors	483	435	566	555	581	1.6	0.3
233	Engineering Professionals	465	427	550	513	542	1.7	-0.2
234	Natural and Physical Science Professionals	356	342	445	522	558	2.3	2.3
241	School Teachers	1690	1723	1984	1934	1937	1.6	-0.2
242	Tertiary Education Teachers	402	407	502	537	581	2.2	1.5
249	Miscellaneous Education Professionals	196	203	274	289	343	3.4	2.3
251	Health Diagnostic and Promotion Professionals	236	241	294	316	332	2.2	1.2
252	Health Therapy Professionals	243	267	364	394	428	4.1	1.6
253	Medical Practitioners	171	160	184	205	220	0.7	1.8
254	Midwifery and Nursing Professionals	1123	1044	1304	1485	1543	1.5	1.7
261	Business and Systems Analysts, and Programmers	407	339	488	472	482	1.8	-0.1
262	Database and Systems Administrators, and ICT Security Specialists	86	91	116	116	118	3.1	0.1
263	ICT Network and Support Professionals	164	140	216	201	199	2.8	-0.8
271	Legal Professionals	174	161	205	216	232	1.6	1.2
272	Social and Welfare Professionals	474	496	592	634	668	2.2	1.2
311	Agricultural, Medical and Science Technicians	181	142	148	158	166	-1.9	1.1

**Table 15.53 Total industry resident employment by occupation (minor group) – Nillumbik (S) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	405	393	445	415	458	1.0	0.3
313	ICT and Telecommunications Technicians	198	159	183	177	179	-0.8	-0.2
321	Automotive Electricians and Mechanics	287	292	247	233	235	-1.5	-0.5
322	Fabrication Engineering Trades Workers	146	174	103	93	89	-3.5	-1.4
323	Mechanical Engineering Trades Workers	313	253	179	163	157	-5.4	-1.3
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	116	89	79	75	76	-3.8	-0.4
331	Bricklayers, and Carpenters and Joiners	938	917	809	747	848	-1.5	0.5
332	Floor Finishers and Painting Trades Workers	138	131	110	110	129	-2.2	1.6
333	Glaziers, Plasterers and Tilers	177	139	109	106	121	-4.8	1.1
334	Plumbers	718	726	568	563	657	-2.3	1.5
341	Electricians	711	871	650	644	737	-0.9	1.3
342	Electronics and Telecommunications Trades Workers	323	355	197	190	196	-4.8	-0.1
351	Food Trades Workers	300	261	246	262	291	-2.0	1.7
361	Animal Attendants and Trainers, and Shearers	91	135	120	131	147	2.8	2.0
362	Horticultural Trades Workers	574	466	427	465	534	-2.9	2.3
391	Hairdressers	143	189	150	164	182	0.5	1.9
392	Printing Trades Workers	125	70	73	59	49	-5.3	-3.8
393	Textile, Clothing and Footwear Trades Workers	59	39	32	25	24	-5.9	-2.6
394	Wood Trades Workers	156	134	102	85	80	-4.1	-2.4
399	Miscellaneous Technicians and Trades Workers	239	311	226	226	235	-0.6	0.4
411	Health and Welfare Support Workers	390	455	511	552	583	2.7	1.3
421	Child Carers	357	403	344	353	339	-0.4	-0.1
422	Education Aides	258	280	330	323	325	2.5	-0.1
423	Personal Carers and Assistants	568	628	658	710	738	1.5	1.2
431	Hospitality Workers	624	721	658	709	820	0.5	2.2
441	Defence Force Members, Fire Fighters and Police	338	415	392	421	420	1.5	0.7
442	Prison and Security Officers	84	113	132	137	135	4.7	0.2
451	Personal Service and Travel Workers	287	319	288	320	320	0.0	1.1
452	Sports and Fitness Workers	392	548	455	529	624	1.5	3.2
511	Contract, Program and Project Administrators	403	471	411	416	436	0.2	0.6
512	Office and Practice Managers	673	650	657	648	692	-0.2	0.5
521	Personal Assistants and Secretaries	569	390	328	332	350	-5.4	0.7
531	General Clerks	925	799	806	816	854	-1.4	0.6
532	Keyboard Operators	260	173	164	171	180	-4.5	0.9
541	Call or Contact Centre Information Clerks	293	251	254	251	259	-1.4	0.2
542	Receptionists	820	678	638	680	735	-2.5	1.4
551	Accounting Clerks and Bookkeepers	1344	1019	906	902	951	-3.9	0.5
552	Financial and Insurance Clerks	297	225	210	188	183	-3.4	-1.3
561	Clerical and Office Support Workers	284	179	168	190	204	-5.1	2.0

**Table 15.53 Total industry resident employment by occupation (minor group) – Nillumbik (S) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	329	273	250	238	229	-2.7	-0.9
599	Miscellaneous Clerical and Administrative Workers	344	370	384	400	418	1.1	0.8
611	Insurance Agents and Sales Representatives	612	475	338	309	299	-5.8	-1.2
612	Real Estate Sales Agents	167	257	180	187	193	0.8	0.7
621	Sales Assistants and Salespersons	2227	2284	1890	1845	1816	-1.6	-0.4
631	Checkout Operators and Office Cashiers	367	404	229	236	237	-4.6	0.3
639	Miscellaneous Sales Support Workers	195	204	129	134	125	-4.0	-0.3
711	Machine Operators	92	84	90	73	70	-0.3	-2.4
712	Stationary Plant Operators	110	105	94	80	81	-1.6	-1.4
721	Mobile Plant Operators	296	227	188	178	193	-4.5	0.3
731	Automobile, Bus and Rail Drivers	141	142	147	155	160	0.4	0.9
732	Delivery Drivers	97	88	102	109	114	0.5	1.1
733	Truck Drivers	230	265	208	224	242	-1.0	1.5
741	Storepersons	176	187	213	196	197	1.9	-0.8
811	Cleaners and Laundry Workers	304	335	282	320	355	-0.7	2.3
821	Construction and Mining Labourers	416	484	392	369	426	-0.6	0.8
831	Food Process Workers	33	29	25	26	27	-2.8	0.9
832	Packers and Product Assemblers	112	127	77	68	66	-3.7	-1.5
839	Miscellaneous Factory Process Workers	59	60	40	35	32	-4.0	-2.0
841	Farm, Forestry and Garden Workers	154	187	111	119	142	-3.2	2.5
851	Food Preparation Assistants	376	403	330	358	411	-1.3	2.2
891	Freight Handlers and Shelf Fillers	194	192	138	141	139	-3.3	0.1
899	Miscellaneous Labourers	295	415	315	324	354	0.7	1.2
	<b>Total</b>	<b>37285</b>	<b>36729</b>	<b>37047</b>	<b>37415</b>	<b>39276</b>	<b>-0.1</b>	<b>0.6</b>

Source: NIEIR.

**Table 15.54 Total industry resident employment by occupation (minor group) – Whittlesea (C)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
111	Chief Executives, General Managers and Legislators	349	474	552	597	656	4.7	1.7
121	Farmers and Farm Managers	120	124	197	192	258	5.1	2.8
131	Advertising, Public Relations and Sales Managers	645	690	1169	1212	1293	6.1	1.0
132	Business Administration Managers	561	727	1325	1431	1571	9.0	1.7
133	Construction, Distribution and Production Managers	1682	1856	2913	2816	2989	5.6	0.3
134	Education, Health and Welfare Services Managers	277	424	629	748	835	8.6	2.9
135	ICT Managers	215	411	492	518	565	8.6	1.4
139	Miscellaneous Specialist Managers	285	390	576	630	696	7.3	1.9
141	Accommodation and Hospitality Managers	412	580	611	726	830	4.0	3.1
142	Retail Managers	1616	1791	2563	2695	2787	4.7	0.8
149	Miscellaneous Hospitality, Retail and Service Managers	984	1209	1663	1839	2005	5.4	1.9
211	Arts Professionals	112	134	206	261	344	6.3	5.3
212	Media Professionals	117	121	194	221	254	5.2	2.7
221	Accountants, Auditors and Company Secretaries	1023	1241	1658	1850	2132	4.9	2.5
222	Financial Brokers and Dealers, and Investment Advisers	329	435	596	631	704	6.1	1.7
223	Human Resource and Training Professionals	495	522	654	749	841	2.8	2.5
224	Information and Organisation Professionals	530	723	1270	1406	1585	9.1	2.2
225	Sales, Marketing and Public Relations Professionals	518	679	898	934	1009	5.7	1.2
231	Air and Marine Transport Professionals	47	55	59	89	79	2.3	2.9
232	Architects, Designers, Planners and Surveyors	437	473	752	824	938	5.6	2.2
233	Engineering Professionals	609	735	1116	1165	1303	6.2	1.6
234	Natural and Physical Science Professionals	351	409	610	721	849	5.7	3.4
241	School Teachers	1802	2519	3108	3530	3937	5.6	2.4
242	Tertiary Education Teachers	390	514	672	785	888	5.6	2.8
249	Miscellaneous Education Professionals	193	312	516	631	803	10.3	4.5
251	Health Diagnostic and Promotion Professionals	325	469	684	769	853	7.7	2.2
252	Health Therapy Professionals	234	358	594	716	852	9.8	3.7
253	Medical Practitioners	188	301	376	455	535	7.2	3.6
254	Midwifery and Nursing Professionals	1869	2411	3436	4228	4756	6.3	3.3
261	Business and Systems Analysts, and Programmers	661	905	1591	1695	1861	9.2	1.6
262	Database and Systems Administrators, and ICT Security Specialists	194	236	438	473	519	8.5	1.7
263	ICT Network and Support Professionals	338	421	749	773	833	8.3	1.1
271	Legal Professionals	130	169	291	351	427	8.4	3.9
272	Social and Welfare Professionals	532	684	904	1097	1265	5.4	3.4
311	Agricultural, Medical and Science Technicians	361	526	927	1073	1222	9.9	2.8

**Table 15.54 Total industry resident employment by occupation (minor group) – Whittlesea (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
312	Building and Engineering Technicians	675	837	1304	1296	1516	6.8	1.5
313	ICT and Telecommunications Technicians	437	536	1031	1104	1203	9.0	1.5
321	Automotive Electricians and Mechanics	858	1123	1131	1160	1213	2.8	0.7
322	Fabrication Engineering Trades Workers	573	822	728	725	741	2.4	0.2
323	Mechanical Engineering Trades Workers	885	893	949	956	974	0.7	0.3
324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	450	502	598	609	623	2.9	0.4
331	Bricklayers, and Carpenters and Joiners	1550	1965	2567	2231	2617	5.2	0.2
332	Floor Finishers and Painting Trades Workers	575	717	735	658	812	2.5	1.0
333	Glaziers, Plasterers and Tilers	794	804	790	699	854	0.0	0.8
334	Plumbers	871	1131	1286	1166	1437	4.0	1.1
341	Electricians	1114	1573	1935	1811	2129	5.7	1.0
342	Electronics and Telecommunications Trades Workers	666	1029	893	910	986	3.0	1.0
351	Food Trades Workers	1195	1623	1953	2249	2508	5.0	2.5
361	Animal Attendants and Trainers, and Shearers	113	215	315	388	473	10.8	4.2
362	Horticultural Trades Workers	558	644	1017	1136	1339	6.2	2.8
391	Hairdressers	479	750	781	1008	1179	5.0	4.2
392	Printing Trades Workers	380	298	377	338	313	-0.1	-1.8
393	Textile, Clothing and Footwear Trades Workers	229	193	266	245	243	1.5	-0.9
394	Wood Trades Workers	539	594	653	577	576	1.9	-1.2
399	Miscellaneous Technicians and Trades Workers	279	477	580	646	730	7.6	2.3
411	Health and Welfare Support Workers	611	1083	1301	1580	1820	7.9	3.4
421	Child Carers	1020	1803	1650	1972	2144	4.9	2.7
422	Education Aides	467	656	1013	1147	1273	8.0	2.3
423	Personal Carers and Assistants	2101	3003	4105	5056	5770	6.9	3.5
431	Hospitality Workers	1109	1595	1554	1787	2025	3.4	2.7
441	Defence Force Members, Fire Fighters and Police	421	610	732	911	1032	5.7	3.5
442	Prison and Security Officers	521	836	1310	1542	1707	9.7	2.7
451	Personal Service and Travel Workers	580	777	738	949	1085	2.4	3.9
452	Sports and Fitness Workers	334	567	547	680	820	5.1	4.1
511	Contract, Program and Project Administrators	560	787	819	890	997	3.9	2.0
512	Office and Practice Managers	887	1050	1229	1348	1526	3.3	2.2
521	Personal Assistants and Secretaries	846	757	672	761	877	-2.3	2.7
531	General Clerks	1875	1870	2142	2390	2666	1.3	2.2
532	Keyboard Operators	572	515	610	680	754	0.7	2.1
541	Call or Contact Centre Information Clerks	1206	1108	1355	1534	1709	1.2	2.4
542	Receptionists	1419	1551	1539	1797	2090	0.8	3.1
551	Accounting Clerks and Bookkeepers	2440	2367	2736	2943	3266	1.2	1.8
552	Financial and Insurance Clerks	1191	1227	1268	1309	1406	0.6	1.0
561	Clerical and Office Support Workers	882	864	890	1109	1206	0.1	3.1

**Table 15.54 Total industry resident employment by occupation (minor group) – Whittlesea (C) (continued)**

		Number					Annual growth (%)	
		2011	2016	2021	2026	2031	2011 to 2021	2021 to 2031
591	Logistics Clerks	1139	1336	1625	1687	1752	3.6	0.8
599	Miscellaneous Clerical and Administrative Workers	872	1028	1117	1300	1498	2.5	3.0
611	Insurance Agents and Sales Representatives	1126	1145	882	894	943	-2.4	0.7
612	Real Estate Sales Agents	348	625	487	585	679	3.4	3.4
621	Sales Assistants and Salespersons	5635	7301	6409	6624	6803	1.3	0.6
631	Checkout Operators and Office Cashiers	970	1690	1148	1237	1274	1.7	1.0
639	Miscellaneous Sales Support Workers	459	657	448	519	540	-0.3	1.9
711	Machine Operators	1052	1115	1249	1136	1101	1.7	-1.3
712	Stationary Plant Operators	535	525	642	807	830	1.8	2.6
721	Mobile Plant Operators	1306	1418	1511	1589	1681	1.5	1.1
731	Automobile, Bus and Rail Drivers	1027	1569	2427	2826	2953	9.0	2.0
732	Delivery Drivers	398	566	1074	1231	1331	10.4	2.2
733	Truck Drivers	1519	2222	2516	2944	3143	5.2	2.2
741	Storepersons	1254	1610	2372	2409	2462	6.6	0.4
811	Cleaners and Laundry Workers	2002	2348	2054	2477	2849	0.3	3.3
821	Construction and Mining Labourers	1470	1918	1989	1752	2108	3.1	0.6
831	Food Process Workers	579	676	620	668	729	0.7	1.6
832	Packers and Product Assemblers	1189	1582	1224	1197	1236	0.3	0.1
839	Miscellaneous Factory Process Workers	494	588	441	411	407	-1.1	-0.8
841	Farm, Forestry and Garden Workers	357	440	326	355	444	-0.9	3.2
851	Food Preparation Assistants	1123	1638	1620	1925	2172	3.7	3.0
891	Freight Handlers and Shelf Fillers	480	728	775	857	877	4.9	1.2
899	Miscellaneous Labourers	924	1236	1230	1362	1538	2.9	2.3
	<b>Total</b>	<b>77449</b>	<b>97742</b>	<b>115274</b>	<b>125915</b>	<b>139261</b>	<b>4.1</b>	<b>1.9</b>

Source: NIEIR.



