

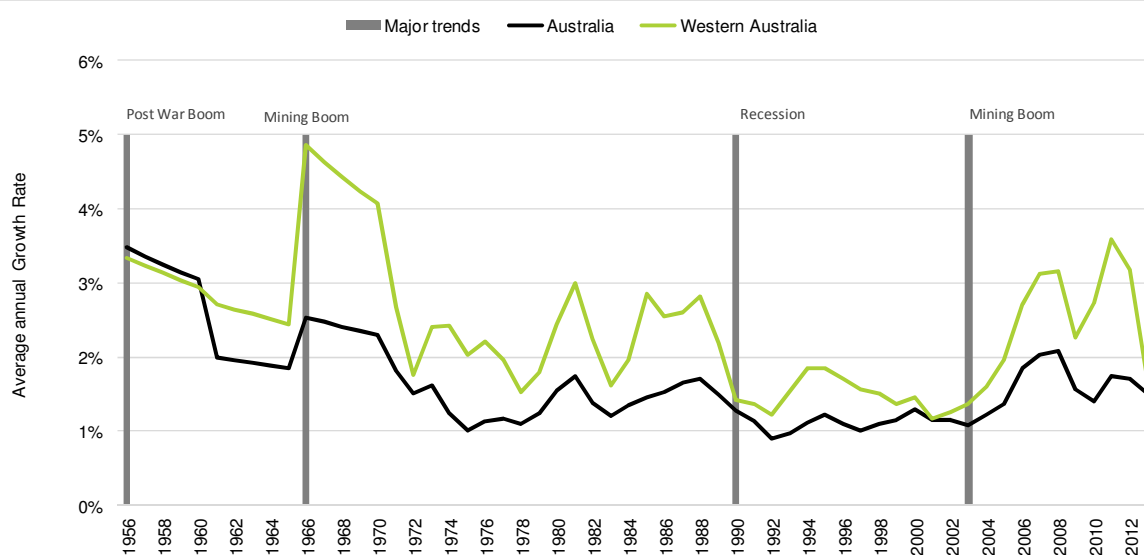
Summary: Demographics Background Paper

The full background paper is presented in Appendix 2.

Key trends

Although Australia is a developed country with relatively low fertility rates, it has periods of high numbers of incoming migrants, including the current period. Over the last ten years, Australia's population has grown at a rate not seen since the post-war period. Within Australia, WA has been one of the major destinations for migrants.

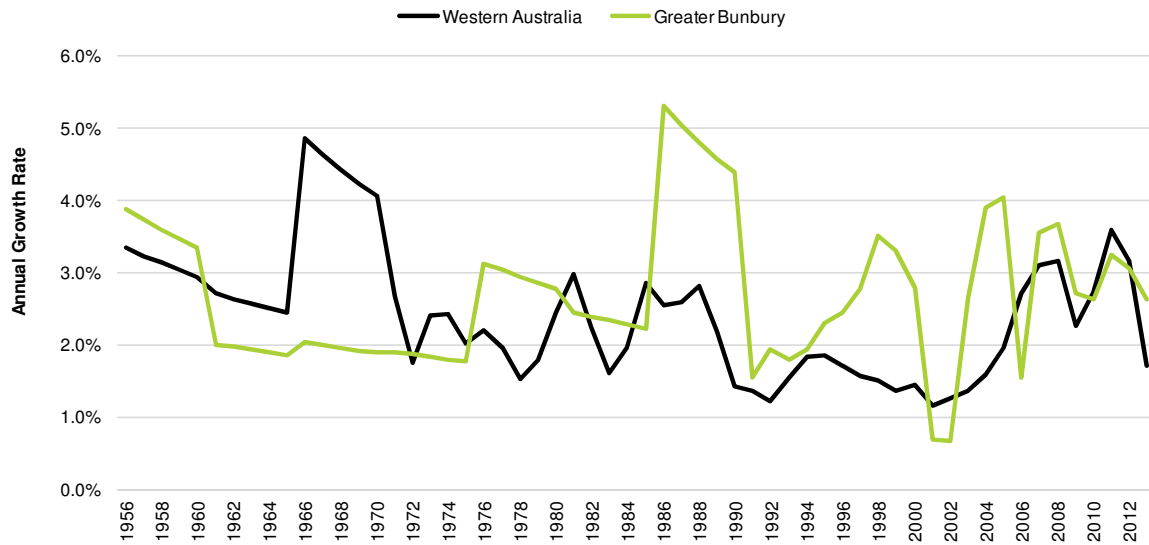
Annual population growth rate, WA and Australia 1956-2014



