

# Regional Workforce Futures

An Analysis of the Great Southern, South West  
and Wheatbelt Regions

**MATTHEW TONTS, AMANDA DAVIES and FIONA HASLAM-  
MCKENZIE**

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**GEOWEST NO. 35**

**INSTITUTE FOR REGIONAL DEVELOPMENT  
SCHOOL OF EARTH AND GEOGRAPHICAL SCIENCES**

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## Summary

The overall aim of the report is to provide an assessment of regional employment dynamics and future labour demand in the Great Southern, South West, and Wheatbelt regions. More specifically, the report:

- Examines the demographic and economic dynamics driving regional labour markets;
- Analyses the changing structure of regional labour markets in terms of sector and occupation;
- Identifies the major challenges facing employers in the regions;
- Develops projections of labour for demand to 2015 for sectors and occupations within the regions.

The data sources used in the preparation of this report included:

- Australian Bureau of Statistics census, labour force survey, and business data;
- Department of Employment and Workplace Relations Small Area Labour Market Data;
- Australian Taxation Office data;
- A questionnaire survey of 280 employers in the four regions;

One of the central objectives of the report was to develop labour force scenarios for specific sectors and occupations within the Great Southern, South West and Wheatbelt. Scenarios were developed using a Dynamic Shift-Share ARIMA model. This model produces total employment, sectoral and occupational scenarios for each region. Geographically, each region has been examined according to the Australian Bureau of Statistics' statistical subdivisions.

While the dynamics of change are different across the three regions, it is clear that there are important labour force issues that need to be addressed, including:

- Strategic planning for changing economic and demographic structures within regions, and the associated emerging demands for labour;
- Severe skilled and general labour shortages in a number of sectors;
- Challenges in attracting employees to, and retaining employees in, regional areas;
- Inter and intra regional competition for labour;
- A rapid ageing of the workforce in a number of sectors and locations.

The following provides a brief overview of the labour for projections for each region:

### ***The Great Southern***

- The labour force demand in the King subdivision is projected to increase steadily between 2007 and 2015, with growth concentrated in: health care and social assistance; retail trade; construction; and, accommodation and food services. In terms of specific occupations, the most significant increases in demand are likely to include: sales assistants and sales persons; cleaners and laundry workers; personal carers and assistants; nursing professionals; school teachers; and mobile plant operators.
- The labour force demand in the Pallinup subdivision is expected to remain relatively stable at around 5,100 between 2007 and 2015. Decline is expected in: agriculture, forestry and fishing; manufacturing; and construction. Modest growth is expected in accommodation and food services, and retail trade. Specific occupations likely to increase include: truck drivers; general clerks; mobile plant operators; and food process workers.

### ***The South West***

- In the Blackwood subdivision, employment demand is likely to fall in agriculture, forestry and fishing, and wholesale trade. The largest increases in demand are expected in: retail trade; accommodation and food services; and, health care and social assistance. Strongest occupational growth is expected in: cleaners and laundry workers; mobile plant operators; school teachers; truck drivers; and midwifery and nursing professionals.
- The Bunbury subdivision is expected to see labour demand increase between 2007 and 2015, with strongest growth expected in: mining; construction; health care and social assistance; and retail trade. Significant increases in demand for the following occupations are expected: sales assistants and salespersons; personal carers and assistants; truck drivers; building and engineering technicians; auto electricians and mechanics; school teachers; and mobile plant operators.
- Labour force demand in the Preston subdivision is anticipated to grow between 2007 and 2015, with strongest growth in employment demand expected in the mining sector, followed by health care and social assistance, construction, and transport. Modest declines are expected in agriculture, forestry and fishing. The strongest growth in occupational demand is expected in some of the following: cleaners; sales assistants and salespersons; stationary plant operators; mobile plant operators; and midwifery and nursing professionals.

- The Vasse subdivision is projected to experience relatively strong employment growth between 2007 and 2015, with increases concentrated in the following sectors: construction; retail trade; accommodation and food services; and health care and social assistance. For occupations, growth is likely to be strongest in: sales assistants and sales persons; bricklayers, and carpenters and joiners; retail managers; school teachers; and hospitality workers.

### ***The Wheatbelt***

- The labour force of the Avon subdivision is expected to increase between 2007 and 2015, although much of the growth will be concentrated in those areas adjacent to Perth. Areas further inland are expected to see a decrease in demand. Much of the decline in demand is expected in agriculture, while growth sectors are likely to include: mining; retail trade; education and training; and health care and social assistance. Occupational increases are expected for: personal carers and assistants; sales assistants and sales persons; cleaners; and truck drivers.
- In the Campion and Lakes subdivisions, growth is likely to be very slow. Resources activity in the Yilgarn area is likely to be the major driver of growth. Occupational growth is anticipated to be concentrated amongst: truck drivers; mobile plant operators; stationary plant operators; and auto electricians and mechanics.
- The Hotham subdivision is projected to experience relatively strong employment growth associated with resources activity near Boddington and a degree of lifestyle based in-migration. Strongest growth is anticipated in: mining; health care and social assistance; and a range of other services. Occupational growth is projected to be relatively high amongst the following: labourers; truck drivers; construction labourers; midwifery and nursing professionals; and fabrication engineering trades workers.
- The Moore subdivision is projected to experience growth in a number of sectors, including: mining; construction; retail trade; health care and social assistance; and public administration. Occupational growth is projected to be strongest for: truck drivers; mobile plant operators; cleaners; auto electricians and mechanics.



## Acknowledgements

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# 1 Introduction

## 1.1 Introduction

One of the most significant contemporary challenges facing regional Western Australia is an acute shortage of skilled and unskilled labour. In part this is an outcome of the strong growth of the Western Australian economy over the past decade or so, with rapid expansion in the resources, construction and manufacturing sectors generating considerable new employment. However, the labour shortage is also the result of a range of other demographic, social and institutional factors, such as an ageing population, changing education and training choices on the part of young people, and perhaps in some cases negative perceptions about living in the regions. The impacts of labour shortages on regional Western Australia are significant. For many businesses and public sector institutions, difficulties in securing or retaining staff are undermining productivity, profitability and/or the quality of service delivery. It is also constraining local and regional economic growth which, in the long run, can leave areas lagging the rest of the State or nation on a range of social and economic indicators. In much broader terms, labour shortages have the potential to impact on the performance of the State and even Australian economies.

The purpose of this report is not to document the underlying causes or consequences of labour shortages, but to provide an analysis of the regional employment dynamics and futures of three Western Australian regions: the Great Southern; the South West; and the Wheatbelt. The document is designed to enable policymakers, regional development practitioners, local governments, industry bodies and communities make informed decisions on matters relating to education and training, migration, and economic and social development. The report draws on data from a range of sources to document the characteristics of the labour markets within these regions, and using a regional economic model projects future employment demand for industry sectors and specific occupations. The geographical area of analysis within each region is ABS's Statistical Subdivisions, which provides the basis for an analysis of subregional and local trends. A full description of the methods and data sources is provided in Appendix 1.

## 1.2 Aims and Objectives

The overall aim of the report is to provide an assessment of regional employment dynamics and future labour demand in the Great Southern, South West, and Wheatbelt regions. More specifically, the report:

- Examines the demographic and economic dynamics driving regional labour markets;
- Analyses the changing structure of regional labour markets in terms of sector and occupation;

- Identifies the major challenges facing employers in the regions;
- Develops projections of labour for demand to 2015 for sectors and occupations within the regions.

### 1.3 Methods and Workforce Modelling

The data sources and methods are described in more detail in Appendix 1. The main sources included:

- Australian Bureau of Statistics census, labour force survey, and business data;
- Department of Employment and Workplace Relations Small Area Labour Market Data;
- Australian Taxation Office data;
- A questionnaire survey of 280 employers in the three regions;

#### **Workforce Modelling**

The workforce scenarios for each region were developed using a Dynamic Shift-Share ARIMA model, as described by Mayor *et al.* (2007)(see Appendix 1). This model produces total employment, sectoral and occupational scenarios for each region. Three scenarios have been generated:

- A 'base', or expected, scenario.
- A 'high growth' scenario, which is the base plus 1.5 per cent per annum.
- A 'low growth' scenario, which is the base minus 1.0 per cent per annum

It should be stressed that the model used here is *deliberatively conservative in projecting labour force scenarios*. Thus, while the base projections are considered the likely future state of labour demand, it would not be unreasonable to also consider the high growth scenarios – particularly for rapidly growing parts of the South West, Great Southern and Wheatbelt. Growth rates for sectors and locations have been based on a careful assessment of local economic dynamics, planned developments, and broader national projections. Importantly, they are not based on a simple assumption that patterns of growth (or decline) can simply be extrapolated forward for any given locality.

