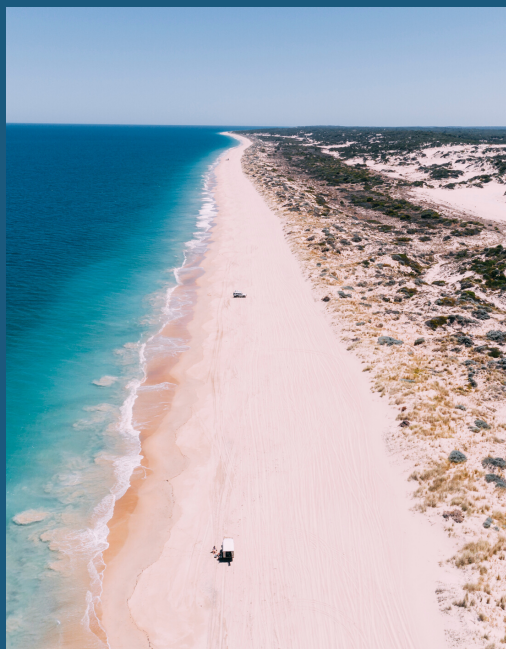


SHIRE OF WAROONA

SUB-REGIONAL ECONOMIC OPPORTUNITY ANALYSIS



Shire of Waroona

Sub-regional Economic Opportunity Analysis

Executive Summary

The Peel Regional Investment Framework sets out the vision, objectives and strategies for the region to 2050. Identified within the Framework is the need for sub-regional economic analysis to aid sub-regions of the Peel to engage in innovation, economic diversification and to continue to meet the needs of a growing population. This report provides sub-regional data and preliminary economic opportunity analysis for the Shire of Waroona to aid in identifying specific opportunities for development in this locality and potential related projects across the region.

Key Findings

- **Population & Demographics:**
Waroona's population has grown by roughly 15% over the last decade, for a total of 4169 residents in 2018. With a median age of 45, four years higher than the Peel region, Waroona's population is notably ageing. At the current rate of growth, Waroona's population will grow by 8.4% by 2031, falling short of WA Planning Commissions population projections.
- **Employment & Labour Force:**
Waroona is facing rising unemployment and declining labour force participation, faring worse than the state average in both metrics. Half of Waroona's residents travel outside the Shire for work – this is coupled with very high self-containment rates in Education, Health Care and Retail which imply that there is a skills mismatch between the residents and available employment in the Shire. The Manufacturing and Mining industries provide half of all available jobs in the LGA, attracting residents of other localities to work in Waroona.
- **Industry & Land Use:**
Mining and Manufacturing provided 80% of Waroona's \$1.9B gross revenue. Based on growth, local employment contribution and backwards linkages, Mining, Agriculture, Manufacturing and Health Care were identified as key industries for Waroona that, if expanded, could help deliver broad based economic benefits for the Shire. Ample land for Residential expansion has been demarcated by the Shire, however, future industrial areas have not been explicitly identified with the exception of an expansion of the SCA around the Wagerup Refinery.
- **Economic Opportunities & Diversification:**
Brief synthesis of Waroona's economic, environmental and social factors show that the Shire is primed for agricultural growth. The soil quality, access to Harvey Water Scheme and the proximity to ports provide a base for small scale or boutique farming operations, several of which have already been established. The proximity to Perth, natural assets and ongoing trail planning and development indicate tourism potential for the Shire.

There is the opportunity to support and grow engineering or fabrication firms that can provide specialised services to the mining, manufacturing and agricultural industries both within and outside of Waroona. Investment and/or endorsement of Enterprise Facilitation to help identify and form mutually beneficial links between stakeholders and firms should be considered by the Shire and operating extractive industries as a Corporate Social Responsibility activity.

An important element for Waroona's future is agricultural growth and seasonal labour imported into the Shire to service agricultural producers. One producer alone, Fruitco, imports approximately 200 casual seasonal workers over a 32 – 36 week period annually. This is expected to increase as they increase their growing capacity. Further exploration is required around the nature of the work, seasonal labour requirements of surrounding producers, the type of seasonal workers attracted, visa options and accommodation need to identify emerging opportunities.

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Disclaimer – This document has been prepared using a range of data sources. All information is provided accurately to the best of our ability and within the limits of our knowledge and resources.

1.0 Population & Demographics

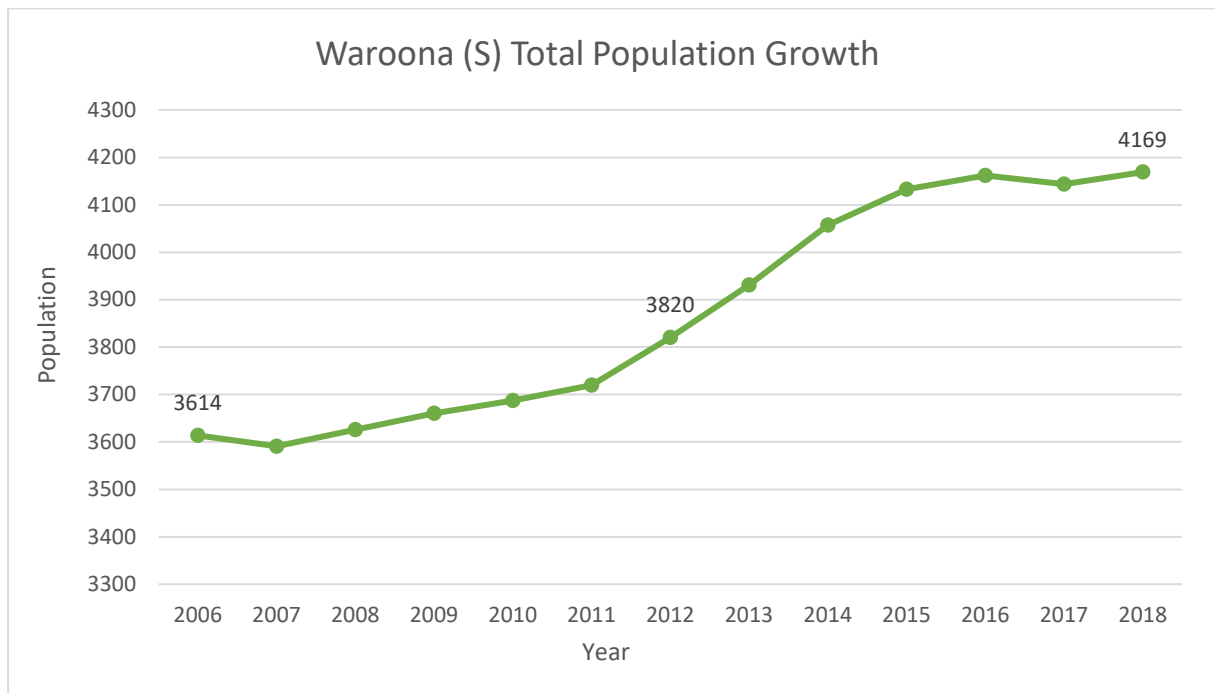
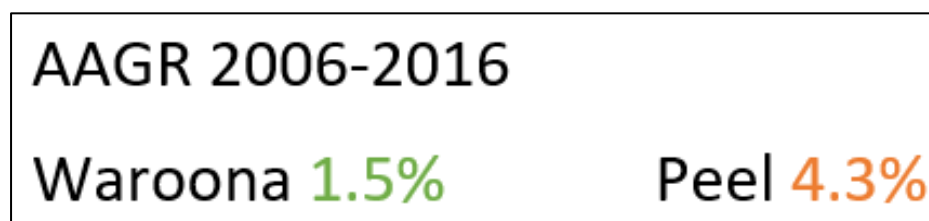


Figure 1. Waroona Population Growth (ABS, 2019)

Waroona's total population has grown by **15.4%** from 2006 to 2018, with a slight plateau in growth over the past 4 years (2015-2018) (ABS, 2019).



Waroona's population has grown at an average of **1.5%** per year from 2006-2016. However, from 2015 onwards the average growth rate reduced to just **0.2%**, (ABS, 2016a).

As of 2016, the largest age cohort in Waroona was 45-54 years of age. Figure 2 (below) shows the only two cohorts to experience a decline from 2006-2016 were children aged 0-4 and 35-44-year-olds, this trend is indicative of a decline in growth of young families moving into and remaining in the area. The most growth was seen in those aged 55 and older (ABS, 2016a).

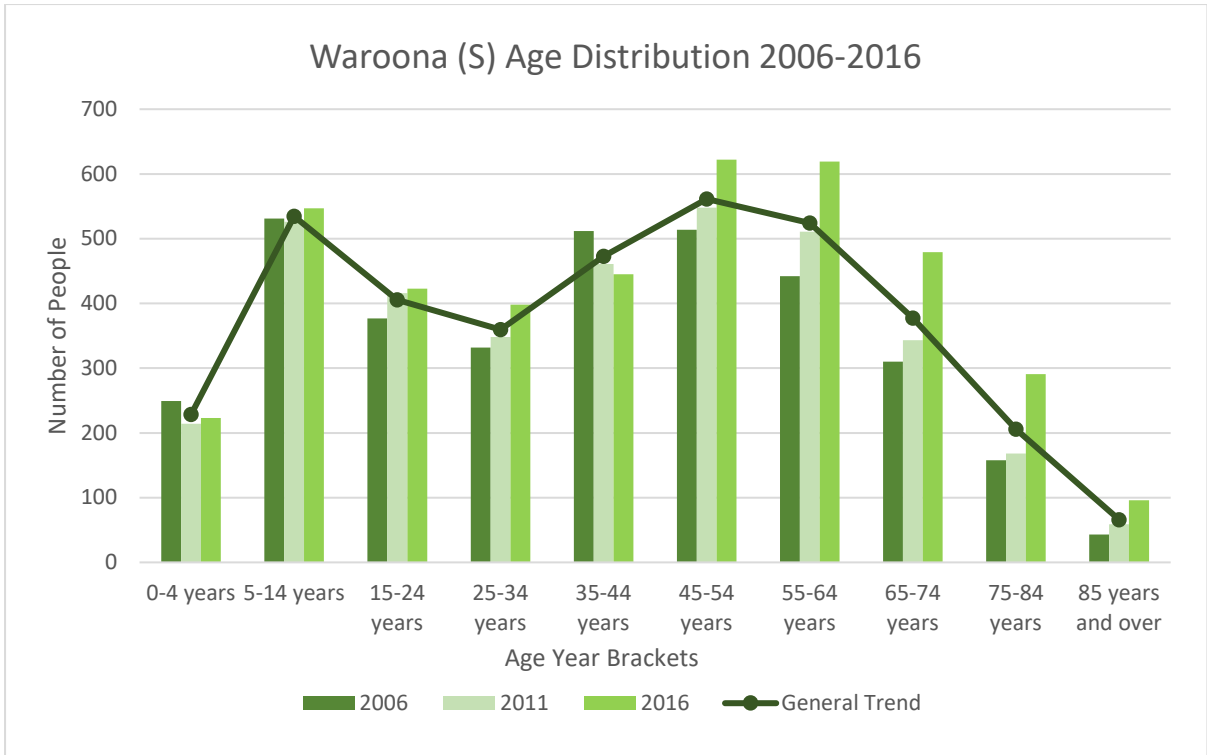


Figure 2. Waroona Age Distribution (ABS, 2016a)

In total there are 2,071 males and 2,076 females in Waroona, accounting for a near even 50% split of the population.

