

# Western Parkland City Economic Analysis

Final report

Investment NSW

17 May 2022



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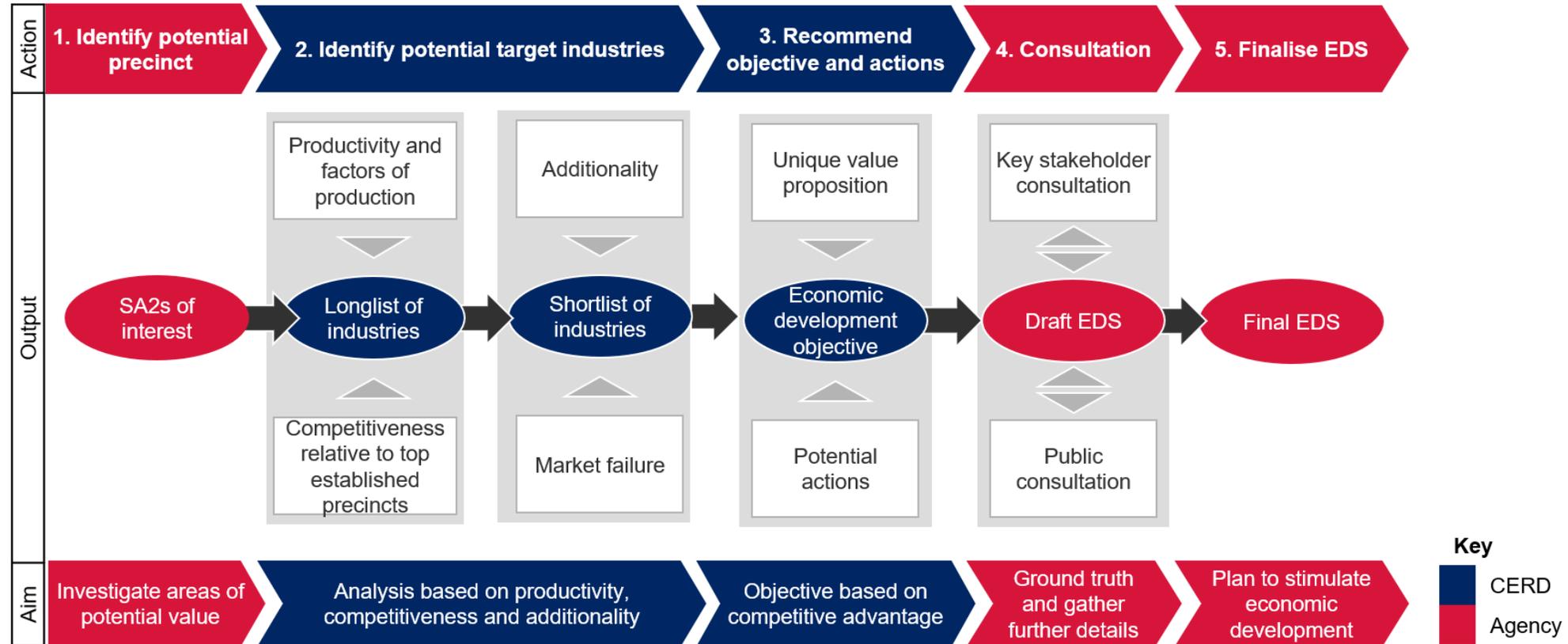
# Disclaimer

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# Agenda

- 1 WPC potential for a functional economic region
- 2 Existing assets and endowments across WPC
- 3 Some background on clusters
- 4 Industry competitiveness in WPC
- 5 Key messages for the WPC Economic Development Roadmap

# Economic development strategy analytical framework



# 1. WPC potential for a functional economic region



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# What is a Functional Economic Region

## Functional Economic Regions (FERs)

- An approach looking at worker commute data to reveal where there are integrated labour markets.
- They are regions designed to reflect the economic linkages between people and businesses across geographic areas.
- For example, business access to workforce, inputs and customers; household access to jobs, goods and services.

## FERs provide a basis for economic and policy development across city areas and regions

- Understanding the economic linkages within and between geographic areas can help identify regional priorities and support regional planning and development efforts.

## Identifying an FER

- **Typically begins with a central SA2 with a Jobs–Housing Balance ratio greater than 1.0**
  - > 1 indicates that the LGA is an employment hub.
- Surrounding LGAs are added **if** they improve the employment self-containment, employment self-sufficiency and commute index metrics for the combined region.

# What we know about Greater Sydney

FER analysis undertaken by the Productivity Commission (2017) showed the whole of Greater Sydney operates as single FER, although this was a construct of thresholds used for clustering regions for the purpose of advising on transitioning regional economies.

It is possible the drill into the Greater Sydney area to better understand the different economic locations around Sydney, their role and how people, goods and services flow throughout the economy.

A comprehensive analysis of economic locations within Greater Sydney was not within the scope of this project.

The WPC LGAs were examined using typical FER measures to provide insight into how the region currently functions and how it interacts with the rest of Greater Sydney.

**Understanding the WPC role as an economic location within Sydney, is useful for the purposes of economic development.**

WPC captures most of the peri-urban LGAs of Sydney. As such the economic activities undertaken in this area provide specific services essential to production and city functioning that cannot be undertaken elsewhere in Sydney.

With lower residential density, cheaper land and larger lots, the area can facilitate the production and movement of industrial goods while minimising the negative impact of industrial activities (noise, dust, amenity, heavy traffic).

# Four measures used to determine a functional economic region

*Does the region have enough jobs for its resident workers?*



## Jobs–housing balance

Number of jobs in the region for each resident worker

~1.0 for a functional economic region

Indicates number of jobs matches number of resident workers

*Do people commute in and out of the region?*



## Employment self-containment

Proportion of resident workers employed in their own region

>90% for a functional economic region



## Employment self-sufficiency

Proportion of jobs in the region covered by its own resident workers

>90% for a functional economic region



## Commute index

Proportion of commuting workers employed in other LGAs within the region

>50% for a functional economic region

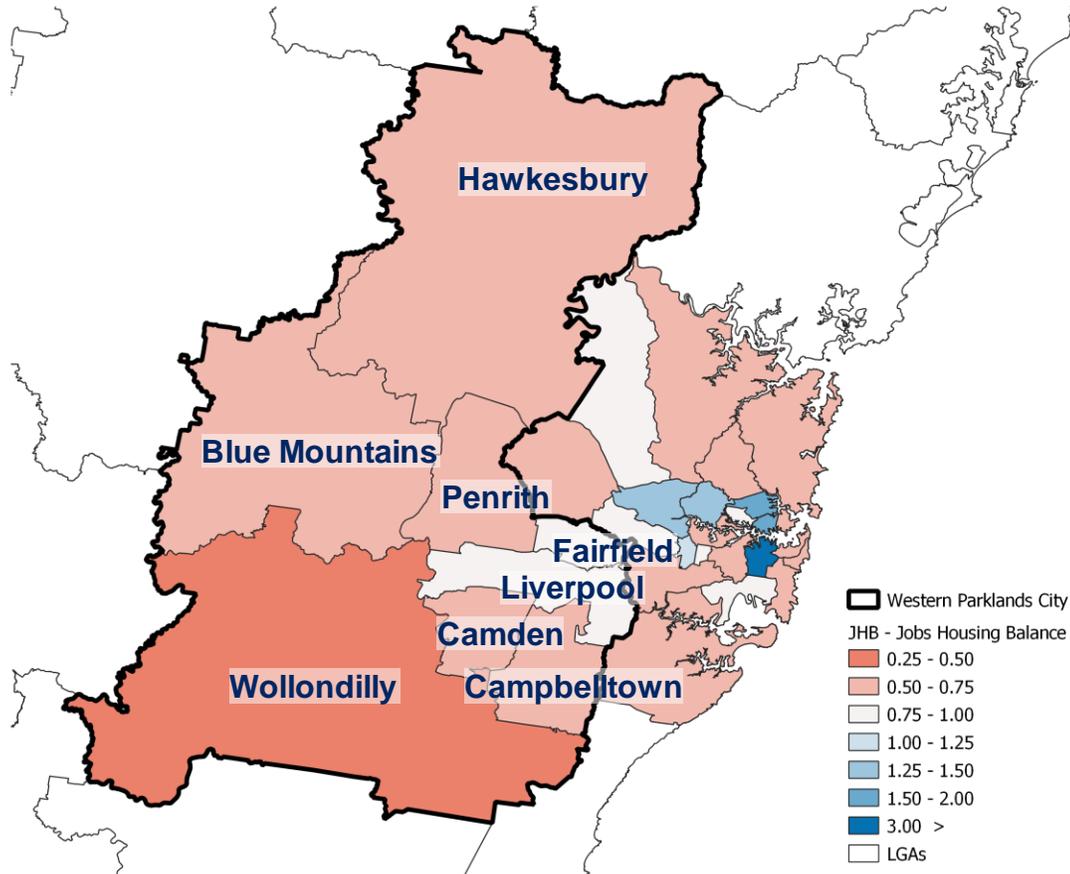
# How WPC links to the rest of Greater Sydney

**WPC is a commuter region for Greater Sydney, but most jobs within WPC are served by locals.**

	<b>Jobs–housing balance</b>	<b>0.71</b>	<ul style="list-style-type: none"> <li>• A jobs–housing balance of 0.71 (7 jobs for every 10 resident workers in WPC)</li> </ul>
	<b>Employment self-containment</b>	<b>0.54</b>	<ul style="list-style-type: none"> <li>• 54% of resident workers are employed within WPC</li> </ul>
	<b>Employment self-sufficiency</b>	<b>0.76</b>	<ul style="list-style-type: none"> <li>• 76% of jobs in WPC are filled by resident workers</li> </ul>
	<b>Commute index</b>	<b>0.30</b>	<ul style="list-style-type: none"> <li>• 30% of WPC workers who commute outside their residential LGA are employed in other LGAs within the region</li> </ul>

Australian Bureau of Statistics 2016 Census of Population & Housing

# Jobs–housing balance



LGA	Jobs–housing balance
Liverpool	0.81
Fairfield	0.79
Hawkesbury	0.75
Penrith	0.72
Campbelltown	0.70
Camden	0.61
Blue Mountains	0.51
Wollondilly	0.46

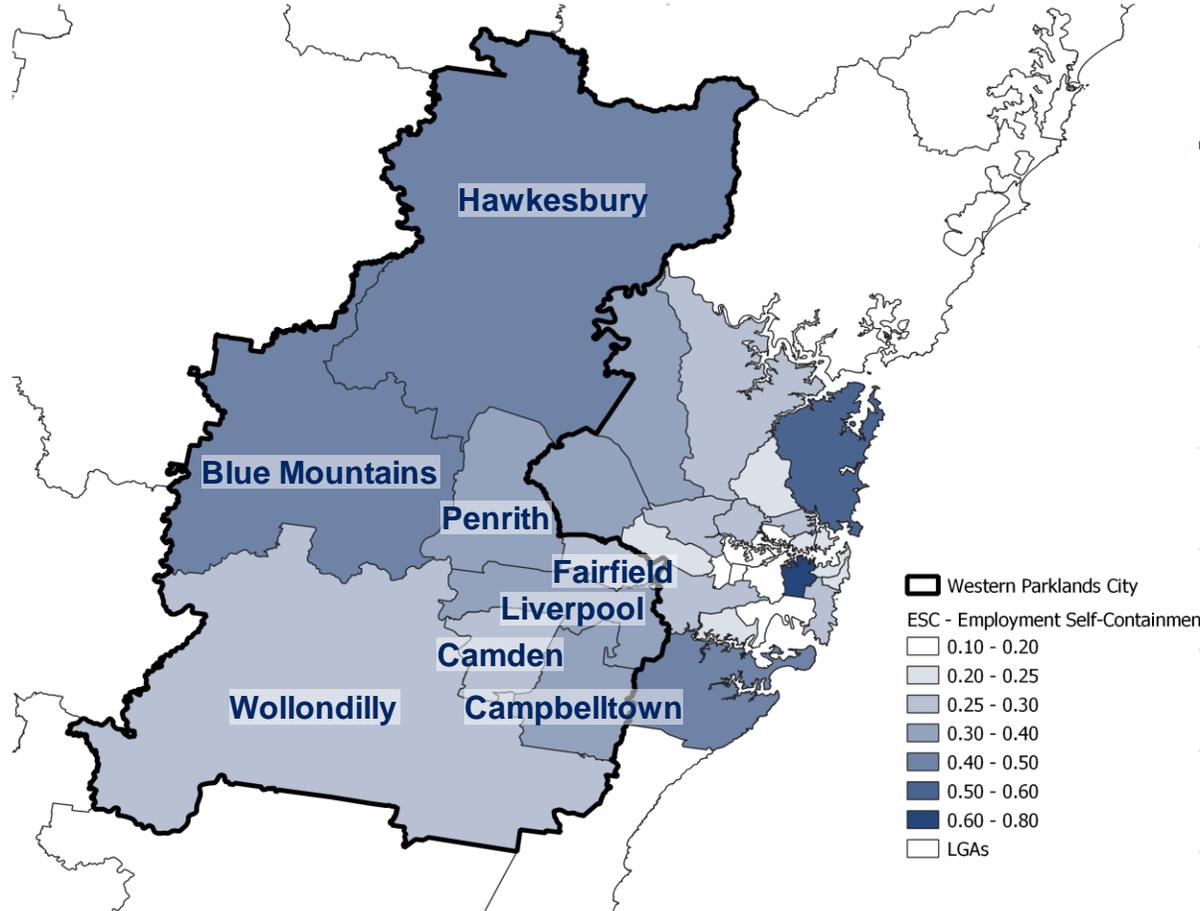
- Western Parkland City LGAs currently **have low jobs–housing balances**, particularly Wollondilly and the Blue Mountains, with none greater than 1.0.
- **This is similar to most Sydney LGAs**, with employment concentrated in the Sydney CBD, Parramatta and the lower north shore.
- This highlights the whole of Greater Sydney currently functions as a continuous city.
- **Fairfield and Liverpool the closest WPC LGAs to being classified as employment hubs.**

Australian Bureau of Statistics 2016 Census of Population & Housing – Employment by Place of Work



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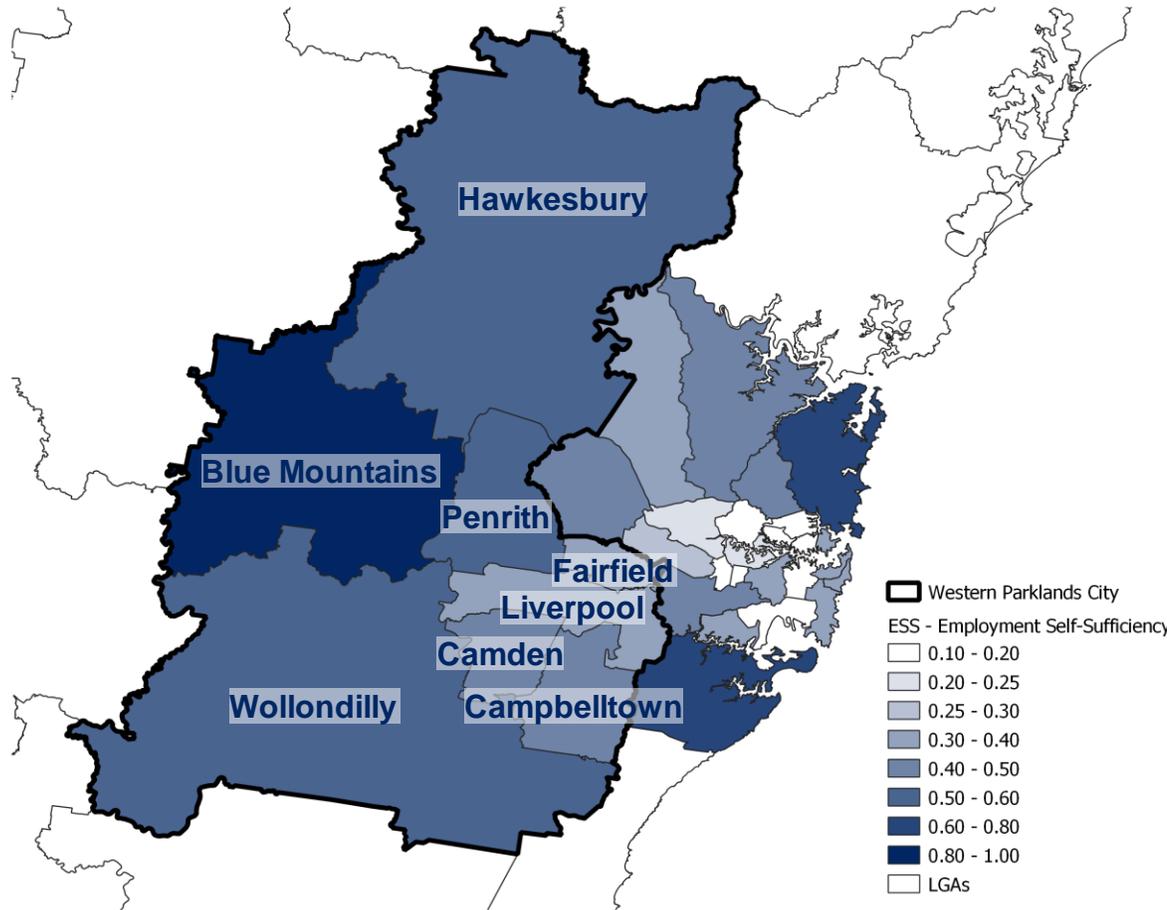
# Employment self-containment (% Resident workers employed within their LGA)