### 1.4 Organisation of the Report

Chapters 2-4 examine each of the regions, including demographic trends (e.g. total population, age structure, and mobility), the regional economy (e.g. gross regional product, industry structure, business characteristics), the labour market (e.g. unemployment, participation, occupational structure), and future workforce needs. The concluding chapter summarises the main findings, highlights some of the issues for policy and planning, and outlines areas in need of further analysis. The Appendices summarise the main methods used in the preparation of the report, and present some additional regional level data.

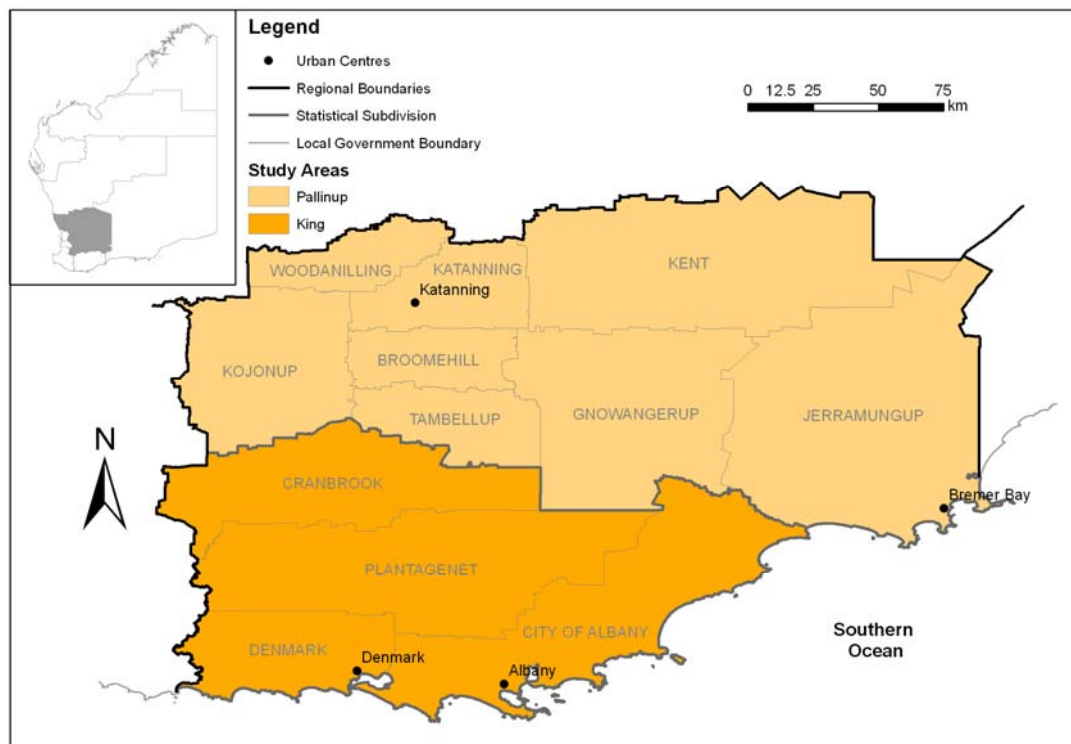
## 2 The Great Southern

### 2.1 Introduction

The Great Southern is an economically diverse region covering an area of 38,917 square kilometres. The coastal town of Albany is the major administrative centre within the region, while Katanning plays an important sub-regional role in the north of the region. Other significant towns in terms of population include Denmark, Mt Barker and Kojonup. In geographical terms, the Australian Bureau of Statistics has divided the region into two statistical subdivisions: King and Pallinup (Figure 2.1).

The Great Southern is an important region for the production of agricultural commodities, notably wheat and other cereals, wool, livestock and grapes. Over recent years agro-forestry has also become an important industry, while minerals production is also increasing in the region. Tourism is also a growing sector, particularly along the south coast. The region is also host to a vibrant manufacturing industry that includes food processing, and metal and wood fabrication. The government sector is also an important employer, with health, education, social services, police and local government playing a significant role in the local economy.

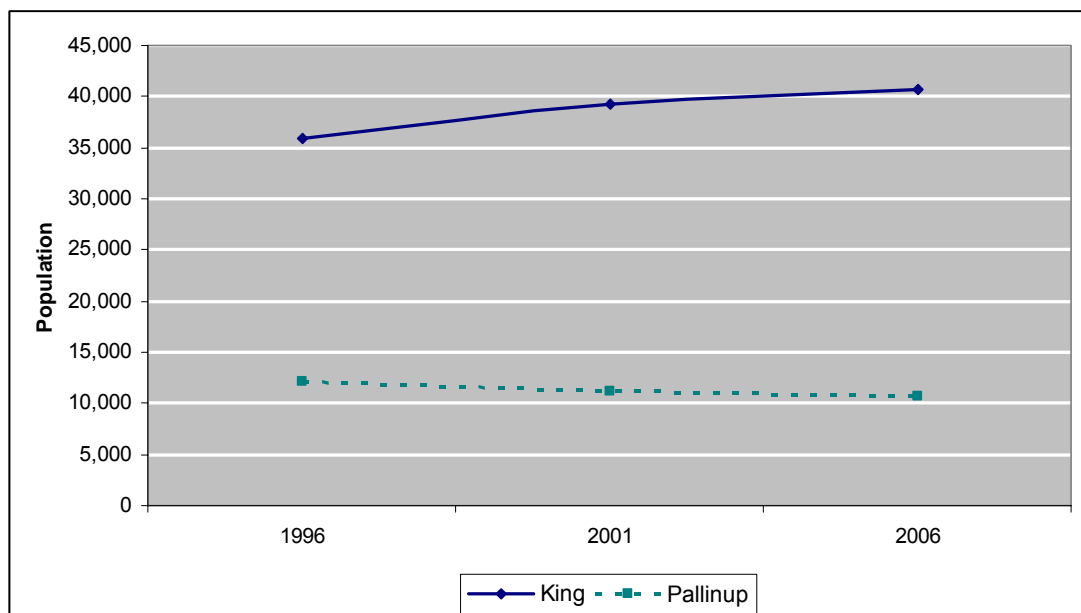
**Figure 2.1 The Great Southern Region**



## 2.2 Regional Population Dynamics

Great Southern has experienced a consistent pattern of growth for more than a decade. Between 1996 and 2006, the population increased from 48,014 to 51,316; a rise of 3,302, or 6.9 per cent. However, the distribution of population growth has been uneven, with the south coast experiencing a considerable increase, while inland agricultural areas have generally declined. This is illustrated in Figure 2.2, which breaks population change into the region's two statistical subdivisions. The subdivision of King, which includes coastal areas and the high amenity Shire of Plantagenet increased from 35,927 to 40,717 between 1996 and 2006, which represents an increase of more than 13 per cent. By contrast, Pallinup, which incorporates mainly inland broadacre crop and livestock areas decreased from 12,087 to 10,644; a loss of nearly 12 per cent.

