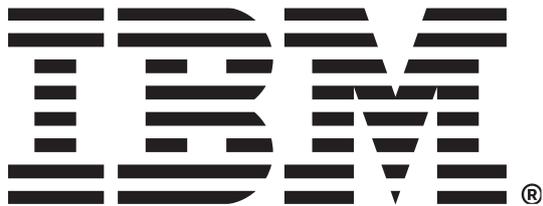




# BALLARAT TECHNOLOGY PARK ECONOMIC IMPACT

FEDERATION UNIVERSITY AND IBM  
AUSTRALIA



20019/FINAL Ballarat Technology Park Economic Impact  
Prepared for Federation University and IBM Australia, November 2020

WRI acknowledges the traditional custodians of the Country where we live and work. We pay our respects to Elders of past, present and future and acknowledge the connections and contribution to land, sea and community.

WRI thanks the staff of Federation University and IBM Australia and the tenant organisations and businesses of the Ballarat Technology Park for assistance in the preparation of the report.

Cover picture: BTP front door sunset, IBM Australia and Federation University

### **Disclaimer**

Any representation, statement, opinion or advice, expressed or implied, in this publication is made in good faith, but on the basis that the Western Research Institute (WRI) or its employees are not liable (whether by reason of negligence, lack of care or otherwise) to any person for any damage or loss whatsoever, which has occurred or may occur in relation to that person taking (as the case may be) action in respect of any representation, statement or advice referred to above.



# INTRODUCTION

Federation University and IBM Australia commissioned the Western Research Institute (WRI) to undertake an economic impact analysis of the impacts of the Ballarat Technology Park on the Local Government Area (LGA) of Ballarat, the Central Highlands region which includes the Ballarat Statistical Area Level 4 (SA4) and Grampians Statistical Area Level 3 (SA3), Victoria, and Australia.

Economic modelling undertaken by WRI utilised financial and operational data collected from questionnaires sent to Ballarat Technology Park tenant organisations. Where data was unavailable, estimates were provided by Federation University and WRI. Modelling was undertaken for the financial year 2017-18 as this was the most recently available ABS input output table that the modelling was based on then updated to 2018-19 values.

Analysis used operational data from Ballarat Technology Park tenants. Capital expenditure has been analysed using data supplied by Federation University.

For a full list of tenants, please see Appendix 2.



*Ballarat Technology Park Lake, Source: <http://btp.federation.edu.au/>*

The economic impact of the Ballarat Technology Park has been reported as a sum of:



**Initial impacts:** defined as the value of the immediate changes in the respective region as a result of the Ballarat Technology Park and its initial expenditure



**Flow-on impacts:** defined as the value of changes in the relevant economy in the course of additional rounds of spending after the initial impact occurred. These additional rounds of spending consist of expenditure by suppliers on inputs and labour to meet the demand from the initial impact expenditure and from the workers of the suppliers purchasing goods and services for consumption. Multiplier values are used to determine the magnitude of flow-on impacts.

The sum of initial and flow-on impacts gives the value of the total impact.

The economic impact of the Ballarat Technology Park was estimated in terms of:



**1. Value added:** the amount by which the value of an article is increased at each step of its production, exclusive of its initial cost. Value added is equal to gross output minus intermediate inputs and is equivalent to the contribution to Gross Regional Product (GRP - the local equivalent of Gross Domestic Product), Gross State Product (GSP) when considering the state wide impacts or Gross Domestic Product (GDP) when considering the national impacts. That is, value added is the difference between the costs of production (excluding the costs of employees, gross operating surplus, taxes and imports) and the value of sales turnover. Value added sums the value added components of production through the supply chain. Value added is the most reliable measure of the actual value of production.



**2. Household income:** consists of all current receipts, whether monetary or in kind, that are received by the household or by individual members of the household, and which are available for, or intended to support, current consumption.<sup>1</sup> Examples include employee wages and salaries, salary sacrificed income, non-cash benefits, bonuses and termination payments, government pensions and allowances, profit/loss from own unincorporated business, investment income, superannuation, workers' compensation, income from annuities, child support, etc.<sup>2</sup>



**3. Full-time equivalent employment (FTE):** is a measure of the workload of an employed person in a location that makes workloads comparable across different types of employment (part-time and full-time) by measuring hours worked and equating that to how many full-time positions the hours make up.