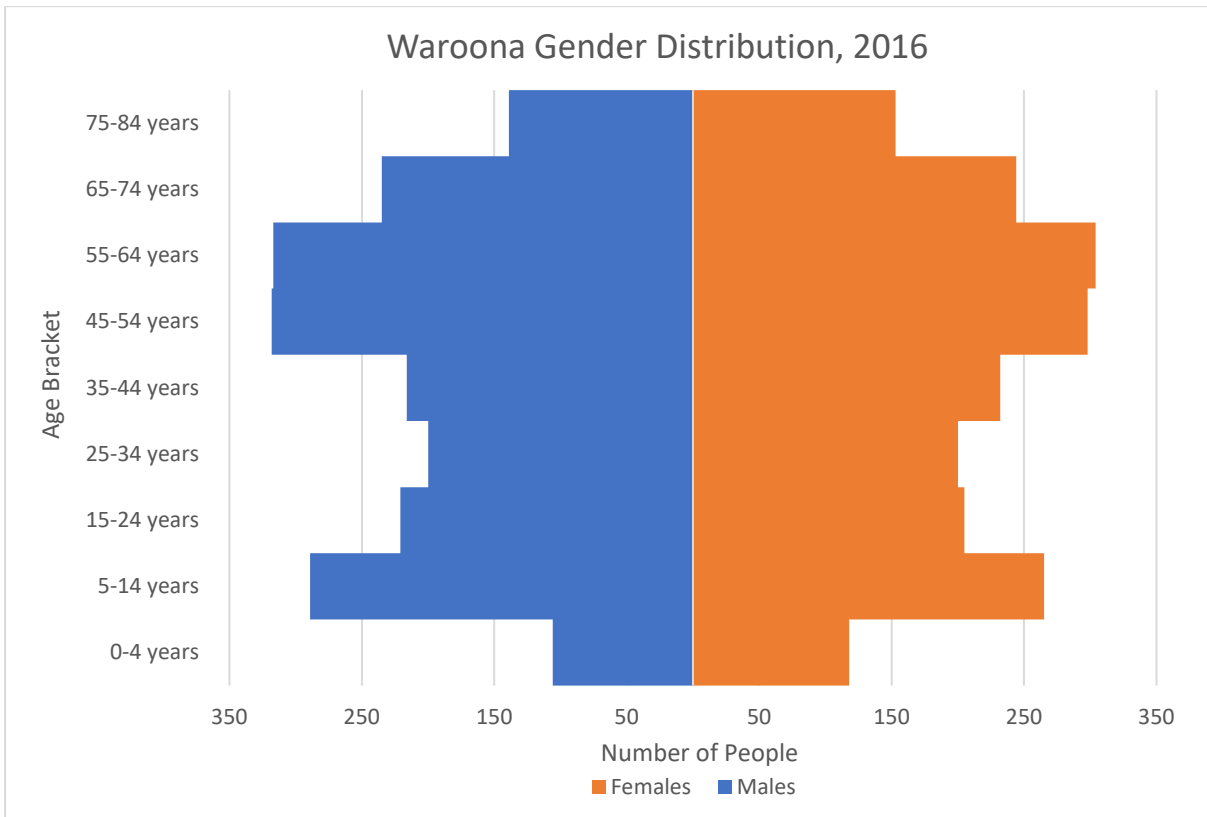


Figure 3. Gender Distribution 2016 (ABS, 2016a)

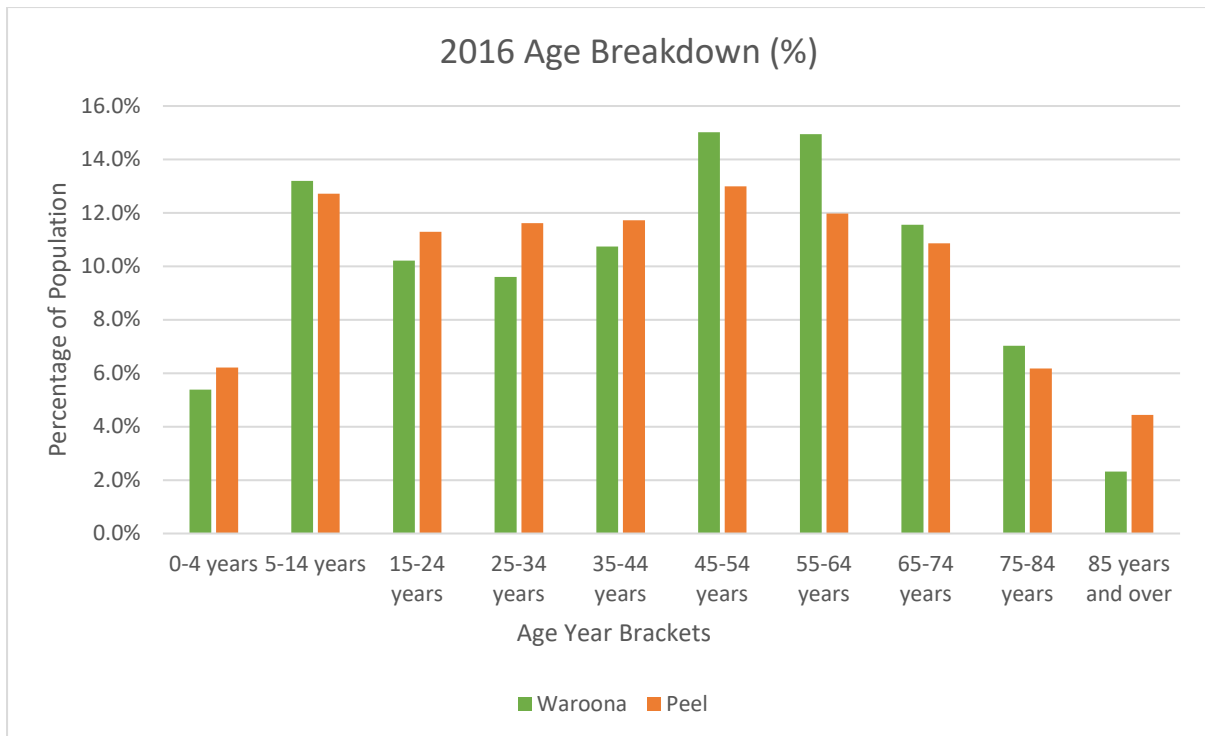


Figure 4. Age Breakdown (%) (ABS, 2016)

At 2016 Waroona had a older population compared to the wider Peel region, evidenced by figures 4 (above) and 5 (below). Proportionally, Waroona has **5% more** ‘middle-aged’ adults aged 45-64 years, and **3% less** young adults in cohorts between the ages of 15 and 34 years of age, this adheres to the typical trend in regional areas of young adults leaving due to a presumed lack of higher educational or employment opportunities. ‘Retention’ of older residents could indicate that ageing-in-place is made possible in the Shire.

Median age in Waroona has been rising in contrast to the Peel region’s over the 10-year period from 2006 to 2016. The median age changes over the ten-year period ostensibly indicate that Waroona is experiencing a notable ageing of the population.

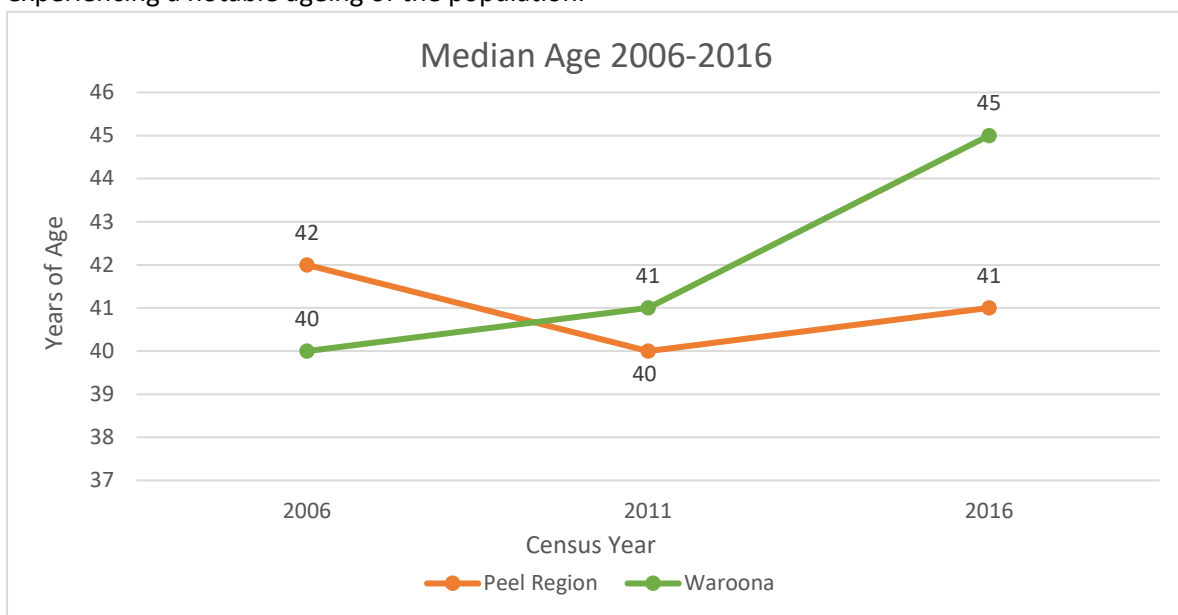


Figure 5. Median Age 2006-2016 (ABS, 2016a)

The percentage of usual residents who identify as Aboriginal and Torres Strait Islander (ATSI) from 2006 to 2016 has been decreasing in Waroona while increasing in Peel. Despite these trends, the total proportion of the population remains higher in Waroona.

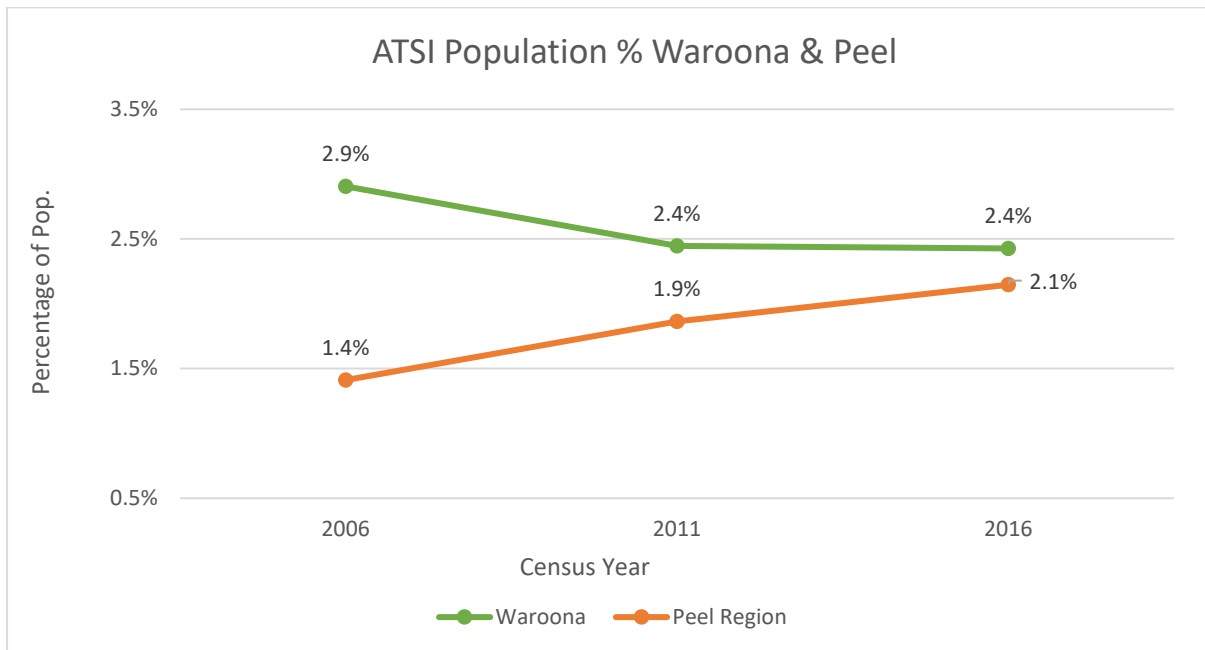


Figure 6. ATSI Population (%) (ABS, 2016a)

Population turnover (Figure 7, below) is defined as the combined impact of people moving into and out of an area. Turnover can help explain how demographic needs change even when population level remains steady. Population turnover in Waroona has, for the most part, remained higher than the Peel region. The higher turnover in comparison to Peel is possibly due to the typical exodus of young adults from regional areas due to limited educational and employment options.