**Figure 2.2 Population Change in the Great Southern, 1996-2006**



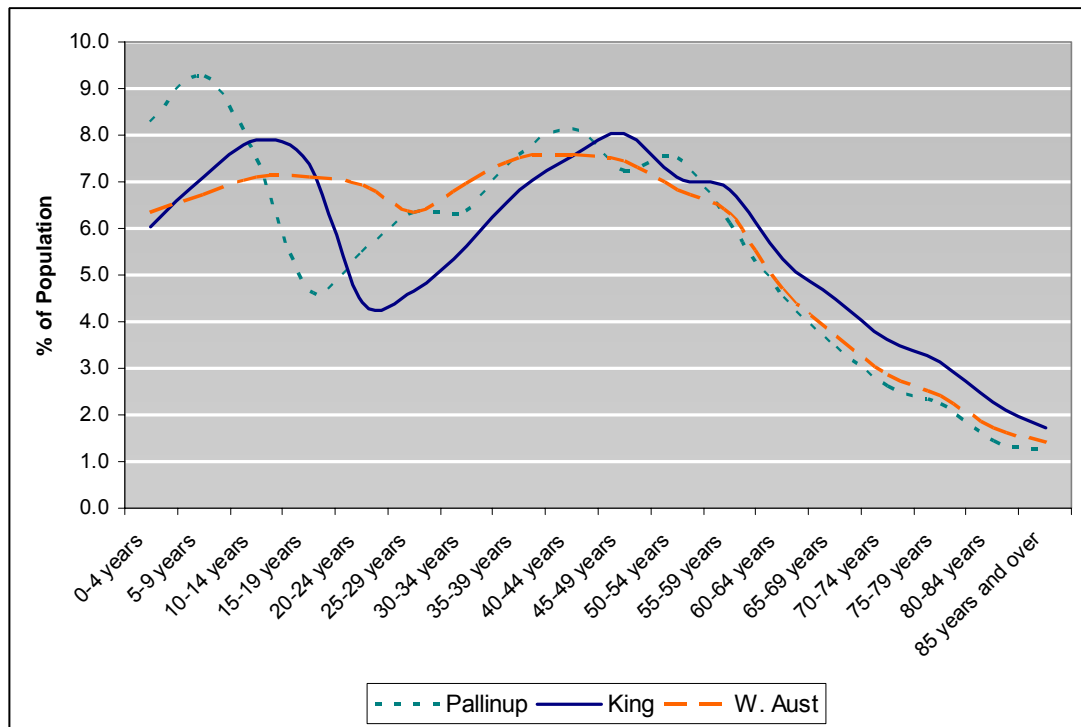
(Source: ABS, 2007)

As in many regional areas, both King and Pallinup have age structures that reflect the general out-migration of young people. When compared to Western Australia, King and Pallinup were under-represented in the 20-34 age cohorts at the 2006 census (Figure 2.3). For example, in King only 4.4 per cent of the population was aged between 20 and 24, compared to 6.9 per cent in Western Australia. In Pallinup, this imbalance extended to the 15-19 age cohort, which represented 4.6 per cent of the population, compared to 7.1 per cent of the Western Australian population. King and Pallinup had a slightly higher proportion of the population aged between 35 and 55 than Western Australian population as a whole.

Beyond the age of 55, King was uniformly over represented when compared with Western Australia and Pallinup. This is consistent with other coastal areas in Australia that have

experienced strong in-migration by retirees and lifestyle migrants over recent decades (Burnley and Murphy, 2004). This has two important implications for labour demand in the future. First, over the next decade or so, a relatively large proportion of the population will move into retirement, fuelling greater demand for ‘replacement labour’ to fill the gaps left by retirees. Secondly, the older age structure will shape the local economy and service sector, with increasing demand likely in areas such as recreation and leisure services, and health and social services.

**Figure 2.3 Age Structure of the Great Southern, 2006**



(Source: ABS, 2007)

Table 2.1 shows levels of internal migration between 2001 and 2006. When compared to Western Australia, Pallinup had a relatively stable population, with nearly 55 per cent living at the same address in 2006 as in 2001. By contrast, the population of King was quite mobile, with nearly 30 per cent living in a different local government area in 2001. This compares with 28.4 for Western Australia and 21.8 for Pallinup. The mobility of the population in King was a significant contributor to the population growth illustrated in Figure 2.2, and is not particularly unusual in rapidly developing coastal areas. Likewise, the relative stability of Pallinup is similar to other broadacre farming regions experiencing net-outmigration.

**Table 2.1 Population Mobility in the Great Southern, 2001-2006 (% of Pop'n)**

	Pallinup	King	WA
Same address as 2001	54.6	47.0	47.7
Same SLA as 2001, but different address	12.9	14.8	13.2
Different address in WA in 2001	18.0	26.5	21.7
Different address interstate in 2001	1.1	1.1	1.2
Overseas in 2001	2.7	2.2	5.5
Not stated	9.8	7.0	8.5

(Source: ABS, 2007)

## 2.3 The Regional Economy

### 2.3.1 Gross Regional Product

In overall terms, the economy of the Great Southern performed well between 2000/01 and 2005/06, with Gross Regional Product (GRP) increasing from \$1.6 to \$2.1 billion, representing annual growth of just under seven per cent (Table 2.2). While this lagged the overall Western Australian economy, this is in large part to the rapid growth experienced in the Pilbara and Goldfields, where the resource sector has fuelled unprecedented levels of activity.

**Table 2.2 Gross Regional Product in the Great Southern Region, 2000/01 - 2005/06**

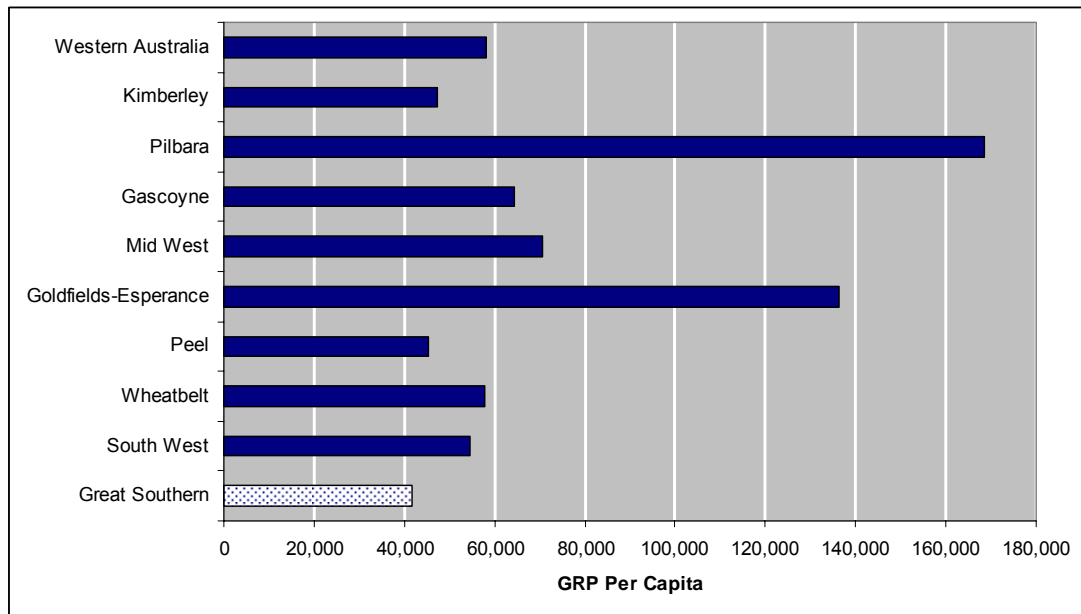
	2000/01		2005/06		Change 2001 - 2006	% Change
	\$ Billion	% of State	\$ Billion	% of State		
Great Southern	1.6	2.1	2.1	1.8	0.5	34.6
Western Australia	74.12	-	119.19	-	45.07	60.8

(Source: Department of Local Government and Regional Development, 2003; 2007)

While the overall performance of the region is very strong, in per capita terms the Great Southern was the lowest ranked of all of Western Australia's regions (Figure 2.3). In 2005/06, the Great Southern had per capital GRP of \$41,624, which was considerably less than the neighbouring regions of the Wheatbelt (\$57,926) and the South West (\$54,683). It was also considerably lower than the Western Australian average of \$58,116. However, the relatively low per capita GRP is not inconsistent with other Australian regions with relatively high numbers of retirees and lifestyle migrants.



**Figure 2.3 Gross Regional Product Per Capita in the Great Southern, 2005/06**



(Source: Department of Local Government and Regional Development, 2007)

**2.3.2 Local Economic Concentration**

Table 2.3 provides an indication of the economic drivers of the region, calculated from ABS employment data. The table presents location quotients (LQs) for each industry sector in the sub-regions of King and Pallinup. In simple terms, a location quotient is a ratio comparing local economic activity in a particular sector, with that in a wider reference economy – normally the national economy. A location quotient of greater than 1 suggests a local or regional advantage (or concentration of employment) in that sector. A location quotient of less than one suggests that the sector is not a ‘propulsive’ industry within the local economy.

In the Great Southern, it is clearly agriculture, forestry and fishing that provides the basis to the regional economy. In Pallinup, this sector is particularly dominant, with an LQ of 13.2. The only other basic industry in Pallinup is wholesaling, with a much lower LQ of 1.6. In King, agriculture, forestry and fishing is also the most important sector, though the region is less dependent on these industries than Pallinup. King also has a number of other industries with LQs greater than 1.0, including construction (1.2), retail trade (1.1), rental, hiring and real estate services (1.1) and education and training (1.1). The relatively high LQs in a number of these sectors are characteristic of regional centres, with Albany clearly playing an important role in King and the wider regional economy.