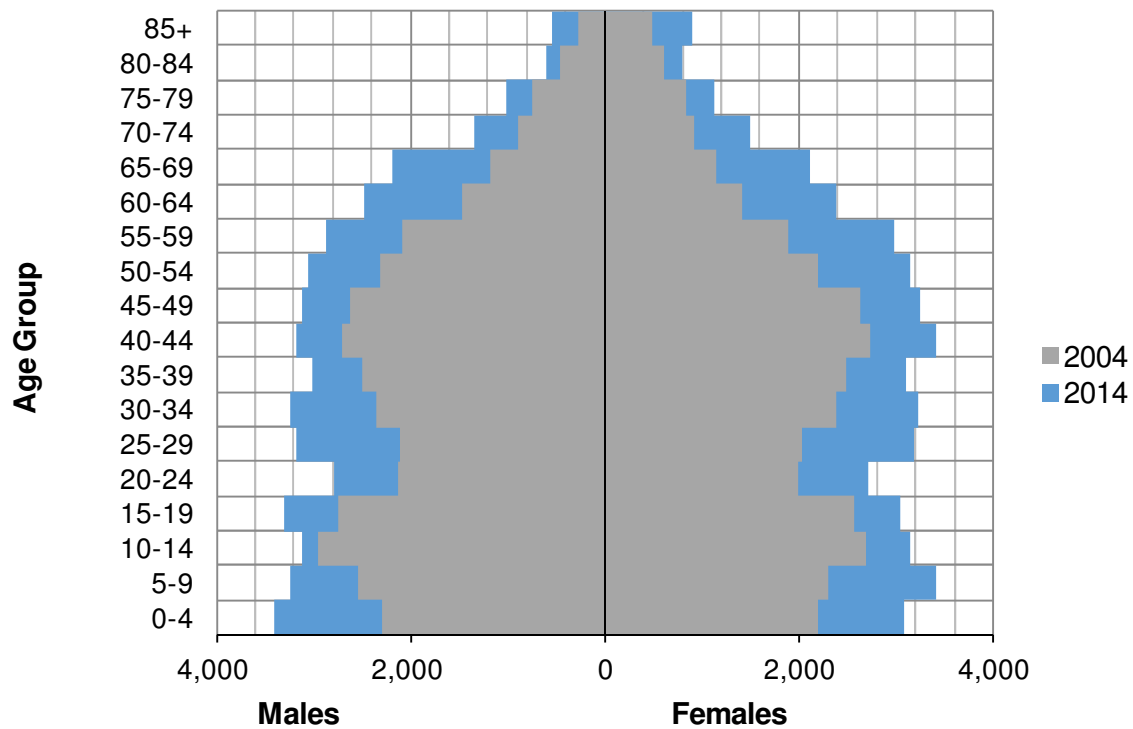
Bunbury Geographe trends

- Population change responds to economic change. Bunbury Geographe's population growth is dominated by economic migrants. Over the last 15 years, Bunbury Geographe's average annual population growth has been 2.55%, well above the WA average of 1.94%.
- As with most regional areas, Bunbury Geographe has been highly sensitive to external economic conditions and population growth is consequently more volatile than the WA average. Average population growth rate in Bunbury Geographe between 2007 and 2014 was approximately 2,400 persons per year.
- The structure and form of the Bunbury Geographe population is relatively stable, although national trends to smaller households and aging populations are also being experienced in the area.
- As many young people leave Bunbury Geographe to attend university, the population is more likely to hold Certificate level qualifications rather than a university degree. The unemployment rate in Bunbury is higher than in Perth, but lower than other regional areas.
- The main areas for population growth by percentage and number are in the Shires of Capel and Harvey, rather than City of Bunbury. Likely factors for growth in these areas are access to affordable land for development and a desire for rural residential lifestyles.