## 16. Disadvantage in Melbourne's North

### 16.1 Introduction

There are regions within Melbourne's North that have particular areas of disadvantaged people. This sections focuses on two regions within Melbourne's North that have relatively high levels of disadvantage – Broadmeadows and Heidelberg West. Both regions suffer from high levels of unemployment, including youth unemployment and have relatively high proportions of migrant population.

In the context of this workforce report, adequate employment directly addresses areas where the people living there are experiencing financial disadvantage. While other forms of disadvantage prevent people from obtaining employment, which could include lack of access to education, social-economic disadvantage, or lack of access to transport. Financial disadvantage could come from three sources:

1. low liquidity (lack of access of savings);
2. low disposable income; and/or
3. no member of the household is employed.

One way to address financial disadvantage is encourage unemployed, underemployed and lower paid people into training or employment into industries and occupations that are forecast to have strong demand in the short to medium term. Barriers to entry into these industries or occupations will need to be considered, and targeted programs may be needed to match disadvantaged to jobs or career pathways.

### 16.2 Broadmeadows

Broadmeadows is a Metropolitan Activity Centre (MAC) that has a very high proportion of residents that are disadvantaged. The working age population within Broadmeadows has a large rate of disengagement with the workforce. Broadmeadows has maintained a high unemployment level over the past ten years that has not shown significant improvement over this time, with the exception the last half of 2021, which has seen the labour market tighten within most regions, including Broadmeadows. Over the 2015 to 2019 period the average unemployment rate for the Broadmeadows SA2 has been around 22 per cent.<sup>2</sup> The labour force participation rate for the area of 48 to 49 per cent is very low compared to Greater Melbourne (above 60 per cent), which suggests a

large proportion of the working age population is long term unemployed.

Broadmeadows contains a large population of residents who were born overseas with 45.9 per cent of residents born outside of Australia. Only 54.8 per cent of residents over the age of 15 have completed high school, while just under half the workforce have post-school qualifications. This translates into a resident workforce that is relatively unskilled with Labourers (17.4 per cent) being the largest occupational group.

The loss of manufacturing employment within the region with the closure of the Ford Manufacturing plant in Campbellfield has been felt in the adjacent regions, including Broadmeadows. However, the rate of unemployment before this time was still around the same level. Note, that the unemployment rate in Greater Melbourne had been improving at the same time.

Broadmeadows has access to several growth industries within Hume (C) that can provide opportunity for disadvantaged residents to obtain employment and improve their circumstances including:

- Transport and Logistics;
- Health Care and Social Assistance; and
- Professional, Scientific and Technical Services.

The Transport and Logistics Industry has recently gone through a large resurgence through the COVID-19 pandemic with increased freight demand. The industry will remain strong and grow over the next ten years. Broadmeadows has close proximity to major transport infrastructure including Hume Highway and Melbourne Airport which gives residents access to jobs within close range within the industry. Training requirements for entry into transport and logistics are low compared to many other industries, which means that the industry could be suited to attract adult unemployed in the short-term. Generally, Transport and Logistics is not seen as an attractive option, especially for young people first entering the workforce. More could be done to attract young people into the industry, starting in high school with industry placement or programs.

Both Health Care and Social Assistance, and Professional, Scientific and Technical Services are expected to undergo significant growth within the Hume (C) region over the next ten years. Broadmeadows, as an MAC, would be ideally suited to encourage more commercial space to house these industries and promote local employment. However, both of these industries require higher skilled

<sup>2</sup> Small Area Labour Markets, National Skills Commission.

workers with occupations within these industries often requiring University degrees, diplomas, or certificates to enter the workforce.

The high proportion of migrant population, and lower high school completion rate suggest that adult education programs in English, or high school equivalent vocational qualifications could help get the working age population ready for the workforce.

The Broadmeadows Revitalisation with the revitalisation of the Town Centre, the redevelopment of Kangan Institute with the siting of a technical school could help cement Broadmeadows as a major education and service centre for manufacturing, logistics and health and community services.

**Table 16.1 Regional workforce profile for Broadmeadows**

	Unit	2015	2016	2017	2018	2019	2020
<b>Population</b>							
Population	no.	13529	13916	14225	14429	14582	14512
Working age population (aged 15-64 years)	no.	9035	9328	9566	9637	9702	9539
Working age population (aged 15-64 years)	no.	66.8	67.0	67.2	66.8	66.5	65.7
Born overseas	%		45.6				
<b>Employment</b>							
Employed	no.	3983	3999	4106	4301	4450	4329
Labour force	no.	5066	5111	5438	5487	5566	5500
Participation rate	%	47.6	46.9	48.8	48.7	48.8	48.3
Unemployment rate	%	21.375	21.75	24.5	21.6	20.05	21.3
<b>Income</b>							
Median employee income	\$	36183	37025	35159	37277		
Mean employee income	\$	38516	39690	38944	41087		
<b>Education (persons aged 15 years and over)</b>							
Completed Year 12			54.8				
Non-school qualifications			48.4				
Postgraduate degree			2.9				
Graduate diploma/graduate certificate			0.8				
Bachelor degree			9.0				
Advanced diploma/diploma			7.4				
Certificate			13.0				
Non-school qualifications - inadequately described			15.4				
<b>Resident Occupation</b>							
Managers	%		5.2				
Professionals	%		10.6				
Technicians and trades workers	%		16.4				
Community and personal service workers	%		15.5				
Clerical and administrative workers	%		9.5				
Sales workers	%		8.5				
Machinery operators and drivers	%		14.2				
Labourers	%		17.4				
Occupation of employed persons - inadequately described	%		2.5				

Sources: ABS Data by Region, ABS Census, Small Area Labour Markets National Skills Commission.

## 16.3 Heidelberg West

Heidelberg West (SA2) is an inner suburban region within Banyule (C) that includes suburbs of Heidelberg West, Bellfield and Heidelberg Heights. The region has high levels of unemployment over the past ten years. Heidelberg West has had an unemployment rate of around 10 per cent over 2015 to 2019, and around 11.7 per cent from 2010 to 2014.<sup>3</sup> Recently, the unemployment rate has been trending downwards, so employment prospects for the local labour force seem to be improving. However, the Heidelberg West region has the highest rate of unemployment within the Banyule (C) region.

The region is also home to a large proportion of social housing and has the largest number of residents who were born overseas within Banyule (C).<sup>4</sup> Education levels for residents of this region are also relatively low in terms of high school completions (55 per cent) and University qualifications. Employment and training prospects for local residents will need to be addressed with these issues in mind.

Heidelberg West benefits from being relatively close to the CBD and has close access to a number of employment districts which include:

- Heidelberg West Business Park;
- La Trobe University;
- Heidelberg Repatriation Hospital and Austin/Mercy Hospital Precinct;
- Northland Shopping Centre; and
- Industrial and Commercial precinct North/South of Bell Street, Preston.

Given the regions lower education levels and post-school qualifications, on average, the more disadvantaged workers will be currently more suited to lower skilled occupations such as those found within Sales, Machinery Operators or Drivers, or Labourers. However, within Banyule (C) these occupation groups are the three lowest in terms of place-of-work employment out of the eight occupation groups. Banyule's (C) largest employment industry is within Health Care and Social Assistance, which skews much more Professional. Darebin (C) has a similar composition for the lower skilled occupations, but has slightly more opportunity for lower skilled work.

There are major opportunities around the redevelopment of La Trobe University, a possible major redevelopment of Northland and investments associated with the Austin Hospital at Heidelberg, as well as public transport connectivity opportunities across the La Trobe NEIC.

The current composition of the local industry skews more toward higher skilled work, which acts as a barrier for those seeking entry into the workforce from a lower qualification background. This means that either transport links may need to be improved for local workers to find suitable work, or workers will need to be retrained or upskilled for growth industries and occupations within the region. Programs that connect local residents to industry to provide them with experience may also help bridge the gap between unskilled unemployed and employed.

Industries within Banyule (C) that will have growth in demand for workers include:

- Health Care and Social Assistance (Q); and
- Other Services (S).

Occupations that are expected to grow strongly within Other Services (S) include Hairdressers, Miscellaneous Labourers, and Personal Service and Travel Workers. This is partly due to rebound in services post-lockdown.

While Health Care and Social Assistance provides the largest opportunity for growth within the region, with thousands of more jobs forecast over the next ten years, which will need to attract more skilled workers. These are occupations such as Nurses, which are directly involved in the care of patients.

The Health Care and Social Assistance industry also requires many lower skilled occupations which have lower educational barriers to entry, but will also be in high demand. These may provide an easier pathway to employment for disadvantaged persons within Heidelberg West area. This includes:

- General Clerks;
- Receptionists;
- Food Trades Workers (Cooks);
- Food Preparation Assistants;
- Personal Carers and Assistants (such as Disability Care Workers); and
- Cleaners and Laundry Workers.

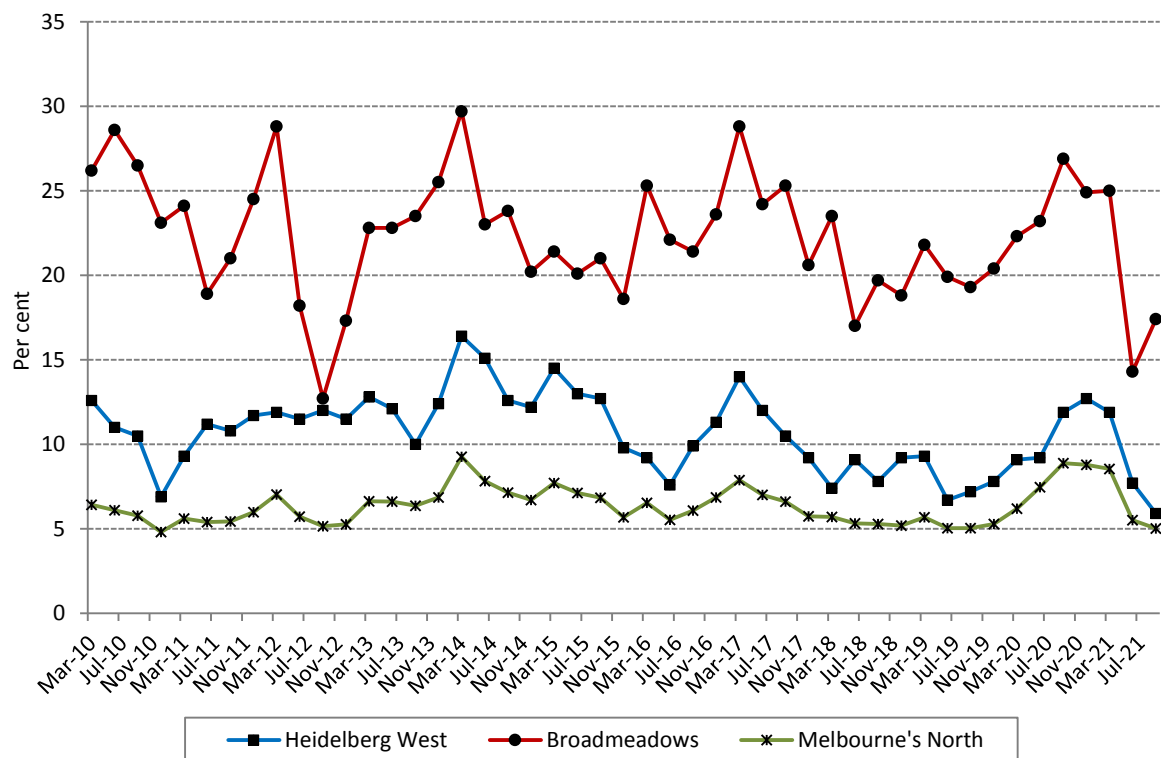
<sup>3</sup> Small Area Labour Markets, National Skills Commission.

<sup>4</sup> West Precinct Demographic Profile, Banyule City Council.

Table 16.2 Regional workforce profile for Heidelberg West							
	Unit	2015	2016	2017	2018	2019	2020
<b>Population</b>							
Population	no.	14634	14806	15118	15349	15766	15839
Working age population (aged 15-64 years)	no.	10003	10121	10329	10492	10839	10903
Working age population (aged 15-64 years)	%	68.4	68.4	68.3	68.4	68.7	68.8
Born overseas	%		30.4				
<b>Employment</b>							
Employed	no.	6456	6674	6985	7236	7407	7528
Labour force	no.	7428	7401	7920	7957	8073	8212
Participation rate	%	61.6	60.7	63.8	63.1	61.9	62.5
Unemployment rate	%	13.1	9.8	11.8	9.1	8.3	8.3
<b>Income</b>							
Median employee income	\$	43815	46010	47204	49015		
Mean employee income	\$	49440	52020	53892	56304		
<b>Education (persons aged 15 years and over)</b>							
Completed Year 12			55.4				
Non-school qualifications			61.2				
Postgraduate degree			6.3				
Graduate diploma/graduate certificate			2.8				
Bachelor degree			16.8	23.1			
Advanced diploma/diploma			8.4				
Certificate			13.8				
Non-school qualifications - inadequately described			13.1				
<b>Resident Occupation</b>							
Managers	%		8.6				
Professionals	%		24.8				
Technicians and trades workers	%		13.9				
Community and personal service workers	%		12.2				
Clerical and administrative workers	%		12.7				
Sales workers	%		8.0				
Machinery operators and drivers	%		6.9				
Labourers	%		10.4				
Occupation of employed persons - inadequately described	%		2.5				

Sources: ABS Data by Region, ABS Census, Small Area Labour Markets National Skills Commission.