**Table 2.3 Location Quotients by Industry Sector in the Great Southern, 2006**

Industry Group	King	Pallinup
Agriculture, forestry & fishing	4.1	13.2
Mining	0.5	0.3
Manufacturing	0.8	0.4
Electricity, gas, water & waste services	0.9	0.7
Construction	1.2	0.5
Wholesale trade	0.6	1.6
Retail trade	1.1	0.6
Accommodation & food services	1.0	0.5
Transport, postal & warehousing	0.8	0.8
Information media & telecommunications	0.5	0.3
Financial & insurance services	0.5	0.3
Rental, hiring & real estate services	1.1	0.2
Professional, scientific & technical services	0.6	0.4
Administrative & support services	0.8	0.4
Public administration & safety	0.9	0.8
Education & training	1.1	0.9
Health care & social assistance	1.0	0.5
Arts & recreation services	0.6	0.1
Other services	1.0	0.8

(Calculated by the authors from ABS, 2007)

### 2.3.4 Enterprise Structure

In 2006, there were just under 5,000 private businesses in King. The largest sector in terms of the number of private enterprises was agriculture, forestry and fishing (comprising 33.2 per cent of the total) (Table 2.4). This compares with just 10.9 per cent of all businesses in Australia being engaged in this sector. Other significant sectors included property and business services (15.1 per cent, compared to 25.1 per cent nationally), construction (15 per cent, compared to 15.7 per cent nationally), and retail trade (10.4 per cent, compared to 11.1 per cent for Australia). Given the region's importance as a tourism destination, it is perhaps surprising that there were only 189 businesses (or 3.8 per cent) in the accommodation, cafes and restaurants sector, although this is still higher than the national average (2.8 per cent).

The dominance of farming in Pallinup is even higher than in King, with nearly 65 per cent of all enterprises in the agriculture, forestry and fishing sector in 2006. As a consequence, all other sectors were under-represented when compared to the national average. The only private sector enterprises of note beyond agriculture were property and business services (9.0 per cent), retail trade (5.8 per cent), and construction (5.3 per cent).

**Table 2.4 Percentage of Businesses by Industry Sector in the Great Southern, 2006**

<b>Industry Sector</b>	<b>King</b>	<b>Pallinup</b>	<b>Australia</b>
Agriculture, Forestry and Fishing	33.3	64.8	10.9
Mining	0.2	0.3	0.4
Manufacturing	4.6	2.4	5.4
Electricity, Gas and Water	0.1	0.0	0.1
Construction	15.0	5.3	15.7
Wholesale Trade	2.3	1.8	4.3
Retail Trade	10.4	5.8	11.1
Accommodation, Cafes and Restaurants	3.8	2.0	2.8
Transport and Storage	4.2	3.2	5.9
Communication Services	0.8	0.5	1.2
Finance and Insurance	3.2	1.7	6.6
Property and Business Services	15.1	9.0	25.1
Education	0.3	0.2	0.8
Health and Community Services	3.2	1.5	4.5
Cultural and Recreational Services	1.7	0.3	2.3
Personal and Other Services	2.0	1.2	2.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(Source: ABS, 2006)

The Great Southern is dominated by small and medium enterprises. In King (Table 2.5), the majority of businesses (62.3 per cent) were sole traders in 2006, with a further 20.4 per cent employing between one and four staff. Of the larger employers in King, the agriculture, forestry and fishing sector had 236 firms with five or more staff (including 14 with more than 50), while retailing had 168 businesses with more than five staff (including 12 with 50+). Other large employers included property and business services, which had 90 firms with five or more staff, and accommodation, cafes and restaurants, which had 78 in this category.

In Pallinup, there were 1,971 businesses in 2006, of which 1,002 (or 50.8 per cent) were sole traders (Table 2.6). A further 540 businesses (27.4 per cent) had between one and four employees. Larger employers included agriculture, forestry and fishing, which had 315 businesses that employed five or more staff (including 12 with 50+ employees). Retail trade had 33 businesses with five or more staff, while accommodation, restaurants and cafes had 18 in this category.

**Table 2.5 Number of Businesses by Employment in King, 2006**

	<b>No staff</b>	<b>1-4 staff</b>	<b>5-19 staff</b>	<b>20-49 staff</b>	<b>50+ staff</b>	<b>Total employing</b>	<b>Total</b>
Agriculture, Forestry and Fishing	1134	285	180	42	14	521	1656
Mining	9	0	0	0	0	0	12
Manufacturing	105	59	48	9	6	122	228
Electricity, Gas and Water	3	0	0	0	0	0	3
Construction	519	165	51	12	0	228	747
Wholesale Trade	51	33	24	9	0	66	114
Retail Trade	204	144	132	24	12	312	516
Accommodation, Cafes & Rest's	63	48	54	21	3	126	189
Transport and Storage	128	45	24	3	3	75	207
Communication Services	27	9	3	0	0	12	39
Finance and Insurance	123	27	12	3	0	42	159
Property and Business Services	540	120	78	9	3	210	750
Education	12	0	3	3	0	6	15
Health and Community Services	72	48	36	3	0	87	159
Cultural and Recreational Services	51	12	12	3	3	30	84
Personal and Other Services	63	24	12	3	0	39	102
<b>Total</b>	<b>3104</b>	<b>1019</b>	<b>669</b>	<b>144</b>	<b>44</b>	<b>1876</b>	<b>4980</b>

(Source: ABS, 2006)

**Table 2.6 Number of Businesses by Employment in Pallinup, 2006**

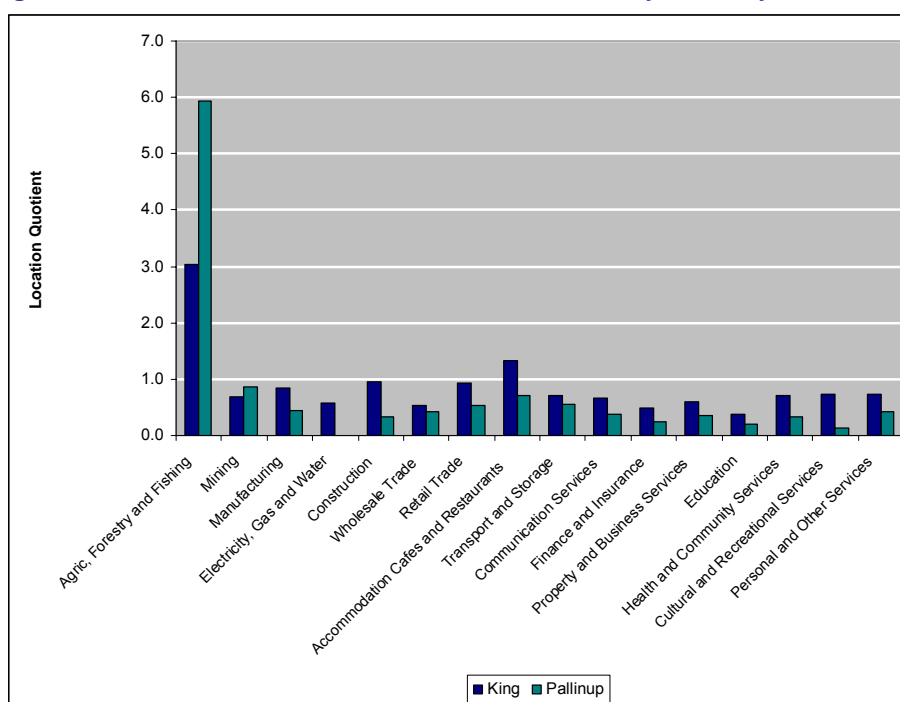
	<b>No staff</b>	<b>1-4 staff</b>	<b>5-19 staff</b>	<b>20-49 staff</b>	<b>50+ staff</b>	<b>Total employing</b>	<b>Total</b>
Agriculture, Forestry and Fishing	585	375	249	54	12	690	1278
Mining	0	0	0	0	0	0	6
Manufacturing	30	12	3	6	0	21	48
Electricity, Gas and Water	3	0	0	0	0	0	0
Construction	66	30	6	0	0	36	105
Wholesale Trade	18	9	12	0	0	21	36
Retail Trade	51	30	30	3	0	63	114
Accommodation, Cafes & Rest's	15	12	18	0	0	30	39
Transport and Storage	36	27	3	0	0	30	63
Communication Services	3	3	0	0	0	3	9
Finance and Insurance	24	6	3	3	0	12	33
Property and Business Services	141	27	6	3	3	39	177
Education	0	0	0	0	0	0	3
Health and Community Services	15	3	6	3	3	15	30
Cultural and Recreational Services	6	0	0	0	0	0	6
Personal and Other Services	9	6	3	0	0	9	24
<b>Total</b>	<b>1002</b>	<b>540</b>	<b>339</b>	<b>72</b>	<b>18</b>	<b>969</b>	<b>1971</b>