LGA	Employment self-containment
Hawkesbury	0.44
Blue Mountains	0.43
Penrith	0.39
Campbelltown	0.34
Liverpool	0.31
Fairfield	0.30
Camden	0.29
Wollondilly	0.27

- Western Parkland City LGAs currently have medium to high employment self-containment (darker blue).
- Sydney LGAs tend to have lower self-containment towards the Sydney CBD, with high self-containment in the CBD itself.
- **Though still dependent on the Sydney CBD, this means the WPC LGAs are less dependent on the Sydney CBD than other parts of the city.**

# Employment self-sufficiency (% LGA Jobs filled by resident workers)



LGA	Employment self-sufficiency
Blue Mountains	0.83
Hawkesbury	0.59
Wollondilly	0.59
Penrith	0.53
Campbelltown	0.49
Camden	0.48
Fairfield	0.38
Liverpool	0.38

- Existing jobs in WPC are well-supplied locally.
- Western Parkland City LGAs currently have medium to high employment self-sufficiency (darker blue).
- Sydney LGAs tend to have lower self-sufficiency towards the Sydney CBD, with very low self-sufficiency in the CBD itself.
- This means the WPC LGAs are less dependent on the Sydney CBD than other parts of the Sydney as jobs in WPC can be supported locally.

# Where WPC resident workers commute



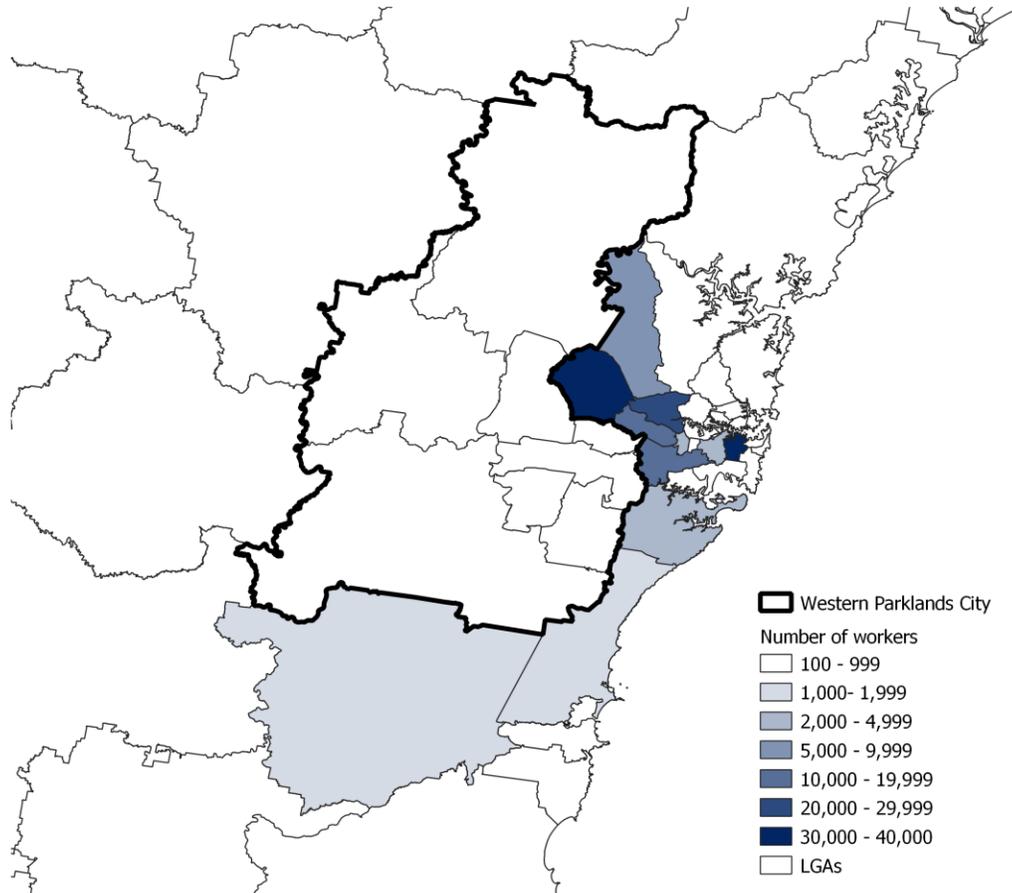
LGA	Within home LGA	In other LGA of WPC	Outside WPC
Hawkesbury	44%	12%	43%
Penrith	39%	11%	<b>50%</b>
Fairfield	30%	15%	<b>55%</b>
Liverpool	31%	17%	<b>52%</b>
Campbelltown	34%	22%	44%
Camden	29%	<b>35%</b>	35%
Wollondilly	27%	<b>40%</b>	33%
Blue Mountains	<b>43%</b>	<b>23%</b>	<b>34%</b>

- Penrith, Fairfield and Liverpool - most resident workers tend to commute outside WPC.

- Camden and Wollondilly are highly connected with the rest of WPC.

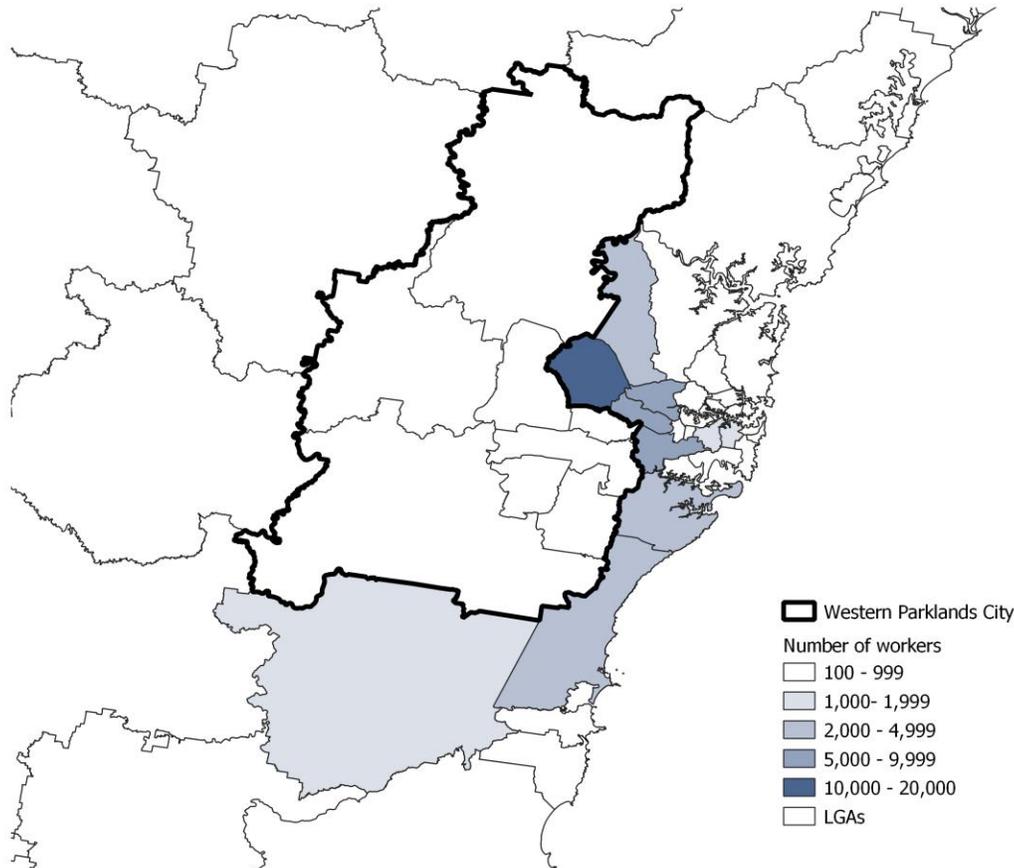
- The Blue Mountains is relatively self-contained.

# Most residents commuting out of WPC work in the CBD and Blacktown



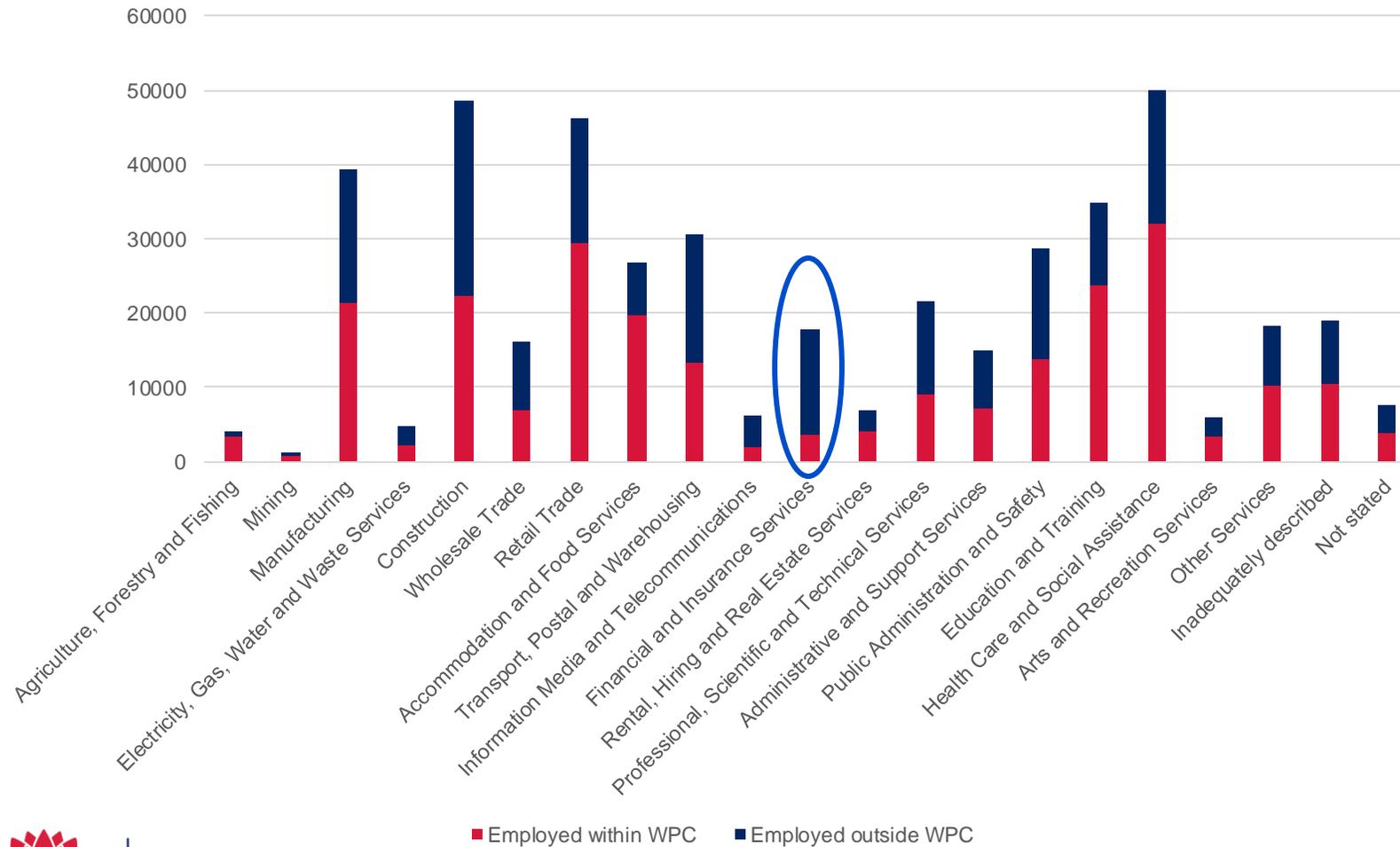
- Most employment connections outside WPC are with nearby LGAs, with the significant exception of the Sydney CBD.
- Workers living in WPC LGAs are highly connected with bordering LGAs in Greater Sydney, particularly Blacktown, as well as the Sydney CBD.
- Of the outwardly commuting residents:
  - 16% work in Blacktown
  - 18% work in the CBD
- Few WPC area workers are employed in the northern, eastern and southern areas of Sydney.

# Most workers commuting into WPC live in Blacktown



- Apart from WPC resident workers, jobs in WPC are primarily served by resident workers in bordering LGAs, particularly Blacktown. These bordering LGAs include Wollongong and Wingecarribee to the south.
- Very few WPC jobs are served by resident workers in the northern, eastern and southern areas of Sydney.