For more information on economic impact analysis methodology see Appendix 1.

<sup>1</sup> ABS Release No. 6523.0 - Household Income and Wealth, Australia, 2015-16.

<sup>2</sup> *ibid.*



# RESULTS

The economic impact analysis for the Ballarat Technology Park was undertaken for the areas of:

Ballarat LGA

Central Highlands region which includes the Ballarat SA4 and Grampians SA3 combined area

Victoria

Australia

Results are split by the impacts of operational activities of organisations within the Ballarat Technology Park, and the impacts of capital expenditure (such as buildings, renovations, etc) in the Ballarat Technology Park.



*Mt Helen, Source: Federation University and IBM Australia*

## Operational expenditure impacts 2018-19

Ballarat LGA	Employment (FTE)	Household income (\$ million)	Industry value added (\$ million)
Initial impact	2,219	206.2	270.8
Flow-on impact	1,547	86.7	205.3
Total impact	3,766	293.0	476.1
% of Ballarat LGA	9.39%	11.44%	9.84%

Key industries impacted by flow-on employment (in descending order)

- o Retail trade
- o Accommodation and food services
- o Education and training
- o Health care and social assistance
- o Wholesale trade
- o Transport, postal and warehousing

Central Highlands region	Employment (FTE)	Household income (\$ million)	Industry value added (\$ million)
Initial impact	2,219	206.3	270.8
Flow-on impact	1,568	87.9	208.0
Total impact	3,787	294.1	478.8
% of Central Highlands region	5.40%	6.89%	5.42%

Key industries impacted by flow-on employment (in descending order)

- o Retail trade
- o Accommodation and food services
- o Health care and social assistance
- o Education and training
- o Wholesale trade
- o Transport, postal and warehousing

## Operational expenditure impacts 2018-19 continued

Victoria	Employment (FTE)	Household income (\$ million)	Industry value added (\$ million)
Initial impact	2,219	206.2	270.8
Flow-on impact	2,215	174.6	358.0
Total impact	4,435	380.8	628.8
% of Victoria	0.16%	0.17%	0.15%

Key industries impacted by flow-on employment (in descending order)

- o Retail trade
- o Professional, scientific and technical services
- o Transport, postal and warehousing
- o Health care and social assistance
- o Accommodation and food services
- o Wholesale trade

Australia	Employment (FTE)	Household income (\$ million)	Industry value added (\$ million)
Initial impact	2,219	206.2	270.8
Flow-on impact	2,492	209.5	429.8
Total impact	4,712	415.7	700.5
% of Australia	0.04%	0.05%	0.04%

Key industries impacted by flow-on employment (in descending order)

- o Retail trade
- o Transport, postal and warehousing
- o Professional, scientific and technical services
- o Accommodation and food services
- o Health care and social assistance
- o Education and training

## Capital expenditure impacts 2018-19

Ballarat LGA	Employment (FTE)	Household income (\$ million)	Industry value added (\$ million)
Initial impact	13	0.8	1.8
Flow-on impact	24	1.5	3.1
Total impact	37	2.3	4.9
% of Ballarat LGA	0.09%	0.09%	0.10%

Key industries impacted by flow-on employment (in descending order)

- o Construction
- o Retail trade
- o Transport, postal and warehousing
- o Education and training
- o Health care and social assistance
- o Professional, scientific and technical services

Central Highlands region	Employment (FTE)	Household income (\$ million)	Industry value added (\$ million)
Initial impact	13	0.8	1.9
Flow-on impact	25	1.5	3.3
Total impact	38	2.3	5.3
% of Central Highlands region	0.05%	0.05%	0.06%

Key industries impacted by flow-on employment (in descending order)

- o Construction
- o Retail trade
- o Accommodation and food services
- o Transport, postal and warehousing
- o Professional, scientific and technical services
- o Education and training