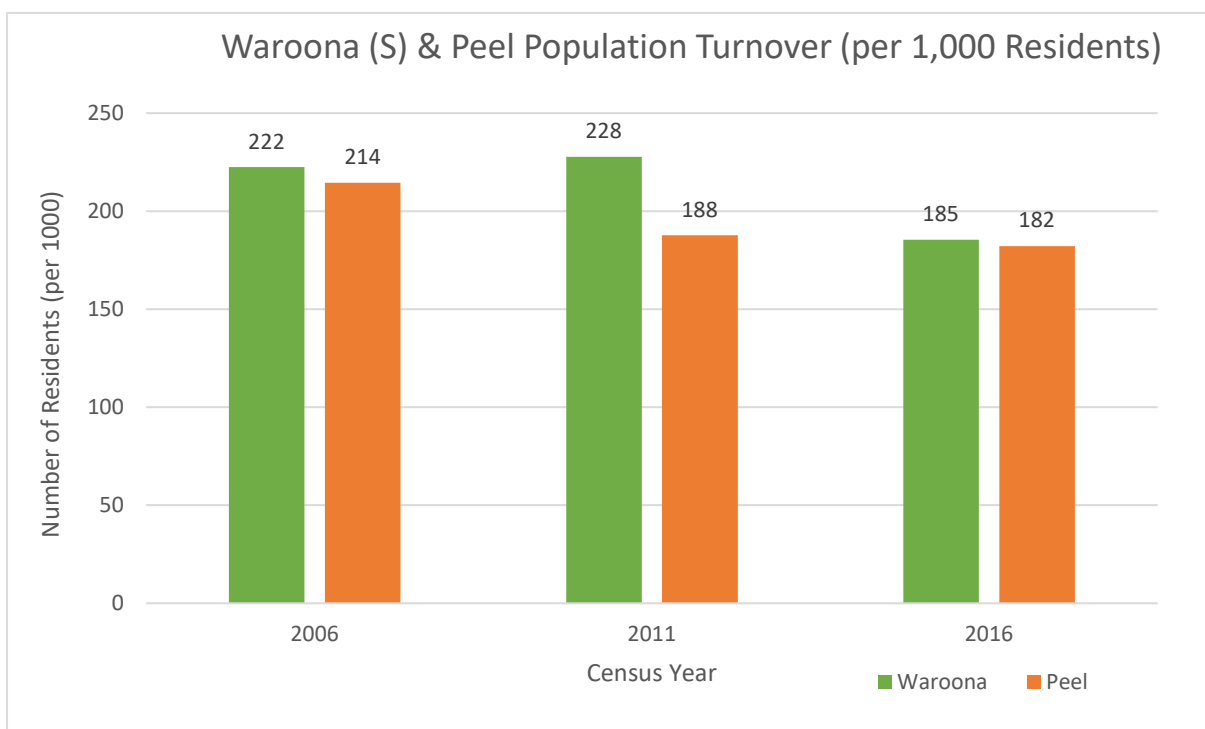


Figure 7. Population Turnover (ABS, 2019)

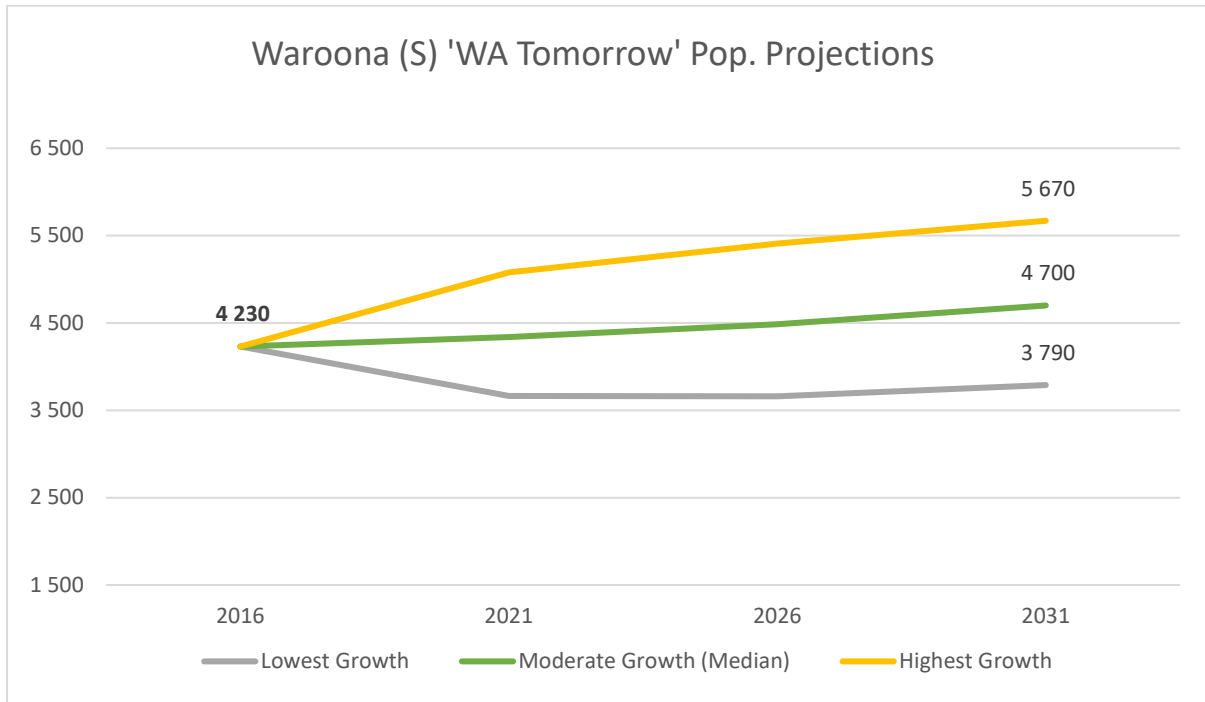


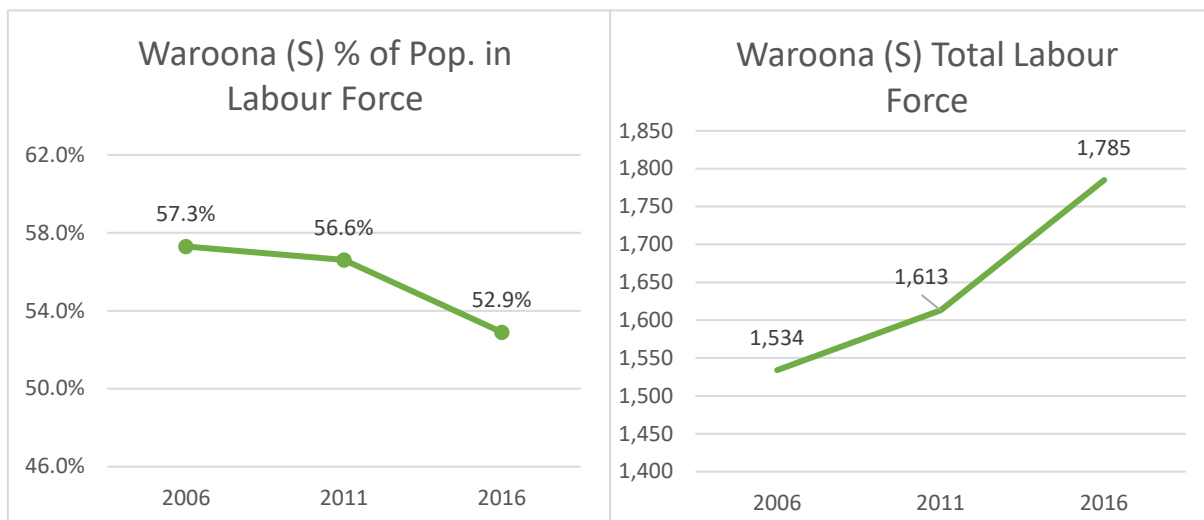
Figure 8. WAPC Population Projections (DPLH, 2019)

The WAPC’s population forecasts use 5 potential scenarios to predict growth. The two ‘extreme’ and the median (‘business as usual’) scenarios have been identified in Figure 8 above. The median forecast predicts the population growing marginally in the next 12 years by **11.1%** (DPLH, 2019), equivalent to an average annual growth rate of 0.9%.

Waroona’s current annual growth rate from 2014 is approximately 0.7%. If this growth rate is maintained, by 2031 Waroona’s population will have only grown by **8.4%**, reaching a resident population of 4519, almost 200 less residents compared to the median growth projection.

The South Metropolitan Peel Sub-regional Planning Framework has projected a need for an additional **5600 dwellings** and an additional **14,000 residents** in Waroona by 2050 (DPLH, 2018).

2.0 Employment & Labour Force



Figures 9 & 10. Waroona Labour Force Make-up (ABS, 2016)

Expectedly, Waroona's total labour force has generally increased in line with total population trend. Percentage of the population in the labour force has, however, been declining and averages out to **55.6%** between 2006 and 2016, more than 8% below the figure for WA. The labour force participation rate has most likely been affected by ageing population.

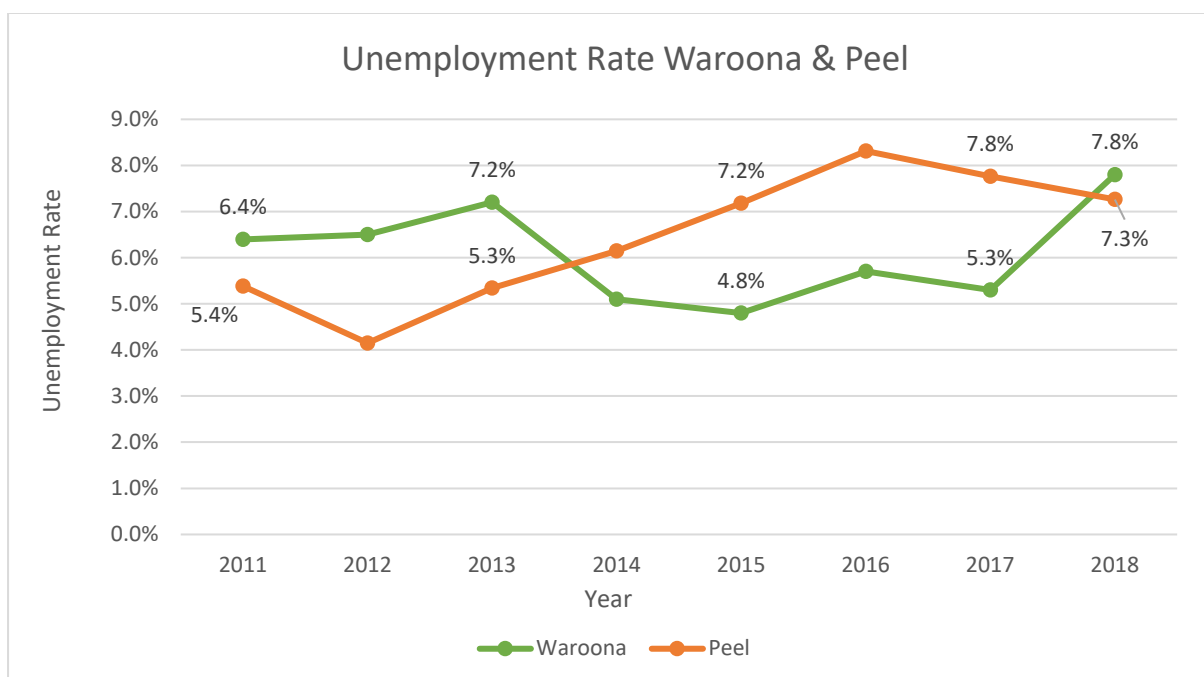


Figure 11. Waroona Unemployment Rate (DESSFB, 2019)

Waroona's unemployment rate has shown considerable difference from the Peel region's over the past 8 years (DESSFB, 2019). A recent 4-year period of stronger employment levels has tapered off as Waroona and Peel's unemployment rates have most recently converged at around 7.5%, above WA's rate of 6.3% at 2018 (ABS, 2018).