Annual population growth rate, WA and Australia 1956-2014



Age composition of Bunbury Geographe's population



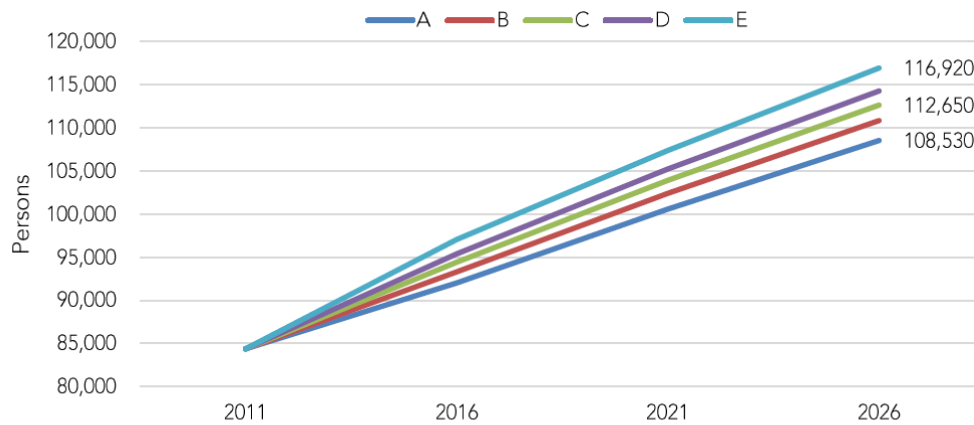
Opportunities

WA Tomorrow developed a series of population predictions to 2026 based on current trends based on a range of low to high growth scenarios that identified:

- The population growth rate of Bunbury Geographe is predicted to slow (to around 1,800 persons/year based on the mid range population forecast (Band C)) depending on scenario.
- The projected population range in 2026 is 108,530 to 116,920 compared to 91,615 in 2014.

- The current population of Bunbury is slightly older than WA as a whole. This trend is anticipated to continue in the future with a greater percentage of Bunbury's population (17.2%) being over 65 in 2026.
- The expected demographic makeup of Bunbury Geographe will continue to be volatile and be dependent on the economic conditions and the economic development strategies implemented, such as the outcomes of the Bunbury Geographe Growth Plan.

WA Tomorrow Bunbury Geographe Projections, 2011-2026



Source: WA Tomorrow 2015

Summary: Economic Profile Background Paper

Understanding global economic trends is important to assess future opportunities that will shape Bunbury Geographe's future.

The full background paper is presented in Appendix 3.

Snapshot

For more than a decade, economic development indicators in Bunbury Geographe have been positive with population growth and overall output increasing while unemployment has decreased. Bunbury Geographe has fared well compared to other regional cities in WA and Australia. However, there is room to improve in innovation as measured by proportion of skilled workers, patent numbers and R&D expenditure.

Bunbury Geographe represents between 2% and 3% of the State's economy and 3.6% of the population, with the top three industries for employment in 2013/14 being:

- Manufacturing
- Construction services.
- Store-based retail.

In terms of gross regional product, the largest sectors of the regional economy are manufacturing, rental, hiring and real estate services, construction and mining. There is also a small but innovative mining equipment and mining service-orientated industry.