## Capital expenditure impacts 2018-19 continued

Victoria	Employment (FTE)	Household income (\$ million)	Industry value added (\$ million)
Initial impact	16	0.9	2.2
Flow-on impact	43	3.2	6.7
Total impact	59	4.1	8.9
% of Victoria	0.00%	0.00%	0.00%

Key industries impacted by flow-on employment (in descending order)

- o Construction
- o Professional, scientific and technical services
- o Retail trade

Australia	Employment (FTE)	Household income (\$ million)	Industry value added (\$ million)
Initial impact	16	1.1	2.2
Flow-on impact	43	3.5	7.3
Total impact	59	4.6	9.6
% of Australia	0.00%	0.00%	0.00%

Key industries impacted by flow-on employment (in descending order)

- o Construction
- o Professional, scientific and technical services
- o Retail trade

# IBM AUSTRALIA

## IMPACT SUMMARY 2018-19<sup>3</sup>

IBM Australia is a significant part of the Ballarat regional economy, employing 450 people locally.<sup>4</sup> IBM Australia's Ballarat Technology Park presence contributes 1.72% of employment, 2.12% of household income, and 2.26% of gross regional product to the Ballarat LGA.

IBM Australia has operated the data centre in the Ballarat Technology Park since 1995 and has been a major industry partner with Federation University and its predecessor institution, the University of Ballarat for over 20 years. Through the partnership, the university has developed one of the most prestigious information technology (IT) degrees in Australia, redefined work experience as a basic tenet of a business degree and co-developed the pathways in technology (P-Tech) concept in Australia.<sup>5</sup>

The Bachelor of IT (Professional Practice) program has produced around 360 local and international graduates since beginning in 2001. As part of the program, all graduates

<sup>3</sup> Please note that the IBM Australia results cannot be subtracted from the Ballarat Technology Park results to obtain estimates for the Ballarat Technology Park excluding IBM Australia as this would result in double counting of impacts.

<sup>4</sup> Information provided by IBM Australia

<sup>5</sup> Ibid

complete a 1,600 hour internship with IBM Australia, providing invaluable real world industry experience for the students. It also provides access to workforce for IBM

Australia, which has hired a number of Federation University graduates through the program to work in Australia and overseas. The partnership has expanded to provide internships at IBM Australia for six undergraduate business students, while more than 40 secondary school students have participated in the innovative P-Tech program, which creates alternative pathways for students into a career in information technology.<sup>6</sup>

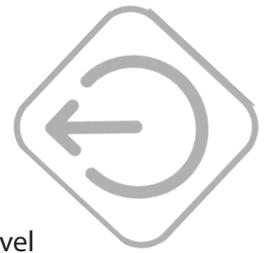
The partnership provides mutual benefits to IBM Australia, Federation University and its students. IBM Australia is able to ensure it has pool of talented local graduates to meet its workforce demands, while the university is able to provide a holistic undergraduate experience that gives students relevant industry skills and the opportunity to apply their studies in the workplace through an internship program, while receiving financial support via a scholarship.<sup>7</sup>

<sup>6</sup> Ibid  
<sup>7</sup> Ibid



Region	Contribution to Gross Product	Full-time Equivalent Employment	Household Income
AUSTRALIA	\$125.5 Million	716	\$62.3 Million
VICTORIA	\$123.7 Million	711	\$62.0 Million
CENTRAL HIGHLANDS REGION	\$109.9 Million	692	\$54.5 Million
BALLARAT LGA	\$109.4 Million	690	\$54.2 Million

# CONCLUSION



The Ballarat Technology Park contributes 0.04% to value added at the national level, 0.15% at the state level for Victoria, 5.42% at the Central Highlands region level, and 9.84% at the Ballarat LGA level. The contributions of the Ballarat Technology Park to the economy are significant, especially at the Central Highlands region and Ballarat LGA levels where it is a key part of the regional economy.

The impact at the Ballarat LGA level illustrates the Ballarat Technology Park underpins almost 10% of industry value added and more than 9% of FTE employment when flow-on effects are taken into account.