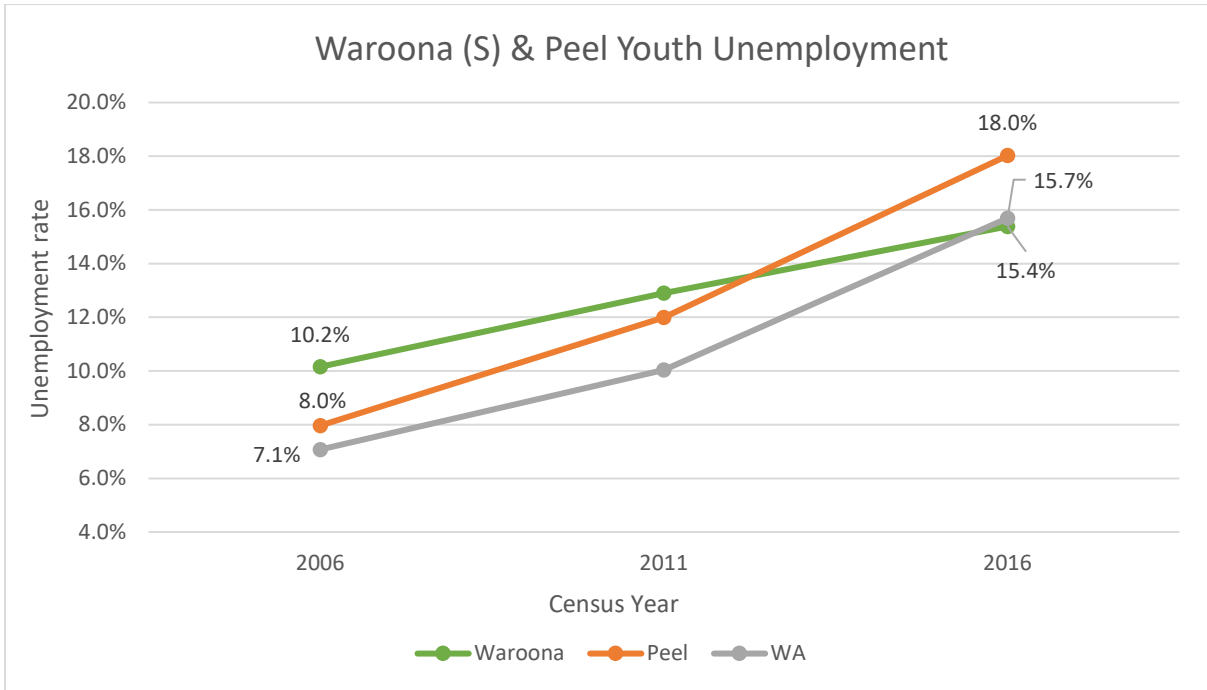


Figure 12. Youth Unemployment Rate Waroona (ABS, 2016a)

Youth unemployment in Waroona has risen significantly from 2006 to 2016 and has remained higher than the WA figure for the past 9 years. Youth unemployment has, however, slowed marginally from 2011 to 2016, bringing it in line with the WA rate, below the Peel region's rate. Youth is defined as those 15-24 years of age.

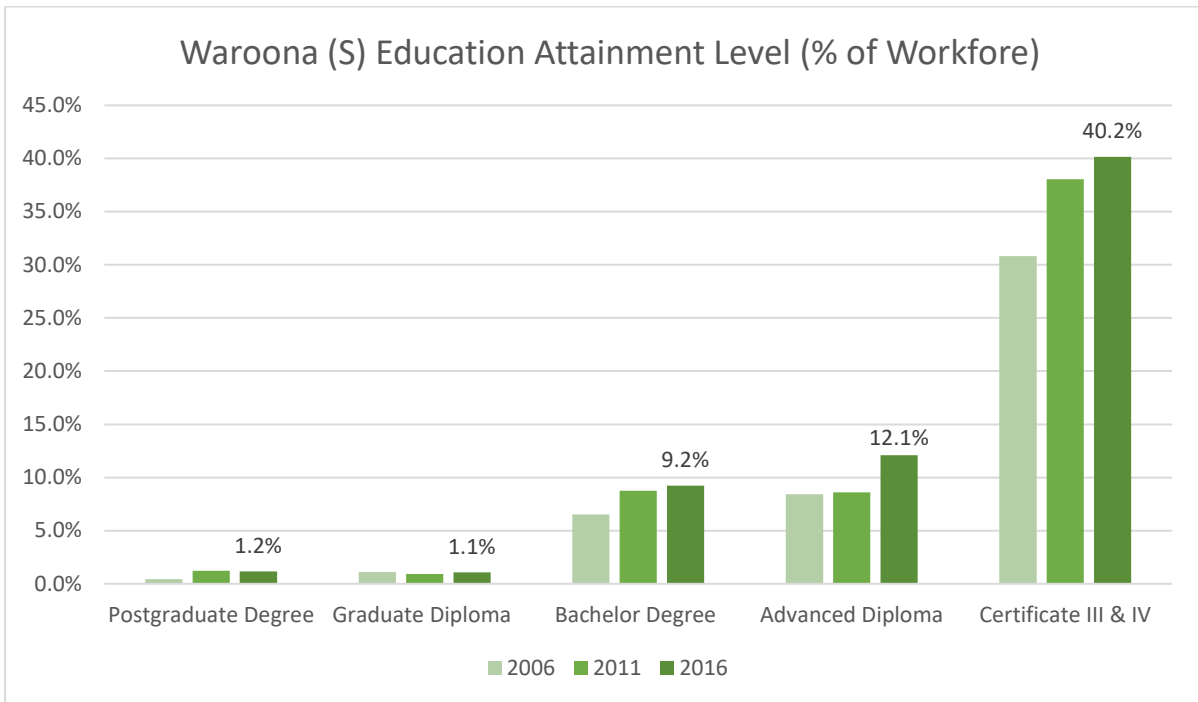


Figure 13. Waroona Education Attainment (ABS, 2016)

Education attainment levels in Waroona have either been rising or have remained steady over the 10-year period from 2006 to 2016. Attainment of Certificates III and IV has grown the most, increasing by **9.4%**. All education types have exhibited growth with the exception of Graduate Diploma attainment which has remained at **1.1%**.

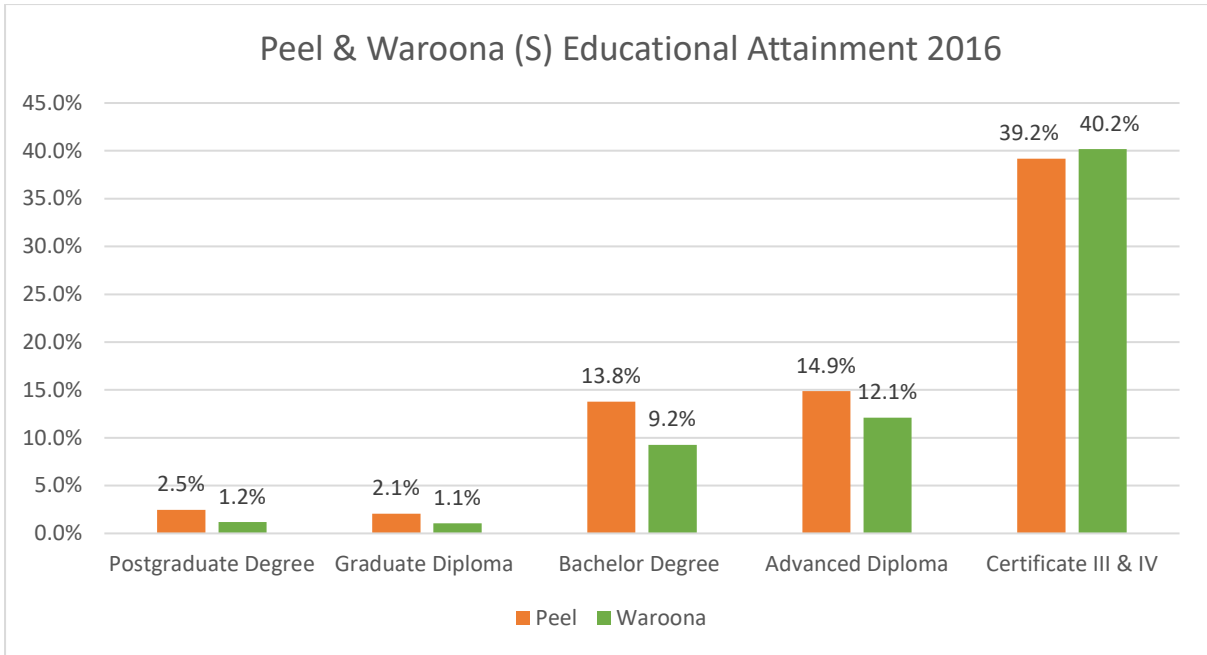


Figure 14. Peel & Waroona Educational Attainment

With the marginal exception of Certificates III and IV, the Peel region has a higher educational attainment rate in all qualification types. The largest discrepancy was Bachelor Degrees - **4.6% more** Peel region residents had attained Bachelor Degrees compared to Waroona, this is perhaps not surprising as a higher proportion of professional work opportunities are most likely based in Mandurah.

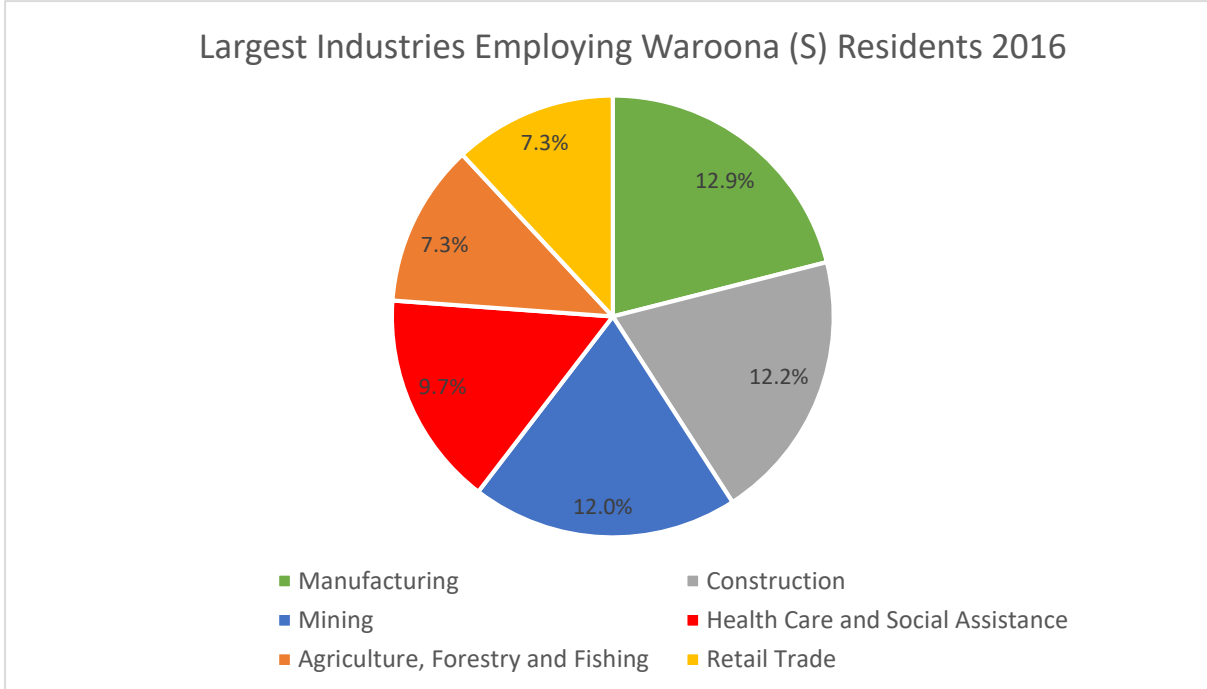


Figure 15. Waroona Industries by Total Employment (ABS, 2016)

At 2016, the industry employing the most Waroona residents was Manufacturing, which provided **210 jobs, or 12.9%** of the total jobs held by residents in the Shire. The next largest industry was Construction, providing **198 jobs**, accounting for **12.2%** of the total jobs. Alcoa’s Wagerup Alumina refinery accounts for a portion of these manufacturing jobs