Key trends

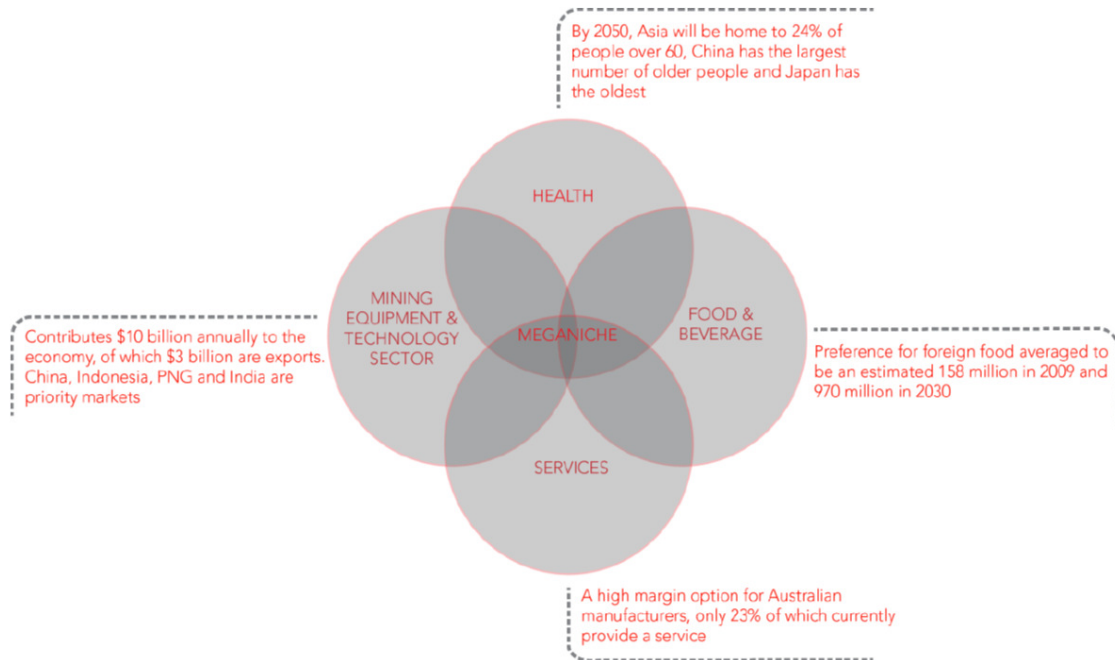
Globalisation is resulting in the emergence of specialised regions with their own distinct economic role. Together with climate change, rapid technological development and four new industry meganiches (in which Australia has a competitive advantage) identified by CSIRO, this specialisation defines the context in which Bunbury Geographe has the opportunity develop its' economy. This specialised diversity is anticipated to result in Bunbury Geographe increasing activity in:

- High quality food and fibre.
- Highly energy efficient mineral product extraction.
- Mining services.
- Tourism.
- Advanced manufacturing.

Megatrends that will affect Bunbury Geographe's economic prospects include:

- The rise of specialised economic regions.
- Growth in Asian markets, particularly China, India and Indonesia.
- Potential effects of climate change on energy demand, water security and food and fibre markets.
- Increasingly faster and cheaper global connectivity.
- The importance of High Speed Broadband for connecting economic hubs.

Meganiche opportunities for Australia



Opportunities

Economic opportunities

Bunbury Geographe is a regional hub moving towards specialised diversity, with strengths in agribusiness, some relatively advanced manufacturing and growing potential in tourism.

What is happening in Bunbury Geographe

- Port facilities, rail freight and surrounding highly productive agricultural areas provide opportunities for Bunbury Geographe develop specialised diversity in processing of high quality food and fibre.
- The local mining areas saw great expansion in mining, processing and mining support services in the last decade. The port and rail facilities and relatively cheap electricity in the form of coal and gas have facilitated this growth. Bunbury Geographe has the potential for expansion in the areas of mining services and energy efficient mineral product extraction.
- The mining equipment and mining service-orientated industry has recognised potential to grow by exporting its products and services to mining regions within Australia and internationally. This could lead to the development of an advanced manufacturing sector.
- The Bunbury Port provides an opportunity for cruise ship related tourism in Bunbury Geographe. The Dolphin Discovery Centre and natural beauty of the Bunbury Geographe region are a potential tourism drawcard.