**Figure 16.1: Unemployment rate – Heidelberg West, Broadmeadows and Melbourne's North (per cent)**



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# APPENDICES

# Appendix A: NIEIR's economic modelling system – structure and application

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## A.1 NIEIR's databases and models

At the heart of the modelling system is NIEIR's LGA based modelling system.

NIEIR has built up a considerable body of intellectual capital for more than 30 years. A major part of this capital is NIEIR's IMP modelling suite, a range of powerful forecasting and analysis tools which give NIEIR "leading edge" capability in national, state, regional and local area economic and business analysis. Other formal models include:

- detailed industry modelling with forecasting sectors (86 industry sectors);
- regional models and forecasting covering all regions in Australia down to the LGA level based on the 86 industry input-output structure;
- models projecting equity market performance indicators at the industry level;
- national and State quarterly, medium and long term models producing forecasts from 6 quarters to 40 years ahead;
- an energy sector model with greenhouse impact and electricity load curve projection capability;
- international and trade models;
- economic activity "leading indicator" models; and
- microsimulation models for assessing household level economic activity and the distributional consequences of short term policy changes, and local area consumer demands down to groups of 200 to 300 households.

Purpose built models and survey instruments are developed for specific consulting projects covering areas such as privatisation, regional development, industry policy and strategy analysis, infrastructure planning, major events and cost-benefit analysis.

For more than 20 years NIEIR has developed an extensive regional database. At the core of the database is the quarterly Local Government Area (LGA) database with consistent series from the June quarter 1991 to June quarter 2018 and by end May estimates to June Quarter 2019 which in regional summary form appear in the ALGA *"State of the Regions"* Report.

The database is based on the 86 industry 2-digit ANZSIC industry classification for 567 LGAs with each industry having time series indicators for:

- hours of work by place of work and place of residence;
- dollar per hour by place of work and place of residence;
- employment by place of work and place of residence;
- sales;
- value added;
- inter-regional and international exports;
- inter-regional and international imports;
- consumption expenditures by industry by households in an LGA; and
- final demand estimates for equipment investment, construction and current government expenditures.

Household income and expenditures by LGA is structured in accordance with the National and State Household Income Formation in the Australian Bureau of Statistics' Australian National Accounts.

The NIEIR LGA databases are available in the public domain on the ID supported websites for nearly 200 LGAs. The data is also available at the 67 regional level for the ALGA/NIEIR "*State of the Regions*" report.

Over the last two years annual databases have been developed with many of the LGA series broken down into estimates from 2001 to 2018 for the SA2 region level and for employment by place of work and place of resident employment at the 1-digit ANZSIC industry level at the SA1 level.

The databases have been used to construct a powerful quarterly integrated LGA regional modelling system based around:

- automatically updated input-output relationships for each LGA;
- inter-regional trade flow relationships between a given industry in a given LGA and all other LGAs in Australia; and
- investment formation and capacity expansion functions estimated for historical data for installed floor space capacity, infrastructure capital stock estimates and major individual investments time series.

The inter-regional trade flows between and within LGAs by industry are constrained to the relevant cell from the estimated quarterly updated 2-digit ANZSIC national direct allocation of imports input-output table estimates. For projecting the national trade flow constraints for intra and inter-regional trade flows the key national drivers are industry technological trends (digital disruption, etc.) final demand formation (consumption, investment built up from the regional level) and behavioural functions for international import penetration by 2-digit industry.

The allocation of international and inter-regional imports by industry to LGA region is based on allocation rules to maintain local and global demand/supply balance.

International exports by industry are projected from the local area based on national competitive drivers (the exchange rate) and local competitiveness indicators (based on productivity, industry cluster density, labour market scale, scope and skill density, etc.) of the LGA region. However, a major driver of projected export capacity expansion in goods tradable industries is driven by the nomination of identified potential major projects by scale and location that are "triggered" when appropriate by changes in the economic environment over the next three decades.

The inter and intra causal relationships in the model are given in Figure A.1.

The modelling system has often been used to produce detailed results consistent with external general assumptions of general economic growth, population growth and industry activity.

[illegible]



## A.2 NIEIR's industry structure

<b>ANZSIC 2-digit number</b>	<b>Industry</b>	<b>ANZSIC 2-digit number</b>	<b>Industry</b>
1	Agriculture	44	Accommodation
2	Aquaculture	45	Food and Beverage Services
3	Forestry and Logging	46	Road Transport
4	Fishing, Hunting and Trapping	47	Rail Transport
5	Agriculture, Forestry and Fishing Support Services	48	Water Transport
6	Coal Mining	49	Air and Space Transport
7	Oil and Gas Extraction	50	Other Transport
8	Metal Ore Mining	51	Postal and Courier Pick-up and Delivery Services
9	Non-Metallic Mineral Mining and Quarrying	52	Transport Support Services
10	Exploration and Other Mining Support Services	53	Warehousing and Storage Services
11	Food Product Manufacturing	54	Publishing (except Internet and Music Publishing)
12	Beverage and Tobacco Product Manufacturing	55	Motion Picture and Sound Recording Activities
13	Textile, Leather, Clothing and Footwear Manufacturing	56	Broadcasting (except Internet)
14	Wood Product Manufacturing	57	Internet Publishing and Broadcasting
15	Pulp, Paper and Converted Paper Product Manufacturing	58	Telecommunications Services
16	Printing (including the Reproduction of Recorded Media)	59	Internet Service Providers, Web Search Portals and Data Processing Services
17	Petroleum and Coal Product Manufacturing	60	Library and Other Information Services
18	Basic Chemical and Chemical Product Manufacturing	62	Finance
19	Polymer Product and Rubber Product Manufacturing	63	Insurance and Superannuation Funds
20	Non-Metallic Mineral Product Manufacturing	64	Auxiliary Finance and Insurance Services
21	Primary Metal and Metal Product Manufacturing	66	Rental and Hiring Services (except Real Estate)
22	Fabricated Metal Product Manufacturing	67	Property Operators and Real Estate Services
23	Transport Equipment Manufacturing	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)
24	Machinery and Equipment Manufacturing	70	Computer System Design and Related Services
25	Furniture and Other Manufacturing	72	Administrative Services
26	Electricity Supply	73	Building Cleaning, Pest Control and Other Support Services
27	Gas Supply	75	Public Administration
28	Water Supply, Sewerage and Drainage Services	76	Defence
29	Waste Collection, Treatment and Disposal Services	77	Public Order, Safety and Regulatory Services
30	Building Construction	80	Preschool and School Education
31	Heavy and Civil Engineering Construction	81	Tertiary Education
32	Construction Services	82	Adult, Community and Other Education
33	Basic Material Wholesaling	84	Hospitals
34	Machinery and Equipment Wholesaling	85	Medical and Other Health Care Services
35	Motor Vehicle and Motor Vehicle Parts Wholesaling	86	Residential Care Services
36	Grocery, Liquor and Tobacco Product Wholesaling	87	Social Assistance Services
37	Other Goods Wholesaling	89	Heritage Activities
38	Commission-Based Wholesaling	90	Creative and Performing Arts Activities
39	Motor Vehicle and Motor Vehicle Parts Retailing	91	Sports and Recreation Activities
40	Fuel Retailing	92	Gambling Activities
41	Food Retailing	94	Repair and Maintenance
42	Other Store-Based Retailing	95	Personal and Other Services
43	Non-Store Retailing and Retail Commission Based Buying	96	Private Households Employing Staff and Undifferentiated Goods

## A.3 The occupation model

The occupational model by 86 2-digit ANZSIC industries and 3-digit occupations is used to provide detailed production of occupational demands. The economic and labour market drivers are formed from the corresponding LGA driver outcomes.

The benchmark region for regional occupational demand is the LGA, which has the best overall outcome for the following indicators:

- (i) scale;
- (ii) productivity; and
- (iii) trend rate of growth.

The assumption is that the LGA selected for the best practice industry on these criteria would also likely have the best practice occupational structure, which the same industries in all other regions would converge to. The rate of convergence is estimated from the historical data. In general the estimated coefficients are strongly statistically significant, indicating that the methodology is valid. That is the characteristics of best practise regions are the most important driver for determining the future outcomes in less than best practise regions

However, skills convergence to best practice region structures is but one of a number of factors driving the evolution of skill demands in a region. Other factors which will influence the true pattern of skills requirements include:

- (i) current shortages as a result of recent increased potential demand which cannot be realised;
- (ii) current surplus because of recent falls in demand relative to trend or over-supply of skills;
- (iii) temporary excess demand for skills/occupations to compensate for shortages in other skills; and
- (iv) noise in the data from sampling and estimation error.

The model is designed to clearly distinguish between actual skills demand as reflected in the data or data estimates and “equilibrium” demand based on estimates of what the demand will be once a short-term move in the data is narrowed, but taking into account the movement towards best practice skills status.

The reality probability is that over the relatively short time horizon to 2022 these factors are likely in many cases to be considerably more important in determining the evolution of the structure of estimates of regional skill needs by industry than the larger picture macro drivers. Before analysing the impact of scenario alternatives, an appropriate first step will be to analyse the evolution of skills demands by region based on a “current trends” macroeconomic projection.

## A.4 Datasets available from NIEIR as of January 2022

Item	Series	Region	Level	Frequency	Start Date	End Date	Description	Note
1	Population	LGA	By Age	Qtr	1991.3	2021.2		
2	Households	LGA	-	Qtr	1991.3	2021.2		
3	Dwellings	LGA	-	Qtr	1991.3	2021.2		
4	Avg Dwelling Price	LGA	-	Qtr	1991.3	2021.2		
11	Workforce	LGA	-	Qtr	1991.3	2021.2		
12	Employment	LGA	-	Qtr	1991.3	2021.2		More Detail Series Available (See Below)
13	Unemployment	LGA	-	Qtr	1991.3	2021.2		
14	Working Age Population	LGA	-	Qtr	1991.3	2021.2	Aged 15-64	
21	NIEIR Unemployment Rate	LGA	-	Qtr	1998.3	2021.2	Headline Unemployed plus excess Disability Support Pension recipients	
22	Headline Unemployment Rate	LGA	-	Qtr	1998.3	2021.2	As published by DEEWR with smoothing adjustment	
23	NIEIR Structural Unemployment Rate	LGA	-	Qtr	1998.3	2021.2	Includes Long-term unemployed and Disability Support Pension recipients and a proportion of single parents and unemployed migrants from non-English speaking countries	
24	Social Security Takeup	LGA	-	Qtr	1998.3	2021.2	Proportion of working age social security recipients in working age population	
25	Hours per week per working age population	LGA	-	Qtr	1998.3	2021.2		
26	Full time equivalent not in employment rate	LGA	-	Qtr	1998.3	2021.2	Not employed (FTE) as proportion of working age population	
31	Employment (Usual Residence)	LGA	2 Digit Industry & FT/PT	Qtr	1991.3	2021.2		Residence of the LGA
32	Hours Worked (Usual Residence)	LGA	2 Digit Industry & FT/PT	Qtr	1991.3	2021.2		Residence of the LGA
33	Income (Usual Residence)	LGA	2 Digit Industry & FT/PT	Qtr	1991.3	2021.2		Residence of the LGA
34	Occupation (Usual Residence)	LGA	3 Digit Industry ANZSCO	Qtr	1991.3	2021.2		Residence of the LGA

Item	Series	Region	Level	Frequency	Start Date	End Date	Description	Note
35	Age Employed (Usual Residence)	LGA	5 Year Age Range (PT/FT)	Qtr	1991.3	2021.2		Residence of the LGA
36	Age Unemployed (Usual Residence)	LGA	5 Year Age Range (PT/FT)	Qtr	1991.3	2021.2		Residence of the LGA
41	Employment (Industry)	LGA	2 Digit Industry & FT/PT	Qtr	1991.3	2021.2		Those working in the LGA
42	Hours Worked (Industry)	LGA	2 Digit Industry & FT/PT	Qtr	1991.3	2021.2		Those working in the LGA
43	Income (Industry)	LGA	2 Digit Industry & FT/PT	Qtr	1991.3	2021.2		Those working in the LGA
44	Occupation (Industry)	LGA	3 Digit Industry ANZSCO	Qtr	1991.3	2021.2		Those working in the LGA
45	Age Employed (Industry)	LGA	5 Year Age Range (PT/FT)	Qtr	1991.3	2021.2		Those working in the LGA
51	Wages/Salaries	LGA	-	Qtr	1998.3	2021.2		Resident
52	Taxes Paid	LGA	-	Qtr	1998.3	2021.2		Resident
53	Benefits	LGA	-	Qtr	1998.3	2021.2		Resident
54	Business Income	LGA	-	Qtr	1998.3	2021.2		Resident
55	Interest Paid	LGA	-	Qtr	1998.3	2021.2		Resident
56	Property Income	LGA	-	Qtr	1998.3	2021.2		Resident
57	Disposable Income	LGA	-	Qtr	1998.3	2021.2		Resident
61	Resident GRP (Local)	LGA	-	Qtr	1991.3	2021.2		Resident
62	Industry GRP (Local)	LGA	-	Qtr	1991.3	2021.2		Industry
71	Headline GRP - Total headline GRP at factor cost	LGA	-	Qtr	1998.3	2021.2		Industry
72	Headline GRP - Total headline GRP at market prices	LGA	-	Qtr	1998.3	2021.2		Industry
73	Ownership of dwellings	LGA	-	Qtr	1998.3	2021.2		Industry
74	Value Added at Factor Cost	LGA	2 Digit Industry (NIEIR)	Qtr	1998.3	2021.2		Industry
75	Value Added at Market Prices	LGA	2 Digit Industry (NIEIR)	Qtr	1998.3	2021.2		Industry
76	Sales to Local Constomers	LGA	2 Digit Industry (NIEIR)	Qtr	1998.3	2021.2		Industry
77	Sales	LGA	2 Digit Industry (NIEIR)	Qtr	1998.3	2021.2		Industry