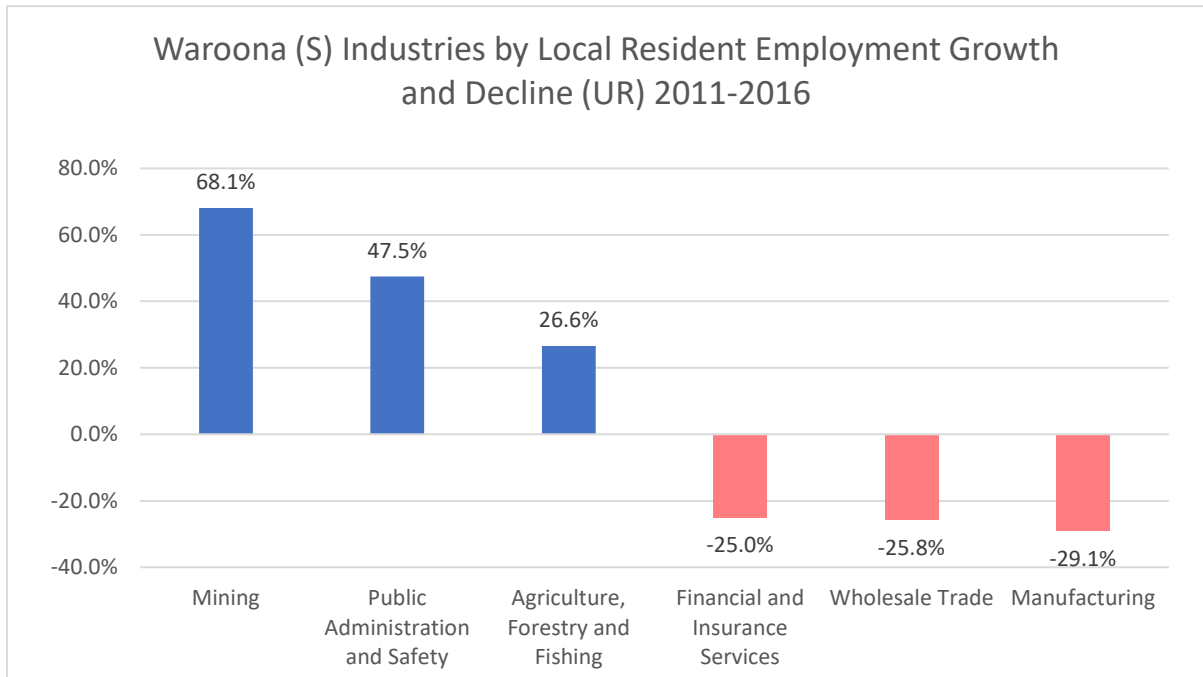


Figure 16. Waroona Resident Largest Growth and Decline Industries, (ABS, 2016)

The industry with the most local resident employment growth (these are jobs that Waroona residents hold, they are not necessarily based in the Shire) between 2011 and 2016 in Waroona was Mining, the industry that experienced the largest local employment decline was Manufacturing.

Approximately **79 new jobs** were gained in the Mining sector between 2011 and 2016 which could possibly be due to an uptake in Willowdale mine employment. **86 jobs** were lost in the Manufacturing industry in the same time, possibly due to a downturn at the Wagerup refinery facility and additional explanation could be related to an increase in efficiency and automation in industry, despite this loss it still remains the largest employing industry in 2016. In total, local residents gained **102 jobs** between 2011 and 2016, representing a **6.7% increase**.

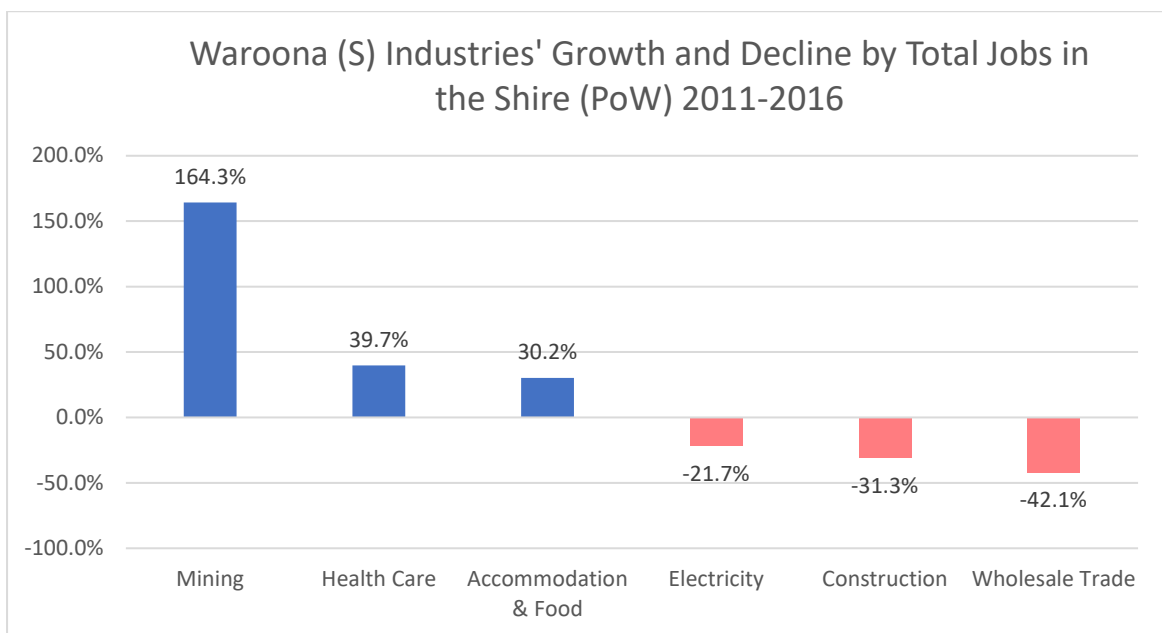


Figure 17. Waroona Industry Growth (ABS, 2016)

Total employment (i.e. the total number of jobs based in Waroona provided by the industry, from Place of Work ABS data) is being used as a proxy for the industry's growth or decline. Mining was the largest industry by growth rate, while Wholesale Trade saw the largest decline. Specifically, Wholesale Trade contraction is mainly in the Timber and Agricultural product field.

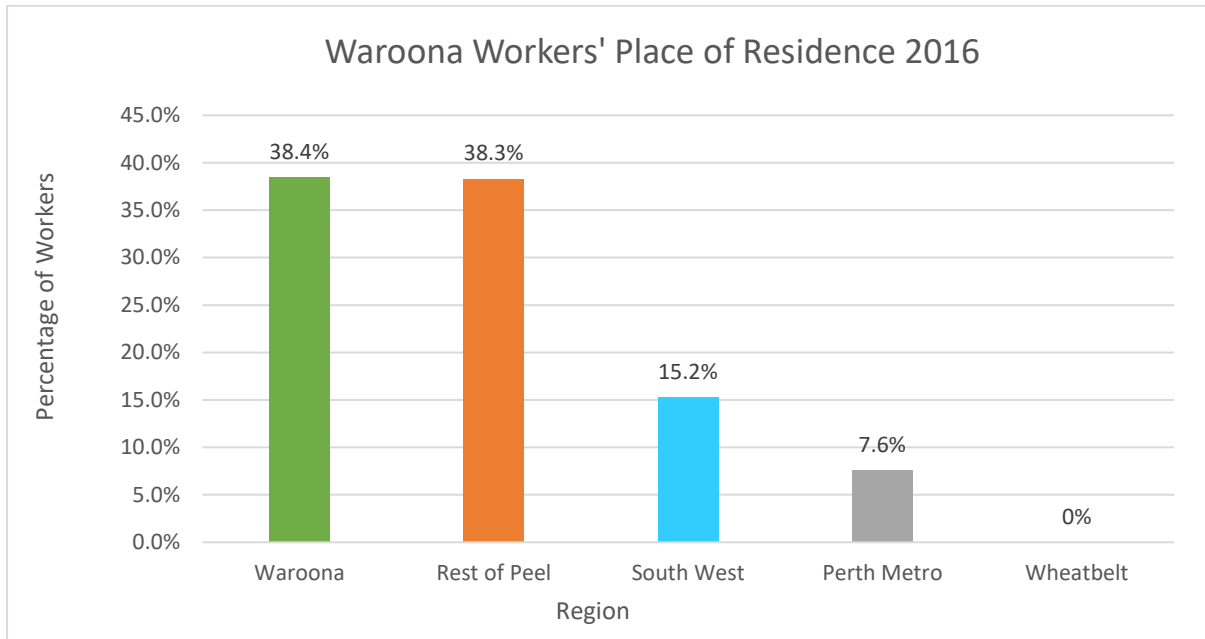


Figure 18. Waroona Self-Sufficiency (ABS, 2016)

Waroona's self-sufficiency rate is **38.4%**, meaning 38.4% of those working in Waroona also live in Waroona. The same proportion of workers live in the rest of Peel and travel into Waroona for work. **24.2%** of these workers live in the City of Mandurah.

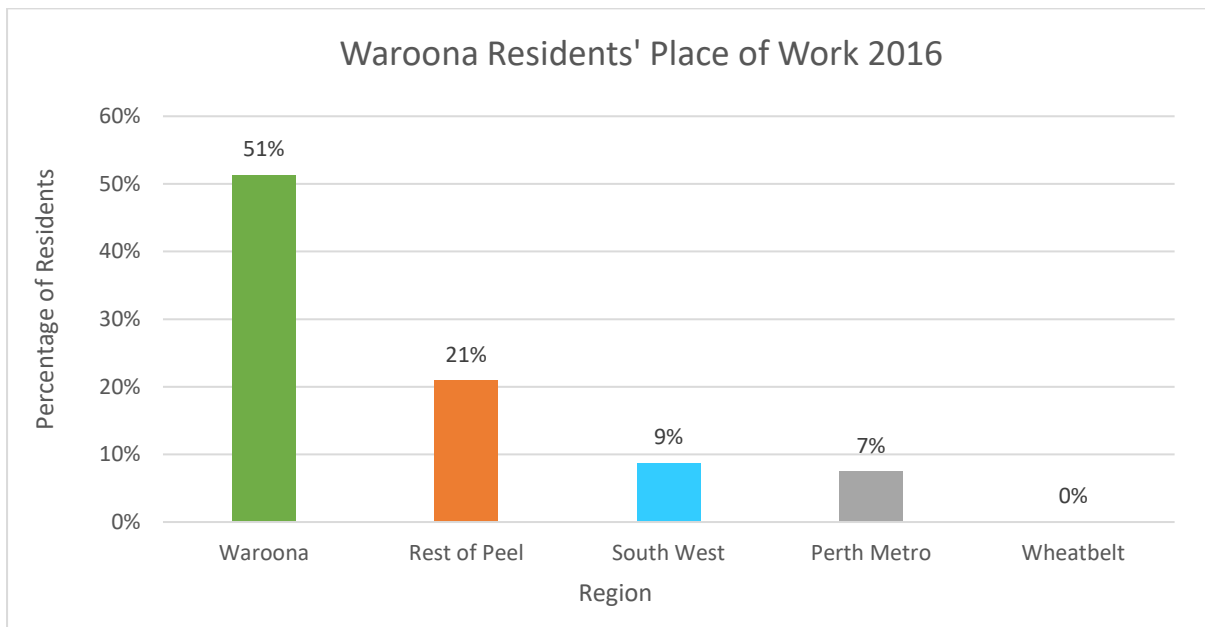


Figure 19. Waroona Self-Containment (ABS, 2016)

51% of Waroona’s employed residents work within the Shire. 30% of Waroona residents travel to neighbouring LGAs in Peel (overwhelmingly Murray and Mandurah) and the South West (the majority to Harvey) for work.