Opportunities and constraints

Efforts to attract investment in intensive agriculture, tourism activities and advanced manufacturing are three ways which could expand development in Bunbury Geographe.

Summary: Environment Background Paper

The essential environmental qualities of Bunbury Geographe attract, support or constrain economic growth of the region. These essential environmental qualities pose a number of key environmental opportunities and constraints for the Region.

The full background paper is presented in Appendix 4.

Snapshot

What are the essential environmental qualities?

1. Industry branding – a 'clean and green' area with high landscape and ecological quality values.
2. Lifestyle branding – a great place to live because of natural amenity and location.
3. Drying climate – a 'water crunch' is expected before 2030 because of limits to water resources.
4. Food production – opportunities to increase agricultural and aquaculture production.
5. Mining and gas – the area is rich in mineral resources and potentially onshore gas.

Key trends

Key global environmental trends are:

- Growing urbanisation internationally leads to a desire for 'clean, green' products.
- Growing pollution and food safety concerns in Asia.

Key regional environmental trends are:

- Vegetation decline is affecting South West biodiversity values.
- Drying climate is affecting ecology and fire regimes.
- Rich flora biodiversity and indigenous knowledge provides opportunities for medical and genetic research.
- Tightening environmental protection helps retain the 'clean and green' image but may impair investment.
- A high level of biosecurity is required to prevent plant and animal diseases establishing.

Opportunities

Lifestyle

There is a major opportunity to brand the natural amenity and location of Bunbury Geographe to attract people to live, work and invest in the region.

Why Bunbury Geographe?

- People want to live near coastal and waterway environments.
- Local amenity values are not obvious from Forrest Highway, so are hidden from visitors.
- Local waterway developments have the potential to enhance amenity and its' visibility.
- Local waterway health is suffering because of high sediment and nutrient loads from agriculture and urban areas.

Opportunities and constraints

- Bunbury Geographe has a captive audience of 1 million visitors/year coming via Forrest Highway.
- The Inner Harbour expansion and realignment of Preston River closer to Forrest Highway offers the opportunity to open up the entrance to Bunbury.
- Potential for building artificial surfing and/or dive spots to encourage visitors to stay in Bunbury.
- Need to protect waterway health through nutrient and sediment management.

Food production – agriculture and aquaculture values

Bunbury Geographe has potential for substantial growth in agriculture and aquaculture production and value adding.

Why Bunbury Geographe?

- Global economic growth is leading to an increased demand for protein and high quality food.
- Salinisation of land due to irrigation is decreasing productivity in irrigated areas.

Opportunities and constraints

- Department of Water predicts a significant shortfall of water for agriculture and industry by 2030.
- Desalination of Wellington Dam may provide more water for irrigated agriculture while combating salinity in irrigation areas.
- ReInjection of treated wastewater into groundwater may maintain aquifers and can be used to combat saline intrusion from the coast.

Industry (mining and gas)

Mining and mineral processing will remain a driver of the economy, with the potential for onshore gas development.

Bunbury Geographe stands on the doorstep of the world's second largest bauxite deposit and also supports mineral and silica sand deposits that are actively mined, with onshore gas reserves that have yet to be prospected. The region is also influenced by economic flows from bauxite and coal deposits that are actively mined to the east of the region.

Why Bunbury Geographe?

- Mineral sands are mined in Dardanup, Capel and Bunbury.
- Coal is mined in the Collie Basin but there is uncertainty about the long term future of coal.
- Bauxite is mined and processed in the region, but this processing is dependent on cheap energy.
- Onshore gas is present in the region, but prospecting has not commenced.

What are the mining and gas opportunities and constraints

- The region is heavily reliant on the alumina industry, which may be vulnerable to growing refining capacity in Asia and rising gas prices.
- The extent of mineral resources and lifetimes of mining in the region are uncertain.
- There is need to protect the 'clean and green' brand against perceived and real threats from mining, oil and gas exploration and production, and pollution.

Drying climate and water resources

Bunbury Geographe is a forecast to undergo a 'water crunch' between supply and demand in the next 10-20 years.