Item	Series	Region	Level	Frequency	Start Date	End Date	Description	Note
81	Interregional Imports	LGA	2 Digit Industry (NIEIR)	Qtr	1998.3	2021.2		Industry
82	International Imports	LGA	2 Digit Industry (NIEIR)	Qtr	1998.3	2021.2		Industry
83	Interregional Exports	LGA	2 Digit Industry (NIEIR)	Qtr	1998.3	2021.2		Industry
84	International Exports	LGA	2 Digit Industry (NIEIR)	Qtr	1998.3	2021.2		Industry
91	Consumption	LGA	HES Categories and by HH Types	Qtr	1998.3	2011.2		
92	Consumption	LGA	2 Digit Industry (NIEIR) & 3 HH Types	Qtr	1998.3	2011.2		3 HH Types are Working, Unemployed & Retired
101	Construction Investment - Residential Dwellings New	LGA	-	Qtr	1991.3	2021.2		
102	Construction Investment - Residential Dwellings Renovation	LGA	-	Qtr	1991.3	2021.2		
103	Construction Investment - Non-Residential Building	LGA	-	Qtr	1991.3	2021.2		
104	Construction Investment - Engineering	LGA	-	Qtr	1991.3	2021.2		
105	Total construction investment	LGA	-	Qtr	1991.3	2021.2		
106	Total equipment investment	LGA	-	Qtr	1991.3	2021.2		

1-Digit industry		2-Digit industry	
ANZSIC1	ANZSIC1 Name	ANZSIC2	ANZSIC2 Name
A	Agriculture, Forestry and Fishing	1	Agriculture
A	Agriculture, Forestry and Fishing	2	Aquaculture
A	Agriculture, Forestry and Fishing	3	Forestry and Logging
A	Agriculture, Forestry and Fishing	4	Fishing, Hunting and Trapping
A	Agriculture, Forestry and Fishing	5	Agriculture, Forestry and Fishing Support Services
B	Mining	6	Coal Mining
B	Mining	7	Oil and Gas Extraction
B	Mining	8	Metal Ore Mining
B	Mining	9	Non-Metallic Mineral Mining and Quarrying
B	Mining	10	Exploration and Other Mining Support Services
C	Manufacturing	11	Food Product Manufacturing
C	Manufacturing	12	Beverage and Tobacco Product Manufacturing
C	Manufacturing	13	Textile, Leather, Clothing and Footwear Manufacturing
C	Manufacturing	14	Wood Product Manufacturing
C	Manufacturing	15	Pulp, Paper and Converted Paper Product Manufacturing
C	Manufacturing	16	Printing (including the Reproduction of Recorded Media)
C	Manufacturing	17	Petroleum and Coal Product Manufacturing
C	Manufacturing	18	Basic Chemical and Chemical Product Manufacturing
C	Manufacturing	19	Polymer Product and Rubber Product Manufacturing
C	Manufacturing	20	Non-Metallic Mineral Product Manufacturing
C	Manufacturing	21	Primary Metal and Metal Product Manufacturing
C	Manufacturing	22	Fabricated Metal Product Manufacturing
C	Manufacturing	23	Transport Equipment Manufacturing
C	Manufacturing	24	Machinery and Equipment Manufacturing
C	Manufacturing	25	Furniture and Other Manufacturing
D	Electricity, Gas, Water and Waste Services	26	Electricity Supply
D	Electricity, Gas, Water and Waste Services	27	Gas Supply
D	Electricity, Gas, Water and Waste Services	28	Water Supply, Sewerage and Drainage Services
D	Electricity, Gas, Water and Waste Services	29	Waste Collection, Treatment and Disposal Services
E	Construction	30	Building Construction
E	Construction	31	Heavy and Civil Engineering Construction
E	Construction	32	Construction Services
F	Wholesale Trade	33	Basic Material Wholesaling



1-Digit industry		2-Digit industry	
ANZSIC1	ANZSIC1 Name	ANZSIC2	ANZSIC2 Name
F	Wholesale Trade	34	Machinery and Equipment Wholesaling
F	Wholesale Trade	35	Motor Vehicle and Motor Vehicle Parts Wholesaling
F	Wholesale Trade	36	Grocery, Liquor and Tobacco Product Wholesaling
F	Wholesale Trade	37	Other Goods Wholesaling
F	Wholesale Trade	38	Commission-Based Wholesaling
G	Retail Trade	39	Motor Vehicle and Motor Vehicle Parts Retailing
G	Retail Trade	40	Fuel Retailing
G	Retail Trade	41	Food Retailing
G	Retail Trade	42	Other Store-Based Retailing
G	Retail Trade	43	Non-Store Retailing and Retail Commission Based Buying
H	Accommodation and Food Services	44	Accommodation
H	Accommodation and Food Services	45	Food and Beverage Services
I	Transport, Postal and Warehousing	46	Road Transport
I	Transport, Postal and Warehousing	47	Rail Transport
I	Transport, Postal and Warehousing	48	Water Transport
I	Transport, Postal and Warehousing	49	Air and Space Transport
I	Transport, Postal and Warehousing	50	Other Transport
I	Transport, Postal and Warehousing	51	Postal and Courier Pick-up and Delivery Services
I	Transport, Postal and Warehousing	52	Transport Support Services
I	Transport, Postal and Warehousing	53	Warehousing and Storage Services
J	Information Media and Telecommunications	54	Publishing (except Internet and Music Publishing)
J	Information Media and Telecommunications	55	Motion Picture and Sound Recording Activities
J	Information Media and Telecommunications	56	Broadcasting (except Internet)
J	Information Media and Telecommunications	57	Internet Publishing and Broadcasting
J	Information Media and Telecommunications	58	Telecommunications Services
J	Information Media and Telecommunications	59	Internet Service Providers, Web Search Portals and Data Processing Services
J	Information Media and Telecommunications	60	Library and Other Information Services
K	Financial and Insurance Services	62	Finance
K	Financial and Insurance Services	63	Insurance and Superannuation Funds
K	Financial and Insurance Services	64	Auxiliary Finance and Insurance Services
L	Rental, Hiring and Real Estate Services	66	Rental and Hiring Services (except Real Estate)
L	Rental, Hiring and Real Estate Services	67	Property Operators and Real Estate Services

1-Digit industry		2-Digit industry	
ANZSIC1	ANZSIC1 Name	ANZSIC2	ANZSIC2 Name
M	Professional, Scientific and Technical Services	69	Professional, Scientific and Technical Services (Except Computer System Design and Related Services)
M	Professional, Scientific and Technical Services	70	Computer System Design and Related Services
N	Administrative and Support Services	72	Administrative Services
N	Administrative and Support Services	73	Building Cleaning, Pest Control and Other Support Services
O	Public Administration and Safety	75	Public Administration
O	Public Administration and Safety	76	Defence
O	Public Administration and Safety	77	Public Order, Safety and Regulatory Services
P	Education and Training	80	Preschool and School Education
P	Education and Training	81	Tertiary Education
P	Education and Training	82	Adult, Community and Other Education
Q	Health Care and Social Assistance	84	Hospitals
Q	Health Care and Social Assistance	85	Medical and Other Health Care Services
Q	Health Care and Social Assistance	86	Residential Care Services
Q	Health Care and Social Assistance	87	Social Assistance Services
R	Arts and Recreation Services	89	Heritage Activities
R	Arts and Recreation Services	90	Creative and Performing Arts Activities
R	Arts and Recreation Services	91	Sports and Recreation Activities
R	Arts and Recreation Services	92	Gambling Activities
S	Other Services	94	Repair and Maintenance
S	Other Services	95	Personal and Other Services
S	Other Services	96	Private Households Employing Staff and Undifferentiated Goods-

1-Digit industry		2-Digit industry (NIEIR)	
ANZSIC1	ANZSIC1 Name	ANZSIC2_49	ANZSIC2_49 Name
A	Agriculture, Forestry and Fishing	1	Agriculture and Aquaculture
A	Agriculture, Forestry and Fishing	2	Forestry and Logging
A	Agriculture, Forestry and Fishing	3	Agriculture, Forestry and Fishing Support Services
B	Mining	4	Coal Mining, Oil and Gas Extraction
B	Mining	5	Other Mining
B	Mining	6	Mining Services
C	Manufacturing	7	Food Product Manufacturing
C	Manufacturing	8	Beverage and Tobacco Product Manufacturing
C	Manufacturing	9	Textile, Leather, Clothing and Footwear Manufacturing
C	Manufacturing	10	Wood Product Manufacturing
C	Manufacturing	11	Pulp, Paper and Converted Paper Product Manufacturing
C	Manufacturing	12	Printing
C	Manufacturing	13	Petroleum and Coal Product Manufacturing
C	Manufacturing	14	Chemical Manufacturing
C	Manufacturing	15	Non-Metallic Mineral Product Manufacturing
C	Manufacturing	16	Primary Metal and Metal Product Manufacturing
C	Manufacturing	17	Fabricated Metal Product Manufacturing
C	Manufacturing	18	Transport Equipment Manufacturing
C	Manufacturing	19	Machinery and Equipment Manufacturing
C	Manufacturing	20	Furniture and Other Manufacturing
D	Electricity, Gas, Water and Waste Services	21	electricity and gas
D	Electricity, Gas, Water and Waste Services	22	Water and Air Transport
E	Construction	23	Construction
F	Wholesale Trade	24	Wholesale
G	Retail Trade	25	Food Retailing
G	Retail Trade	26	Other Retailing
H	Accommodation and Food Services	27	Accommodation
H	Accommodation and Food Services	28	Food and Beverage Services
I	Transport, Postal and Warehousing	29	Road Transport
I	Transport, Postal and Warehousing	30	Rail Transport
I	Transport, Postal and Warehousing	31	Water and Air Transport
I	Transport, Postal and Warehousing	32	Other Transport and Storage

1-Digit industry		2-Digit industry (NIEIR)	
ANZSIC1	ANZSIC1 Name	ANZSIC2_49	ANZSIC2_49 Name
J	Information Media and Telecommunications	33	Publishing, Recording, Broadcasting and Internet Publishing
J	Information Media and Telecommunications	34	Telecommunications Services
J	Information Media and Telecommunications	35	Information Services
K	Financial and Insurance Services	36	Finance and Insurance
L	Rental, Hiring and Real Estate Services	37	Property Services
M	Professional, Scientific and Technical Services	38	Professional, Scientific and Technical Services
N	Administrative and Support Services	39	Other Business Services
O	Public Administration and Safety	40	Public Administration
O	Public Administration and Safety	41	Defence
O	Public Administration and Safety	42	Public Order, Safety and Regulatory Services
P	Education and Training	43	Primary and Secondary Education
P	Education and Training	44	Tertiary Education
Q	Health Care and Social Assistance	45	Health Services
Q	Health Care and Social Assistance	46	Social Services
R	Arts and Recreation Services	47	Arts and Heritage
R	Arts and Recreation Services	48	Sports and Recreation Activities
S	Other Services	49	Personal and Other Services

ABS Code	ABS Label	HH Types	ANZSIC2_49 Name
01.0	01.0 FOOD	1	Total working age households with at least one person employed
02.0	02.0 ALCOHOLIC BEVERAGES & TOBACCO	2	Couple work age hours
02.1	02.1 CIGARETTES & TOBACCO	3	Couple working age households with at least one person employed
02.2	02.2 ALCOHOLIC BEVERAGES	4	Couple-single households - at least one member employed
03.0	03.0 CLOTHING & FOOTWEAR	5	Couple-single households - no member employed
03.1	03.1 PERSONAL OUTLAYS ON NEW CLOTHING & ACCESSORIES	6	Employed working age households with school qualifications
03.2	03.2 PERSONAL OUTLAYS ON SHOES & BOOTS	7	Employed working age households with tertiary qualifications
04.0	04.0 HOUSING ELEC. GAS WATER & OTHER FUELS	8	Employed working age households with trade qualifications
04.1	04.1 & 4.2 ACTUAL & IMPUTED RENT FOR HOUSING	9	Employment in couple households
04.3	04.3 WATER & SEWERAGE CHARGES	10	Group hours
04.4	04.4 ELECTRICITY GAS & OTHER FUELS	11	Group households with at least one person employed
05.0	05.0 FURNISHINGS & HOUSEHOLD EQUIPMENTS	12	Group working age households
05.1	05.1 FURNITURE & FLOOR COVERINGS	13	Hours 65 plus
05.2	05.2 HOUSEHOLD TEXTILES	14	Households with children 6-19
05.3	05.3 HOUSEHOLD APPLIANCES	15	Households with children aged 5 and under
05.4	05.4 HOUSEHOLD WARES	16	Households with no children
05.5	05.5 HOUSEHOLD TOOLS	17	Not in employment working age households
05.6	05.6 HOUSEHOLD NON-DURABLES GOODS	18	Ratio of group households with at least one person employed to total group households
06.0	06.0 HEALTH	19	Single work age hours
06.1	06.1 MEDICINES MEDICAL AIDS & THERAPUTIC APPLIANCES	20	Total employment in 65+ households
06.2	06.2.DOCTORS & OTHER HEALTH PROFESSIONALS	21	Total employment in group households
06.3	06.3.DENTISTS	22	Total employment in lone households
06.4	06.4 HOSPITAL & NURSING HOME CARES	23	Work age hours
07.0	07.0 TRANSPORT		
07.1	07.1 PURCHASE OF VEHICLES		
07.2	07.2 OPER. OF PERS. TRANSPORT EQUIPMENT		
07.2.1	07.2.1 MOTORING GOODS		
07.2.1	07.2.1.1 MOTORING FUEL		
07.2.2	07.2.2 REPAIR & MAINTENANCE EXPENDITURE		
07.2.3	07.2.3 MISC. MOTORING EXPENDITURE		
07.3	07.3 TRANSPORT SERVICES		
07.3.1	07.3.1 PASS. TRANS. SERVICES BY RAIL		