Ballarat Technology Park	Employment (FTE)	Household income (\$ million)	Industry value added (\$ million)
Total impact Australia	4,712	415.7	700.5
Total impact Victoria	4,435	380.8	628.8
Total impact Central Highlands region	3,787	294.1	478.8
Total impact Ballarat LGA	3,766	293.0	476.1



Greenhill Enterprise Centre, Source: <http://btp.federation.edu.au/>



Flecknoe Building, Source: Federation University

The results presented in this report update the 2010 University of Ballarat Economic Impact report created by WRI. Ballarat Technology Park was estimated to contribute \$174.4 million in value added in 2009 at the Ballarat LGA level per the report undertaken in 2010, compared to \$476.1 million in 2018-19 per this report. This is an increase of 173%. The growth of the value added contribution of the Ballarat Technology Park is due to strong growth in the Victorian state economy and Ballarat regional economy over the last 10 years, and strong growth in Australia in key industries which have a significant presence in the Ballarat Technology Park.

Victoria has experienced strong growth in all industries since 2010. According to Australian Bureau of Statistics data, the total value added from all industries in Victoria increased from \$327.132 billion in June 2010 to \$416.799 billion in June 2019. This is an increase of 27%.<sup>8</sup>

According to id.consulting, Ballarat's Gross Regional Product grew from \$4.725 billion in 2011 to \$6.050 billion in 2019, an increase of 28%.<sup>9</sup>

To help contextualise the strong growth in results from the 2010 report to this report, national revenues of key growth industries in Australia with significant presence in the Ballarat Technology Park were examined over time using data from IBISWorld. The industries included data processing and web hosting services (which includes significant tenants at the Park, IBM Australia and CT4), community services (Berry Street), health services (Ballarat Health Services SWEF, Primary Healthcare limited Healius), private general hospitals (St John of God Health Care), professional services (Concentrix) and scientific research services (Centre for eResearch and Digital Innovation). The table below shows the national revenue growth in these industries over the modelled periods from 2009-10 to 2018-19.

8 ABS Cat. No. 5220.0, Australian National Accounts: State Accounts, 2018-19

9 id Consulting, City of Ballarat economic profile, retrieved 9 November <https://economy.id.com.au/ballarat/gross-product>

Industry	2009-10 Revenue (\$ million)	2018-19 Revenue (\$ million)	Change in revenue (%)
Community services <sup>i.</sup>	32,958	54,733	66%
Data processing and web hosting services <sup>ii.</sup>	1,189	1,718	44%
Health services <sup>iii.</sup>	113,285	154,510	36%
Private general hospitals <sup>iv.</sup>	11,523	16,298	41%
Professional services <sup>v.</sup>	145,345	189,674	30%
Scientific research services <sup>vi.</sup>	4,960	7,921	59%

i. IBISWorld, Community Services in Australia, May 2020

ii. IBISWorld, Data Processing and Web Hosting Services in Australia, August 2020

iii. IBISWorld, Health Services in Australia, May 2020

iv. IBISWorld, Private General Hospitals in Australia, April 2020

v. IBISWorld, Professional Services in Australia, June 2020

vi. IBISWorld, Scientific Research Services in Australia, July 2020



# METHODOLOGY

Economic impacts were measured at local government, regional, state and national levels. Modelling was undertaken through input output analysis which provides a detailed picture of the structure of an economy at a point in time and can be used to estimate the contribution or impact of a sector of the economy or an individual organisation including flow-on or multiplier effects.

The impacts are measured in terms of value added, household income and full time equivalent jobs. All impacts are expressed in either dollar terms or FTE employment terms and as a percentage of the national, state, regional and local economy. The impacts of the operations of Ballarat Technology Park was undertaken using the industry shutdown model, which assesses the impact on the economy without the industry sector under examination. The impact of capital expenditure was assessed using the final demand model.