What is happening in Bunbury Geographe

- Groundwater and surface water yields are declining due to ongoing decreases in winter rainfall
- Salinisation of rivers in the South West is affecting surface water useability
- Saline intrusion into groundwater due to over-abstraction is affecting groundwater useability.

Opportunities and constraints

- Department of Water predicts a significant shortfall of water for agriculture and industry by 2030.
- Desalination of Wellington Dam may provide more water for irrigated agriculture.
- ReInjection of treated wastewater into groundwater may be used to combat saline intrusion.

Summary: Service and Social Infrastructure Background Paper

Both service and social infrastructure are required to support future economic growth in Bunbury Geographe. An understanding of this infrastructure and its' limitations allows infrastructure to be used to its' full potential and future constraints to be mitigated.

The full background paper is presented in Appendix 5.

Snapshot

Key infrastructure in Bunbury Geographe includes:

- Port of Bunbury.
- Forrest, South West and Bussell Highways.
- Rail links to Perth-Peel and Collie.
- Dampier to Bunbury Gas Pipeline.
- National Broadband Network.
- Wellington, Harvey and Stirling Dams and the Harvey and Collie Irrigation District water networks.
- South-West health and education campus.

Opportunities

Energy

The continuation and expansion of mineral refining in the Bunbury Geographe area requires the availability of low cost power, through either electricity or gas.

What is happening in Bunbury Geographe?

- Over the next ten years, peak demand in the South West Interconnected System (SWIS) is anticipated to increase at a rate of 0.3% per year. Based on this projection, Western Power has not identified a need for new generation capacity in the SWIS beyond that required to meet the Renewable Energy Target (RET).
- The existing power network is aged and the bulk of the load in the region is supported by relatively weak and long 132kV and 66kV transmission systems. Upgrades of existing infrastructure may be required in order to provide for future growth.
- Wagerup and Worsley Alumina use gas to supply power for alumina refinery. The planned Kemerton Industrial Precinct expansion is well positioned to take advantage of the direct supply from the Dampier to Bunbury Gas Pipeline. The extension of gas supplies to Collie would provide alternative energy sources to support increased electricity production or an alternative to coal.

Opportunities and constraints

- Potential rises in domestic gas prices due LNG export may affect the competitiveness of alumina refining in the South-West.

Water

Irrigated agriculture accounts for 65% of licensed groundwater and surface water use. Water is also required for industry (e.g. mineral refining) and domestic use. Many of the water resources in the area are fully allocated or approaching full allocation.

What is happening in Bunbury Geographe?

- Climate change has resulted in a decrease in surface water runoff of 50% less runoff into surface water bodies and 30% reduction in groundwater recharge. Although licensed water allocations do not necessarily change, the actual amount of water available for use and the sustainability of this use are affected
- In the Harvey and Collie irrigation districts, the effects of the drying climate have seen surface water availability drop. Depending on annual runoff, dam fed irrigation areas such as Harvey are being supplied with only 50% of their stated allocation. Irrigation schemes have moved to minimise water loss from conveyance systems and find new surface water sources to offset the loss in yield.

Opportunities and constraints

- Desalination of Wellington Dam and piping of the Collie Irrigation District may provide more water for irrigated agriculture.
- Reinjection of treated wastewater into groundwater may be used to combat saline intrusion.

Road and rail

What is happening in Bunbury Geographe?

- Road infrastructure upgrades have significantly improved access and reliability for freight and industry traffic. A side-effect of these improvements is the ease at which regional traffic is able to bypass Bunbury, and travel through to Dunsborough, Yallingup and Margaret River, considered more desirable for tourists.
- The freight rail system connects Bunbury Port to Collie, Perth and the alumina refineries at Wagerup and Pinjarra.
- Passenger rail services run twice daily between Bunbury and Perth, stopping at smaller towns including Brunswick Junction and Harvey. The current rail terminus is approximately 3 km from the Bunbury CBD, reducing the ease of use. The concept of a high speed rail connection with a terminus in the Bunbury CBD has been discussed by the State Government but no timeframe has been confirmed.