ABS Code	ABS Label	HH Types	ANZSIC2_49 Name
07.3.2	07.3.2 PASS. SERVICES BY ROAD		
07.3.2.1	07.3.2.1 PASS. SERVICES BY BUS		
07.3.3.2	07.3.3.2 PASS. SERVICES BY TAXI & HIRE CARS		
07.3.3	07.3.3 PASS. TRANS. SERVICES BY AIR		
07.3.4	07.3.4 PASS. TRANS. SERVICES BY SEA & INLAND WATERWAYS		
08.0	08.0 COMMUNICATIONS		
09.0	09.0 RECREATION & CULTURE		
09.1	09.1 AUDIO VISUAL EQUIPMENTS		
09.2	09.2 OTH. MAJOR DURA. FOR REC. & CUL.		
09.3	09.3 OTHER REC. ITEMS & EQUIPMENT		
09.3.1	09.3.1 GAMES TOYS & HOBBIES		
09.3.2	09.3.2 FLOWERS & GARDEN SUPPLIES		
09.3.3	09.3.3 PET FOODS & PET PRODUCTS		
09.4	09.4 REC. & CUL. SERVICES		
09.4.1	09.4.1 SPORTING & RECREATIONAL SERVICES		
09.4.2	09.4.2 CUL. & ENT. SERVICES		
09.4.1	09.4.1 NET LOSSES FROM GAMBLING		
09.4.2	09.4.2 CINEMA & OTHER ADMISSIONS		
09.5	09.5 NEWSPAPERS BOOKS & ARTISTS GOODS		
10.0	10.0 EDUCATION SERVICES		
11.0	11.0 HOTELS CAFES & RESTAURANTS		
11.1	11.1 CATERING WITH SERVICE COMPONENTS		
11.2	11.2 ACCOMMODATION SERVICES		
11.2.1	11.2.1 TEMPORARY ACCOM. SERV.		
11.2.2	11.2.2 HOSTEL ACCOM. SERV. FOR AGED/DISABLED		
12.0	12.0 MISCELLANEOUS GOODS & SERVICES		
12.1	12.1 PERSONAL CARE		
12.1.1	12.1.1 HAIRDRESSING/BEAUTY SALON SERVICES		
12.1.2	12.1.2 PERFUMES COSMETICS ETC		
12.2	12.2 PERSONAL EFFECTS		
12.2.1	12.2.1 JEWELLERY WATCHES & CLOCKS		
12.2.2	12.2.2 OTHER PERSONAL EFFECTS INCLUDING BABY ARTICLES		
12.3	12.3 INSURANCE WITH PREMIUM SUPPLEMENTS		
12.3.1	12.3.1 CASUALTY INSURANCE OF H'HOLD EFFECTS		



ABS Code	ABS Label	HH Types	ANZSIC2_49 Name
12.3.2	12.3.2 MOTOR VEHICLE INSURANCE		
12.3.2.3	12.3.2.3 HEALTH INSURANCE		
12.3.2.5	12.3.2.5 LIFE INSURANCE & SUPERANNUATION		
12.3.2.6	12.3.2.6 WORKERS COMPENSATION		
12.4	12.4 FINANCIAL SERVICES		
12.4.2.1	12.4.2.1 EXPLICIT CHARGES BY FIN. INSTITUTION		
12.4.2.2	12.4.2.2 EXP. ON IND. TAXES ON FIN. TRAS.		
12.4.1	12.4.1 INDIRECTLY SERV. CHARGES BY FIN. INSTITUTION		
12.5	12.5 OTHER SERVICES		
12.5.1	12.5.1 DRY CLEANING & LAUNDRY SERVICES		
12.5.2	12.5.2 REMOVALISTS SERVICES		
12.5.3	12.5.3 PROF. SERVICES OTHER THAN HEALTH		
12.5.4	12.5.4 DOMESTIC SERVICES		
12.5.5	12.5.5 FUNERAL SERVICES		
12.5.6	12.5.6 ADVERTISING SERVICES		
12.5.7	12.5.7 PHOTOGRAPHIC SERVICES		
12.5.8	12.5.8 SERVICES TO POST SECONDARY INSTITUTION		
12.5.9	12.5.9 CHILD CARE SERVICES		
12.5.11	12.5.11 REPAIR & MAINTENANCE SERVICES N.E.I.		
12.5.10 & .12	12.5.10 & .12 OTHER MISC. SERVICES INCL. PUBLIC. AUTH. FEES		
12.5.13	12.5.13 EXPENDITURE ON NON-PROFIT ORGANISATIONS		

ANZSCO1	ANZSCO1 Name	ANZSCO2	ANZSCO2 Name	ANZSCO3	ANZSCO3 Name
1	Managers	11	Chief Executives, General Managers and Legislators	111	Chief Executives, General Managers and Legislators
1	Managers	12	Farmers and Farm Managers	121	Farmers and Farm Managers
1	Managers	13	Specialist Managers	131	Advertising, Public Relations and Sales Managers
1	Managers	13	Specialist Managers	132	Business Administration Managers
1	Managers	13	Specialist Managers	133	Construction, Distribution and Production Managers
1	Managers	13	Specialist Managers	134	Education, Health and Welfare Services Managers
1	Managers	13	Specialist Managers	135	ICT Managers
1	Managers	13	Specialist Managers	139	Miscellaneous Specialist Managers
1	Managers	14	Hospitality, Retail and Service Managers	141	Accommodation and Hospitality Managers
1	Managers	14	Hospitality, Retail and Service Managers	142	Retail Managers
1	Managers	14	Hospitality, Retail and Service Managers	149	Miscellaneous Hospitality, Retail and Service Managers
2	Professionals	21	Arts and Media Professionals	211	Arts Professionals
2	Professionals	21	Arts and Media Professionals	212	Media Professionals
2	Professionals	22	Business, Human Resource and Marketing Professionals	221	Accountants, Auditors and Company Secretaries
2	Professionals	22	Business, Human Resource and Marketing Professionals	222	Financial Brokers and Dealers, and Investment Advisers
2	Professionals	22	Business, Human Resource and Marketing Professionals	223	Human Resource and Training Professionals
2	Professionals	22	Business, Human Resource and Marketing Professionals	224	Information and Organisation Professionals
2	Professionals	22	Business, Human Resource and Marketing Professionals	225	Sales, Marketing and Public Relations Professionals
2	Professionals	23	Design, Engineering, Science and Transport Professionals	231	Air and Marine Transport Professionals
2	Professionals	23	Design, Engineering, Science and Transport Professionals	232	Architects, Designers, Planners and Surveyors
2	Professionals	23	Design, Engineering, Science and Transport Professionals	233	Engineering Professionals
2	Professionals	23	Design, Engineering, Science and Transport Professionals	234	Natural and Physical Science Professionals
2	Professionals	24	Education Professionals	241	School Teachers
2	Professionals	24	Education Professionals	242	Tertiary Education Teachers

ANZSCO1	ANZSCO1 Name	ANZSCO2	ANZSCO2 Name	ANZSCO3	ANZSCO3 Name
2	Professionals	24	Education Professionals	249	Miscellaneous Education Professionals
2	Professionals	25	Health Professionals	251	Health Diagnostic and Promotion Professionals
2	Professionals	25	Health Professionals	252	Health Therapy Professionals
2	Professionals	25	Health Professionals	253	Medical Practitioners
2	Professionals	25	Health Professionals	254	Midwifery and Nursing Professionals
2	Professionals	26	ICT Professionals	261	Business and Systems Analysts, and Programmers
2	Professionals	26	ICT Professionals	262	Database and Systems Administrators, and ICT Security Specialists
2	Professionals	26	ICT Professionals	263	ICT Network and Support Professionals
2	Professionals	27	Legal, Social and Welfare Professionals	271	Legal Professionals
2	Professionals	27	Legal, Social and Welfare Professionals	272	Social and Welfare Professionals
3	Technicians and Trades Workers	31	Engineering, ICT and Science Technicians	311	Agricultural, Medical and Science Technicians
3	Technicians and Trades Workers	31	Engineering, ICT and Science Technicians	312	Building and Engineering Technicians
3	Technicians and Trades Workers	31	Engineering, ICT and Science Technicians	313	ICT and Telecommunications Technicians
3	Technicians and Trades Workers	32	Automotive and Engineering Trades Workers	321	Automotive Electricians and Mechanics
3	Technicians and Trades Workers	32	Automotive and Engineering Trades Workers	322	Fabrication Engineering Trades Workers
3	Technicians and Trades Workers	32	Automotive and Engineering Trades Workers	323	Mechanical Engineering Trades Workers
3	Technicians and Trades Workers	32	Automotive and Engineering Trades Workers	324	Panelbeaters, and Vehicle Body Builders, Trimmers and Painters
3	Technicians and Trades Workers	33	Construction Trades Workers	331	Bricklayers, and Carpenters and Joiners
3	Technicians and Trades Workers	33	Construction Trades Workers	332	Floor Finishers and Painting Trades Workers
3	Technicians and Trades Workers	33	Construction Trades Workers	333	Glaziers, Plasterers and Tilers
3	Technicians and Trades Workers	33	Construction Trades Workers	334	Plumbers
3	Technicians and Trades Workers	34	Electrotechnology and Telecommunications Trades Workers	341	Electricians
3	Technicians and Trades Workers	34	Electrotechnology and Telecommunications Trades Workers	342	Electronics and Telecommunications Trades Workers
3	Technicians and Trades Workers	35	Food Trades Workers	351	Food Trades Workers
3	Technicians and Trades Workers	36	Skilled Animal and Horticultural Workers	361	Animal Attendants and Trainers, and Shearers
3	Technicians and Trades Workers	36	Skilled Animal and Horticultural Workers	362	Horticultural Trades Workers
3	Technicians and Trades Workers	39	Other Technicians and Trades Workers	391	Hairdressers
3	Technicians and Trades Workers	39	Other Technicians and Trades Workers	392	Printing Trades Workers
3	Technicians and Trades Workers	39	Other Technicians and Trades Workers	393	Textile, Clothing and Footwear Trades Workers
3	Technicians and Trades Workers	39	Other Technicians and Trades Workers	394	Wood Trades Workers

ANZSCO1	ANZSCO1 Name	ANZSCO2	ANZSCO2 Name	ANZSCO3	ANZSCO3 Name
3	Technicians and Trades Workers	39	Other Technicians and Trades Workers	399	Miscellaneous Technicians and Trades Workers
4	Community and Personal Service Workers	41	Health and Welfare Support Workers	411	Health and Welfare Support Workers
4	Community and Personal Service Workers	42	Carers and Aides	421	Child Carers
4	Community and Personal Service Workers	42	Carers and Aides	422	Education Aides
4	Community and Personal Service Workers	42	Carers and Aides	423	Personal Carers and Assistants
4	Community and Personal Service Workers	43	Hospitality Workers	431	Hospitality Workers
4	Community and Personal Service Workers	44	Protective Service Workers	441	Defence Force Members, Fire Fighters and Police
4	Community and Personal Service Workers	44	Protective Service Workers	442	Prison and Security Officers
4	Community and Personal Service Workers	45	Sports and Personal Service Workers	451	Personal Service and Travel Workers
4	Community and Personal Service Workers	45	Sports and Personal Service Workers	452	Sports and Fitness Workers
5	Clerical and Administrative Workers	51	Office Managers and Program Administrators	511	Contract, Program and Project Administrators
5	Clerical and Administrative Workers	51	Office Managers and Program Administrators	512	Office and Practice Managers
5	Clerical and Administrative Workers	52	Personal Assistants and Secretaries	521	Personal Assistants and Secretaries
5	Clerical and Administrative Workers	53	General Clerical Workers	531	General Clerks
5	Clerical and Administrative Workers	53	General Clerical Workers	532	Keyboard Operators
5	Clerical and Administrative Workers	54	Inquiry Clerks and Receptionists	541	Call or Contact Centre Information Clerks
5	Clerical and Administrative Workers	54	Inquiry Clerks and Receptionists	542	Receptionists
5	Clerical and Administrative Workers	55	Numerical Clerks	551	Accounting Clerks and Bookkeepers
5	Clerical and Administrative Workers	55	Numerical Clerks	552	Financial and Insurance Clerks
5	Clerical and Administrative Workers	56	Clerical and Office Support Workers	561	Clerical and Office Support Workers
5	Clerical and Administrative Workers	59	Other Clerical and Administrative Workers	591	Logistics Clerks
5	Clerical and Administrative Workers	59	Other Clerical and Administrative Workers	599	Miscellaneous Clerical and Administrative Workers
6	Sales Workers	61	Sales Representatives and Agents	611	Insurance Agents and Sales Representatives
6	Sales Workers	61	Sales Representatives and Agents	612	Real Estate Sales Agents
6	Sales Workers	62	Sales Assistants and Salespersons	621	Sales Assistants and Salespersons
6	Sales Workers	63	Sales Support Workers	631	Checkout Operators and Office Cashiers
6	Sales Workers	63	Sales Support Workers	639	Miscellaneous Sales Support Workers
7	Machinery Operators and Drivers	71	Machine and Stationary Plant Operators	711	Machine Operators
7	Machinery Operators and Drivers	71	Machine and Stationary Plant Operators	712	Stationary Plant Operators
7	Machinery Operators and Drivers	72	Mobile Plant Operators	721	Mobile Plant Operators
7	Machinery Operators and Drivers	73	Road and Rail Drivers	731	Automobile, Bus and Rail Drivers
7	Machinery Operators and Drivers	73	Road and Rail Drivers	732	Delivery Drivers
7	Machinery Operators and Drivers	73	Road and Rail Drivers	733	Truck Drivers
7	Machinery Operators and Drivers	74	Storepersons	741	Storepersons

ANZSCO1	ANZSCO1 Name	ANZSCO2	ANZSCO2 Name	ANZSCO3	ANZSCO3 Name
8	Labourers	81	Cleaners and Laundry Workers	811	Cleaners and Laundry Workers
8	Labourers	82	Construction and Mining Labourers	821	Construction and Mining Labourers
8	Labourers	83	Factory Process Workers	831	Food Process Workers
8	Labourers	83	Factory Process Workers	832	Packers and Product Assemblers
8	Labourers	83	Factory Process Workers	839	Miscellaneous Factory Process Workers
8	Labourers	84	Farm, Forestry and Garden Workers	841	Farm, Forestry and Garden Workers
8	Labourers	85	Food Preparation Assistants	851	Food Preparation Assistants
8	Labourers	89	Other Labourers	891	Freight Handlers and Shelf Fillers
8	Labourers	89	Other Labourers	899	Miscellaneous Labourers

## Appendix B: Occupations at the ANZSCO 3-digit level: Melbourne's North compared to the metropolitan area as a whole

In Section 3.2 the distribution of employment in 2021 and preceding years was described on the basis of the ANZSCO 2-digit classification. In Part 3 of the report projections are provided at the ANZSCO 3-digit level. This note links the two sections by comparing the distribution of employment in Melbourne's North in 2021 by ANZSCO 3-digit occupations with the distribution in Melbourne as a whole. It also compares the place-of-work distribution in Melbourne's North with the residential distribution.

At the 3-digit level, the ANZSCO classification splits many, but not all, of the 2-digit occupations into relatively specific occupational groups, thus expanding the list from 43 occupations to 97 more tightly-defined occupations. The following tables compare the composition of the Northern Melbourne workforce, first on a place-of-work basis and then on a residential basis, with the workforce in Greater Melbourne as a whole and also with suburban Melbourne – Greater Melbourne less Central Melbourne.