*IBM Australia Ballarat Technology Park, Source: IBM Australia*



*IBM Australia Ballarat Technology Park, Source: IBM Australia*

## Constructing the tables

The input output tables for this project were based on the national table published by the Australian Bureau of Statistics (ABS) for 2017-18 which was adjusted to reflect 2018-19 and subsequently modified to reflect the Victorian economy in the same year.

That Victorian table was then used to create the relevant regional tables as outlined in Appendix 1.

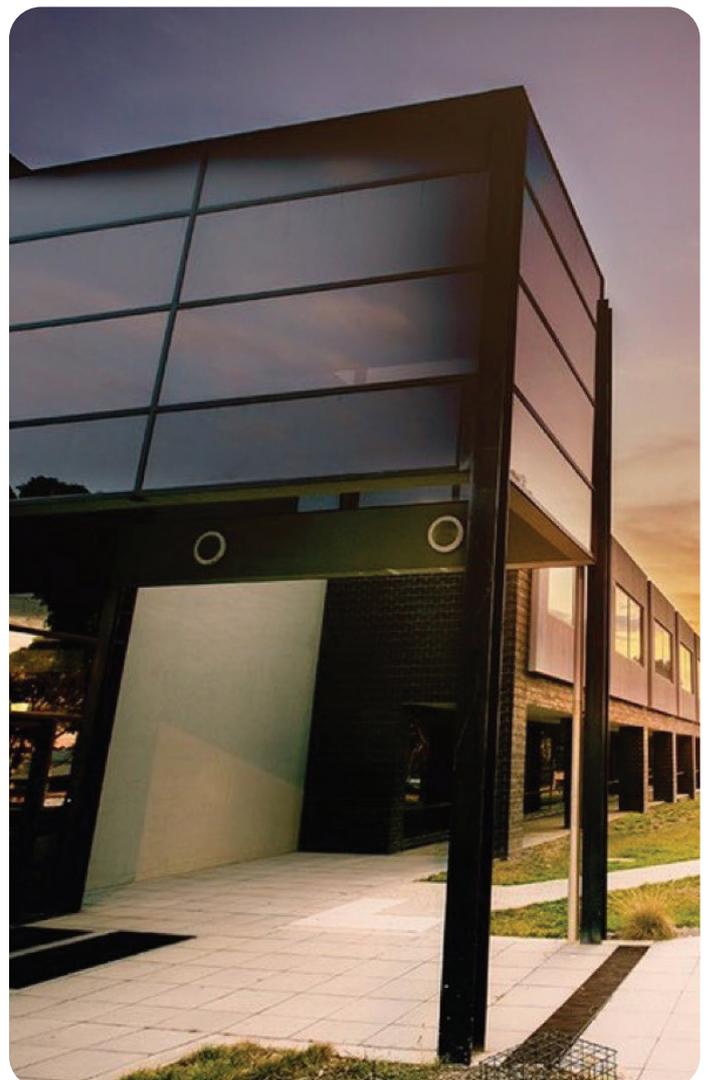
Further details regarding the construction of the input output tables is provided in Appendix 1.

## Data collection

To estimate the economic impacts of the Ballarat Technology Park, data was collected from Ballarat Technology Park tenants to determine their employment, income and expenditure. Where data was unavailable, estimates provided by Federation University and WRI joint analysis were used. Data collected included:

- o Number of employees and their hours worked to determine full time equivalent staff numbers and where these employees resided
- o Total wages and salaries including on-costs
- o Sales by main type of goods and services **sold**, main industry the item was sold to, total value of the item and the percentage sold in the Ballarat LGA, in the Central Highlands Region, in Victoria excluding the Central Highlands region, in other parts of Australia excluding Victoria, and overseas.
- o Purchases by main type of goods and services **purchased**, main industry the item was purchased from, total value of the item, and the percentage purchased from the Ballarat LGA, in the Central Highlands region, in Victoria excluding the Central Highlands region, in other parts of Australia excluding Victoria, and overseas.

Capital expenditure data was provided by Federation University and reflects their capital investment in the Ballart Technology Park.