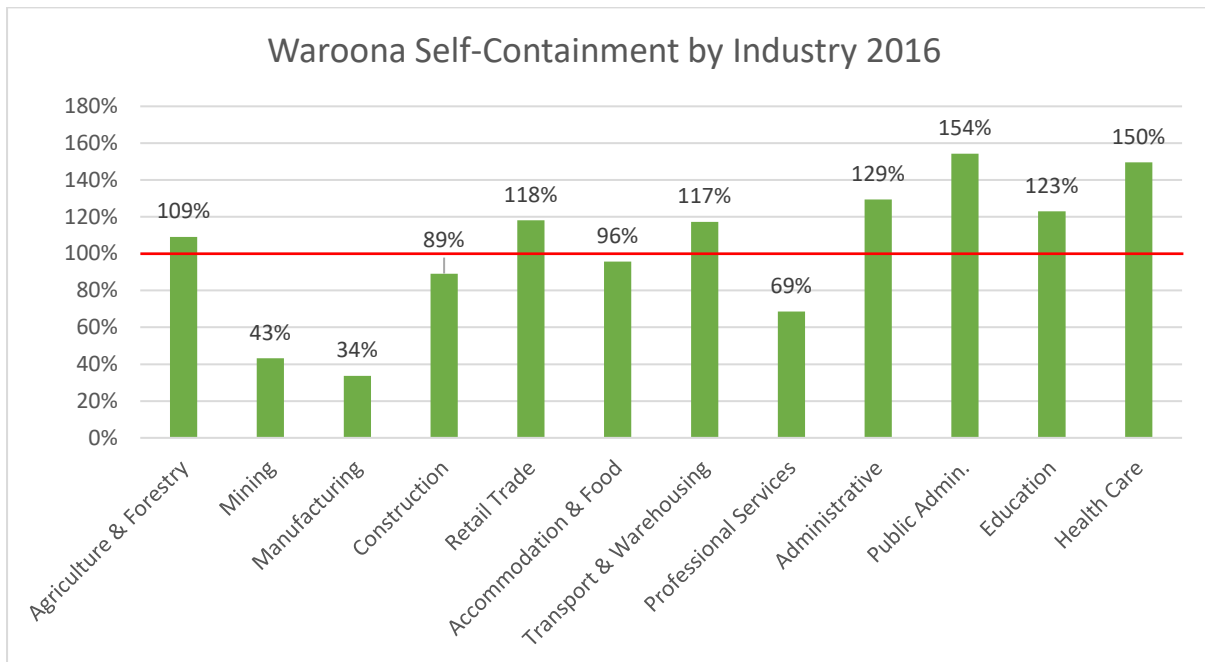


Figure 20. Waroona Self-Containment (ABS, 2016)

Industries where self-containment is ‘over’ 100% mean that a portion of those working in such industries leave the Shire for work. For example, there are (indicatively) 109 total jobs in Healthcare in Waroona, however, 163 Waroona residents work in the Healthcare industry, meaning at least 54 people leave the Shire for this work. Many industries in Waroona have Self-Containment ‘over’ 100%, however, two of the top three employing industries (Mining and Manufacturing) are well under 100%, attracting residents of other Shires to work in these industries.

The high number of ‘above-100%’ self-contained industries along with the low self-containment of Mining and Manufacturing indicate a discrepancy between skilled workers and their suitability for available employment in the Shire. This is further supported by the fact that Waroona brings 60% of its workforce from surrounding localities and has 50% of its residents leave the Shire for work.

2.1 Employment & Labour Force Summary

Waroona suffers from below average (and decreasing) labour force participation rates and above average unemployment compared to both the Peel region and the wider state. The Shire also experiences a relatively low self-containment rate, meaning about half of all residents leave Waroona for work. Mining expansion in the Shire has resulted in more residents being employed in the industry, however, the challenge facing Waroona is how to decrease unemployment, retain skilled residents who leave the Shire for work and stimulate employment opportunities that are more suitable to the Shire’s population.

An important element for Waroona’s future that is not shown in the data is seasonal labour imported into the Shire to service agricultural producers. One producer alone, Fruitco, imports approximately 200 casual seasonal workers over a 32 – 36 week period annually. This is expected to increase as they increase their growing capacity. Further exploration around the nature of the work, seasonal labour

requirements of surrounding producers, the type of seasonal workers attracted, visa options and accommodation needs is required to identify emerging opportunities.

3.0 Industry Sector

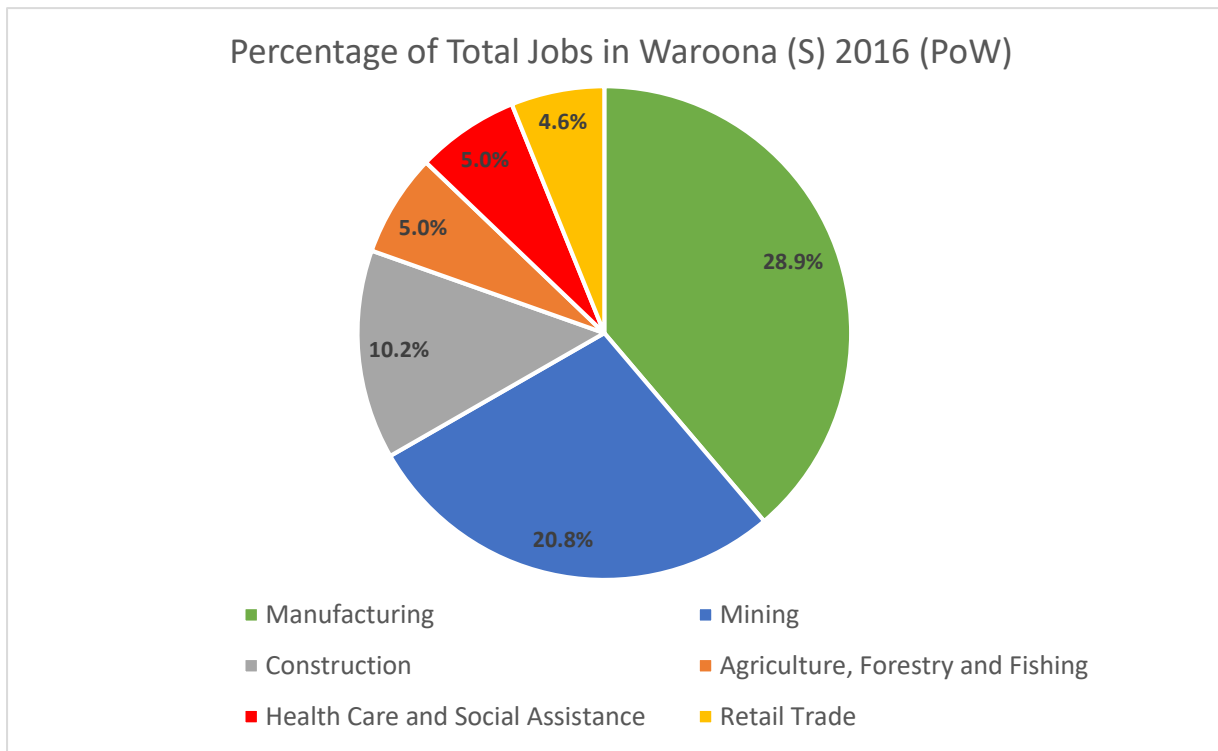


Figure 21. % of Total Jobs in Waroona (ABS, 2016)

At 2016, the Manufacturing and Mining industries provided 625 and 451 jobs respectively, making up **almost 50%** of the total jobs in Waroona. The Wagerup Alumina refinery accounts for a portion of these manufacturing jobs but there are a number of engineering and fabrication firms in Waroona that service the regional agricultural industry as well as the mining industry state-wide.

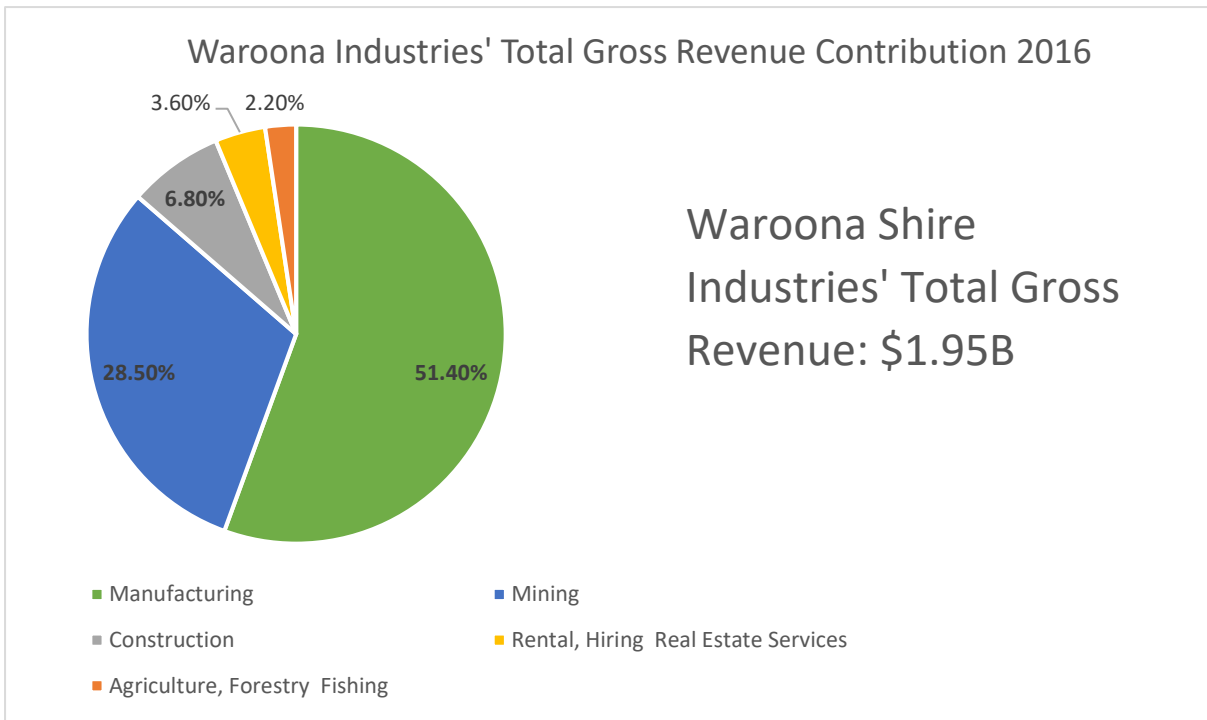


Figure 22. Waroona Industry Revenue Contribution (ABS, 2016) (from Remplan analysis)

Manufacturing operations in Waroona generated approximately **\$1B** of gross revenue, accounting for **51.4%** of the Shire's total output. Mining and Construction are the 2nd and 3rd largest contributors, generating **\$558M** and **\$132M** respectively.

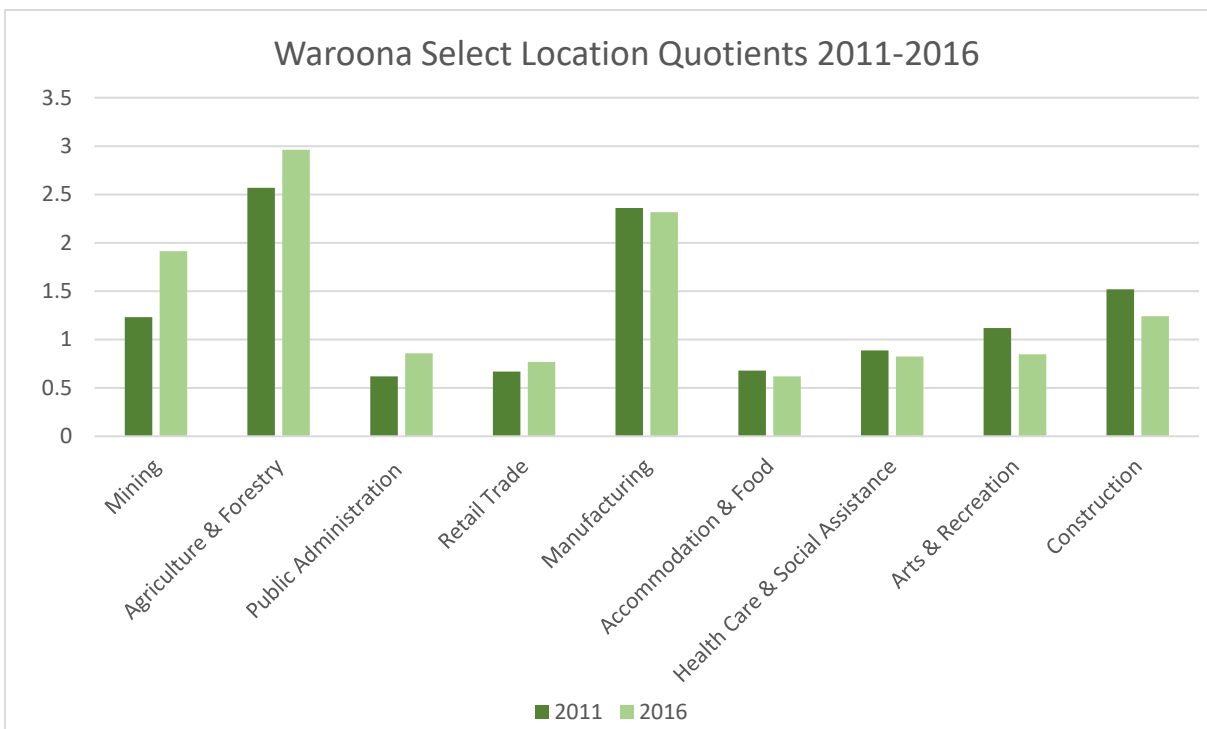


Figure 23. Waroona Location Quotients 2011-2016 (ABS, 2016)

The change in location quotients (LQ) can provide an *indication* of which industry sectors are growing or declining. Those sectors that have a LQ over 1 which increase over time could be considered strong performing industries. In Waroona these industries are Agriculture & Forestry and Mining.