Overall, in 2021 14 per cent of all the jobs in Greater Melbourne were located in Melbourne's North. Excluding the cities of Melbourne and Yarra (Central Melbourne) from the denominator, the proportion rose to 20 per cent. Table B.1 shows that the distribution of occupations by place of work in Melbourne's North was broadly similar to that in Greater Melbourne. In only six of the 97 occupations was the proportion of jobs less than 6 per cent of that in Melbourne as a whole, and at the opposite extreme in only 7 of the 97 occupations was the proportion more than 24 per cent. Taking out Central Melbourne and comparing Melbourne's North with suburban Melbourne the similarity increases, with fewer occupations at the extremes of the range.

Table B.1 Distribution of occupations (ANZSCO 3-digit) in workplaces in Melbourne's North as a percentage of those in Greater Melbourne and suburban Melbourne, 2021			
Melbourne's North/Greater Melbourne	Occupations	Melbourne's North/suburban Melbourne	Occupations
Percentage range		Percentage range	
<6	6	<11	3
6<13	23	11<18	31
13<17	29	18<22	36
17<24	32	22<29	24
24+	7	30+	3
Average 14	Total 97	Average 20	Total 97

Source: 2016 Census updated to 2021 by NIEIR.

Tables B.2 and B.3 comprise the top dozen rows and the bottom dozen rows, respectively, of a larger table of 3-digit occupations arrayed in descending order of the proportion of all jobs in Greater Melbourne located in Melbourne's North on a place-of-work basis.

Thanks to the location of the airport, in 2021 Melbourne's North accounted for more than half of the total employment of air and marine transport professionals in Greater Melbourne. This was the only professional or managerial occupation in the regional top dozen, the rest were mainly trades, machinery operators and labourers. Though employment located in Melbourne's North was less than the number of resident workers, in some of these occupations the number of resident workers exceeded the number of jobs in the region. For example, the excess of Northern Melbourne jobs over resident workers for rail and passenger road drivers probably reflected the location of Melbourne's tram and bus depots and suburban rail sign-on points.



<b>Table B.2 Occupations prominent in Melbourne's North on a place-of-work basis, 2021</b>			
<b>Occupation</b>	<b>NM/Melbourne (per cent)</b>	<b>NM/suburban Melbourne (per cent)</b>	<b>NM residents/ NM jobs (per cent)</b>
Air and marine transport professionals	54	68	37
Wood trades	28	29	85
Panelbeaters and other vehicle body trades	27	28	94
Rail and passenger road drivers	25	31	128
Mechanical engineering trades	25	27	87
Food process workers	25	27	85
Mobile plant operators	25	26	92
Child care	24	25	111
Fabrication engineering trades	23	24	112
Personal service, travel workers	23	27	89
Defence, police and firefighters	22	32	120
Prison and security officers	18	28	170
<b>MELBOURNE'S NORTH</b>	<b>14</b>	<b>20</b>	<b>142</b>

Source: 2016 Census updated to 2021 by NIEIR.

At the opposite end of the distribution, in 2021 occupations relatively uncommon in Melbourne's North were predominantly white-collar with a strong emphasis on ICT – at least half of the bottom dozen occupations had strong ICT associations. In all the bottom dozen occupations the number of resident workers exceeded the number of jobs in the region, in one case by five times.

<b>Table B.3 Occupations relatively uncommon in Melbourne's North on a place-of-work basis, 2021</b>			
<b>Occupation</b>	<b>NM/Melbourne (per cent)</b>	<b>NM/suburban Melbourne (per cent)</b>	<b>NM residents/ NM jobs (per cent)</b>
Real estate sales agents	10	12	142
Advertising, PR and sales managers	9	13	188
ICT, telecom technicians	7	13	272
Sales, marketing and PR professionals	7	12	231
Financial and insurance clerks	6	15	316
Finance brokers, dealers and investment advisers	6	13	265
Information and organisational professionals	5	14	307
Database administrators, ICT security specialists	5	13	313
ICT network and support professionals	4	10	450
Legal professionals	3	10	473
ICT managers	3	10	499
Business and systems analysts and programmers	3	9	434
<b>MELBOURNE'S NORTH</b>	<b>14</b>	<b>20</b>	<b>142</b>

Source: 2016 Census updated to 2021 by NIEIR.

Turning to a residential basis, in 2021 Melbourne's North housed 21 per cent of all people employed in Greater Melbourne and 22 per cent of those employed in the Melbourne suburbs. At the 3-digit ANZSCO level the distribution of occupations among the residents of Melbourne's North was not far different from that in the metropolitan area as a whole. It was a little more compressed than the distribution by workplace – occupations by workplace tend to congregate regionally more than they do by place of residence.

Table B.4 Distribution of occupations (ANZSCO 3-digit) among residents of Melbourne's North as a percentage of those in Greater Melbourne and suburban Melbourne, 2021			
Melbourne's North/Greater Melbourne	Occupations	Melbourne's North/suburban Melbourne	Occupations
Percentage range		Percentage range	
<16	7	<17	6
16<19	20	17<20	16
19<23	45	20<24	49
23<26	21	24<27	21
26+	4	30+	5
Average 21	Total 97	Average 22	Total 97

Source: 2016 Census updated to 2021 by NIEIR.

Tables B.5 and B.6 echo Tables B.2 and B.3 in that they comprise the top dozen and the bottom dozen rows, respectively, of a larger table of 3-digit occupations, arrayed in descending order of the proportion of all employees residing in Greater Melbourne located in Melbourne's North, this time on a residential basis.

There is a certain commonality between Table B.2 and Table B.5, in that five occupations appear in both tables, indicating that workers value proximity when making their workplace and residential decisions. Again, most of the occupations listed in Table B.5 are in the broad trades, machinery operation and labouring categories, like their counterparts in Table B.2. However, there is a notable exception: Melbourne's North has a relative abundance of tertiary education teachers. Though there are far fewer jobs in tertiary education than residents, tertiary educators are less fussed about residential socio-economic status than most professions and are more likely to be attracted by relatively affordable housing.

It is notable that several of the current residential concentrations of occupations in Melbourne's North appear to result from historical rather than current job accessibility. This is probably true for workers in the textile, clothing and footwear trades, where the remaining jobs seem to be largely in the southern suburbs. Melbourne's North is also the preferred residential location for prison and security officers, as is appropriate in that, despite the closure of Pentridge, in 2021 the region still had more jobs for this occupation than any of the other regions. However, over the past few decades the State Government has shifted a significant amount of prison employment to the western suburbs while a great many prison employees still live in the North. When governments or other employers make decisions to shift the workplace of career workers they inevitably generate additional commuting which can last until the shifted workers retire.

Table B.5 Occupations prominent in Melbourne's North on a residential basis, 2021			
Occupation	NM/Melbourne (per cent)	NM/suburban Melbourne (per cent)	NM residents/ NM jobs (per cent)
Prison and security officers	33	34	59
Rail and passenger road drivers	31	32	78
Wood trades	29	29	118
Panelbeaters and other vehicle body trades	28	28	101
Textile, clothing, footwear trades	26	27	71
Agricultural, medical and science technicians	26	26	73
Defence, police and firefighters	26	26	83
Bricklayers, carpenters, joiners	26	26	77
Electricians	26	26	75
Painters and floor finishers	25	25	81
Health and welfare support workers	25	26	75
Tertiary education teachers	23	27	55
<b>MELBOURNE'S NORTH</b>	<b>21</b>	<b>22</b>	<b>71</b>

Source: 2016 Census updated to 2021 by NIEIR.

As in the top dozen occupations by residence, so also in the bottom dozen: in 2021 there was considerable commonality between the occupations which were relatively unusual among the residents of Melbourne's North and those which were relatively unusual in the region's workplaces. No less than six 3-digit occupations are listed in both Table B.3 and Table B.6. This constitutes further evidence that people take accessibility into account when deciding where to live and work.

Exceptions to this rule occur when occupational groups seek to live in high-status locations regardless of their work location. The outstanding example of this is medical practice. Melbourne's medical practitioners prefer to live in the eastern and southern suburbs, and Melbourne's North depends on net inbound commuting to fill its medical practitioner positions.

<b>Table B.6 Occupations relatively uncommon in Melbourne's North on a residential basis, 2021</b>			
<b>Occupation</b>	<b>NM/Melbourne (per cent)</b>	<b>NM/suburban Melbourne (per cent)</b>	<b>NM residents/ NM jobs (per cent)</b>
Packers and product assemblers	17	17	101
Farm, forestry or garden worker	17	17	80
Sales, marketing, PR professional	16	18	43
Farmer, farm manager	16	17	85
Advertising, PR and sales managers	16	17	53
Business and systems analysts and programmers	16	18	23
Accountant, auditor, or company secretary	16	17	48
Legal professional	15	19	21
Finance brokers, dealers and investment advisers	15	17	37
CEO, general manager, legislator	15	16	74
Real estate sales agent	14	14	72
Medical practitioner	13	16	115
<b>MELBOURNE'S NORTH</b>	<b>21</b>	<b>22</b>	<b>71</b>

Source: 2016 Census updated to 2021 by NIEIR.

## Appendix C: Labour market indicators by LGA

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The resident labour market across Melbourne's North can vary substantially in both participation and unemployment between the regions. This appendix presents a summary of the labour market by LGA and in total for Melbourne's North for key demographics that contribute to regional differences in employment outcomes. These statistics have all been drawn from the ABS Census of Population and Housing from 2006 to 2016. The labour market is summarised by the following indicators:

- Employed;
- Unemployed;
- Not in the Labour Force;
- Participation rate; and
- Unemployment rate.

In addition to the total labour market, the following key demographics have been summarised for each LGA:

- Indigenous status;
- culturally and linguistically diverse backgrounds; and
- age group (i.e. youth, mature, middle).

Table C.1 Labour force status by region – Total					
Region name		Units	2006	2011	2016
Banyule (C)	Employed	no.	56129	58665	58916
	Unemployed	no.	2475	2716	3430
	Not in the Labour Force	no.	31180	31958	32625
	Labour Force Participation rate	per cent	65.3	65.8	65.6
	Unemployment rate	per cent	4.2	4.4	5.5
Darebin (C)	Employed	no.	55910	63810	70307
	Unemployed	no.	3920	4187	5438
	Not in the Labour Force	no.	38558	38822	38722
	Labour Force Participation rate	per cent	60.8	63.7	66.2
	Unemployment rate	per cent	6.6	6.2	7.2
Hume (C)	Employed	no.	61391	70923	81027
	Unemployed	no.	4634	5190	7756
	Not in the Labour Force	no.	39031	46154	55713
	Labour Force Participation rate	per cent	62.8	62.3	61.4
	Unemployment rate	per cent	7.0	6.8	8.7
Mitchell (S)	Employed	no.	13877	15960	18409
	Unemployed	no.	697	859	1107
	Not in the Labour Force	no.	7508	8658	10259
	Labour Force Participation rate	per cent	66.0	66.0	65.5
	Unemployment rate	per cent	4.8	5.1	5.7
Moreland (C)	Employed	no.	59731	69851	80351
	Unemployed	no.	3844	4305	5917
	Not in the Labour Force	no.	41536	41267	41768
	Labour Force Participation rate	per cent	60.5	64.2	67.4
	Unemployment rate	per cent	6.0	5.8	6.9
Nillumbik (S)	Employed	no.	32393	33080	32577
	Unemployed	no.	1014	1198	1459
	Not in the Labour Force	no.	11212	12120	13145
	Labour Force Participation rate	per cent	74.9	73.9	72.1
	Unemployment rate	per cent	3.0	3.5	4.3
Whittlesea (C)	Employed	no.	55266	71489	88554
	Unemployed	no.	3444	4265	6867
	Not in the Labour Force	no.	34165	40928	52078
	Labour Force Participation rate	per cent	63.2	64.9	64.7
	Unemployment rate	per cent	5.9	5.6	7.2
<b>Melbourne's North</b>	<b>Employed</b>	<b>no.</b>	<b>334697</b>	<b>383778</b>	<b>430141</b>
	<b>Unemployed</b>	<b>no.</b>	<b>20028</b>	<b>22720</b>	<b>31974</b>
	<b>Not in the Labour Force</b>	<b>no.</b>	<b>203190</b>	<b>219907</b>	<b>244310</b>
	<b>Labour Force Participation rate</b>	<b>per cent</b>	<b>63.6</b>	<b>64.9</b>	<b>65.4</b>
	<b>Unemployment rate</b>	<b>per cent</b>	<b>5.6</b>	<b>5.6</b>	<b>6.9</b>

Source: ABS Census of Population and Housing, 2006, 2011 and 2016.

Table C.2 Labour force status by region – Indigenous residents					
Region name		Units	2006	2011	2016
Banyule (C)	Employed	no.	177	212	268
	Unemployed	no.	23	31	30
	Not in the Labour Force	no.	117	137	191
	Labour Force Participation rate	per cent	63.1	63.9	60.9
	Unemployment rate	per cent	11.5	12.8	10.1
Darebin (C)	Employed	no.	323	403	423
	Unemployed	no.	80	51	74
	Not in the Labour Force	no.	297	333	350
	Labour Force Participation rate	per cent	57.6	57.7	58.7
	Unemployment rate	per cent	19.9	11.2	14.9
Hume (C)	Employed	no.	256	344	496
	Unemployed	no.	47	47	77
	Not in the Labour Force	no.	200	262	377
	Labour Force Participation rate	per cent	60.2	59.9	60.3
	Unemployment rate	per cent	15.5	12.0	13.4
Mitchell (S)	Employed	no.	99	136	202
	Unemployed	no.	10	19	30
	Not in the Labour Force	no.	66	103	150
	Labour Force Participation rate	per cent	62.3	60.1	60.7
	Unemployment rate	per cent	9.2	12.3	12.9
Moreland (C)	Employed	no.	209	265	349
	Unemployed	no.	35	38	45
	Not in the Labour Force	no.	165	185	197
	Labour Force Participation rate	per cent	59.7	62.1	66.7
	Unemployment rate	per cent	14.3	12.5	11.4
Nillumbik (S)	Employed	no.	68	87	118
	Unemployed	no.	8	9	5
	Not in the Labour Force	no.	26	39	38
	Labour Force Participation rate	per cent	74.5	71.1	76.4
	Unemployment rate	per cent	10.5	9.4	4.1
Whittlesea (C)	Employed	no.	267	397	586
	Unemployed	no.	30	37	68
	Not in the Labour Force	no.	211	250	357
	Labour Force Participation rate	per cent	58.5	63.5	64.7
	Unemployment rate	per cent	10.1	8.5	10.4
<b>Melbourne's North</b>	<b>Employed</b>	<b>no.</b>	<b>1399</b>	<b>1844</b>	<b>2442</b>
	<b>Unemployed</b>	<b>no.</b>	<b>233</b>	<b>232</b>	<b>329</b>
	<b>Not in the Labour Force</b>	<b>no.</b>	<b>1082</b>	<b>1309</b>	<b>1660</b>
	<b>Labour Force Participation rate</b>	<b>per cent</b>	<b>60.1</b>	<b>61.3</b>	<b>62.5</b>
	<b>Unemployment rate</b>	<b>per cent</b>	<b>14.3</b>	<b>11.2</b>	<b>11.9</b>

Source: ABS Census of Population and Housing, 2006, 2011 and 2016.