Ballarat Technology Park, Source: IBM Australia and Federation University

# APPENDIX 1: INPUT OUTPUT ANALYSIS

Inter-industry models can be used for economic impact analysis, to estimate the benefits or costs generated by new initiatives on each sector of an economy. For example, if there is a change in the purchasing or sales pattern of any industry, the flow-on or multiplier effects on upstream industries can be calculated.

Input-output modelling is one method of inter-industry modelling.

## Constructing the Tables

### Australia 2018-19

The latest national input-output table (2017-18) published by the Australian Bureau of Statistics (ABS)<sup>10</sup> was utilised as the base table.

The steps involved in updating that table to reflect the financial year of 2018-19 included:

- o Data from the 2016 Census relating to employment by industry sector was analysed in conjunction with data from the Labour Force Survey<sup>11</sup> to determine the number of full-time equivalent employees by industry sector in both 2017-18 and 2018-19. It should be noted that the national input output table published by the ABS comprises 114 industry sectors whilst the Labour Force Survey for Australia is disaggregated to 88 sectors, including sub-sectors of ANZSIC Level 1 classifications denoted as “not further defined”. Census data relating to employment by Place of Work at ANZSIC Level 4 is utilised to further disaggregate data from the Labour Force Survey into the industry sectors incorporated in the national input output table. In converting to full-time equivalent (FTE) jobs, the ABS convention of assuming 1 part time employee is equivalent to 0.5 FTE was adopted.
- o The above data was used to calculate output by industry sector, in 2017-18 dollar values utilising changes in FTE employment numbers between 2017-18 and 2018-19. The table was then inflated by the Consumer Price Index<sup>12</sup> to convert the table to 2018-19 values.
- o Data from the Australian System of National Accounts<sup>13</sup> for 2018-19 relating to Compensation of Employees and Gross Operating Surplus by

industry sector was used to inflate the relevant rows in the input output table. Similarly, data from the same publication relating to Final Demand was used to inflate the relevant Final Demand columns in the input output table.

- o The table was balanced and checked for accuracy against data from the Australian System of National Accounts including a comparison of the derived Gross Domestic Product and its components and Gross Industry Value Added by industry sector at ANZSIC Level 1.
- o A new sector (row and column) was created for Ballarat Technology Park using income, expenditure and employment data provided. This was allocated to the relevant input output categories in the Australian input output table to enable subtraction of data from the appropriate parent sectors. This ensures that the new sector representing Ballarat Technology Park is not additional to the existing economy but rather is a subset of that economy.

### Victoria 2018-19

The national input output table derived for 2018-19 was used to generate the input output table for the same year for Victoria. The steps involved in developing the State table included:

- o Data from the 2016 Census regarding employment by industry sector by place of employment was analysed in conjunction with data from the Labour Force Survey for Victoria to estimate the number of FTE employees by industry sector in 2018-19. It should be noted that data from the Labour Force Survey by State or Territory is only provided at ANZSIC Level 1 (19 industry sectors). Accordingly, Census data by Place of Work was used to further disaggregate that data. The resultant estimates of FTE numbers for Victoria were used to estimate output by industry sector at the 114 sector level.
- o Data from the Australian National Accounts: State Accounts<sup>14</sup> for 2018-19 was used to extract information on Compensation of Employees, Gross Operating Surplus and the various final demand sectors. Data from the 2016 Census regarding personal income by industry sector at ANZSIC Level 4 was used to disaggregate Compensation of Employees by input output category whilst

<sup>10</sup> ABS Cat. No. 5209.0.55.001

<sup>11</sup> ABS Cat. No. 6291.0.55.003

<sup>12</sup> ABS Cat. No. 6401.0

<sup>13</sup> ABS Cat. No. 5204.0

<sup>14</sup> ABS Cat. No. 5220.0

ensuring that the totals at ANZSIC Level 1 coincided with the data published in the State Accounts.