Opportunities and constraints

- Forrest Highway presents an opportunity to showcase the region's opportunities to passers-by between Perth-Peel and the Busselton-Cape region, drawing potential future investors, workers and residents to the region.
- A high speed passenger connection to Perth-Peel would provide potentially major social and economic benefits.
- As Bunbury grows it will be essential to maintain safe access to the port to prevent potential future conflict between freight movement and residential values.
- Rail services need to be able to handle an increased capacity.

Port facilities

Bunbury Port will play a pivotal role in the future economic growth for the Bunbury Geographe Region.

What is happening in Bunbury Geographe?

- Exports from the Port are increasing at a rate of approximately 3% per year, with key products being alumina, wood products, spodumene and mineral sands.
- Any port expansion is anticipated to be led by industry.
- The Port has been subject to a Structure Plan and Strategic Public Environmental Review, paving the way for future expansion.

Opportunities and constraints

- The port has capacity to expand, increase export of high value goods as well as increase imports.
- The port may potentially be part of the future freight solution for Perth-Peel, through containerised shipping and efficient rail loading/linkages to the Perth-Peel logistics centres.
- State Government planning for Perth-Peel freight is focussed on an outer harbour solution at Kwinana, with no major consideration for the Port of Bunbury.

Broadband

Broadband is increasingly seen as a market access resource by the agricultural, tourism, creative and commercial sectors.

What is happening in Bunbury Geographe?

- The National Broadband Network rollout is already well underway, with hard wired networks proposed in the coastal city area, and wireless coverage for most of the hinterland including the rural towns and hamlets.
- Compared to other regional cities, the current NBN rollout is relatively comprehensive in both rural and urban areas of Bunbury Geographe. However, the proportion of households without the internet is higher in Bunbury Geographe than in Western Australia in general.

Opportunities and constraints

- The NBN has the potential to transform opportunities for international engagement and attraction. Realisation of these opportunities has yet to be fully explored and engaged by business.

Social infrastructure **Social Infrastructure assets include schools, universities, hospitals, recreational facilities, public transport and community housing**

What is happening in Bunbury Geographe in health infrastructure

- The Bunbury Geographe region has 2.7 beds per 1000 people, compared to a national average of 3.9 beds per 1000 people.
- There is a high rate of semi- and non-urgent attendances at hospital emergency departments, indicating a lack of primary health services such as GPs.
- Population growth and aging is likely to exacerbate these issues.

What is happening in Bunbury Geographe in education infrastructure

- There is a lower percentage of university graduates than in other parts of WA
- Edith Cowan University (ECU) is present but offers a limited range of courses, resulting in young people leaving Bunbury Geographe to access better opportunities in Perth
- South West Institute of Technology offers a range of vocational education and training services.

Bunbury Geographe has been identified by Department of Sport and Recreation as having a shortage of outdoor playing fields for sports such as football, soccer and hockey.

Opportunities and constraints

- The region's attractiveness as a lifestyle and retirement destination within Perth-Peel, Australia and internationally will strongly depend on a high level of health and education services for all ages but particularly youth and the elderly.
- Other peri-urban and rural regions within Australia are expected to compete for the brand of lifestyle and retirement.

Summary: Regional Cluster Analysis

Industry cluster networks are geographic concentrations of interconnected businesses, suppliers, and associated institutions in a particular field (e.g. forestry, hospitality, metal manufacturing). Cluster analysis in the Bunbury Geographe area identifies which industry clusters could be leveraged to support the greatest growth.

The full analysis report is presented in Appendix 6

Snapshot

Bunbury Geographe has a high specialisation in:

- Forestry.
- Wood products (e.g. woodchips, particle board).
- Livestock processing (e.g. abattoirs).

Key trends

Best multipliers for output and employment

Output multipliers are a measure of the estimated potential dollar increase in output from all industries in the region's economy per dollar of increased output in the relevant industry.

What is happening in Bunbury Geographe industry clusters?