(Source: ABS, 2006)

The enterprise structure of both King and Pallinup are consistent with similar regions in other parts of Australia. Farming enterprises tend to dominate the business sector, with a range of small and medium enterprises servicing this sector and the broader population. The more diverse and growing economy in King was reflected by a wider range of businesses than in Pallinup. Moreover, businesses in King tended to be larger in terms of the number of employees. The continued growth of King is likely to see further increases in the number and size of businesses, particularly in the accommodation, cafes and restaurants, retail trade, and service sectors. In Pallinup, the near future is likely to see a degree of inertia, with little change in business numbers, or possibly a marginal contraction as individual farms are amalgamated and expanded. In addition, improving transport links and changing patterns of business interaction are likely to see an increasing number of retail, service and other functions delivered from regional centres, or even the Perth metropolitan area.

Location quotients were calculated for private enterprises in King and Pallinup to provide an indication of the relative importance of different business sectors (Figure 2.4). The results are broadly consistent with the LQs calculated for employment (Table 2.3), and clearly show agriculture, forestry and fishing as the propulsive sector of both the King and Pallinup economies. The only other propulsive industry in the region was accommodation, cafes and restaurants, which has an LQ of 1.3 in the King subdivision. This reflects the growing importance of tourism, particularly in Albany, Denmark and Plantagenet. However, it also points to the much greater importance of agriculture, which has an LQ of 3.0. Thus, while tourism is certainly an important component of the regional economy, it continues to fall well below agriculture which, in real terms, remains the region’s most significant industry.

**Figure 2.4 Location Quotients for Businesses by Industry Sector, 2006**



(Calculated by the authors from ABS, 2007)

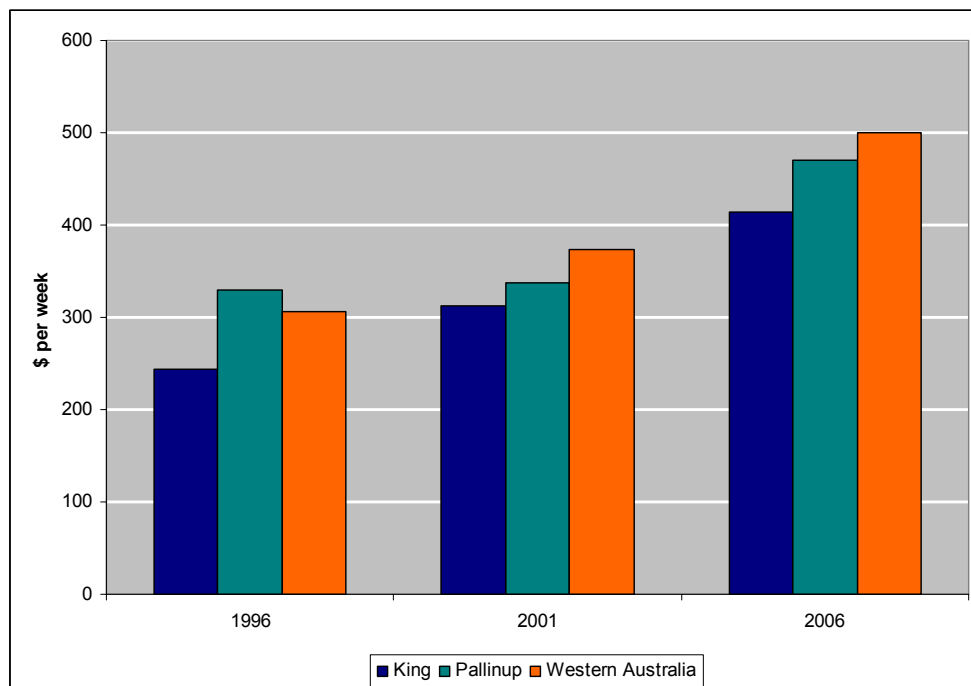
### 2.3.5 Income Distribution

One of the major issues facing businesses and public sector organisations in attracting and retaining labour is the capacity to pay competitive wages. Figure 2.5 shows changing median individual incomes between 1996 and 2006 for King, Pallinup and Western Australia. It shows that, in 1996, median incomes in King were 79.5 per cent of the State average (\$307 per week), while in Pallinup incomes were 107.2 per cent of the State average. In simple terms, this means that incomes in the Great Southern were considerably lower than those being earned elsewhere, while Pallinup was more competitive than WA as a whole.

By 2006, the competitiveness of the incomes being received in the Great Southern had, in general terms, deteriorated against the State average. While King improved its position against the Western Australian average between 1996 and 2006 (from 79.5 per cent to 82.8 per cent), Pallinup decreased over the same period, falling from 107.2 per cent to 94 per cent.

The incomes in the Great Southern are largely a reflection of the structure of the economy. The high level of dependence on agriculture – an industry that is experiencing significant cost, price and profit pressures – means that wages tend to be lower than in regions dependent on other industries (e.g. mining). The economic flow-on effects within the regional economy, generally means that other businesses are unlikely to pay wages commensurate with those in other areas. The growing role of tourism in King is unlikely to help address the problem, since this sector is not normally recognised as a high wage and salary industry.

**Figure 2.5 Median Individual Weekly Income in the Great Southern, 2006**



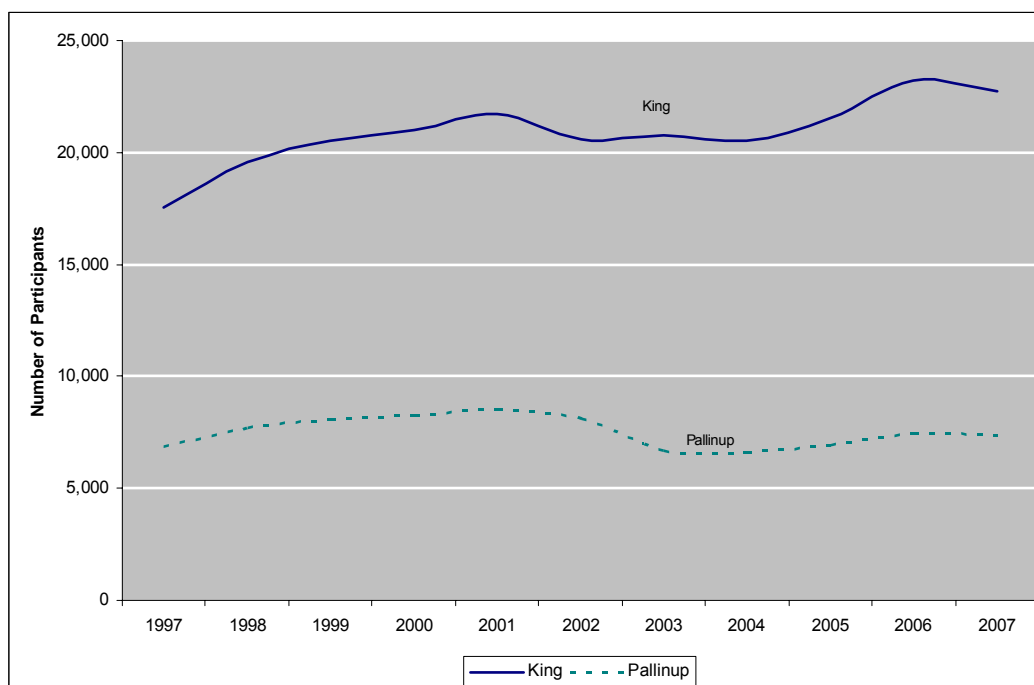
(Source: ABS, 2007)