- o The above data were incorporated into the Generation of Regional Input Output Tables (GRIT) file incorporated in the IO9 software used in this analysis. The GRIT technique, developed by Professors West and Jensen of the University of Queensland, uses allocation methods and location quotients as well as superior data. It is the most widely used method of constructing input output tables in Australia and is also commonly employed in Europe and America. Data for Ballarat Technology Park was also incorporated into the GRIT file reflecting the expenditure, income and FTE employment in Victoria. Income derived from outside Victoria was treated as an export whilst expenditure made outside Victoria was treated as an import.
- o The resultant tables were balanced using the RAS methodology. The RAS technique is a bi-proportional iterative adjustment method designed to modify a base input output matrix to fit new row and column totals. The rows and columns are adjusted proportionally to the new row and column totals in turn, and the cycle repeated until the actual row and column totals converge to the specified values. This may require some adjustment to the tolerances of individual sectors to enable the table to converge.
- o The balanced tables were then checked for accuracy against data from the Australian National Accounts: State Accounts including the comparing the derived Gross State Product and its components and Gross Industry Value Added by industry at ANZSIC Level 1.

### **Regional 2018-19**

The regional input output tables were derived from the 2018-19 input output table for Victoria.

The key variation between creating the input output table for a region and that for Victoria as a whole is that there is no published data for a Region to enable cross-checking such as total Gross Regional Product, the various Final Demand components, Compensation of Employees or Gross Operating Surplus. Consequently, the development of the input output table for the regions relies primarily on the use of ratio analysis using

a range of data from the 2016 Census.

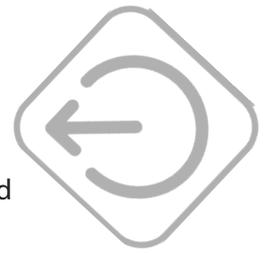
The steps involved in developing the region table included:

- o The regions were analysed in terms of total employment by industry sector at ANZSIC Level 4 and by status in the labour force (full-time or part-time) by Place of Work to determine estimates of FTE employment at the time of the 2016 Census. Changes in employment by industry sector (ANZSIC Level 1) to 2018-19 were assessed using data from the Labour Force Survey by labour market region. The resultant estimates of FTE employment by input output industry sector were used to estimate output for the regions in 2018-19.
- o Data from the 2016 Census relating to personal weekly income by industry sector was extracted and compared with the average personal weekly income by industry sector for Victoria. The resultant ratio was used to adjust State level Compensation of Employees by full time equivalent by industry sector for the regions.
- o Average weekly income per capita for persons residing in the regions was calculated from data from the 2016 Census and compared with the Victorian average. The resultant ratio was used to adjust State level Household Final Consumption Expenditure, Government Final Consumption Expenditure and Ownership of Dwellings per capita for 2018-19 to the regional level.
- o The above data were incorporated into the GRIT file, along with data for Ballarat Technology Park at the relevant regional level and the resultant table balanced using the RAS methodology. The balanced table was checked for reasonableness by comparing Gross Regional Product per capita and per full time equivalent employee with the State average.

## APPENDIX 2: TENANT LIST

The list of tenant businesses and organisations for the Ballarat Technology Park is provided below.

- o Ballarat Health Services (SWEPE)
- o Ballarat Toyota
- o Berry Street
- o Blackhill Software
- o Centre for eResearch and Digital Innovation (CeRDI)
- o Concentrix
- o Co-Pilot Marketing
- o CT4
- o Dimensional Metrology Services (DMS)
- o Elmstone Group
- o Emergency Services Telecommunication Authority (ESTA)
- o Evaluation Solutions
- o Fiona Elsey Cancer Research Institute (FECRI)
- o First State Super
- o GROW Ballarat
- o Highlands LLEN
- o IBM Australia Ballarat
- o ICSL Internet Commerce Security Laboratory
- o iGlass Warehouse
- o Lateral Plains Pty Ltd
- o Lifeline Administration Office - Ballarat
- o Liv It Up Café
- o MEGT Australia
- o Primary Health Care Limited
- o Porter Architects
- o Precision Agriculture Pty Ltd
- o Runway
- o Serco
- o Signature Software
- o Small Dog
- o Southern Cross Austereo
- o St John of God Health Care
- o State Revenue Office (SRO)
- o VECCI Apprenticeship Services
- o VicSuper
- o Westvic Staffing Solutions
- o Workforce Extensions Regional HR
- o Workshop Café