Sectors which have LQ's under 1 but are increasing over time are potential industries that could benefit from targeted economic intervention/development (Goetz, et al., 2009). Retail Trade and Public Administration are the two sectors who qualify for this. Retail Trade is among the six largest employing industries in Waroona with increasing LQ's under 1.

Accommodation & Food, Health Care, Arts & Recreation and Construction all had LQ's that decreased, indicating that they are industries in decline. Most of the Construction jobs were lost in the 'Heavy & Civil Construction' and 'Land Development and Site Preparation' subfields, possibly indicative of a reduction in development.

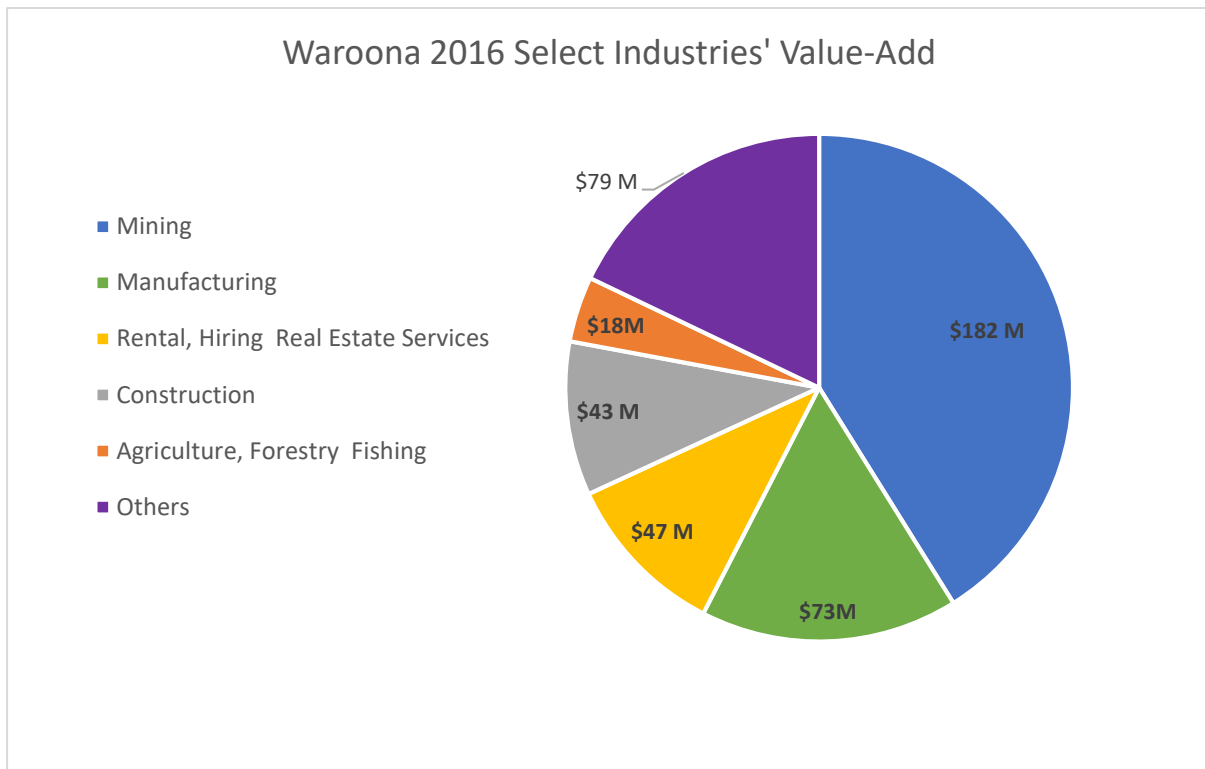


Figure 24. Waroona Value-Add (ABS,2016) (from Remplan Analysis)

Value-add, or the marginal economic value that each industry contributes to the region, is obtained by subtracting each industry's local expenditure and imports from the industry's total output. Mining makes up **41%** of Waroona's total value-add amount, followed by Manufacturing and Rental & Real Estate Services which contribute **16.4%** and **10.6%** respectively.

Key Industries	Moderate Impact Industries
Mining	Manufacturing
Agriculture	Construction Services

Growth Rate	Mining	Health Care	Accommodation	Agriculture	Retail Trade
Local Employment	Manufacturing	Construction Services	Mining	Health Care	Agriculture
Increasing LQ	Mining	Agriculture	Public Admin	Retail	N/A
Backwards Linkages	Agriculture	Manufacturing	Construction Services	Admin Services	Arts & Rec
Value-Add	Mining	Manufacturing	Rental & Real Estate	Construction Services	Agriculture

Table 1. Top 5 Waroona Industries in Each Metric

Industries who qualify for 'Backwards Linkages' are identified by REMPLAN as "spending the most on locally sourced intermediate goods and services per dollar of output." REMPLAN description posits that because of the well-developed local supply chains in these industries, expansion in these areas has the potential to "deliver broad based economic benefits for the region" (REMPLAN, 2018).

3.1 Key Industries

Mining and Agriculture were the industries that, very broadly, contribute the most to the region. Financially, Mining is the largest contributor to value-add and the second largest contributor to gross economic revenue. Mining, however, is not considered to have sufficient backward linkages that result in money being spent locally.

Agriculture and Mining experienced tangible growth as well as increasing LQs. In effect this means that Agriculture and Mining have experienced both 'real' and nominal growth as total number of jobs provided has increased, and the relative specialisation of those industries compared to the Western Australian economic makeup has also increased.

3.2 Moderate Impact Industries

Manufacturing and Construction Services are moderately important industries that add value and are significant local employers.

Manufacturing jobs were overwhelmingly in the Alumina Processing and Production subfield.

Manufacturing (mostly in the Alumina Processing and Production subfield) and Construction Services (Site Preparation Services and Heavy & Civil Construction subfields), however, have experienced decline. Despite their contraction they still are still the largest employers in Waroona, employing **25.1%** of local residents. These industries also spend proportionally large amounts of money in the local economy.

Health Care & Social Assistance could also be considered a moderate impact industry due to high local employment and growth as well as an ageing population. This is evidenced in the new purpose-built accommodation unit development at Quambie Park.

4.0 Services

4.1 Education & Childcare

Facility (Type)	Service	Regional Administration
St. Joseph's School (Primary School)	K – Year 6	Catholic Education WA
Waroona District High School (District High School)	K – Year 10	South Metropolitan

Table 2. Waroona Education

High school expansion to include an academic stream for years 11 and 12 has been briefly identified as a need for the Shire (Shire of Waroona, 2016). However, there is currently no indication from the State government or other responsible authority for the academic funding of years 11 and 12.

Schools offering academic streams of years 11 and 12 within reasonable distance of Waroona (City of Mandurah and Shire of Murray) include Austin Cove Baptist College, Mandurah Catholic College and Pinjarra Senior High School.

At the time of writing, childcare in Waroona is provided via private, local enterprise.

4.2 Health & Social Services

Health Services

Facility	Services Provided
Harvey Medical Group Waroona	Independent general practice, family medicine chronic illness care, mental health assessments.

Table 3. Waroona Health Services

Notably there is no district hospital in Waroona, however, the shire is serviced by nearby district hospitals in the LGAs of Murray, Harvey and Mandurah.

Key Social Services

Social Service	Provision Status
Family Support Service	Based in Shire
Department of Human Services	Phone/Online
Child and Adolescent Health	Based in Shire
Peel Youth Services	Lacking

Table 4. Waroona Social Services. Adapted from Peel Says No To Violence Report (Watkins, 2017)

5.0 Land Use Availability

5.1 Residential

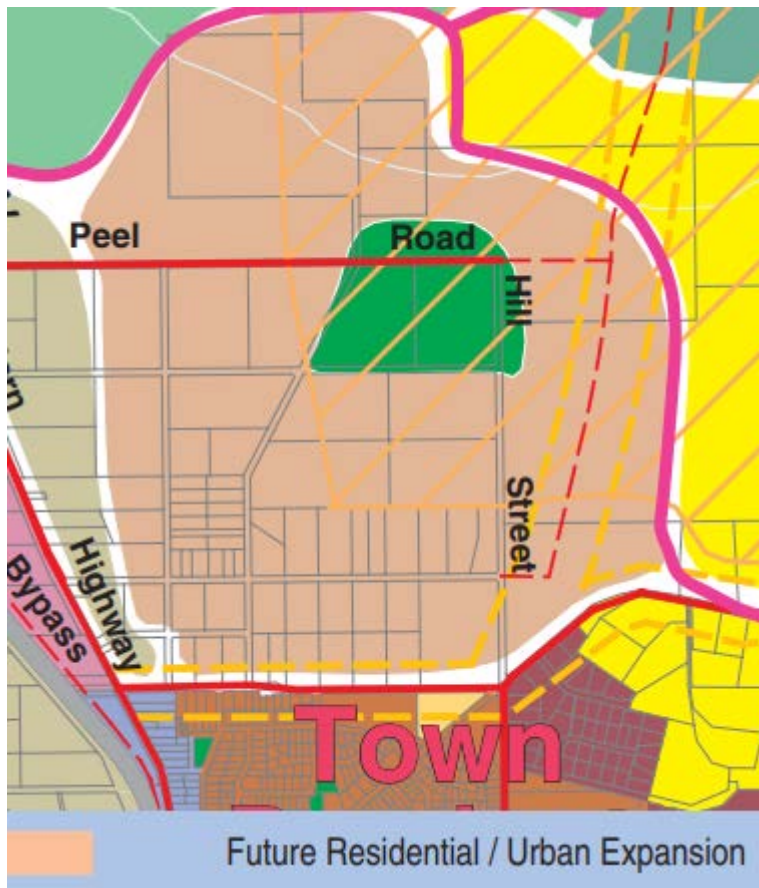
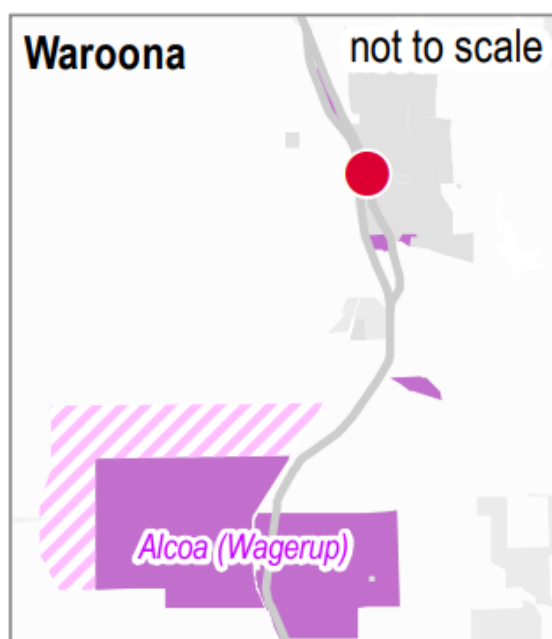


Figure 25. Waroona Future Residential (Shire of Waroona, 2009)

Waroona's Local Planning Strategy (Shire of Waroona, 2009) identifies ample land for residential expansion north of the Waroona Town Precinct. The southern portion of this land has already been rezoned to 'Rural Living' and subsequently subdivided (Shire of Waroona, 1996).

ABS (2016) statistics indicate that median rental prices in Waroona are the **lowest** in the Peel region. Median rent in Waroona is **\$250** while the average rent in Peel region is \$302.