## 2.4 The Labour Force

### 2.4.1 Employment and Unemployment Trends

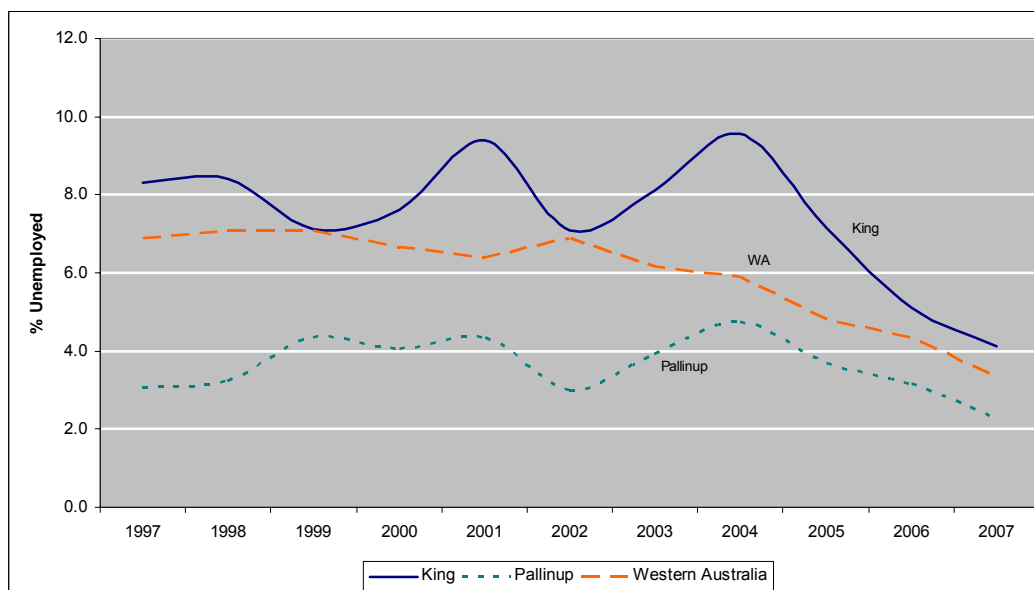
The Department of Employment and Workplace Relations' Small Area Labour Market data show the total workforce of King increasing steadily between 1997 and 2007 (Figure 2.6). During this period, the estimated labour force increased from 17,546 to 22,760; an annual rate of growth of 2.7 per cent. By contrast, the labour force in Pallinup rose marginally over the same period, from 6,882 to 7,338; an annual rate of growth of 0.6 per cent. However, Pallinup's labour force peaked at 8,262 in 2000; a decline of 924 on the 2000 labour force (-1.6 p.a.). This volatility is largely the result of the sub-region's high level of dependence on agriculture, which experienced difficult trading and environmental conditions during the early to mid 2000s.

**Figure 2.6 Estimated Size of the Labour Force in the Great Southern, 1996-2007**



(Source: DEWR, various issues)

In terms of unemployment rates, the King statistical subdivision remained above the State average for the entire period 1997-2007 (Figure 2.7). The unemployment rate fell from 8.3 per cent in 1997 (having been 10.3 per cent in 1996) to 4.1 per cent in 2007. Like many agricultural areas, the unemployment rate in Pallinup remained very low, and was consistently well below the State average between 1997 and 2007. Unemployment peaked at 4.7 per cent in 2004, before falling to just 2.3 per cent in 2007. The low unemployment rates in King and Pallinup are symptomatic of very tight supply conditions in the labour market, emphasising the need to focus on the attraction and retention of employees.

**Figure 2.7 Unemployment Rates in the Great Southern, 1996-2007**

(Source: DEWR, various issues)

#### 2.4.2 Labour Force Participation

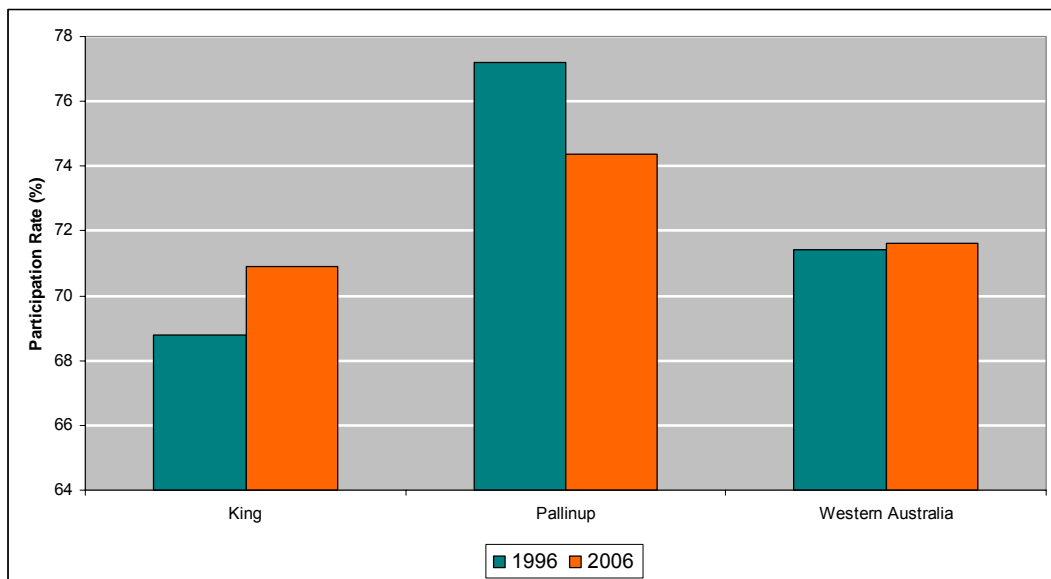
Labour force participation rates vary considerably within the Great Southern (Figure 2.8). In King, participation rates were lower than the State average in both 1996 and 2006, although had increased from 68.8 per cent to 70.9 per cent. On the surface, this would suggest that there is at least some scope to better engage non-participants in the labour force. However, it is not uncommon in retirement and lifestyle communities to find slightly lower participation rates than elsewhere.

In contrast to King, the subdivision of Pallinup had much higher rates of participation than in Western Australia as a whole (Figure 2.8). In 1996, the rate was 77.2 per cent and, while it had fallen to 74.4 per cent by 2006, was still well above the Western Australian rate of 71.6 per cent. The reason for the decrease in participation between 1996 and 2006 is not entirely clear, but may be the result of deteriorating conditions in agriculture and a consequent withdrawal of some members of the population from active engagement in the labour force.

Figure 2.9 shows how labour force participation rates varied across different age cohorts in 2006. In King, rates of participation were higher than the Western Australian average between the ages of 15 and 24 (peaking at 78.6 per cent for 20-24 year olds), before dropping in the 25-39 year age cohorts. For much of the remainder of the age range the profile was close to the State average, although the 65+ age groups were slightly higher than for Western Australia as a whole.

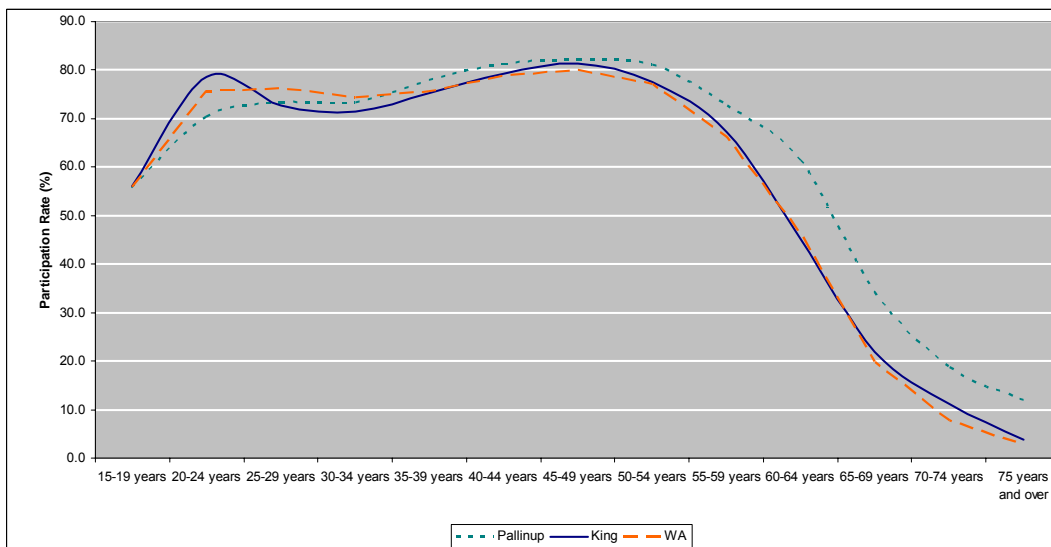


**Figure 2.8 Labour Force Participation Rates in the Great Southern, 1996-2006**



(Source: Calculated by the authors from ABS, 2007)

**Figure 2.9 Labour Force Participation in the Great Southern by Age, 1996-2006**



(Source: ABS, 2007)

In the case of Pallinup, the level of participation remained lower than the State average until the mid 30s age groups (Figure 2.9). From this period on, the rate of participation was uniformly higher than in Western Australia as a whole. In part, this was a reflection of the relative age of the agricultural labour force in Pallinup which, as in much of rural Australia, was older than in other sectors. While the overall rate of participation in Pallinup was very high, lower levels of participation amongst people in the 20-34 year age cohorts suggest that there may be some scope for targeting these components of the population for better engagement in the labour force. However, in real terms, this section of the population is quite small and, on its own, is unlikely to provide a major injection of potential employees into the regional labour market.