# WPC resident workers - by industry



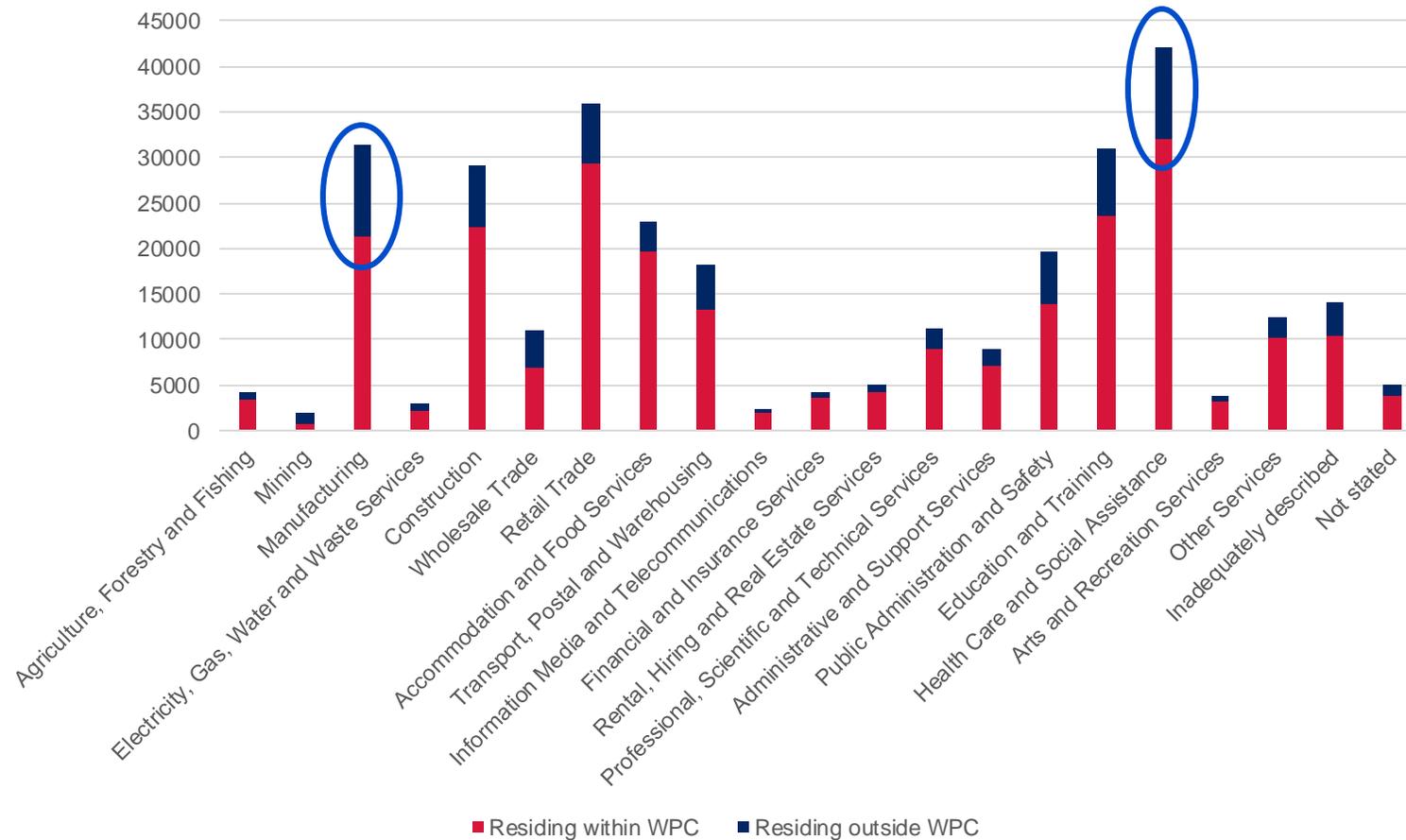
- WPC has a large resident workforce for:
  - **manufacturing,**
  - **construction,**
  - **retail trade and**
  - **health care and social assistance.**

This represents the largest skill base available in WPC with workers employed in both WPC and throughout Greater Sydney.

- **Over 80% of resident workers in financial and insurance services commute outside WPC,**
  - **the industry with the highest proportion of uncaptured skills within WPC.**



# WPC jobs – number of workers by industry



- Jobs across all industries are already mostly filled by WPC locals.
- Limited potential to replace external workers with local workers.
- **Manufacturing and Health Care and Social Assistance** draw more external workers to WPC than other industries.



# Summary

**WPC captures most of the peri-urban LGAs of Sydney.**

**The peri-urban area serves a specific set of functions for Greater Sydney that cannot be undertaken elsewhere.**

- The WPC serves as a **commuter region**, particularly for the CBD, by providing relatively lower cost residential land than other areas in Sydney.
- With lower residential density, cheaper land and larger lots (compared to the rest of Sydney), the WPC can facilitate the production and movement of **industrial goods** while minimising the negative impact of industrial activities (noise, dust, amenity, heavy traffic).
- Parts of WPC also have small farms and market gardens and are a major **source of fresh fruit and vegetables** for Sydney.
- Agriculture in the peri-urban areas also provides a **buffer zone** between urban areas and the Greater Blue Mountains World Heritage Area – relevant to reducing urban vulnerability to bushfires.<sup>1</sup>

<sup>1</sup> Merson et al 2010, *The challenges of urban agriculture in the Sydney Basin and lower Blue Mountains region of Australia*, International Journal of Agricultural Sustainability, 8(1-2), 72-85.

## 2. Existing assets and endowments across WPC



# WPC – existing assets and endowments



## Abundant vacant land

- Low cost and large lot sizes

## Unutilised workforce

- Capacity to activate new entrants to workforce

## Greater Blue Mountains World Heritage Area



## Existing anchor institutions

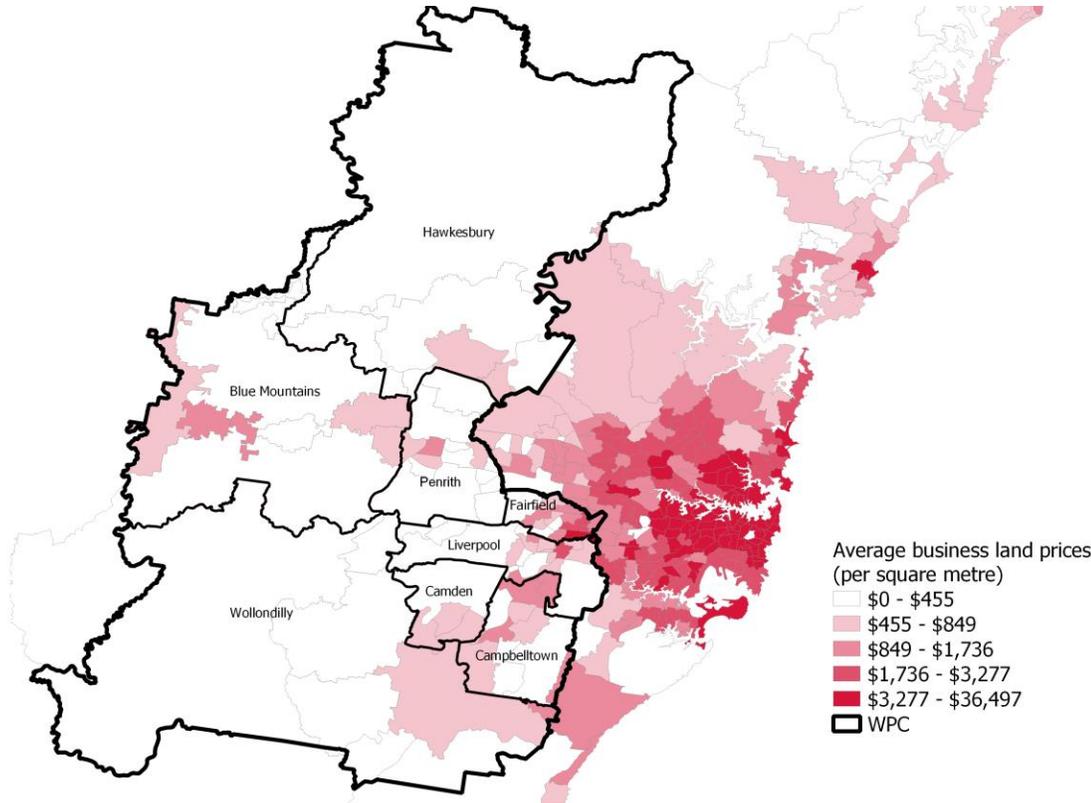
- **Education**
  - Western Sydney University (multiple campuses)
  - Richmond Agricultural College
  - South Western Sydney TAFE
  - Aerotropolis Multiversity  
A joint university education, training and research facility focusing on future jobs
- **Research**
  - Elizabeth Macarthur Agricultural Institute, Menangle
  - Ingham Institute for Applied Medical Research
- **Largest public hospital in NSW**
  - Liverpool – leading Trauma Centre



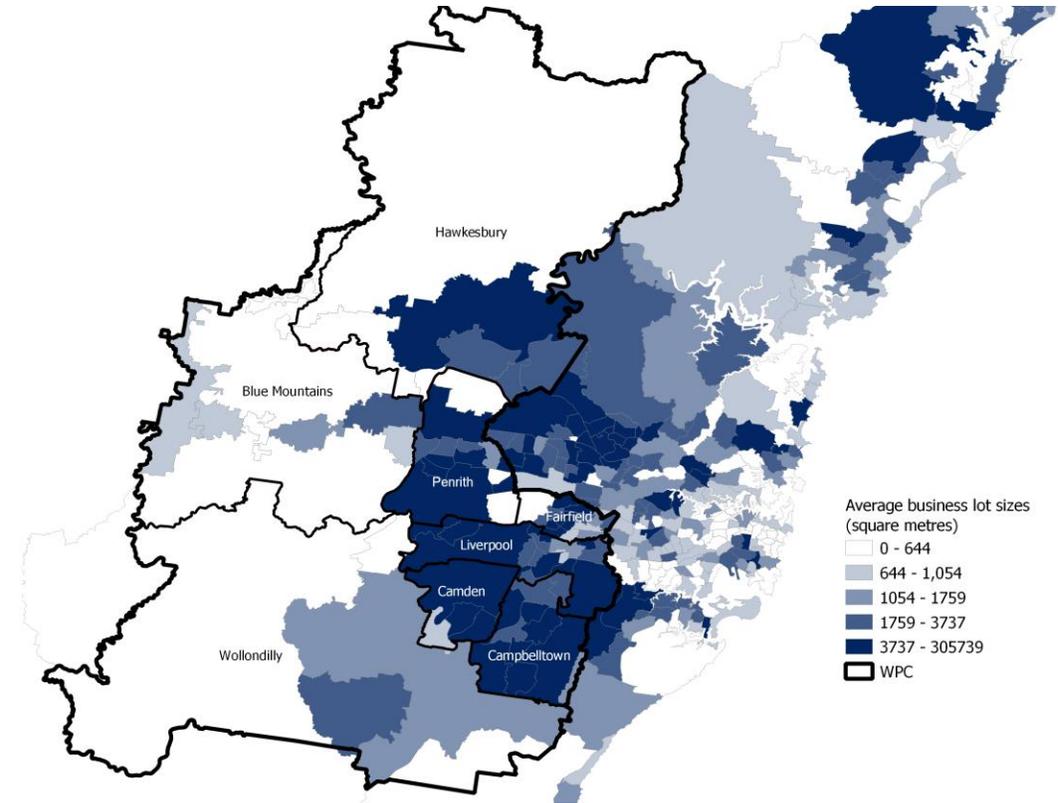
## Key committed infrastructure (under construction):

- **Air**
  - Western Sydney International Airport
- **Road**
  - M12 motorway
- **Rail**
  - Sydney Metro – Western Sydney Airport

# Lower land costs and larger lot sizes in WPC

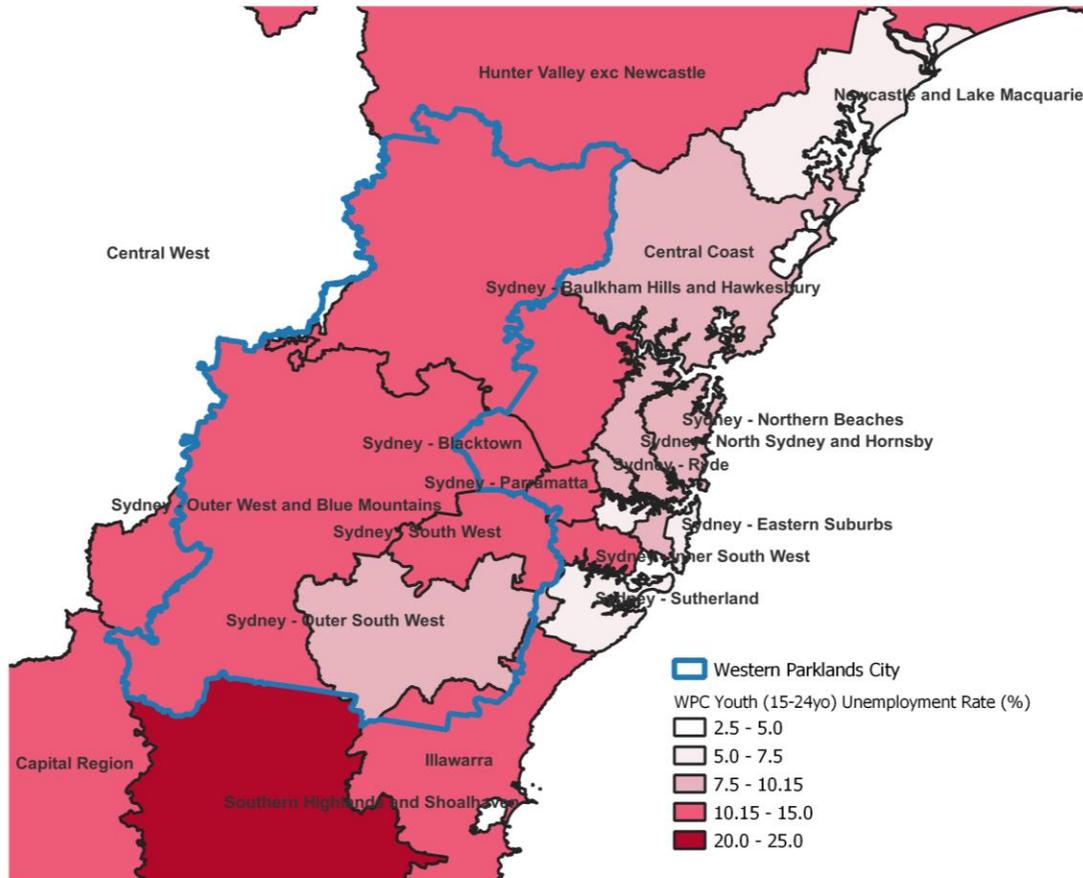


- Land in WPC is cheaper than the Greater Sydney average, providing an advantage to land-intensive industries.



- Lots in WPC are larger than the Greater Sydney average and are suitable for industries requiring a large footprint such as manufacturing and logistics.

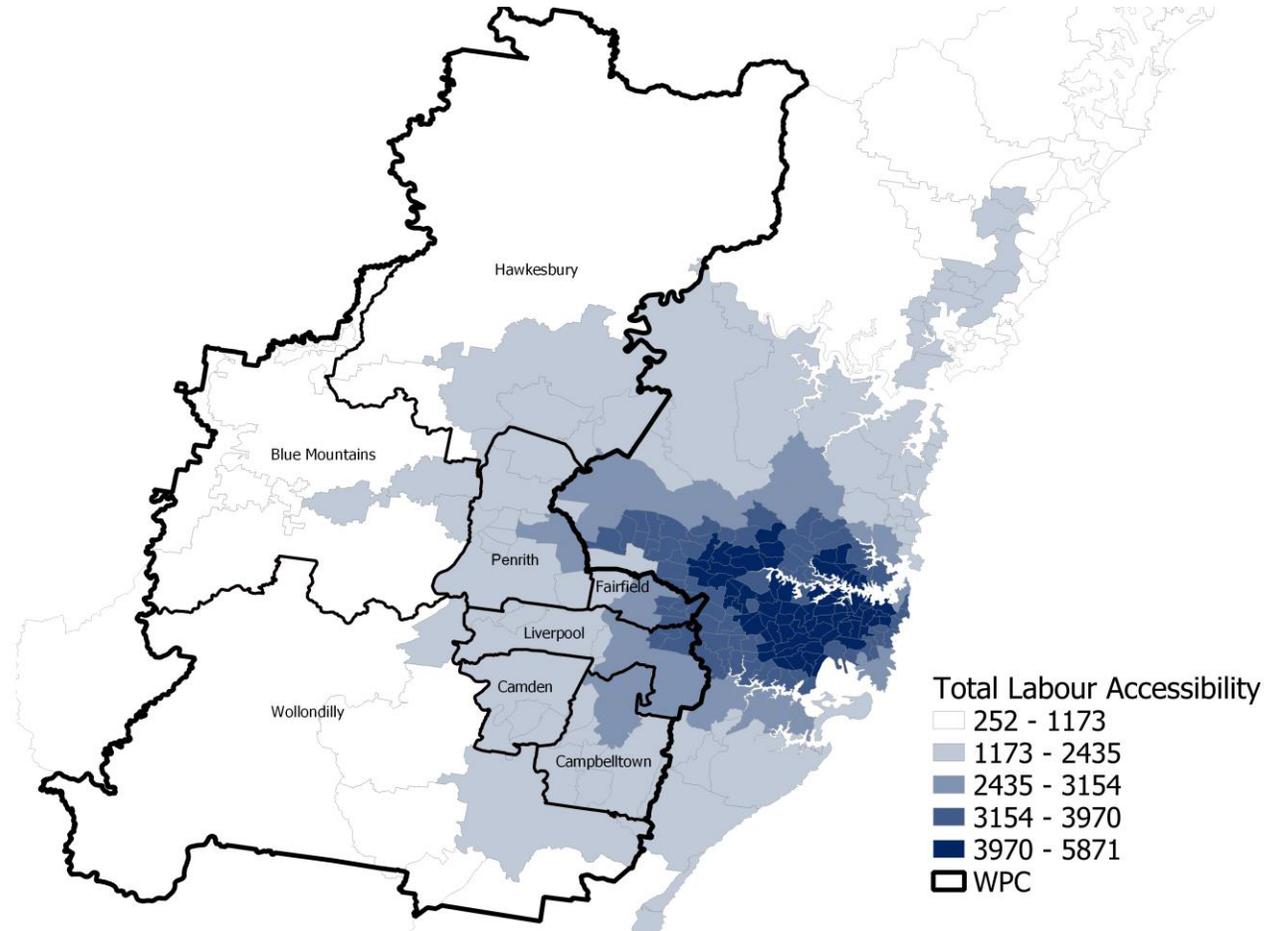
# Untapped workforce



Source: ABS - 6291.0.55.001 - RM1 - Labour force status by Age, Labour market region (ASGS) – based on the average 12 months to February 2022

- Parts of WPC have rates of youth unemployment above the NSW State average of 10 per cent
- This represents a large untapped workforce capacity within the WPC and in neighbouring areas.
- EDR actions to activate this capacity would be a **significant driver of additionality** for the WPC:
  - Strengthen linkages between WPC industries and the Western Sydney University (WSU) campuses and Richmond Agricultural College.
  - Targeted programs for secondary schools and early childhood programs to improve educational quality tailored to needs of the local community.