# CAPABILITY

## Ms Kathy Woolley – Chief Executive Officer

GAICD (Australian Institute of Company Directors), MIIA (Institute of Internal Auditors), Change Management Qualification (Australian Graduate School of Management, UNSW), BComm Economics with merit (UWO), Public Participation Certificate (International Association of Public Participation - IAP<sub>2</sub>), Certificate IV Workplace training and assessment (TAFE)

Kathy joined the WRI team in February 2018 having previously worked on a variety of boards and senior management roles across sectors including media, health, education, regional development, government, event management, research and sales.

For a number of years Kathy also ran a consultancy specialising in services for not for profit entities, focusing on best practice techniques in management and governance.

With formal qualifications in change management, company directorship, community engagement, economics and training, and well developed skills in human resources, information technology, finance and economic development, Kathy offers a unique skill set to assist with most business needs.

Kathy is a member of the Australian Institute of Internal Auditors and has developed internal audit and process improvement frameworks for a number of organisations.

## Ms Dale Curran – Senior Research Officer

Graduate Certificate in Marketing (RMIT), BA (ANU), Certificate IV Small Business Management (NSW TAFE)

Dale is the senior researcher at WRI and has worked with the organisation across many roles and projects over the past 10 years. Her expertise in research centres around consultation processes, her keen eye for detail and quality assurance. She has also managed the executive support, finance, management of the Board of Directors and maintenance of policies functions in the organisation and understands how businesses work.

## Mr Chris Mullen – Research Officer

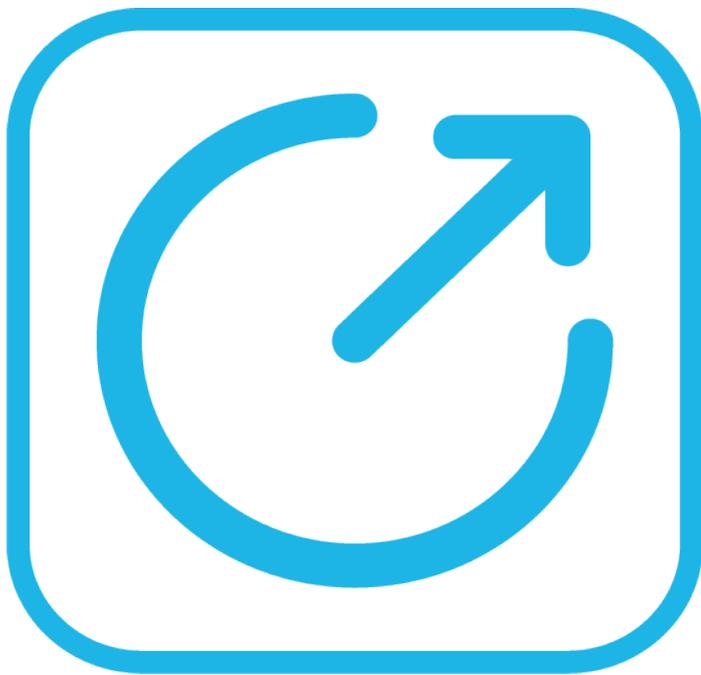
BEcon (UNE)

Chris is an Economics graduate from the University of New England and is currently undertaking a Master of Economics course. Chris has a great interest and passion for macroeconomics and microeconomics, policy analysis and regional development economics. Throughout his undergraduate degree Chris has gained skills in benefit cost analysis, business statistics and economic modelling. Having grown up on a property on the mid-north coast, Chris has a strong understanding of life in regional Australia and the issues rural communities face.

## Ms Heather Waters - Administration Officer

Certificate III Business (Australian College of Commerce and Management)

Heather brings strong skills in customer service from her experience working in the retail industry. She provides all the administrative support and is responsible for the creation of desktop published reports where required. Heather is currently enrolled in Certificate IV Business. Heather is passionate about building strong rural communities.



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*Brewery Building, Source: Federation University*