### 2.4.3 Employment by Industry Sector

In both King and Pallinup, agriculture, forestry and fishing was the dominant employer in 2006, comprising 12.7 and 40.7 per cent of the workforce, respectively (Table 2.7). These proportions were considerably higher than the Western Australian average of 3.3 per cent. The labour force of King was more diverse than Pallinup, with other major employers including retail trade (12.7 per cent) and construction (9.3 per cent). There was also a large basic services sector, with health care and social assistance (10.7 per cent) and education and training (8.4 per cent) major employers in the region. Much of this activity was concentrated in the regional centre of Albany.

In Pallinup, the dominance of agriculture, forestry and fishing in the labour market meant that the percentages of workers in other sectors were quite low. After agriculture, retail trade is the next largest employer (7.3 per cent), followed by education and training (7.1 per cent) and wholesale trade (7.0 per cent). Public administration and safety, and health care and social assistance were the only other sectors with five per cent or more of the workforce.

**Table 2.7 Percentage of the Labour Force in Different Industry Sectors in the Great Southern**

Industry Sector	King	Pallinup	W. Aust
Agriculture, forestry & fishing	12.7	40.7	3.3
Mining	0.6	0.4	4.3
Manufacturing	8.3	3.8	9.4
Electricity, gas, water & waste services	0.9	0.7	1.0
Construction	9.3	3.6	9.1
Wholesale trade	2.6	7.0	4.0
Retail trade	12.7	7.3	11.1
Accommodation & food services	6.5	3.1	5.8
Transport, postal & warehousing	3.6	3.8	4.2
Information media & telecommunications	0.9	0.5	1.3
Financial & insurance services	2.0	1.3	2.9
Rental, hiring & real estate services	1.8	0.4	2.0
Professional, scientific & technical services	3.9	2.6	6.3
Administrative & support services	2.6	1.1	3.2
Public administration & safety	6.1	5.3	6.4
Education & training	8.4	7.2	7.7
Health care & social assistance	10.7	5.1	10.2
Arts & recreation services	0.8	0.1	1.2
Other services	3.5	3.1	3.8
Other	2.1	2.8	2.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(Source: ABS, 2007)

### 2.4.4 Shift-Share Analysis

Table 2.8 presents the findings of a shift-share analysis of employment change in the King statistical subdivision for the period 2001 to 2006 (see Appendix 1 for a description of Shift-Share Analysis). It shows the total change in employment for each industry sector, and the different components (national share, industry composition, or regional shift) that have

contributed to growth/decline. Overall, the labour force of King increased by 1,977 (or 12.3 per cent) between 2001 and 2006, with national processes contributing to more than 1,500 of these. The industry composition component of King over the same period was negative (-279), while local competitive advantage contributed to an additional 691 jobs.

The most significant increases in employment between 2001 and 2006 occurred in: manufacturing (25.9 per cent); construction (28 per cent); financial and insurance services (28.0 per cent); public administration and safety (25.1 per cent); and health care and social assistance (34.1 per cent). While the major driver of growth was the national component, regional shift played an important role in a number of these sectors, particularly manufacturing, and health care and social assistance. The region's industry composition proved a major drag on employment growth, particularly for agriculture, forestry and fishing, manufacturing, and wholesale trade (which also declined as a result of local factors).

**Table 2.8 Shift-Share Decomposition of Employment Change by Industry in King, 2001-2006**

Industry Sector	National Share	Industry Composition	Regional Shift	Total	% Change
Agriculture, forestry & fishing	233	-595	259	-103	-4.3
Mining	5	17	31	53	101.9
Manufacturing	116	-151	344	309	25.9
Electricity, gas, water & waste services	14	9	-4	19	13.6
Construction	127	275	-35	367	28.0
Wholesale trade	64	-98	-154	-188	-28.5
Retail trade	186	44	154	384	20.0
Accommodation & food services	115	-40	-77	-2	-0.1
Transport, postal & warehousing	53	7	44	104	19.0
Information media & telecommunications	20	-48	-18	-46	-22.1
Financial & insurance services	28	5	47	80	28.0
Rental, hiring & real estate services	24	-1	49	72	28.8
Professional, scientific & technical services	58	0	38	96	16.1
Administrative & support services	51	-32	-83	-64	-12.1
Public administration & safety	86	143	-7	222	25.1
Education & training	131	22	19	172	12.7
Health care & social assistance	140	156	196	492	34.1
Arts & recreation services	17	2	-44	-25	-15.2
Other services	59	-45	21	35	5.8
Other	38	51	-89	0	0.0
<b>Total</b>	<b>1565</b>	<b>-279</b>	<b>691</b>	<b>1977</b>	<b>12.3</b>

(Calculated by the authors from ABS, 2007)

In Pallinup, total employment decreased by 200 jobs between 2001 and 2006, representing a fall of 3.7 per cent (Table 2.9). The losses were entirely the result of industry composition and regional shift components. This indicates that both the mix of industries and local economic conditions are constraining the potential for growth in Pallinup. The most significant declines were recorded in: agriculture, forestry and fishing (-8.6 per cent); manufacturing (-32.4 per cent); administration (-44.1 per cent); and retail trade (-7.8 per cent). Of particular concern is the decline in agriculture, where the high level of dependency on this industry contributed to a marked decline in the 'industry mix' component. The other industry hit particularly hard was manufacturing, with a net loss of nearly 100 positions. The major contributors to the decline were regional shift and industry mix components, suggesting that local factors and close links with agriculture were the major drivers of the contraction in this sector.

**Table 2.9 Shift-Share Decomposition of Employment Change by Industry in Pallinup, 2006**

Industry Sector	National Share	Industry Composition	Regional Shift	Total	% Change
Agriculture, forestry & fishing	222	-567	149	-196	-8.6
Mining	1	2	11	14	233.3
Manufacturing	28	-37	-85	-94	-32.4
Electricity, gas, water & waste services	3	2	3	8	27.6
Construction	18	38	-53	3	1.6
Wholesale trade	23	-35	139	127	54.3
Retail trade	40	9	-81	-32	-7.8
Accommodation & food services	17	-6	-29	-18	-10.0
Transport, postal & warehousing	15	2	18	35	22.2
Information media & telecommunications	4	-9	-8	-13	-33.3
Financial & insurance services	6	1	-8	-1	0.0
Rental, hiring & real estate serv's	2	0	-3	-1	-4.5
Professional, scientific & technical services	12	0	-3	9	7.3
Administrative & support services	10	-6	-49	-45	-44.1
Public administration & safety	24	39	-36	27	11.1
Education & training	37	6	-55	-12	-3.1
Health care & social assistance	25	28	-54	-1	0.0
Arts & recreation services	2	0	-17	-15	-68.2
Other services	15	-12	2	5	3.8
Other	14	19	-33	0	0.0
<b>Total</b>	<b>518</b>	<b>-526</b>	<b>-192</b>	<b>-200</b>	<b>-3.7</b>