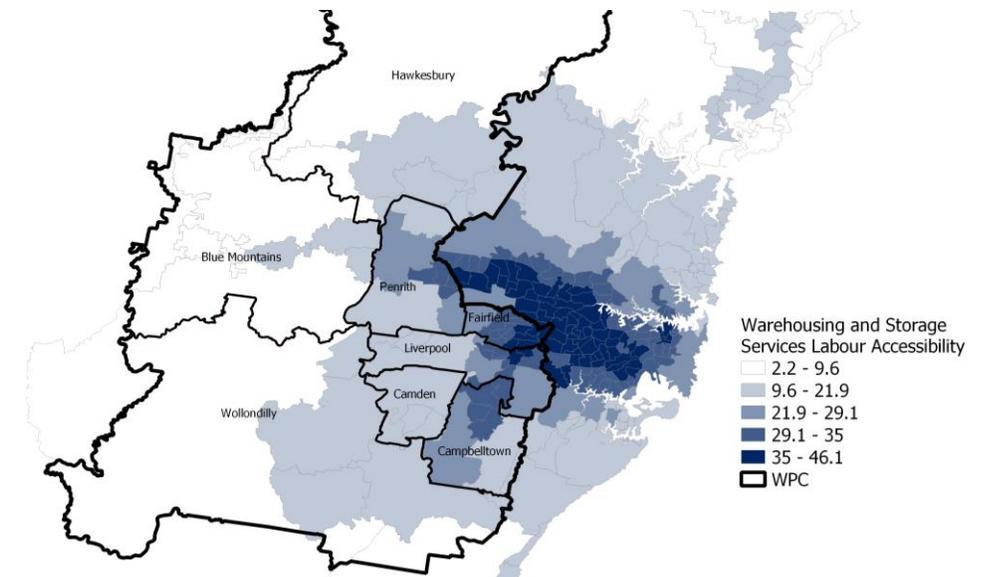
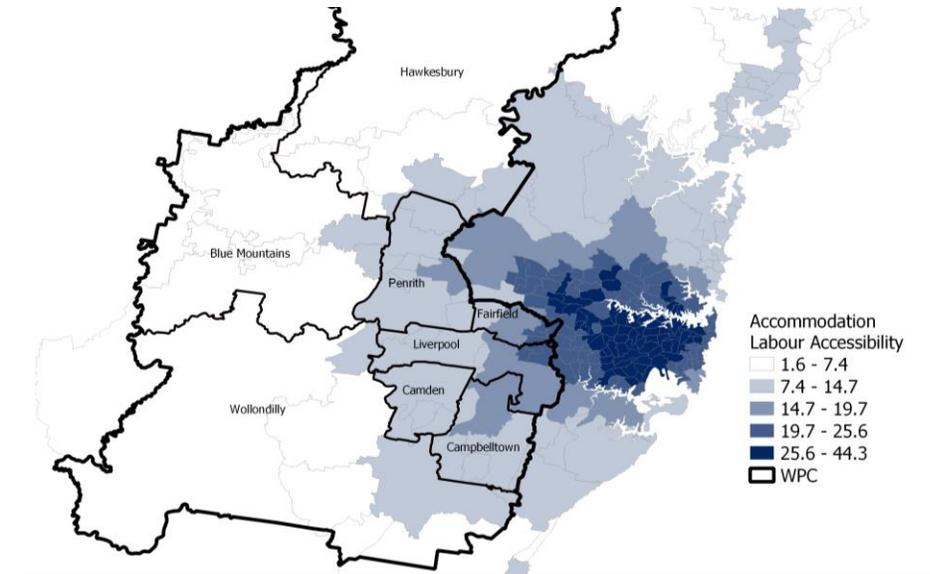
# WPC infrastructure – connecting people with jobs



- This map shows the size of the workforce that can commute to each SA2 in Sydney via both road and public transport.
- Darker blue areas are more accessible to the workforce than lighter areas due to better transport links and more workers living close by.
- WPC is on the fringe of accessible areas of Greater Sydney, with lower than average accessibility other than in pockets of the Fairfield and Liverpool LGAs. This is comparable in accessibility to other locations on the outer edge of the GMA.
- This means WPC cannot access deep labour pools for most jobs as easily as locations closer to the CBD and along the Parramatta River.
- Accessibility will improve with new infrastructure including the M12 Motorway, Sydney Metro – Western Sydney Airport and other planned infrastructure.
- Accessibility will also improve as residential areas are further developed within and nearby WPC, attracting more workers.

# Labour accessibility varies by industry

- Different industries in WPC have different access to the skills they require, depending on whether the skilled workforce resides close to WPC.
- For example, parts of WPC are among the most accessible places in Sydney for:
  - Warehousing and Storage Services workers.
- WPC is less accessible than average for:
  - Accommodation workers.
- Industries that currently have good access to their required skills may be candidates for early EDR actions, while other industries may need to rely on the opening of new infrastructure for WPC to be a competitive location.



# Why these assets and endowments are important

## Endowments provide a foundation for growth

- Building from an existing base is most successful approach for economic development
  - Productivity in the use of endowments is what creates prosperity



## Strategies for economic development

Design a set of actions to leverage existing economic base with available investment resources by focusing on what matters most to industries and businesses



## Quality of the business environment

- Streamlined land use planning processes
- Access to physical and digital infrastructure
- Attractive place for workforce
- Collaborative networks operating across government, industry and institutions



## Opportunities for cluster development

- Use cluster-based actions only when firms:
  - 1) Are geographically close
  - 2) Are economically interdependent
- Prioritise clusters with largest number of firms
  - Affect the largest number of firms with one intervention
- Anchor institutions are often the seed for clusters to develop organically

# WPC – industry opportunities

## Industries that will find WPC an attractive location will be those that:

- Require larger land areas (lot sizes);
- Are more labour intensive; and
- Gain advantage from proximity to alternative transport networks.

## For example:

- Agriculture (specifically intensive horticulture and aquaculture)
- Storage and distribution
- Packaging and processing
- Manufacturing

# WPC – future commitments



## Key commitments:

- **CSIRO moving all Sydney operations to WPC**
  - 450 employees
- **Western Sydney Construction Hub**
  - Centre of excellence for construction trades
- **Advanced Manufacturing Research Facility**
- **Support from Defence Foundation Partners**
  - BAE Systems, Hitachi, and Northrop Grumman



## Key infrastructure:

- **Rail**
  - Western Sydney Freight Line (proposed)
  - Sydney Metro – Western Sydney Airport extensions (vision)

# Opportunities for WPC

## Leverage opportunities with existing anchor institutions present in WPC

## Establish stronger government, research and education institution and industry collaborations and networks

- to build on existing industry strengths and to mobilise the unutilised and under-utilised workforce

## Ensuring long term coordination and cooperation across WPC LGAs to harness efficiencies

- LGAs will need to operate cohesively to activate growth opportunities to the benefit of all areas
- Coordinated approach planning land use zones
- Common planning approval processes
- Shared infrastructure and plant and equipment

# So which industry should be a focus and why ....

**Do any WPC priority industries show cluster opportunities?**

**What actions should an EDR include for industries with and without cluster potential?**

# 3. Some background on clusters



# Clusters

**A group of firms that gain a competitive advantage from being geographically close to each other (agglomeration)**

**Provide insight into where productivity benefits can be gained specifically by increasing a firm's access to:**

- **Suppliers** – which can reduce input costs
- **Labour** – which can increase labour productivity through better and quicker matching of skills to jobs
- **Information** – knowledge and technology which can reduce production costs and lead to creation of new processes, products and services

**Three basic sources of interdependency:**

- **Industry product and supply chains**
- **Occupations**
- **Technologies**

# Why clusters can be used to inform economic development strategies (EDS)

## Clusters are just one test to guide relevant actions to include in an EDS

- One way to understand what matters to a group of firms, specially firms that have economic dependencies.
- They are used to create policies and programs to best achieve the overall economic development objective by targeting what matters most to a group of related firms.

## Note that clusters usually cannot be created by force

*“virtually every successful cluster has emerged from entrepreneurial activity that relates to some historical industry strength in the region”* (Brookings Institute 2018)

- Many examples of unsuccessful attempts to create a cluster from scratch using strategic government investment and major incentives for business attraction
  - Expensive
  - High risk
- There needs to be good evidence to include cluster initiatives in an economic development strategy.

# Which industries realise productivity gains by locating in a cluster?

Cluster	Industry (ANZSIC Level 2)	Firm level productivity increase from a 10% increase in cluster firm density
Information Communication Technology	Telecommunication Services	1.08%
Construction	Heavy and Civil Engineering Construction	0.39%*
Agriculture	Agriculture, Forestry and Fishing Support Services	0.38%*
Agriculture	Agriculture	0.32%*
Auxiliary Finance	Auxiliary Finance and Insurance Services	0.31%
Finance	Finance	0.28%
Professional Services	Professional, Scientific and Technical services (except CSDRS)	0.23%
Creative	Creative and Performing Arts Activities	0.16%
Finance	Administrative Services	0.15%
Construction	Building Construction	0.12%*
Information Communication Technology	Computer System Design and Related Services	0.09%
Construction	Construction Services	0.08%*
Health	Medical and Other Health Care Services	0.08%*

\* Priority industries in WPC Economic Development Strategy

Source: Based on Market Analysis and Data Science, Investment NSW econometric analysis of ABS Business Longitudinal Analysis Data Environment (BLADE) data

- Knowledge-based industries generally benefit from proximity to other firms in their clusters, as well as industries in construction, health and agriculture.
- Industries in manufacturing tend to have insignificant or negative effects from proximity to other cluster firms.

(Note: Agriculture result may be reflecting corporate Ag Head Offices and family farms recording their address as their accountant's address for ATO correspondence.)



# Not every group of firms will be a cluster

**Where evidence of clusters (ie dependant linkages between firms) is not strong, interventions other than clustering initiatives, will be more efficient and effective interventions and should be considered in the development of the EDR.**

**(fixed costs of designing and implementing programs are spread across a large number of firms and opportunity for greater impact)**

**These will be actions that address common needs or constraints across the set of unrelated firms operating in the WPC (regardless of their industry).**

**For example:**

- **Programs designed to support small business growth regardless of industry**
- **Improving access to physical or digital infrastructure**
- **Labour matching platforms or training programs for common skills.**

## 4. Industry competitiveness in WPC

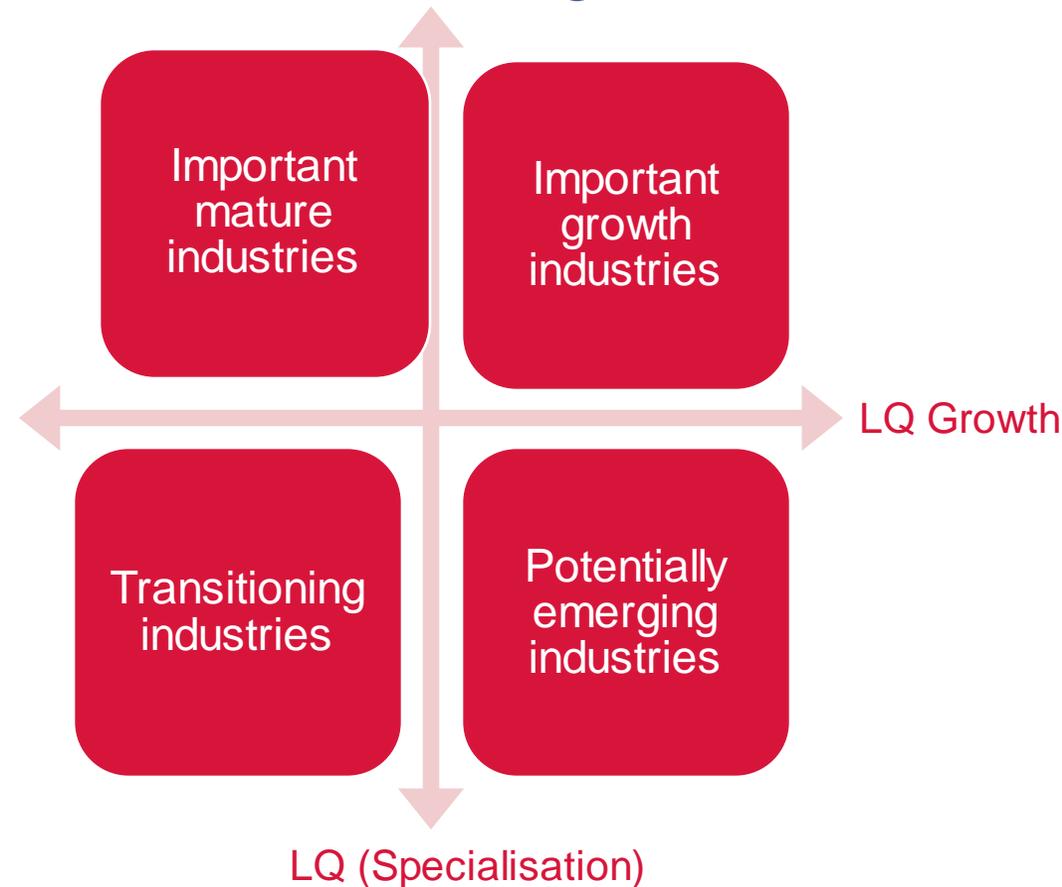


# Composition of the WPC region economy

Industry Location Quotients (LQs) are used to quantify how concentrated an industry is compared to the State average.