The majority of the top industries in the Bunbury Geographe region had an indirect and induced output greater than 50% of the direct increase in their output (e.g. for a \$1.00 increase in Forestry there would be an extra \$0.68 of output generated in all other industries) Multipliers take into account the regional supply chains and support industries.

The tradeable industries with the highest output multipliers in the region were:

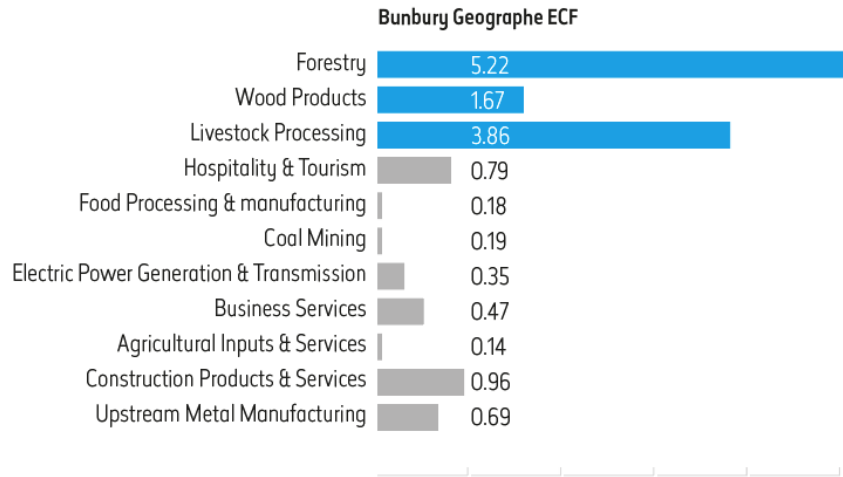
- Livestock processing (2.34), including abattoirs.
- Wood products (2.25).
- Construction products and services (2.11).
- Business services (1.93).
- Food processing and manufacturing (1.89), including dairies.
- Hospitality and tourism (1.84).
- Coal mining (1.82).

The tradeable industries with the highest employment multipliers in the region were:

- Construction products and services (6.13).
- Coal mining (3.47).
- Livestock processing (2.72).
- Upstream metal manufacturing (2.46), which is predominantly alumina refining.
- Food processing and manufacturing (2.24).
- Wood products (2.14).
- Electric power generation and transmission (2.07).
- Business services (1.94).
- Forestry (1.89).
- Agricultural inputs and services (1.69).
- Hospitality and tourism (1.56).

Bunbury Geographe also provides business services to the broader South West. Relative specialisation is present in forestry, wood products and livestock processing as presented in the figure below.

Regional Employment Concentration Factor (ECF)



Opportunities

Regional clusters

Bunbury Geographe has gaps in the professional clusters of:

- Distribution and electronic commerce (traded).
- Financial services (traded).
- Business services (traded).
- Local commercial services (local).

The three largest regional sectors of activity (by employment) are:

- Food production (including agricultural inputs and services, food processing and manufacturing and livestock processing).
- Hospitality and tourism.
- Business services.

Opportunities and constraints

- The cluster gaps indicate a strong linkage between Bunbury Geographe and Perth-Peel, with potential economic leakage of these services to Perth. These sectors may offer potential for regional growth. However, the high connectivity between Bunbury Geographe and regional traded activities indicates the relative ease with which inputs can be sourced from Perth and other areas unless increased levels of traded activity are attracted to Bunbury Geographe.
- When considering centre and regional Traded activity that may form a basis for value adding activity, Bunbury Geographe can improve its capacity to accommodate future growth by:
 - Building on existing industrial capacity including Kemerton and Port of Bunbury.
 - Expanding the capacity of Port of Bunbury to act as an import port by developing capacity for container offloading and storage and export of local food opportunities.
 - Build on the relatively stable local population.
 - Continue to position Bunbury as an active and vibrant regional service centre.
- Drivers for future growth include:
 - Leveraging inefficiencies in the Perth-Peel metropolitan area
 - Value adding of regional exports such as agriculture and timber.