Table C.3 Labour force status by region – Non-indigenous residents					
Region name		Units	2006	2011	2016
Banyule (C)	Employed	no.	55512	58098	58366
	Unemployed	no.	2413	2667	3379
	Not in the Labour Force	no.	30531	31392	32071
	Labour Force Participation rate	per cent	65.5	65.9	65.8
	Unemployment rate	per cent	4.2	4.4	5.5
Darebin (C)	Employed	no.	55059	62929	69524
	Unemployed	no.	3753	4088	5318
	Not in the Labour Force	no.	37467	37852	37934
	Labour Force Participation rate	per cent	61.1	63.9	66.4
	Unemployment rate	per cent	6.4	6.1	7.1
Hume (C)	Employed	no.	60510	69894	80074
	Unemployed	no.	4503	5070	7609
	Not in the Labour Force	no.	38057	45166	54705
	Labour Force Participation rate	per cent	63.1	62.4	61.6
	Unemployment rate	per cent	6.9	6.8	8.7
Mitchell (S)	Employed	no.	13649	15715	18025
	Unemployed	no.	672	834	1058
	Not in the Labour Force	no.	7310	8439	9953
	Labour Force Participation rate	per cent	66.2	66.2	65.7
	Unemployment rate	per cent	4.7	5.0	5.5
Moreland (C)	Employed	no.	58978	68991	79627
	Unemployed	no.	3757	4222	5835
	Not in the Labour Force	no.	40479	40386	41068
	Labour Force Participation rate	per cent	60.8	64.4	67.5
	Unemployment rate	per cent	6.0	5.8	6.8
Nillumbik (S)	Employed	no.	32094	32781	32292
	Unemployed	no.	1004	1185	1433
	Not in the Labour Force	no.	11051	11970	12992
	Labour Force Participation rate	per cent	75.0	73.9	72.2
	Unemployment rate	per cent	3.0	3.5	4.2
Whittlesea (C)	Employed	no.	54365	70348	87437
	Unemployed	no.	3347	4175	6742
	Not in the Labour Force	no.	33231	39971	51073
	Labour Force Participation rate	per cent	63.5	65.1	64.8
	Unemployment rate	per cent	5.8	5.6	7.2
<b>Melbourne's North</b>	<b>Employed</b>	<b>no.</b>	<b>330167</b>	<b>378756</b>	<b>425345</b>
	<b>Unemployed</b>	<b>no.</b>	<b>19449</b>	<b>22241</b>	<b>31374</b>
	<b>Not in the Labour Force</b>	<b>no.</b>	<b>198126</b>	<b>215176</b>	<b>239796</b>
	<b>Labour Force Participation rate</b>	<b>per cent</b>	<b>63.8</b>	<b>65.1</b>	<b>65.6</b>
	<b>Unemployment rate</b>	<b>per cent</b>	<b>5.6</b>	<b>5.5</b>	<b>6.9</b>

Source: ABS Census of Population and Housing, 2006, 2011 and 2016.

Table C.4 Labour force status by region – Culturally and Linguistically Diverse residents					
Region name		Units	2006	2011	2016
Banyule (C)	Employed	no.	8816	10222	11343
	Unemployed	no.	587	675	986
	Not in the Labour Force	no.	7815	8574	9350
	Labour Force Participation rate	per cent	54.6	56.0	56.9
	Unemployment rate	per cent	6.2	6.2	8.0
Darebin (C)	Employed	no.	14923	17173	18570
	Unemployed	no.	1572	1633	2142
	Not in the Labour Force	no.	20220	20427	20730
	Labour Force Participation rate	per cent	44.9	47.9	50.0
	Unemployment rate	per cent	9.5	8.7	10.3
Hume (C)	Employed	no.	16960	21195	28302
	Unemployed	no.	1872	1939	3287
	Not in the Labour Force	no.	18370	22438	29094
	Labour Force Participation rate	per cent	50.6	50.8	52.1
	Unemployment rate	per cent	9.9	8.4	10.4
Mitchell (S)	Employed	no.	1053	1051	1720
	Unemployed	no.	71	69	113
	Not in the Labour Force	no.	1091	1091	1581
	Labour Force Participation rate	per cent	50.7	50.7	53.7
	Unemployment rate	per cent	6.3	6.2	6.2
Moreland (C)	Employed	no.	14985	18423	21542
	Unemployed	no.	1507	1542	2271
	Not in the Labour Force	no.	22388	22025	22375
	Labour Force Participation rate	per cent	42.4	47.5	51.6
	Unemployment rate	per cent	9.1	7.7	9.5
Nillumbik (S)	Employed	no.	3150	2857	2993
	Unemployed	no.	111	96	161
	Not in the Labour Force	no.	1624	1699	1984
	Labour Force Participation rate	per cent	66.8	63.5	61.4
	Unemployment rate	per cent	3.4	3.3	5.1
Whittlesea (C)	Employed	no.	17610	22477	31644
	Unemployed	no.	1350	1618	3016
	Not in the Labour Force	no.	18403	21604	28237
	Labour Force Participation rate	per cent	50.7	52.7	55.1
	Unemployment rate	per cent	7.1	6.7	8.7
<b>Melbourne's North</b>	<b>Employed</b>	<b>no.</b>	<b>77497</b>	<b>93398</b>	<b>116114</b>
	<b>Unemployed</b>	<b>no.</b>	<b>7070</b>	<b>7572</b>	<b>11976</b>
	<b>Not in the Labour Force</b>	<b>no.</b>	<b>89911</b>	<b>97858</b>	<b>113351</b>
	<b>Labour Force Participation rate</b>	<b>per cent</b>	<b>48.5</b>	<b>50.8</b>	<b>53.1</b>
	<b>Unemployment rate</b>	<b>per cent</b>	<b>8.4</b>	<b>7.5</b>	<b>9.3</b>

**Note:** Culturally and Linguistically Diverse (CALD) population is defined as those living in Australia that were born outside of Australia; and from countries other than major English speaking countries.

**Source:** ABS Census of Population and Housing, 2006, 2011 and 2016.

Table C.5 Labour force status by region and age group – 15 to 24 years					
Region name		Units	2006	2011	2016
Banyule (C)	Employed	no.	8981	8405	7465
	Unemployed	no.	941	1062	1242
	Not in the Labour Force	no.	5016	5213	4989
	Labour Force Participation rate	per cent	66.4	64.5	63.6
	Unemployment rate	per cent	9.5	11.2	14.3
Darebin (C)	Employed	no.	8136	8258	8891
	Unemployed	no.	1260	1468	1780
	Not in the Labour Force	no.	5921	6475	6436
	Labour Force Participation rate	per cent	61.3	60.0	62.4
	Unemployment rate	per cent	13.4	15.1	16.7
Hume (C)	Employed	no.	11001	12131	12893
	Unemployed	no.	1669	1955	2894
	Not in the Labour Force	no.	8518	10336	11317
	Labour Force Participation rate	per cent	59.8	57.7	58.2
	Unemployment rate	per cent	13.2	13.9	18.3
Mitchell (S)	Employed	no.	2123	2455	2723
	Unemployed	no.	224	318	347
	Not in the Labour Force	no.	1618	1715	1922
	Labour Force Participation rate	per cent	59.2	61.8	61.5
	Unemployment rate	per cent	9.5	11.5	11.3
Moreland (C)	Employed	no.	9317	9887	10329
	Unemployed	no.	1227	1426	1913
	Not in the Labour Force	no.	5937	6492	6666
	Labour Force Participation rate	per cent	64.0	63.5	64.7
	Unemployment rate	per cent	11.6	12.6	15.6
Nillumbik (S)	Employed	no.	5661	5629	5031
	Unemployed	no.	447	567	651
	Not in the Labour Force	no.	2915	2801	2595
	Labour Force Participation rate	per cent	67.7	68.9	68.6
	Unemployment rate	per cent	7.3	9.2	11.5
Whittlesea (C)	Employed	no.	9827	11209	12384
	Unemployed	no.	1227	1605	2430
	Not in the Labour Force	no.	6335	7684	9209
	Labour Force Participation rate	per cent	63.6	62.5	61.7
	Unemployment rate	per cent	11.1	12.5	16.4
<b>Melbourne's North</b>	<b>Employed</b>	<b>no.</b>	<b>55046</b>	<b>57974</b>	<b>59716</b>
	<b>Unemployed</b>	<b>no.</b>	<b>6995</b>	<b>8401</b>	<b>11257</b>
	<b>Not in the Labour Force</b>	<b>no.</b>	<b>36260</b>	<b>40716</b>	<b>43134</b>
	<b>Labour Force Participation rate</b>	<b>per cent</b>	<b>63.1</b>	<b>62.0</b>	<b>62.2</b>
	<b>Unemployment rate</b>	<b>per cent</b>	<b>11.3</b>	<b>12.7</b>	<b>15.9</b>

Source: ABS Census of Population and Housing, 2006, 2011 and 2016.

Table C.6 Labour force status by region and age group – 25 to 44 years					
Region name		Units	2006	2011	2016
Banyule (C)	Employed	no.	24720	26010	26465
	Unemployed	no.	916	996	1238
	Not in the Labour Force	no.	4841	4753	4426
	Labour Force Participation rate	per cent	84.1	85.0	86.2
	Unemployment rate	per cent	3.6	3.7	4.5
Darebin (C)	Employed	no.	31623	35877	38196
	Unemployed	no.	1812	1859	2392
	Not in the Labour Force	no.	7128	7514	7267
	Labour Force Participation rate	per cent	82.4	83.4	84.8
	Unemployment rate	per cent	5.4	4.9	5.9
Hume (C)	Employed	no.	29977	33172	38655
	Unemployed	no.	2086	2129	3093
	Not in the Labour Force	no.	10118	11187	13377
	Labour Force Participation rate	per cent	76.0	75.9	75.7
	Unemployment rate	per cent	6.5	6.0	7.4
Mitchell (S)	Employed	no.	6359	6626	7549
	Unemployed	no.	267	313	405
	Not in the Labour Force	no.	1482	1529	1655
	Labour Force Participation rate	per cent	81.7	81.9	82.8
	Unemployment rate	per cent	4.0	4.5	5.1
Moreland (C)	Employed	no.	33894	39605	46416
	Unemployed	no.	1786	2048	2714
	Not in the Labour Force	no.	7894	8016	8194
	Labour Force Participation rate	per cent	81.9	83.9	85.7
	Unemployment rate	per cent	5.0	4.9	5.5
Nillumbik (S)	Employed	no.	12482	11639	11222
	Unemployed	no.	303	299	384
	Not in the Labour Force	no.	2065	1923	1537
	Labour Force Participation rate	per cent	86.1	86.1	88.3
	Unemployment rate	per cent	2.4	2.5	3.3
Whittlesea (C)	Employed	no.	27380	36415	45881
	Unemployed	no.	1463	1784	2917
	Not in the Labour Force	no.	7491	8661	11259
	Labour Force Participation rate	per cent	79.4	81.5	81.3
	Unemployment rate	per cent	5.1	4.7	6.0
<b>Melbourne's North</b>	<b>Employed</b>	<b>no.</b>	<b>166435</b>	<b>189344</b>	<b>214384</b>
	<b>Unemployed</b>	<b>no.</b>	<b>8633</b>	<b>9428</b>	<b>13143</b>
	<b>Not in the Labour Force</b>	<b>no.</b>	<b>41019</b>	<b>43583</b>	<b>47715</b>
	<b>Labour Force Participation rate</b>	<b>per cent</b>	<b>81.0</b>	<b>82.0</b>	<b>82.7</b>
	<b>Unemployment rate</b>	<b>per cent</b>	<b>4.9</b>	<b>4.7</b>	<b>5.8</b>

Source: ABS Census of Population and Housing, 2006, 2011 and 2016.

Table C.7 Labour force status by region and age group – 45 to 54 years					
Region name		Units	2006	2011	2016
Banyule (C)	Employed	no.	13065	13077	12792
	Unemployed	no.	380	380	509
	Not in the Labour Force	no.	2220	2166	2227
	Labour Force Participation rate	per cent	85.8	86.1	85.7
	Unemployment rate	per cent	2.8	2.8	3.8
Darebin (C)	Employed	no.	10742	12437	13993
	Unemployed	no.	526	542	740
	Not in the Labour Force	no.	3140	3088	3194
	Labour Force Participation rate	per cent	78.2	80.8	82.2
	Unemployment rate	per cent	4.7	4.2	5.0
Hume (C)	Employed	no.	13570	16001	17331
	Unemployed	no.	565	744	1050
	Not in the Labour Force	no.	4262	5162	6532
	Labour Force Participation rate	per cent	76.8	76.4	73.8
	Unemployment rate	per cent	4.0	4.4	5.7
Mitchell (S)	Employed	no.	3309	3950	4317
	Unemployed	no.	128	134	201
	Not in the Labour Force	no.	649	767	845
	Labour Force Participation rate	per cent	84.1	84.2	84.2
	Unemployment rate	per cent	3.7	3.3	4.4
Moreland (C)	Employed	no.	10942	12726	14083
	Unemployed	no.	522	525	738
	Not in the Labour Force	no.	3290	3308	3315
	Labour Force Participation rate	per cent	77.7	80.0	81.7
	Unemployment rate	per cent	4.6	4.0	5.0
Nillumbik (S)	Employed	no.	9099	8996	8456
	Unemployed	no.	151	196	197
	Not in the Labour Force	no.	1031	1020	1021
	Labour Force Participation rate	per cent	90.0	90.0	89.4
	Unemployment rate	per cent	1.6	2.1	2.3
Whittlesea (C)	Employed	no.	12042	14746	17581
	Unemployed	no.	499	564	923
	Not in the Labour Force	no.	3685	3899	4847
	Labour Force Participation rate	per cent	77.3	79.7	79.2
	Unemployment rate	per cent	4.0	3.7	5.0
<b>Melbourne's North</b>	<b>Employed</b>	<b>no.</b>	<b>72769</b>	<b>81933</b>	<b>88553</b>
	<b>Unemployed</b>	<b>no.</b>	<b>2771</b>	<b>3085</b>	<b>4358</b>
	<b>Not in the Labour Force</b>	<b>no.</b>	<b>18277</b>	<b>19410</b>	<b>21981</b>
	<b>Labour Force Participation rate</b>	<b>per cent</b>	<b>80.5</b>	<b>81.4</b>	<b>80.9</b>
	<b>Unemployment rate</b>	<b>per cent</b>	<b>3.7</b>	<b>3.6</b>	<b>4.7</b>

Source: ABS Census of Population and Housing, 2006, 2011 and 2016.