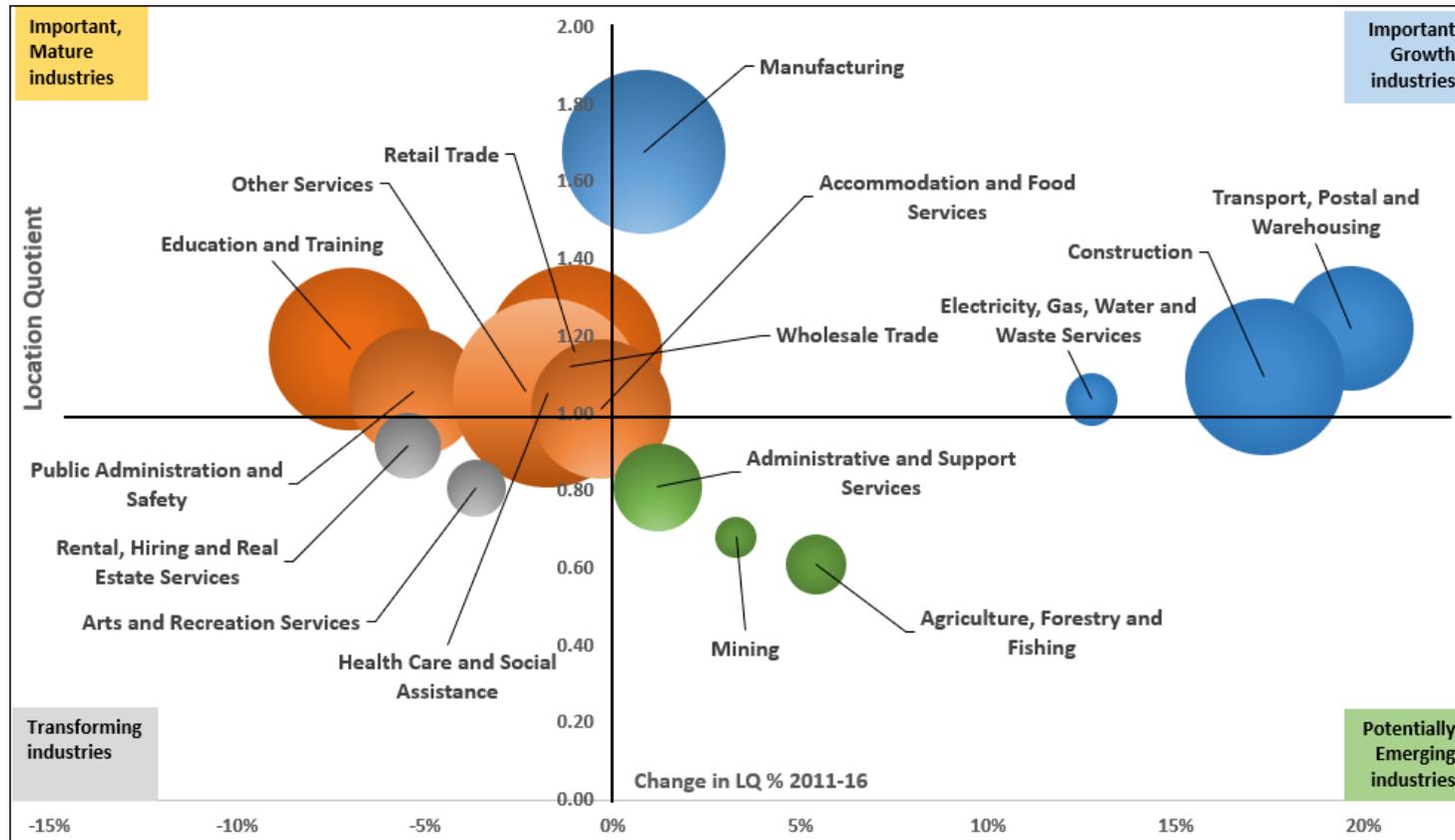
Industries with a **high LQ (>1)** suggest a specialisation and represent the economic base of a region.

They are usually export-oriented industries (ie trade outside their region), bringing money into a region as opposed to circulating money already within a region.



Industries with high **LQ growth** indicates stronger potential for industry growth in the region.

# Industry specialisation and growth in WPC



Australian Bureau of Statistics Census of Population & Housing 2011, 2016



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- Large employing industries in WPC with  $LQ > 1$  and high growth in LQ are:
  - **Transport, Postal and Warehousing**
  - **Construction**
  - **Electricity, Gas, Water and Waste Services** (although with smaller employment)
- **Manufacturing** has the highest LQ in WPC and is a significant employer, although growth in LQ was lower compared to the industries above.
- **Agriculture, Forestry and Fishing** has a high growth rate, but has an  $LQ < 1$ .
  - This is an emerging industry with potential for WPC, particularly given WPC land, untapped labour, distribution access, and the location of institutional anchors with agricultural specialisations (particularly in greenhouse production).
  - Greenhouse fruit, veg and flower production are also a industries with growing global demand which need access to air freight.

# Priority industries

- Of the eight WPC Economic Development Strategy priority industries, six have a high specialisation and/or high growth in WPC.
- These industries should be a primary focus for the EDR consultations.



**Advanced Manufacturing\***



**Construction**



**Freight and Logistics**



**Circular Economy**

**Important growth industries**

\* **Aerospace and defence products industries** may be captured as part of the set of industries using **Advanced Manufacturing Technologies**



**Agribusiness**

**Potentially emerging industries**



**Health and Education**

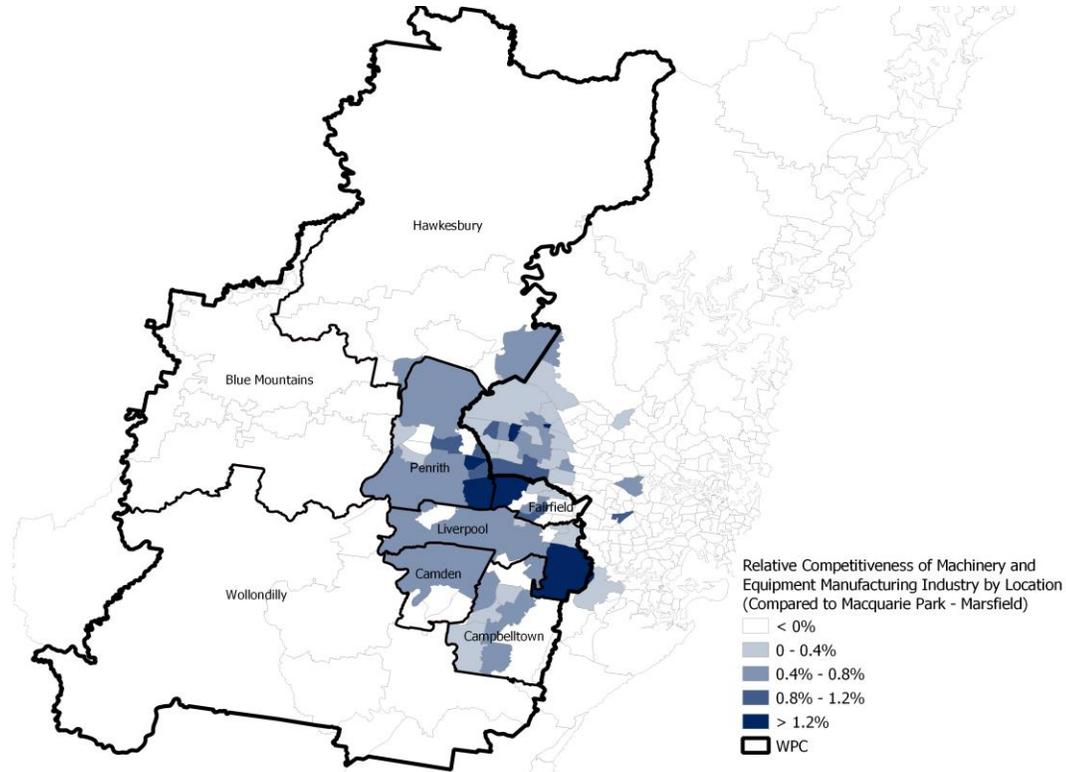


**Visitor Economy**



**Food Product Manufacturing**

# Advanced Manufacturing + Aerospace and Defence



**Competitiveness index by SA2 for Machinery and Equipment Manufacturing relative to Macquarie Park - Marsfield**

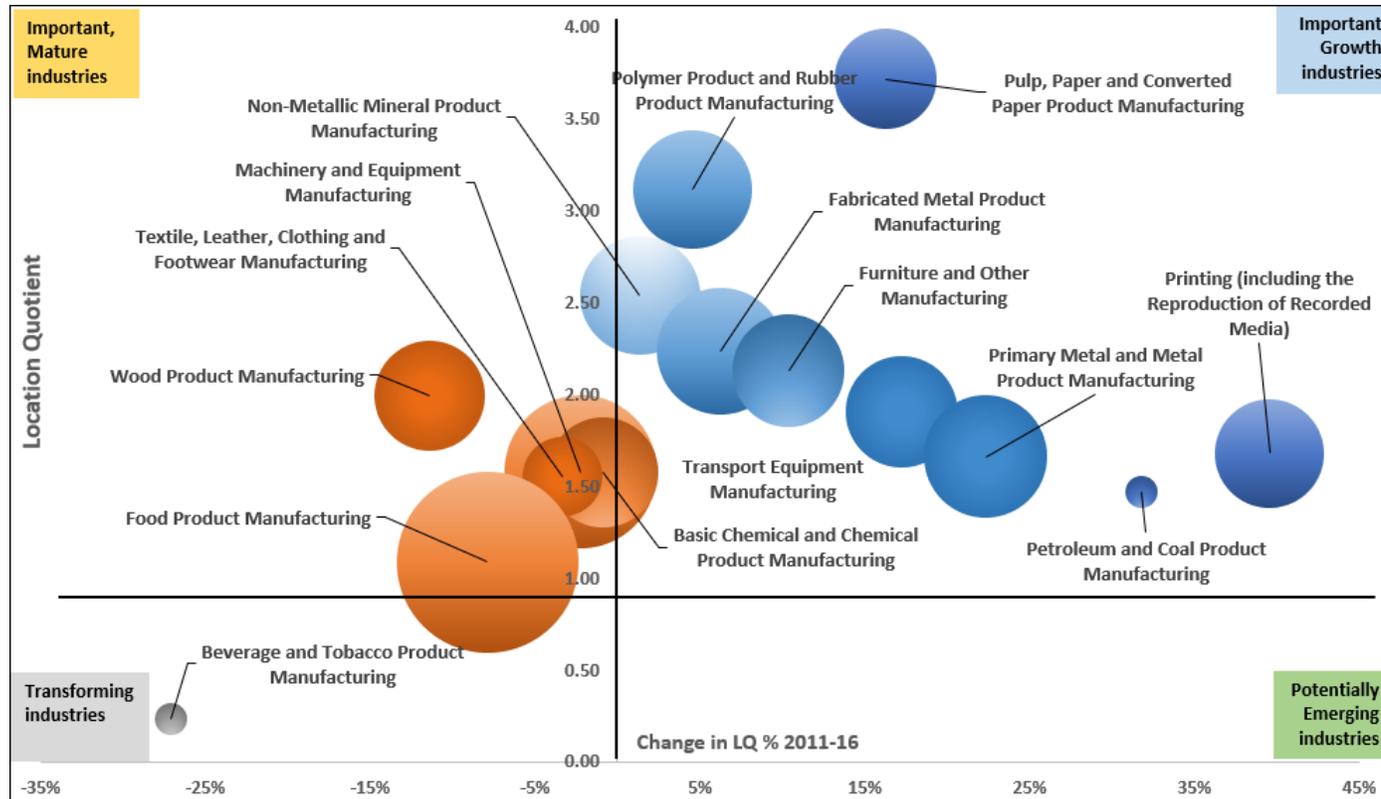
## Context

- Manufacturing represents 10% of WPC jobs, which is 1.7 times the state average.
- Key commitment to develop the Advanced Manufacturing Research Facility, and existing defence sites including RAAF Richmond are located within WPC.
- There is a high availability of zoned and affordable land in WPC for manufacturing operations.

## Analysis

- The advanced manufacturing industries have a significant advantage in the Penrith, Fairfield, Liverpool, Camden and Campbelltown LGAs of WPC compared to other Sydney locations due to proximity to workforce and lower land costs.
- Manufacturing industries could experience cost savings in production of over 1.2%, particularly around Horsley Park.
- Manufacturing industries did not show productivity gains from clustering from the firm level productivity analysis.

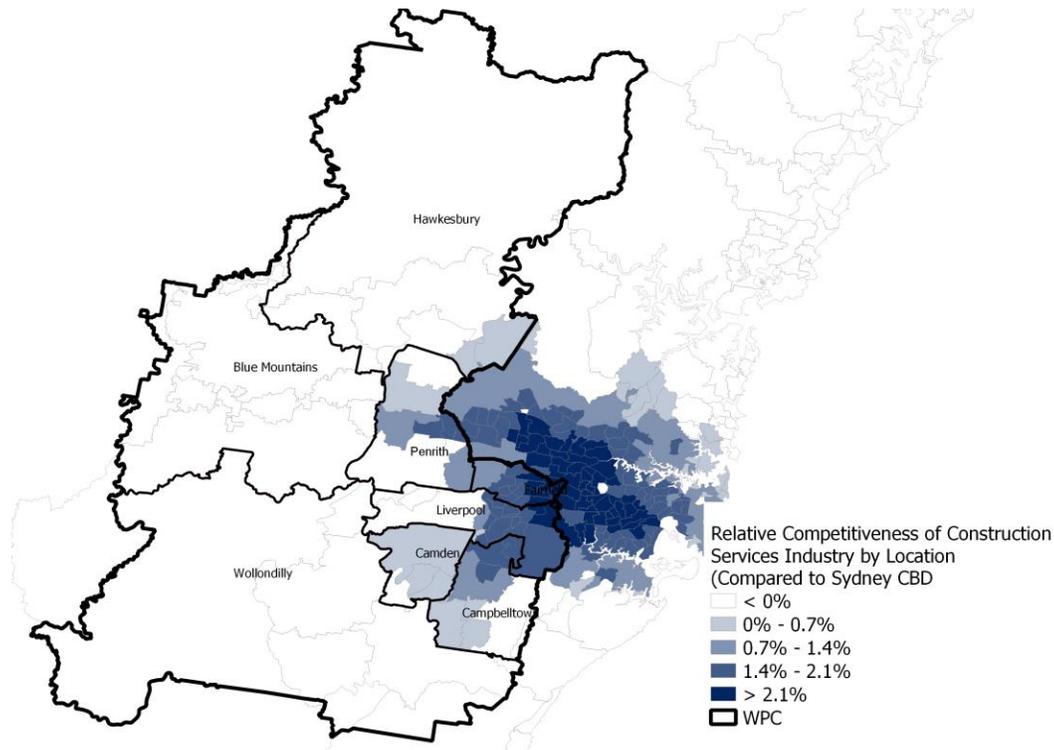
# A closer look at WPC Manufacturing industries



Australian Bureau of Statistics Census of Population & Housing 2011, 2016

- Within the set of industries classified as Advanced Manufacturing (including Aerospace and Defence products) many:
  - have a high and increasing specialisation in WPC compared to the rest of NSW; and
  - are large employers for the area.
- **Food production manufacturing** was the largest employer overall, closely followed by **Machinery and Equipment Manufacturing**, both identified as important and mature industries for WPC.
  - These industries are a strength of the WPC economy.
  - They may require some attention in the EDR as they are becoming less specialised in WPC.