5.2 Industrial



An Industrial investigation area to the north and west of the Wagerup Refinery has been identified in the South Metropolitan Peel sub-regional Framework (DPLH, 2018).

Waroona has been classified as a 'District Centre' by this same framework.

Figure 26. Waroona Industrial Investigation

6.0 Infrastructural Considerations

Water

- Harvey Water is licensed to draw 137GL annually supplying water primarily for dairy farming, beef grazing, horticulture and industry

Power

- Planned solar farm by South Energy which, upon completion, will have an installed capacity of 180 megawatts (MW), which can bring power to approximately 67,000 homes
- Power supplied by Landwehr Terminal Station and the Wagerup Substation

Transport

- Waroona has major road connections to Perth, Mandurah and Bunbury via the South Western Highway.
- East-West road connection from the Waroona townsite to Lake Clifton and Preston Beach via Coronation Road.



Figure 27. Waroona Major Roads

- Via current road network connections, the closest freight port to Waroona is the Bunbury Port.
- Narrow gauge freight rail access is available in the shire.
- Potential for future connectivity via road links east of the Waroona townsite (Figure 26 below).

- State government has indicated that it intends to eventually conduct strategic freight transport planning for the realignment of South Western Highway to bypass Waroona in the interest of townsite amenity (Department of Transport, 2012).

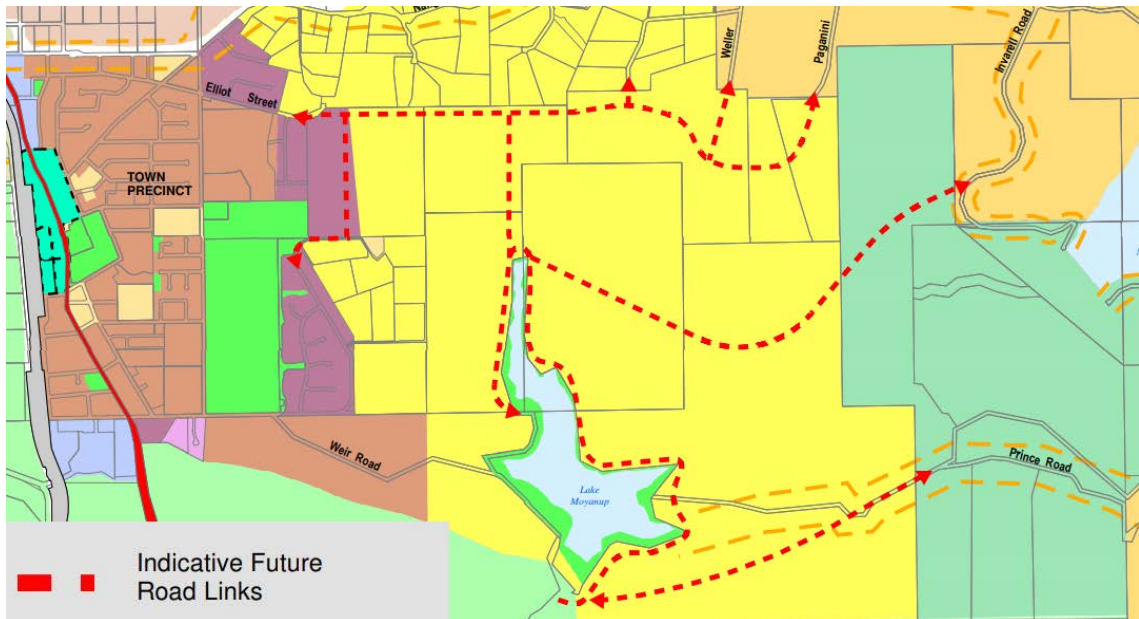


Figure 28. Waroona Future Road Links

7.0 Economic Opportunities & Diversification

7.1 General

The Productivity Commission, a federal government body, produced a significant report (Productivity Commission, 2017) with general recommendations and considerations for regional growth and diversification. The most relevant of which were:

- Governments should focus on the people who reside in regions, rather than the geographical areas themselves.
- Governments have a finite capacity to facilitate local growth, and must balance this with promoting conditions for transition and development. **It is difficult to artificially create and maintain an advantage for a regional community where such an advantage does not inherently exist.**
- Removing unnecessary regulations is needed to support regional development – cumbersome and unnecessary planning and zoning regulations as well as environmental regulations i.e. ‘green tape’.

A WALGA submission to the report supported the removal of ‘barriers’

- Planning, zoning and developmental regulatory processes can be a costly barrier to business entry and investment and can be complex, excessively prescriptive, and often anticompetitive. In agriculture, planning and zoning regulations often stifle innovation and impede farm businesses from becoming more efficient.
- The planning regime specifically can act as a constraint on development, particularly in the case where new activities are not permitted land use under the existing Local Planning Scheme.

Boddington does have the ability to amend its Local Planning Scheme, however, this is a significant process that is generally undertaken with a proponent and ultimately requires state planning approval. Wider planning 'constraints' are also affected at the state government level.

A similar report from the University of Queensland (Centre for Social Responsibility in Mining, 2017) also makes general recommendations mainly for mining related industry's corporate social responsibility efforts although also applicable to governments. The most relevant of which are:

- Support for local/regional economic development programs and enterprise centres (ex. business incubators, business forums) that build on local assets and are relevant to the geographic, economic, social, cultural and institutional context.
- Building local human capital, especially the education and skills of the local workforce, to increase the resilience of all local businesses and their productivity and capacity for innovation.
- Improvements in regional infrastructure and connectedness to facilitate availability of goods and services and access to broader markets.
- Building business networks and identifying a range of opportunities for local and Aboriginal businesses to reduce reliance on the mining sector in general.

The focus is broadly on new businesses facilitation and existing business support as well as upskilling. The report's recommendations could potentially encourage the re-steering of existing community reference groups, or the creation of something new (see Enterprise Facilitation below).

The State Government produced report Diversify WA (Department of Premier and Cabinet, 2019) in support of the Our Priorities: Sharing Prosperity – Stronger Economy policy suite, outlines priority economic sectors based on the 'natural trade strengths and advantages of the state.' The sectors that are relevant for Waroona are:

- Energy
- Tourism, events and creative industries
- Mining and Mining Equipment, Technology and Services
- Primary industries (particularly agriculture)

The report also makes passing mention of the potential of Lithium mining and indicates that the Peel region could be home to one of the State's three lithium processing facilities. The increase in private equity and investment into primary industries is highlighted as a growth opportunity.

7.2 Waroona Focused

The growth and diversification considerations below are based on a brief synthesis of Waroona's economic, environmental and social factors.

- Waroona has favourable agricultural conditions, with relative proximity to ports, good soil quality and access to the Harvey Water Scheme. Despite these conditions, agricultural growth has not been as strong as expected, however, the recent establishment of several successful exporting farming businesses can serve as an example of what is possible for other investors or growers. Examination and consideration of methods (ex. status of landholdings) to encourage more agricultural business in the Shire should be reviewed.
- Some of these agricultural businesses use a transient workforce for seasonal labour. There is perhaps scope to collaborate with these businesses to develop a shared accommodation that can be used by seasonal workers and then other groups during the off-season. Other

businesses can be identified that could employ these workers in the off-season, encouraging the workers to remain in the region or even the Shire. Further analysis of skills requirements, visa options and surrounding growers need is required.

- Despite a plateau in recent years, population growth has been steady over the last decade. The provision of key services and infrastructure will need to be maintained or even increased to accommodate growth.
- There is real potential for moderate growth in tourist activity. The proximity to Perth, natural environment assets such as the coastline and the Darling Scarp, emerging trails, growing recreational equine activity and niche agricultural business all provide opportunity. With facilitation synergy can be achieved between these features to create real tourism value.
- There is the opportunity to support and grow engineering or fabrication firms that can provide specialised services to the mining, manufacturing and agricultural industries both within and outside of Waroona. Investment and/or endorsement of Enterprise Facilitation to help identify and form mutually beneficial links between stakeholders and firms should be considered by the Shire and operating extractive industries as a Corporate Social Responsibility activity.

7.3 Case Studies

Several case studies of Australian towns that have pursued economic diversification projects are presented below. The case studies were considered to be somewhat applicable or achievable in Waroona.

Karratha/Augusta, WA

Karratha is pursuing economic diversification through **aquaculture**, or specifically, 'algalculture.' **Algae farms** in Karratha are intended to supply health-supplement and medical industries (Bell, 2015).

Think tank Australia21 produced a report (Australia21, 2016) highlighting the potential and benefits of algalculture for Australian regions. Conditions and benefits are:

- Areas where there is a large availability of land and industries that produce significant amounts of wastewater
- Algae farms grow on non-productive and non-arable land
- Can be grown in hot climates such as the Pilbara but also in cooler climates such as Western Texas – slightly colder than Peel region. There are many different types of algae.

Cursory consideration of circumstances in Boddington make the region at least somewhat suitable. However, questions of land use, land ownership, attracting a grower and possibly sufficient sunshine hours remain.

Augusta is host to **abalone farms** grown on artificial abalone reefs in Flinders Bay. It is an intensive and specialised industry requiring significant capital and expenditure but is very lucrative. While the southern waters are suitable for greenlip abalone, the waters on Waroona's coast should be, indicatively, suitable for the similarly valuable brownlip abalone (DPIRD, 2016). As of early 2019, current operators, Ocean Grown Abalone, expressed intent to develop a processing facility in Augusta, creating more jobs for the region.

Castlemaine, VIC

Former gold mining town flourishing with diversified economy in **niche heritage, retail and gastro-tourism**. Up-market restaurants, a brewery and boutique retail make Castlemaine essentially a 'tourist

shopping village' characterised by relatively undisturbed 19th century streetscapes surrounded by forests containing historic mining areas (Taylor, 2017). The success of the town is seemingly built upon the successful marriage of their heritage and shopping and hospitality offerings.

Is this directly replicable in Waroona or even Western Australia? It is unlikely, but perhaps a small-scale or partial version is possible. While intact 19th century streetscapes are clearly not present in the Peel region, two features identified as contributing to the success for Castlemaine were proximity to an urban centre and the presence of mountain biking trails attracting visitors. Waroona has both of these features as well as further tourist potential. Viticulture, retail and gastro-tourism are still viable but it is hard to measure the contribution of heritage towards attracting these visitors.

There is the potential for the heritage factor to be substituted with the natural environment assets present in Waroona, with nearby Dwellingup's ambition to become a trails hub there could be an opportunity to create a trails/tourism/viticulture/culinary experience.

Cobar, NSW

Cobar is a currently active mining town with a population of 5000. Through **Enterprise Facilitation** the town created 90 new jobs, generated \$2.4 million in sales with \$700k in value add. Waroona and Cobar share some key circumstances, such as the presence of an active and successful mining company in the shire and similar population size.

The method was inspired by Esperance, WA's experience 1985 to 1988 where 45 small businesses were created and generated significant revenue and jobs. The Esperance small business centre still operates today.

The Cobar Enterprise Facilitation project was sponsored by a mining company (PGM) who helped in the creation of a steering committee to create Enterprise Facilitation Inc. – essentially an 'accelerator' or 'incubator' made up of local business people, civic leaders, and organizations such as the weekly newspaper and government officials. A central tenet of Enterprise Facilitation is to offer free, confidential business management and networking advice to aspiring entrepreneurs and existing small businesses. The method is guided by several principles which essentially amount to providing bottom-up, non-judgmental support to new and existing businesses that are backed by the community (McFaul, et al., 2013).

Enterprise Facilitation is partly based on the idea that there are creative and entrepreneurial individuals in many regional spaces and these individuals or groups are often unaware or unsure of how to pursue or begin their venture. Enterprise Facilitation in Waroona can help identify parties that have innovative or niche ideas and assist them in recognising and exploiting gaps or potential opportunities in terms of mine, manufacturing or agricultural industry servicing (ex. is there a mine service that could be done more efficiently or effectively form a current or newly established business in the shire?). Exploring whether Enterprise Facilitation can be sponsored or resourced by the extractive industry in the shire is a worthwhile investigation teamed with an exploration with the mining, manufacturing and agricultural industries as to the key services / functions in their supply chain that could benefit from local delivery.

To be successful Enterprise Facilitation requires buy-in from the private sector, community and local government.

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