Table C.8 Labour force status by region and age group – 55 to 64 years					
Region name		Units	2006	2011	2016
Banyule (C)	Employed	no.	7998	9121	9447
	Unemployed	no.	228	260	365
	Not in the Labour Force	no.	4749	4540	4124
	Labour Force Participation rate	per cent	63.4	67.4	70.4
	Unemployment rate	per cent	2.8	2.8	3.7
Darebin (C)	Employed	no.	4555	6172	7638
	Unemployed	no.	278	284	470
	Not in the Labour Force	no.	5444	4837	4614
	Labour Force Participation rate	per cent	47.0	57.2	63.7
	Unemployment rate	per cent	5.8	4.4	5.8
Hume (C)	Employed	no.	6121	8364	10175
	Unemployed	no.	284	330	651
	Not in the Labour Force	no.	6161	6838	7755
	Labour Force Participation rate	per cent	51.0	56.0	58.3
	Unemployment rate	per cent	4.4	3.8	6.0
Mitchell (S)	Employed	no.	1727	2430	3052
	Unemployed	no.	65	86	140
	Not in the Labour Force	no.	1259	1417	1468
	Labour Force Participation rate	per cent	58.7	64.0	68.5
	Unemployment rate	per cent	3.6	3.4	4.4
Moreland (C)	Employed	no.	4735	6445	7789
	Unemployed	no.	288	297	486
	Not in the Labour Force	no.	5330	4790	4747
	Labour Force Participation rate	per cent	48.5	58.5	63.5
	Unemployment rate	per cent	5.7	4.4	5.9
Nillumbik (S)	Employed	no.	4555	5723	6238
	Unemployed	no.	88	118	194
	Not in the Labour Force	no.	1911	2118	2107
	Labour Force Participation rate	per cent	70.8	73.4	75.3
	Unemployment rate	per cent	1.9	2.0	3.0
Whittlesea (C)	Employed	no.	5469	8022	10734
	Unemployed	no.	228	309	555
	Not in the Labour Force	no.	6153	6820	7182
	Labour Force Participation rate	per cent	48.1	55.0	61.1
	Unemployment rate	per cent	4.0	3.7	4.9
<b>Melbourne's North</b>	<b>Employed</b>	<b>no.</b>	<b>35160</b>	<b>46277</b>	<b>55073</b>
	<b>Unemployed</b>	<b>no.</b>	<b>1459</b>	<b>1684</b>	<b>2861</b>
	<b>Not in the Labour Force</b>	<b>no.</b>	<b>31007</b>	<b>31360</b>	<b>31997</b>
	<b>Labour Force Participation rate</b>	<b>per cent</b>	<b>54.1</b>	<b>60.5</b>	<b>64.4</b>
	<b>Unemployment rate</b>	<b>per cent</b>	<b>4.0</b>	<b>3.5</b>	<b>4.9</b>

Source: ABS Census of Population and Housing, 2006, 2011 and 2016.



Table C.9 Labour force status by region and age group – 65 and over					
Region name		Units	2006	2011	2016
Banyule (C)	Employed	no.	1366	2043	2743
	Unemployed	no.	15	28	74
	Not in the Labour Force	no.	14365	15291	16860
	Labour Force Participation rate	per cent	8.8	11.9	14.3
	Unemployment rate	per cent	1.1	1.4	2.6
Darebin (C)	Employed	no.	831	1049	1585
	Unemployed	no.	19	26	53
	Not in the Labour Force	no.	16925	16908	17224
	Labour Force Participation rate	per cent	4.8	6.0	8.7
	Unemployment rate	per cent	2.2	2.4	3.2
Hume (C)	Employed	no.	714	1253	1967
	Unemployed	no.	12	28	67
	Not in the Labour Force	no.	9965	12630	16737
	Labour Force Participation rate	per cent	6.8	9.2	10.8
	Unemployment rate	per cent	1.7	2.2	3.3
Mitchell (S)	Employed	no.	345	525	760
	Unemployed	no.	3	7	20
	Not in the Labour Force	no.	2520	3240	4371
	Labour Force Participation rate	per cent	12.1	14.1	15.1
	Unemployment rate	per cent	0.9	1.3	2.6
Moreland (C)	Employed	no.	852	1187	1751
	Unemployed	no.	18	27	58
	Not in the Labour Force	no.	19094	18649	18839
	Labour Force Participation rate	per cent	4.4	6.1	8.8
	Unemployment rate	per cent	2.1	2.2	3.2
Nillumbik (S)	Employed	no.	600	1113	1629
	Unemployed	no.	9	13	33
	Not in the Labour Force	no.	3273	4262	5891
	Labour Force Participation rate	per cent	15.7	20.9	22.0
	Unemployment rate	per cent	1.5	1.2	2.0
Whittlesea (C)	Employed	no.	553	1114	1974
	Unemployed	no.	7	21	49
	Not in the Labour Force	no.	10491	13859	19577
	Labour Force Participation rate	per cent	5.1	7.6	9.4
	Unemployment rate	per cent	1.3	1.9	2.4
<b>Melbourne's North</b>	<b>Employed</b>	<b>no.</b>	<b>5261</b>	<b>8284</b>	<b>12409</b>
	<b>Unemployed</b>	<b>no.</b>	<b>83</b>	<b>150</b>	<b>354</b>
	<b>Not in the Labour Force</b>	<b>no.</b>	<b>76633</b>	<b>84839</b>	<b>99499</b>
	<b>Labour Force Participation rate</b>	<b>per cent</b>	<b>6.5</b>	<b>9.0</b>	<b>11.4</b>
	<b>Unemployment rate</b>	<b>per cent</b>	<b>1.6</b>	<b>1.8</b>	<b>2.8</b>

Source: ABS Census of Population and Housing, 2006, 2011 and 2016.

## Appendix D: Capital stock by region

The capital stock represents the accumulation of long-term private and public investment into the region. Capital stock is an important driver of future jobs growth as it enables business productivity growth and expansion. The following tables summarise non-residential capital stock from 2001 to 2021 for key regions within Melbourne's North, Greater Melbourne and Victoria. Table D.1 contains total non-residential capital stock for each region. While Table D.2 is expressed in terms of non-residential capital stock per working age population, which enables more meaningful comparisons. Table D.3 compares each region's non-residential capital stock per working age population against Melbourne's North so that long-term relative trends can be identified.

Melbourne's North has a long-term deficiency in capital stock of around 14 per cent over the previous 20 years when compared to the rest of Greater Melbourne (excluding the Central region) as shown in Table D.3. This difference has been relatively consistent over the previous 20 years, with the exception of an improvement in 2021, which may be impacted by migration trends from COVID-19. As of 2021, Melbourne's North had \$97,300 capital stock per working age population, which remains below that of South, West and East regions. Strong future investment growth, above that of peer regions, is required to close the gap in capital stock.

**Figure D.1: Total non-residential capital stock per working age population  
(per cent annual growth)**

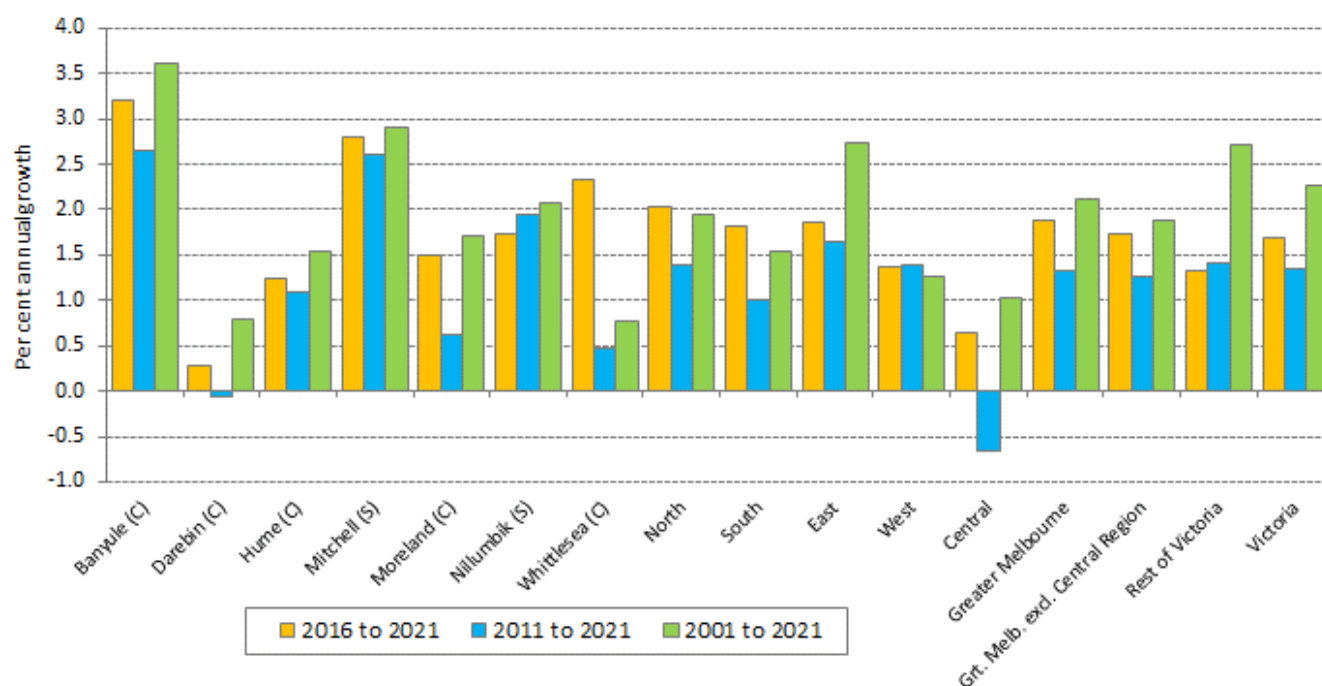


Table D.1 Total non-residential capital stock (\$cvm billion)					
	2001	2006	2011	2016	2021
Banyule (C)	2.9	3.9	4.8	5.3	6.3
Darebin (C)	4.8	5.6	6.6	7.0	7.7
Hume (C)	10.5	12.9	17.0	20.9	26.4
Mitchell (S)	1.2	1.5	2.1	2.8	3.8
Moreland (C)	2.7	3.3	4.2	4.7	5.6
Nillumbik (S)	2.0	2.3	2.7	3.0	3.2
Whittlesea (C)	6.7	8.0	10.3	12.2	15.9
Northern Melbourne	30.8	37.5	47.6	55.9	68.8
Southern Melbourne	59.6	72.8	89.3	99.8	118.1
Eastern Melbourne	45.6	56.9	71.3	79.7	91.2
Western Melbourne	28.4	34.4	43.8	54.3	65.9
Central Melbourne	36.3	51.7	72.1	86.2	109.2
Melbourne	200.8	253.3	324.0	376.0	453.2
<b>Rest of Victoria</b>	<b>63.6</b>	<b>81.6</b>	<b>104.0</b>	<b>118.0</b>	<b>131.2</b>
<b>Victoria</b>	<b>264.4</b>	<b>334.9</b>	<b>428.0</b>	<b>494.0</b>	<b>584.4</b>

Table D.2 Total non-residential capital stock per working age population (\$cvm thousands)					
	2001	2006	2011	2016	2021
Banyule (C)	38.0	50.3	59.4	65.9	77.2
Darebin (C)	56.7	63.3	66.9	65.5	66.4
Hume (C)	125.5	135.3	152.8	160.2	170.5
Mitchell (S)	71.2	81.3	97.5	110.0	126.3
Moreland (C)	30.1	35.3	39.9	39.3	42.4
Nillumbik (S)	52.2	58.2	64.9	72.3	78.8
Whittlesea (C)	88.9	96.0	99.1	92.6	103.8
Northern Melbourne	66.3	75.6	84.8	87.9	97.3
Southern Melbourne	83.0	92.5	102.0	103.2	112.9
Eastern Melbourne	72.8	88.9	106.2	114.0	125.0
Western Melbourne	79.1	84.2	88.8	95.2	101.9
Central Melbourne	380.0	421.5	496.7	450.6	465.3
Melbourne	88.7	103.2	118.0	122.7	134.7
<b>Rest of Victoria</b>	<b>81.9</b>	<b>100.7</b>	<b>121.6</b>	<b>131.1</b>	<b>139.9</b>
<b>Victoria</b>	<b>86.9</b>	<b>102.6</b>	<b>118.9</b>	<b>124.6</b>	<b>135.8</b>
<b>Rest of Australia</b>	<b>114.0</b>	<b>128.7</b>	<b>159.0</b>	<b>198.9</b>	<b>208.0</b>
<b>Australia</b>	<b>107.3</b>	<b>122.2</b>	<b>148.9</b>	<b>179.8</b>	<b>189.0</b>

Table D.3 Total non-residential capital stock per working age population compared to Melbourne's North (Index, Melbourne's North = 100)					
	2001	2006	2011	2016	2021
Banyule (C)	57.3	66.6	70.1	74.9	79.3
Darebin (C)	85.5	83.8	78.9	74.5	68.3
Hume (C)	189.4	179.0	180.3	182.2	175.2
Mitchell (S)	107.4	107.5	115.1	125.1	129.8
Moreland (C)	45.5	46.7	47.0	44.7	43.6
Nillumbik (S)	78.8	77.0	76.6	82.2	81.0
Whittlesea (C)	134.2	127.0	116.9	105.2	106.8
North	100.0	100.0	100.0	100.0	100.0
South	125.3	122.3	120.4	117.3	116.0
East	109.9	117.6	125.3	129.6	128.5
West	119.4	111.4	104.7	108.2	104.7
Central	573.4	557.6	586.0	512.4	478.3
Greater Melbourne	133.8	136.5	139.2	139.5	138.5
Greater Melbourne excluding Central Region	114.4	114.4	114.3	114.7	113.0
<b>Rest of Victoria</b>	<b>123.6</b>	<b>133.2</b>	<b>143.5</b>	<b>149.0</b>	<b>143.9</b>
<b>Victoria</b>	<b>131.2</b>	<b>135.7</b>	<b>140.2</b>	<b>141.7</b>	<b>139.6</b>