# Construction



**Competitiveness index by SA2 for Construction Services relative to Sydney CBD**

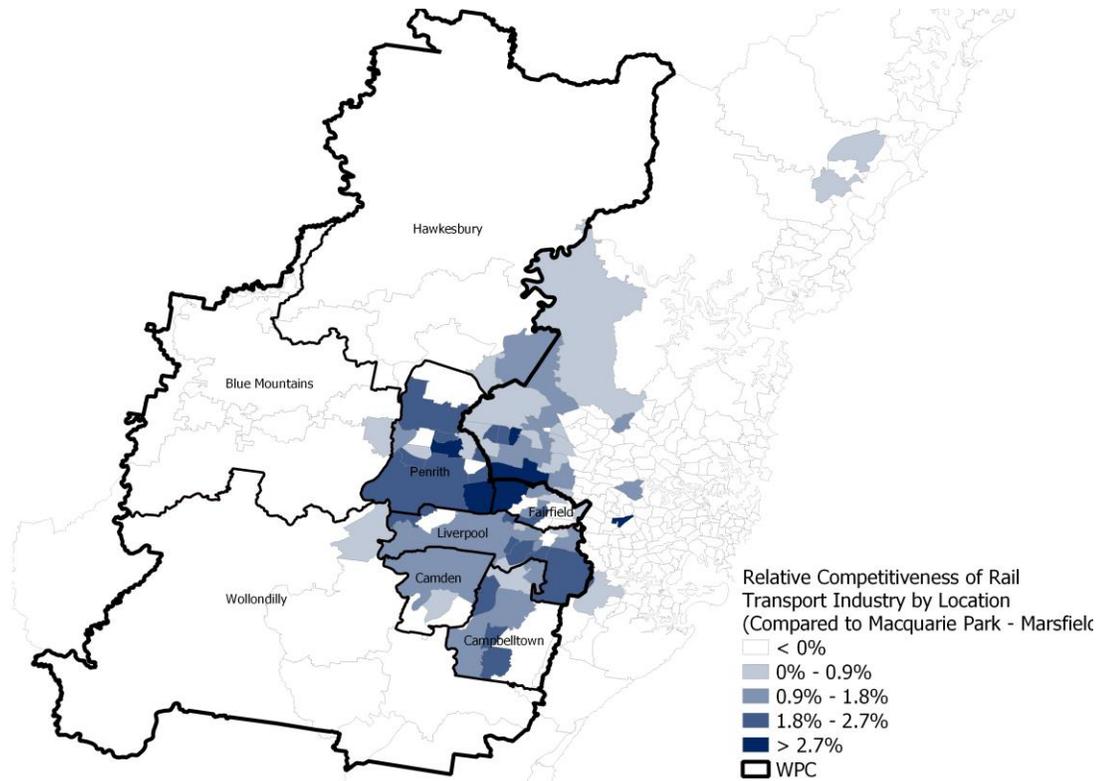
## Context

- Construction is a growing specialisation for WPC, with growth of 17% in employment between 2011 and 2016.
- Significant population growth, release of new land for development and infrastructure are significant drivers of demand.
- Construction Centre for Excellence to be located on TAFE Nepean-Kingswood campus.
- While construction largely takes place on site, proximity to upstream manufacturing industries provides the potential for development of innovative construction methods and materials.

## Analysis

- Construction industries in WPC are moderately competitive with other locations in Sydney, with eastern parts of WPC experiencing cost savings in production of over 2.1%.
- Building construction and construction services benefit from clustering with manufacturing, transport and utility industries.

# Freight and Logistics



**Competitiveness index by SA2 for Rail Transport relative to Macquarie Park - Marsfield**

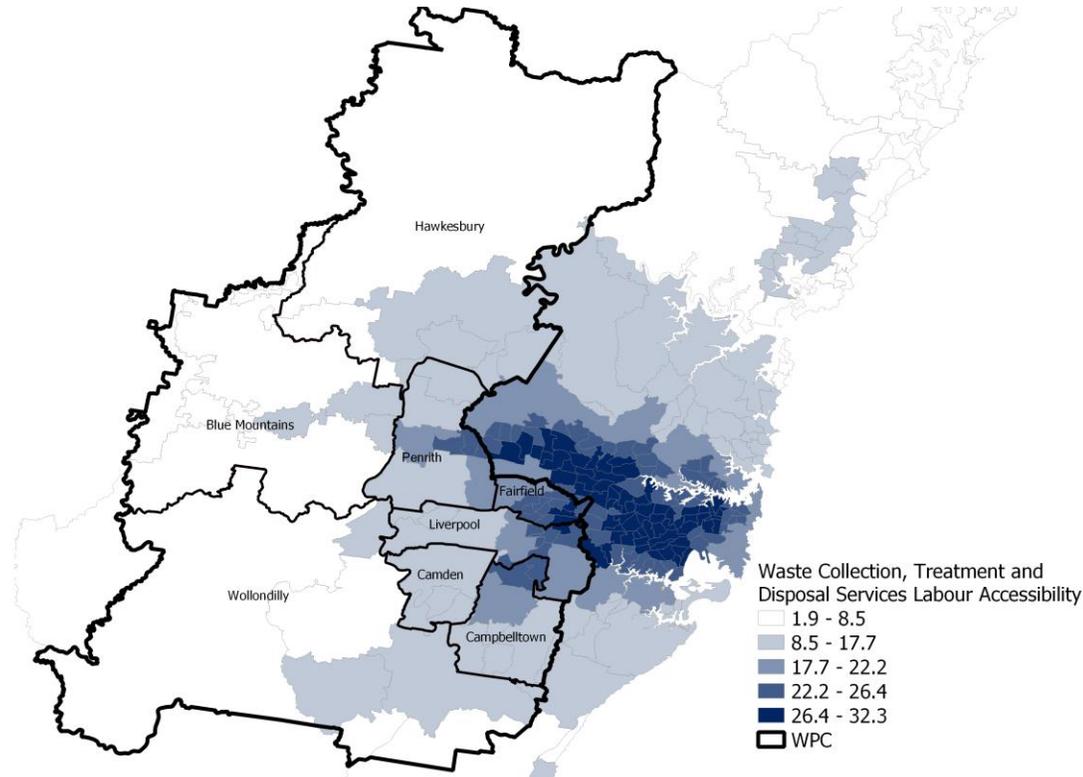
## Context

- Freight and logistics are a current strength of WPC, with existing specialisation and high growth.
- WPC will have a unique endowment in the Western Sydney Airport and associated transport infrastructure, which provides direct linkages with overseas markets and fast movement with interstate markets.
- The large plots of industrial land available in WPC are suitable for freight and logistics activities.

## Analysis

- Similar to manufacturing, the WPC LGAs of Penrith, Fairfield, Liverpool, Camden and Campbelltown are the most highly competitive locations for freight and logistics industries in Sydney based on land and labour costs.
- The rail transport industry could experience cost savings of over 2.7% around Horsley Park, which also aligns with the proposed Western Sydney Freight Line.
- Road and rail transport industries, as well as warehousing industries, did not show a gain from clustering.

# Circular economy



**Labour accessibility by SA2 for Waste Collection, Treatment and Disposal Services**

## Context

- Increased capacity for waste management needed in NSW following import restrictions into Asia.
- Significant presence in WPC, currently processing 32% of waste received at NSW facilities.
- Limited competition in Sydney market – 3 providers responsible for most waste collection, materials recovery and landfill facilities.

## Analysis

- Accessibility to labour for circular economy industries in WPC is average for Sydney, with better accessibility in eastern parts of Fairfield and Liverpool.
- Land values are difficult to analyse as the present locations of waste industries have very low land value, and are largely already located in WPC.
- No apparent gain from clustering.
- Results are heavily biased by garbage collection services, and further analysis with specific ANZSIC 4-digit industries e.g. materials recovery services would be useful.

# Agribusiness

## Context

- Agriculture, Forestry and Fisheries shows as an industry potentially emerging in WPC due to high LQ growth.
- Agriculture in the Sydney Basin is valued at \$870m (2016-17) and accounts for about 6 per cent of NSW agriculture Gross Value of Agricultural Production (NSW DPI).
- Western Sydney Airport and other planned infrastructure could support a gateway the export of perishable goods.
- Significant agricultural industry, and opportunity for intensive, high value horticulture.
- Richmond Agriculture Centre of Excellence and Elizabeth Macarthur Agricultural Institute are located within WPC.

## Analysis

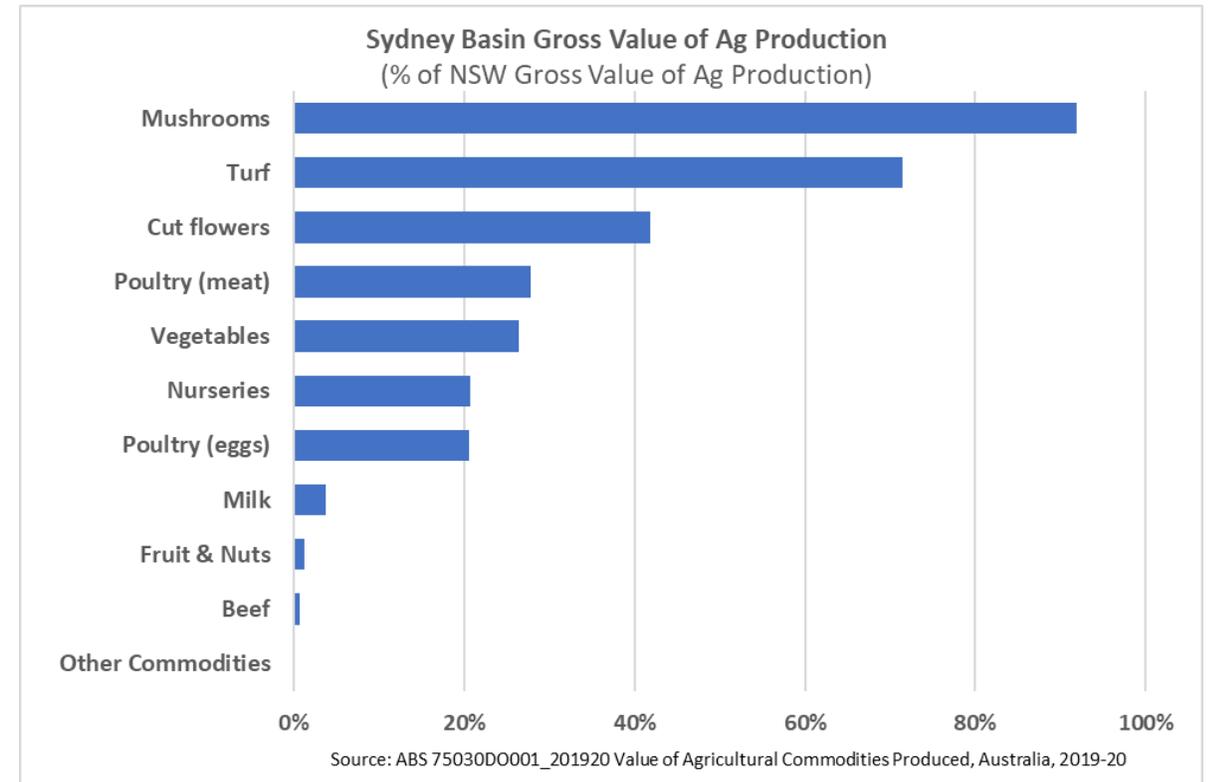
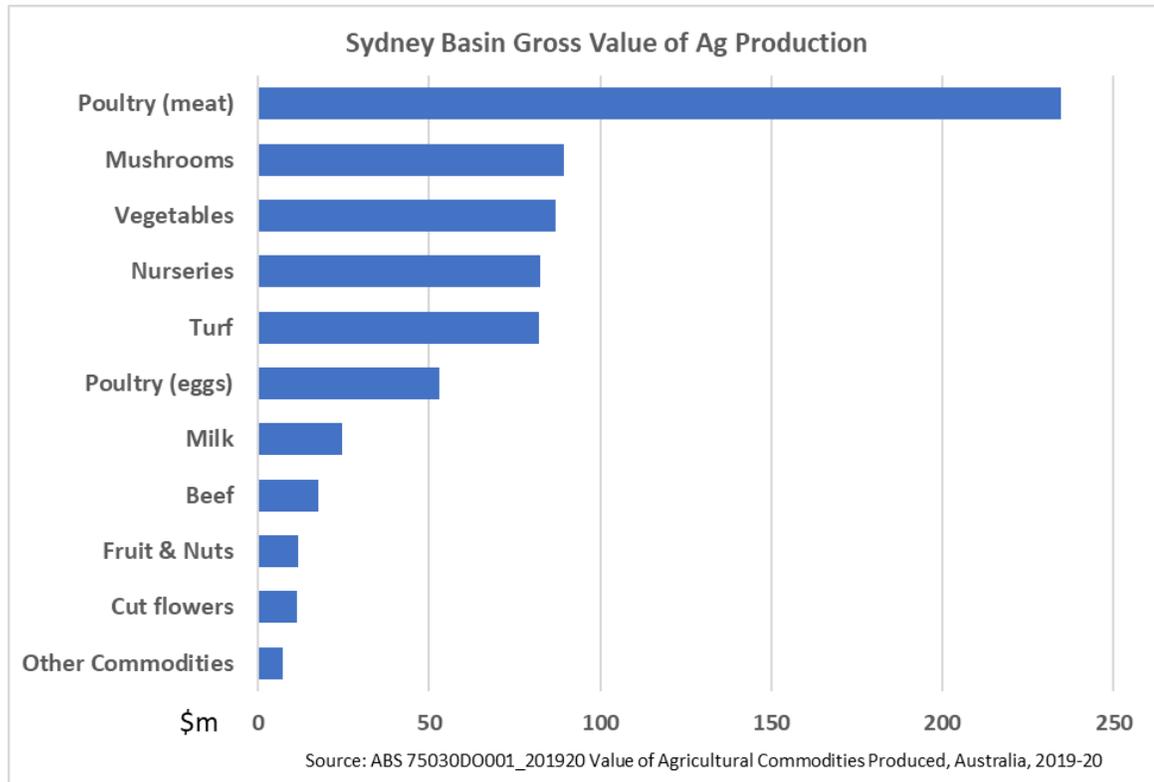
- Agriculture (0.032) and ag support services (0.038) have high (statistically significant) agglomeration coefficients\*.
- Detailed analysis at Level 4 would be recommended to identify the relevant agglomeration coefficients for agricultural industries in WPC.
- As a potentially emerging industry in WPC, analysis of the food supply chain (perishable goods) is recommended to assess any gaps in the supply chain which could be addressed through EDR actions and create opportunities for Food Product Manufacturing which already shows as a large and mature industry in WPC.

\* Agriculture result may be reflecting corporate Ag Head Offices and family farms recording their address as their accountant's address for ATO correspondence.

# Sydney Basin – intensive agricultural production

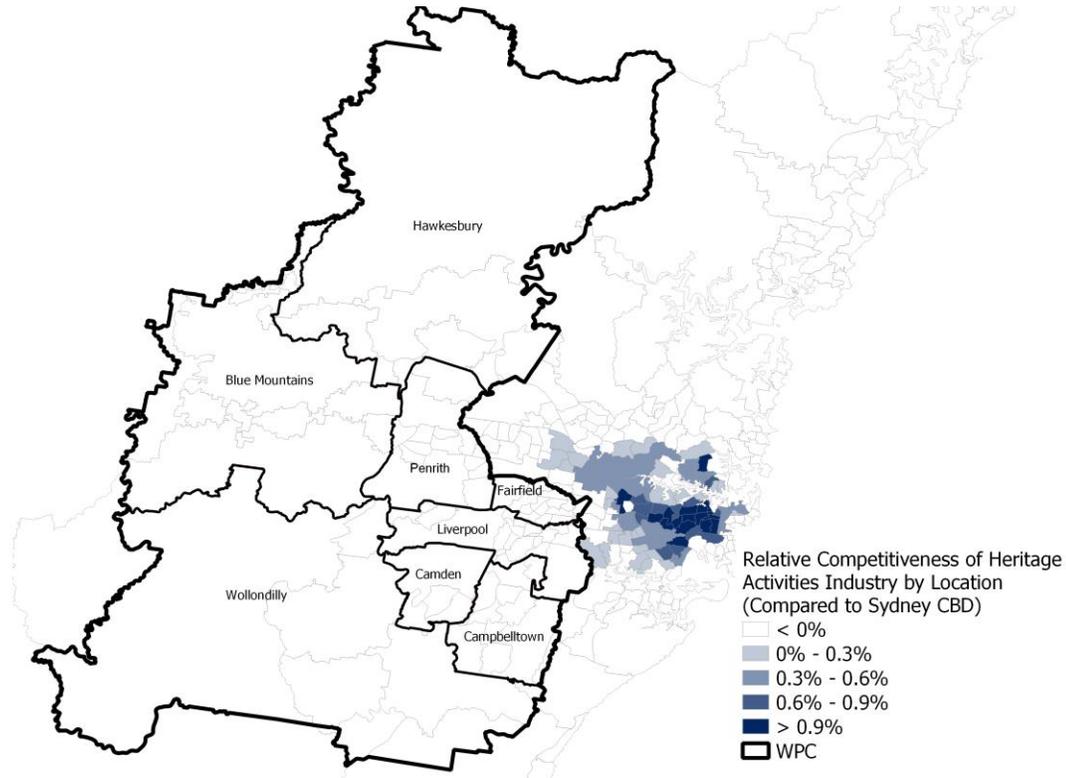
High value produce - Worth \$700m per year

Represents 6.3 per cent of total NSW GVAP\*  
(but a significant portion of GVAP for several industries)



\* GVAP - Gross Value of Agricultural Production

# Visitor Economy



**Competitiveness index by SA2 for Heritage Activities relative to Sydney CBD**

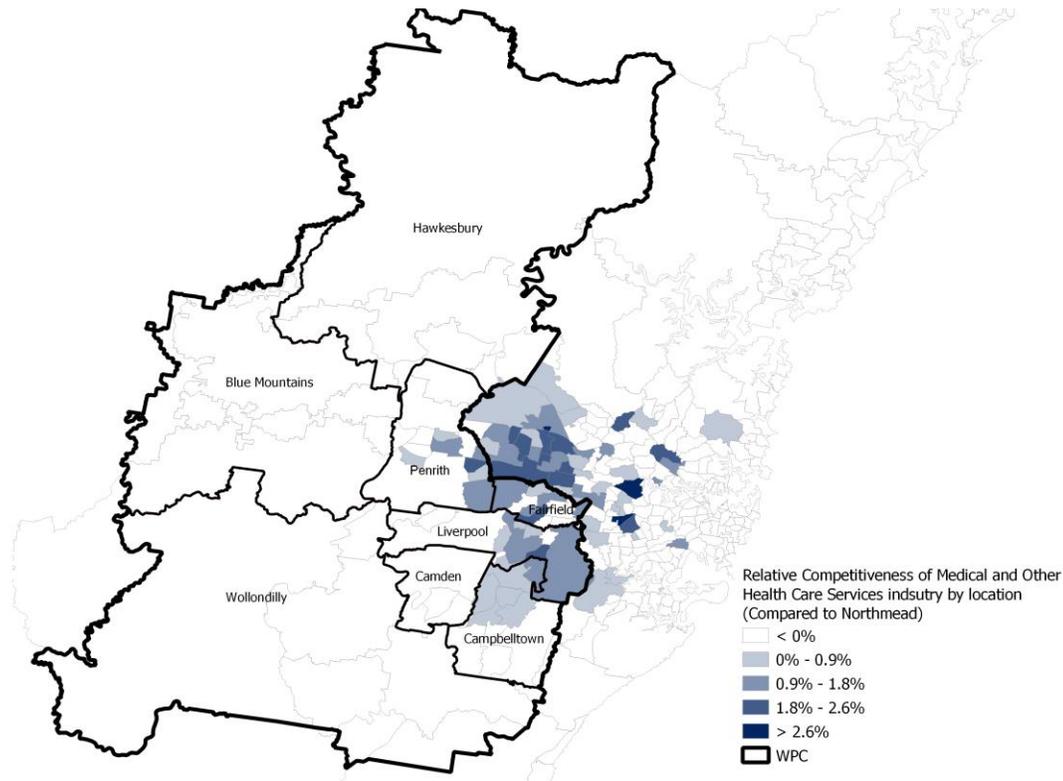
## Context

- Existing tourism in WPC is concentrated on natural endowments in the Blue Mountains, as well as adventure tourism in Penrith.
- Potential for LGAs to focus on specific tourism, e.g. Wollondilly/Camden for nature-based tourism.
- Mostly day trips given proximity to Sydney population.

## Analysis

- WPC is currently less competitive for traditional visitor economy industries such as accommodation and heritage (which includes museums, parks and gardens) compared to most of Greater Sydney in terms of access to labour and land.
- There may be some opportunities for marketing the Greater Blue Mountains World Heritage area as a destination to the niche international travel market interested in outdoor and nature tourism.
- No apparent benefit of clustering.

# Health and Education



**Competitiveness index by SA2 for Medical and Other Health Care Services relative to Northmead**

## Context

- Opportunity to expand on NSW specialisation in medical technology, supported by Liverpool Innovation Precinct, Campbelltown Health and Education Precinct and other institutions.
- Health care and social assistance is the largest employer in WPC.
- Key commitments to multiversity, relocation of CSIRO and Advanced Manufacturing Research Facility.

## Analysis

- Medical and other health care services benefit from clustering with hospitals, residential care services and social assistance services, and are competitive in WPC relative to Greater Sydney.
- Tertiary Education does not appear to benefit from clustering and is less competitive in WPC compared to other Sydney regions.

# 5. Key messages for the WPC Economic Development Roadmap



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# Key messages for WPC EDR

## EDR should aim to build existing local industries providing important functions for the city that cannot be undertaken elsewhere in Sydney

- These are a current strength of the area and are well-served by the local workforce.
- The WPC location also already offers something attractive to their business.

## The industries selected from the analysis are a mix:

- one emerging industry with possible potential for agglomeration gains from clustering
- a set of industries with high industry specialisation in WPC but where no apparent cluster potential was evident.

## Clustering initiatives are likely to be less important in the development of WPC

## Realising additionality for NSW (creating new jobs, services, products)

- Increasing workforce participation for youth in WPC should be a central goal of the WPC EDR.
  - The largest potential for additional gains for NSW from the WPC development is likely to accrue from the activating the large unutilised or under-utilised youth workforce.
  - Specifically increasing workforce participation rates for the 16 to 25 year age group.
- Prioritise the focus industries with high trade exposure to avoid displacement effects elsewhere in the State.
  - Industries which will gain most from proximity to an airport
  - E.g. exports of perishable produce or “just-in-time” specialised manufactured products.

# Key messages for WPC EDR – cluster initiatives

## Analysis found evidence suggesting one emerging cluster in Agriculture, Fisheries and Forestry

- This industry already has a presence in WPC (ie intensive agriculture) and has high growth potential given increasing global demand.
- Further analysis of Level 4 industries within this Division to identify specific opportunities (most likely related to horticultural production).
- This was an industry identified as possibly benefiting from increased firm density (agglomeration).
- There are existing anchor institutions and transport infrastructure (ie airport) from which this industry could gain through stronger collaboration networks and connections.
- Land availability, untapped labour supply in WPC and being close to a major domestic market also suggest an advantage for the WPC location for this industry.

## Actions to consider in EDR consultations with this industry include:

- Further analysis of Level 4 industries within this Division to identify specific opportunities (i.e. specific types of intensive horticultural production and related supply chains).
- Consideration of land zoning for these activities.
- Examining the perishable produce supply gain to identify gaps and opportunities that can guide EDR action recommendations
- Opportunities to increase WPC linkages to other key production areas in the State.

# Key messages for WPC EDR – non cluster initiatives

## There are opportunities for other industries strong presence in WPC and growth potential

- These industries were not identified as being part of a cluster (or at least one that can be identified now).

## The focus industries identified were:

- Industries using Advanced Manufacturing technologies
- Construction
- Freight and logistics
- Circular economy
- Food Product Manufacturing

## Actions to consider in EDR consultations with these industries include:

- Any shared needs or constraints having impact across these industries
- Establishing collaborative networks between local businesses and anchor institutions to support innovation and productivity
- Programs to support local investment from existing businesses in these industries
- Programs to support small business growth and entrepreneurship.

# Appendix A: Top WPC industries (employment analysis)



# Top WPC industries from employment analysis

## Top 15 by LQ

- Pulp, Paper and Converted Paper Product Manufacturing
- Polymer Product and Rubber Product Manufacturing
- Non-Metallic Mineral Product Manufacturing
- Warehousing and Storage Services
- Gas Supply
- Defence
- Fabricated Metal Product Manufacturing
- Furniture and Other Manufacturing
- Wood Product Manufacturing
- Motor Vehicle and Motor Vehicle Parts Wholesaling
- Transport Equipment Manufacturing
- Waste Collection, Treatment and Disposal Services
- Basic Material Wholesaling
- Printing (including the Reproduction of Recorded Media)
- Primary Metal and Metal Product Manufacturing

## Top 15 by LQ growth

- Forestry and Logging
- Fishing, Hunting and Trapping
- Aquaculture
- Gas Supply
- Metal Ore Mining
- Other Transport
- Library and Other Information Services
- Printing (including the Reproduction of Recorded Media)
- Non-Store Retailing and Retail Commission-Based Buying and/or Selling
- Air and Space Transport
- Petroleum and Coal Product Manufacturing
- Warehousing and Storage Services
- Exploration and Other Mining Support Services
- Transport Support Services
- Primary Metal and Metal Product Manufacturing

## Top 15 by employment

- Preschool and School Education
- Food and Beverage Services
- Construction Services
- Other Store-Based Retailing
- Hospitals
- Food Retailing
- Social Assistance Services
- Medical and Other Health Care Services
- Public Administration
- Road Transport
- Professional, Scientific and Technical Services (Except Computer System Design and Related Services)
- Building Construction
- Repair and Maintenance
- Residential Care Services
- Personal and Other Services

# Appendix B: Guide to the competitiveness index (Section 4 maps)



# Competitiveness shows what matters to cluster industries

Competitiveness is measured by the savings in cost per unit of output achieved by moving to a location for each industry within a cluster.

**The Index uses three components to assess effects on firm profit in WPC relative to the most prominent location for the industry in NSW:**

- labour cost (indicating the cost of accessing the labour pool)
- land values (reflecting the cost of renting commercial and industrial space)
- productivity (based on existing firm densities).



# Competitiveness Index results (section 4)

The indicator of competitiveness (shown in the maps in section 4) can be used to design precinct interventions that matter to cluster industry firms by:

- showing an industry's potential to be competitive in WPC, relative to major competing precincts
- guiding strategies that could increase, or bring forward, economic benefits for NSW.

Construction Services					
Location (SA2)		Effect of location on profit components:			
		Productivity	Labour cost	Land cost	Profit (competitiveness index)
		Compared to – Sydney – Haymarket – The Rocks			
		(A)	(B)	(C)	(D = A + B + C)
WPC	Fairfield	-0.26%	-0.13%	2.50%	2.11%
	Penrith	-0.38%	-1.06%	2.75%	1.31%
Competing precincts	Homebush Bay - Silverwater	-0.30%	-0.19%	2.80%	2.31%
	Lalor Park - Kings Langley	-0.30%	-0.07%	2.77%	2.40%

## Competitiveness example results for the Construction Services industry.

- The current highest employing SA2 for the Construction Services industry is the Sydney CBD. All percentages in the table show the expected cost saving relative to the Sydney CBD.
- Construction Services experience an overall increase in profit in the key WPC locations of Fairfield and Penrith compared to the Sydney CBD.
- This is driven by lower land costs in Fairfield and Penrith compared to the Sydney CBD, countered by lower access to labour.
- Construction Services firms benefit from clustering, so there is a disadvantage in moving into Fairfield and Penrith from the Sydney CBD as they have a lower cluster firm density compared to the Sydney CBD.

# Western Parkland City Economic Analysis

**Addendum: Manufacturing industries –  
potential opportunities for cluster initiatives**

Investment NSW

19 October 2021

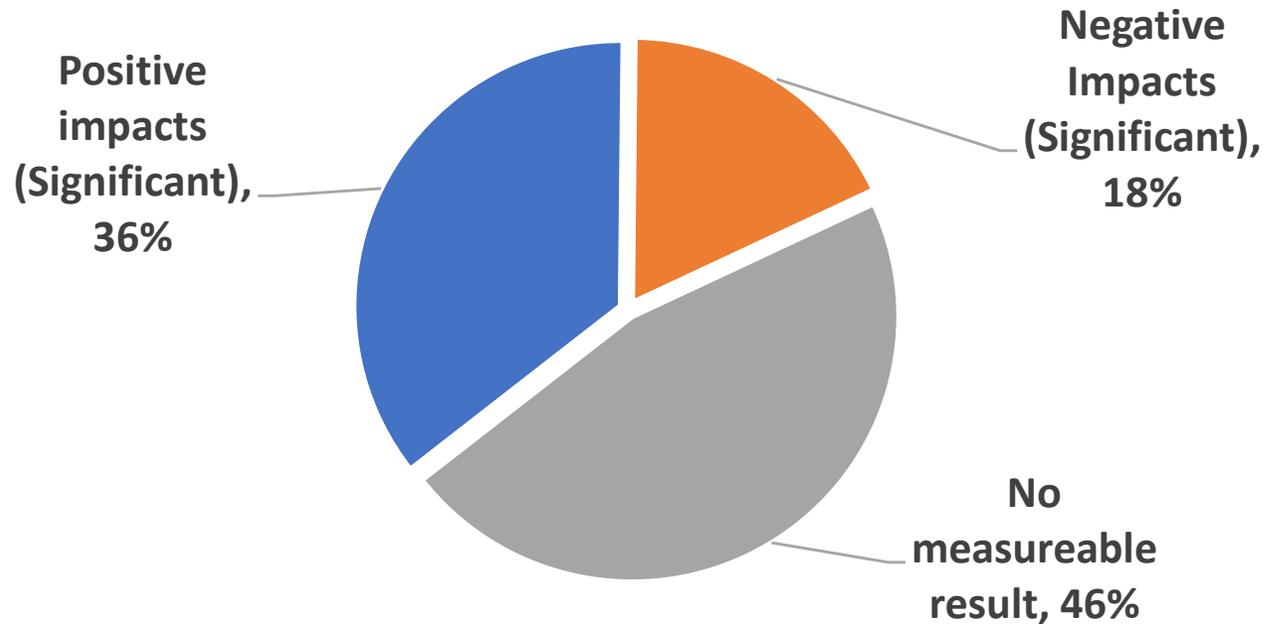


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# Firm Level Productivity Results: Manufacturing industries

FLP coefficients - manufacturing industries



**Not all manufacturing industries realise productivity gains from increases in cluster firm density**

- 46 per cent showed no measurable change in firm level productivity
- 36 per cent showed positive impacts indicating positive productivity impacts from clustering
- 18 per cent showed negative impacts indicating these industries do better when not clustered.

# Firm level productivity analysis

**Investment NSW analysed six groupings ('clusters') of manufacturing industries with a presence in WPC**

**Each was examined to see if there was evidence of productivity benefits from co-locating with other firms in their group**

- Evidence of productivity gains from co-location indicated cluster initiatives may be a consideration for the EDR

## Productivity gains from clustering evident

- Food Processing and Manufacturing
- Specialist Equipment Manufacturing
- Textile and Leather Product Manufacturing

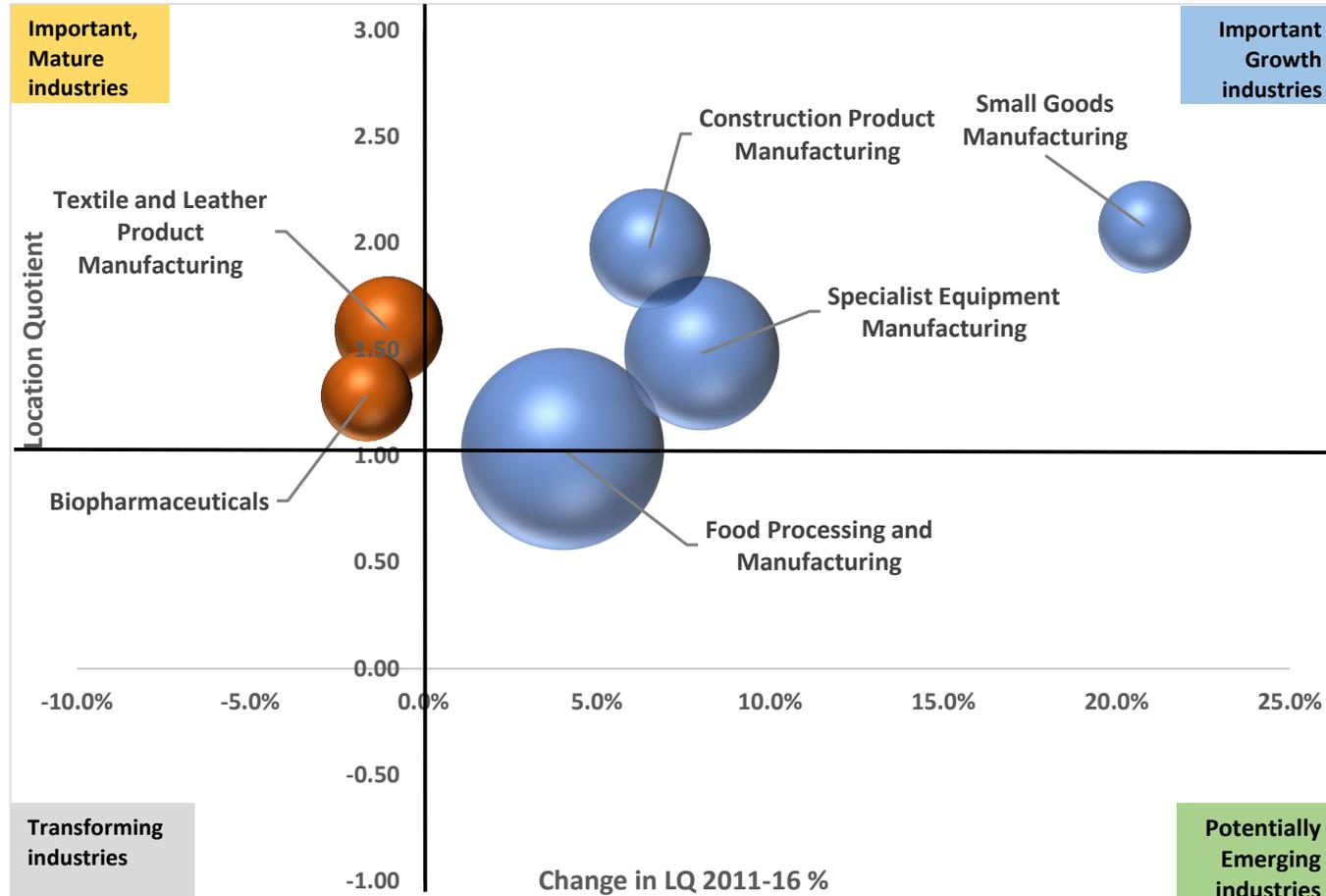
## No productivity gains from clustering evident

- Biopharmaceuticals
- Construction Product Manufacturing
- Small Goods Manufacturing



- Food Processing and Manufacturing industries, with the exception of Small Goods Manufacturing
- selected Professional and Scientific Equipment, including (as examples) gas metres, GPS equipment, meteorological equipment, navigation systems, optical fibre, radar and surveying equipment, electrical lighting equipment.
- several manufactured textiles products, such as canvas goods, sleeping bags, bed linen, curtains, awnings, and rope, cordage, thread and twine goods

# WPC Manufacturing Clusters



Australian Bureau of Statistics Census of Population & Housing 2011, 2016



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- All six manufacturing clusters in WPC have high levels of employment compared to the NSW average for the clusters (LQ  $\geq$  1.0).
- Four of the clusters in have an increasing specialisation compared to the rest of NSW.
- Small Goods Manufacturing showed the best growth in specialisation.
- The six manufacturing clusters employed around 9,650 WPC workers (2016), representing slightly over 3.0% of the region workforce.
- **Food Processing and Manufacturing** was the largest employer overall, closely followed by **Specialist Equipment Manufacturing**, both identified as potential important growth industries for WPC.
- **Biopharmaceuticals** and **Textile and Leather Product Manufacturing** are important, mature industries, but they may require some attention in the EDR as they are becoming less specialised in WPC.

## Firm Level Productivity results for WPC Manufacturing industry by cluster



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# Food Processing and Manufacturing

## Cluster industries:

- Milk and Cream Processing
- Ice Cream Manufacturing
- Cheese and Other Dairy Product Manufacturing
- Fruit and Vegetable Processing
- Oil and Fat Manufacturing
- Grain Mill Product Manufacturing
- Cereal, Pasta and Baking Mix Manufacturing
- Bread Manufacturing (Factory based)
- Cake and Pastry Manufacturing (Factory based)
- Biscuit Manufacturing (Factory based)
- Sugar Manufacturing
- Confectionery Manufacturing
- Potato, Corn and Other Crisp Manufacturing
- Prepared Animal and Bird Feed Manufacturing
- Other Food Product Manufacturing nec
- Soft Drink, Cordial and Syrup Manufacturing
- Beer Manufacturing
- Spirit Manufacturing
- Wine and Other Alcoholic Beverage Manufacturing
- Cigarette and Tobacco Product Manufacturing
- Cereal Grain Wholesaling

Industry (ANZSIC 4-digit)	FLP increase from a 1% increase in cluster firm density
Milk and Cream Processing	0.1070%
Sugar Manufacturing	0.1040%
Fruit and Vegetable Processing	0.0905%
Cereal Grain Wholesaling	0.0643%
Other Food Product Manufacturing nec	0.0541%
Wine and Other Alcoholic Beverage Manufacturing	0.0468%
Beer Manufacturing	0.0442%#
Spirit Manufacturing	0.0442%#
Prepared Animal and Bird Feed Manufacturing	0.0424%
Soft Drink, Cordial and Syrup Manufacturing	0.0322%
Biscuit Manufacturing (Factory based)	0.0244%#
Potato, Corn and Other Crisp Manufacturing	0.0244%#

**Other cluster industries are not significantly impacted by cluster firm density**

# - Coefficients estimated at ANZSIC 3-digit level due to data constraints

- The results indicate potential productivity improvements from cluster co-location for 12 of the of the 21 industries in this cluster.
- Many of the industries with no measurable FLP results would likely co-locate for location, supply and market benefits (e.g. Cheese and Other Dairy Product Manufacturing locating near other dairy-related industries).



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Source: Based on Market Analysis and Data Science, Investment NSW econometric analysis of ABS Business Longitudinal Analysis Data Environment (BLADE) data

# Specialist Equipment Manufacturing

## Cluster industries:

- Reproduction of Recorded Media
- Automotive Electrical Component Manufacturing
- Photographic, Optical and Ophthalmic Equipment Manufacturing
- Medical and Surgical Equipment Manufacturing
- Other Professional and Scientific Equipment Manufacturing
- Computer and Electronic Office Equipment Manufacturing
- Communication Equipment Manufacturing
- Other Electronic Equipment Manufacturing
- Electric Cable and Wire Manufacturing
- Electric Lighting Equipment Manufacturing
- Other Electrical Equipment Manufacturing

Industry (ANZSIC 4-digit)	FLP increase from a 1% increase in cluster firm density
Reproduction of Recorded Media	0.1080%
Other Professional and Scientific Equipment Manufacturing	0.0473%
Other Electrical Equipment Manufacturing	0.0376%
Electric Lighting Equipment Manufacturing	0.0311%
Medical and Surgical Equipment Manufacturing	-0.0213%
Other Electronic Equipment Manufacturing	-0.0583%

*Other cluster industries are not significantly impacted by cluster firm density*

- The results appear appropriate for most of the industries in the **Specialist Equipment Manufacturing** cluster.
- The Medical and Surgical Equipment Manufacturing might have significantly different requirements than the other industries and may not benefit from co-locating with other industries in the cluster.

# Textile and Leather Product Manufacturing

## Cluster industries:

- Wool Scouring
- Natural Textile Manufacturing
- Synthetic Textile Manufacturing
- Leather Tanning, Fur Dressing and Leather Product Manufacturing
- Textile Floor Covering Manufacturing
- Rope, Cordage and Twine Manufacturing
- Cut and Sewn Textile Product Manufacturing
- Textile Finishing and Other Textile Product Manufacturing
- Knitted Product Manufacturing
- Clothing Manufacturing
- Footwear Manufacturing

Industry (ANZSIC 4-digit)	FLP increase from a 1% increase in cluster firm density
Rope, Cordage and Twine Manufacturing	0.1400%
Natural Textile Manufacturing	0.1060%
Textile Finishing and Other Textile Product Manufacturing	0.0225%
Cut and Sewn Textile Product Manufacturing	0.0188%
Clothing Manufacturing	-0.0153%
Wool Scouring	-0.1000%

*Other cluster industries are not significantly impacted by cluster firm density*

- The **Textile and Leather Product Manufacturing** cluster contains a mix of industries with only a small number showing potential productivity gains from co-locating. Although results were not significant for a few of the industries, it is possible there would be clustering gains from location, supply chains and markets (e.g. Knitted Product Manufacturing and Textile Floor Covering Manufacturing with the first four industries).
- The results for Wool Scouring appear reasonable as the scale of operation and production activities would be significantly different from most of the other industries in the cluster.

# Biopharmaceuticals

## Cluster industries include:

- Human Pharmaceutical and Medicinal Product Manufacturing
- Veterinary Pharmaceutical and Medicinal Product Manufacturing

Industry (ANZSIC 4-digit)	FLP increase from a 1% increase in cluster firm density
Human Pharmaceutical and Medicinal Product Manufacturing	-0.107%

*Veterinary Pharmaceutical and Medicinal Product Manufacturing, is not significantly impacted by cluster firm density*

- The **Biopharmaceutical** industries are being reviewed to determine whether there are valid reasons for the significant negative coefficient for Human Pharmaceutical and Medicinal Product Manufacturing firms co-locating with each other and with Veterinary Pharmaceutical and Medicinal Product Manufacturing firms.
- Possibly, scale of production and access to particular laboratory requirements might significantly differentiate human from veterinary manufacturing and supply chains.

# Construction Product Manufacturing

## Cluster industries:

- Cement and Lime Manufacturing
- Plaster Product Manufacturing
- Ready-Mixed Concrete Manufacturing
- Concrete Product Manufacturing
- Metal Roof and Guttering Manufacturing (except Aluminium)
- Other Structural Metal Product Manufacturing

Industry (ANZSIC 4-digit)	FLP increase from a 1% increase in cluster firm density
Cement and Lime Manufacturing	-0.0168% #
Ready-Mixed Concrete Manufacturing	-0.0168% #
Concrete Product Manufacturing	-0.0239%
Other Structural Metal Product Manufacturing	-0.0421%

*Other cluster industries are not significantly impacted by cluster firm density*

# - Coefficients estimated at ANZSIC 3-digit level due to modelling constraints

- Most industries in the **Construction Product Manufacturing** cluster experience negative productivity impacts when firms are located in close proximity.
- The negative agglomeration results may be due to location factors and access to supplies, e.g. Ready-Mixed Concrete Manufacturing would need to be located close to building sites, while Cement and Lime Manufacturing would need to be located close to raw products and away from urban areas.



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Source: Based on Market Analysis and Data Science, Investment NSW econometric analysis of ABS Business Longitudinal Analysis Data Environment (BLADE) data

# Small Goods Manufacturing

## Cluster industries:

- Whiteware Appliance Manufacturing
- Other Domestic Appliance Manufacturing
- Jewellery and Silverware Manufacturing
- Toy, Sporting and Recreational Product Manufacturing
- Other Manufacturing nec

## Industry (ANZSIC 4-digit)

## FLP increase from a 1% increase in cluster firm density

Industry (ANZSIC 4-digit)	FLP increase from a 1% increase in cluster firm density
Other Domestic Appliance Manufacturing	-0.0716%

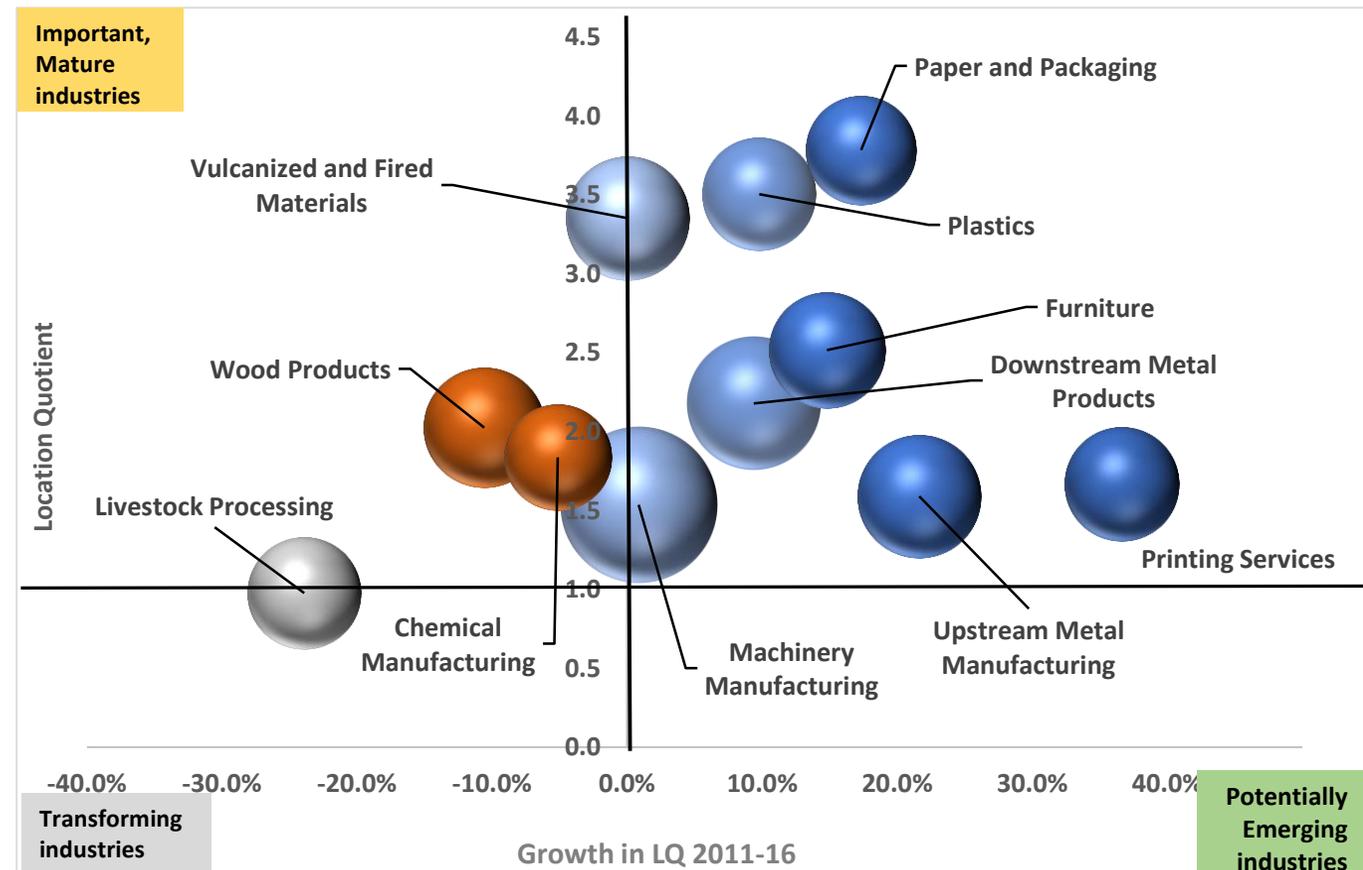
*Other cluster industries are not significantly impacted by cluster firm density*

- The results for **Small Goods Manufacturing** appear appropriate. It would seem unlikely that these manufacturing industries would share similar requirements for skilled labour and other inputs.

# Results not available for the following industries

- FLP results to identify potential for agglomeration gains, are not yet available for the following groups of manufacturing industries with a presence in WPC.

- Upstream Metal Manufacturing
- Downstream Metal Products
- Machinery Manufacturing
- Paper and Packaging
- Plastics
- Vulcanized and Fired Materials
- Furniture
- Printing Services
- Chemical Manufacturing
- Wood Products
- Livestock Processing



Australian Bureau of Statistics Census of Population & Housing 2011, 2016



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