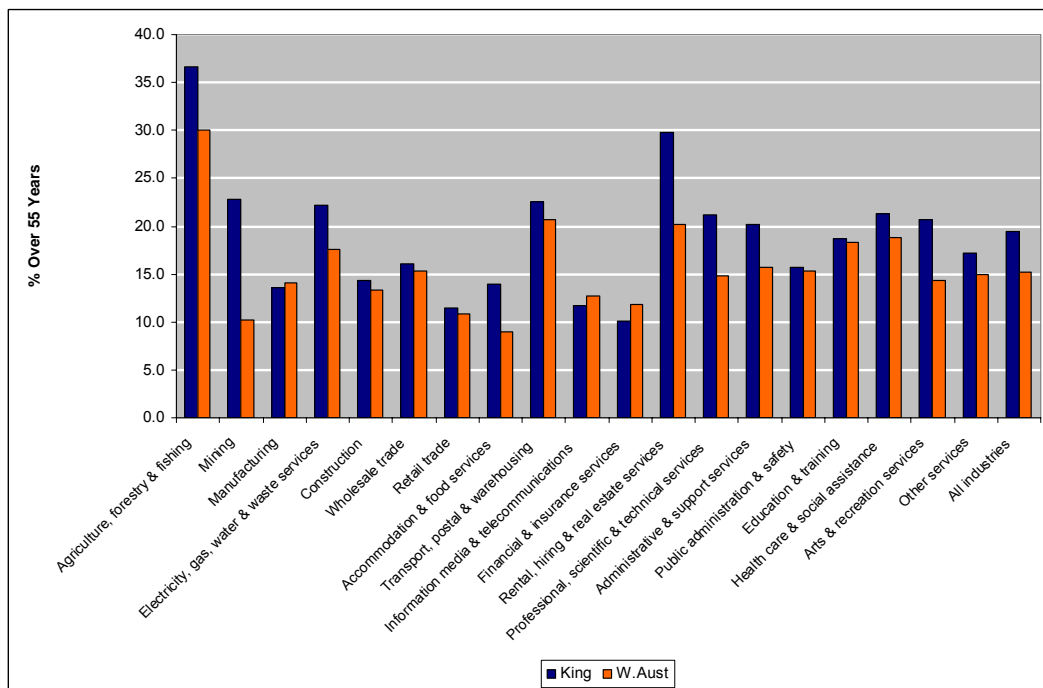
(Calculated by the authors from ABS, 2007)

### 2.4.5 The Ageing of the Labour Force

One of the major issues facing regional Australia is the ageing of the labour force. In many sectors, an increasing proportion of the population is within 10 years of the official retirement age of 65 years. In the Great Southern, there are a number of sectors where the ageing of the population is a significant issue, notably: agriculture, forestry and fishing; health care; and a number of other service sectors. All of these sectors risk losing a significant proportion of their workforce over the next 10 years.

At the 2006 census, the oldest sector in the King subdivision was agriculture, forestry and fishing, with 37 per cent of the workforce over the age of 55 (compared with the WA average of 30.1 per cent)(Figure 2.10). Other sectors with more than 20 per cent of workers over 55 years were: rental, hiring and real estate services (29.8 per cent); electricity, gas and water (22.6 per cent); health care and social assistance (21.4 per cent); and arts and recreational services (20.7 per cent).

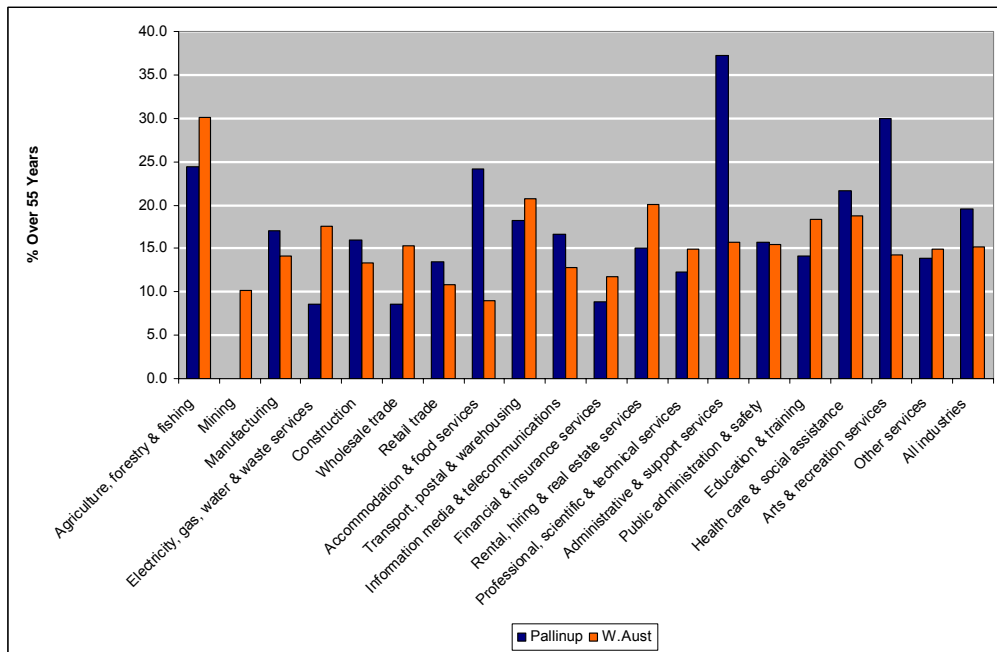
**Figure 2.10 Proportion of Labour Force Over 55 Years of Age by Industry in King, 2006**



(Source: ABS, 2007)

The ageing of the workforce was also a significant issue in a number of sectors in Pallinup (Figure 2.11). Those sectors with more than 20 per cent of the workforce over 55 years included: administrative and support services (37.3 per cent); arts and recreational services (30 per cent); agriculture, forestry and fishing (24.4 per cent); accommodation and food services (24.1 per cent), and health care and social assistance (21.6 per cent).

**Figure 2.11 Proportion of Labour Force Over 55 Years of Age by Industry in Pallinup, 2006**

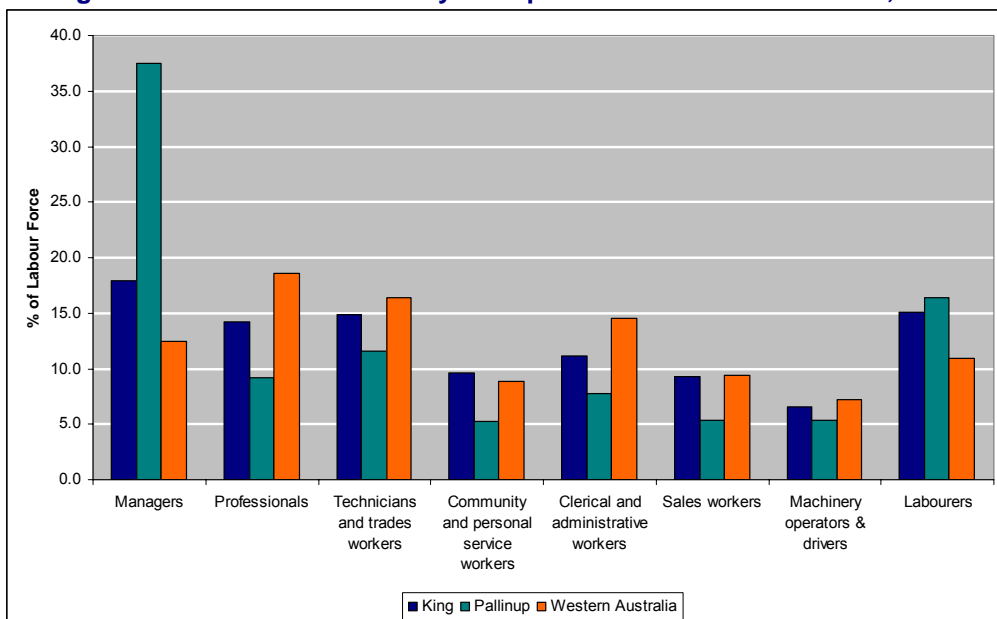


(Source: ABS, 2007)

**2.4.6 Occupational Structure of the Labour Force**

In terms of occupational structure in the Great Southern, Figure 2.12 indicates that the most common occupation is managers, which is well above the State average. This is largely as a result of the dominance of family farms, where the farm owner is regarded as a manager. Most other sectors are under-represented compared to WA as a whole, although the proportion of labourers is higher in both subdivisions. This reflects the mix of industries in the subdivisions, many of which have relatively high unskilled or semi-skilled labour demand.

**Figure 2.12 Labour Force by Occupation in the Great Southern, 2006**

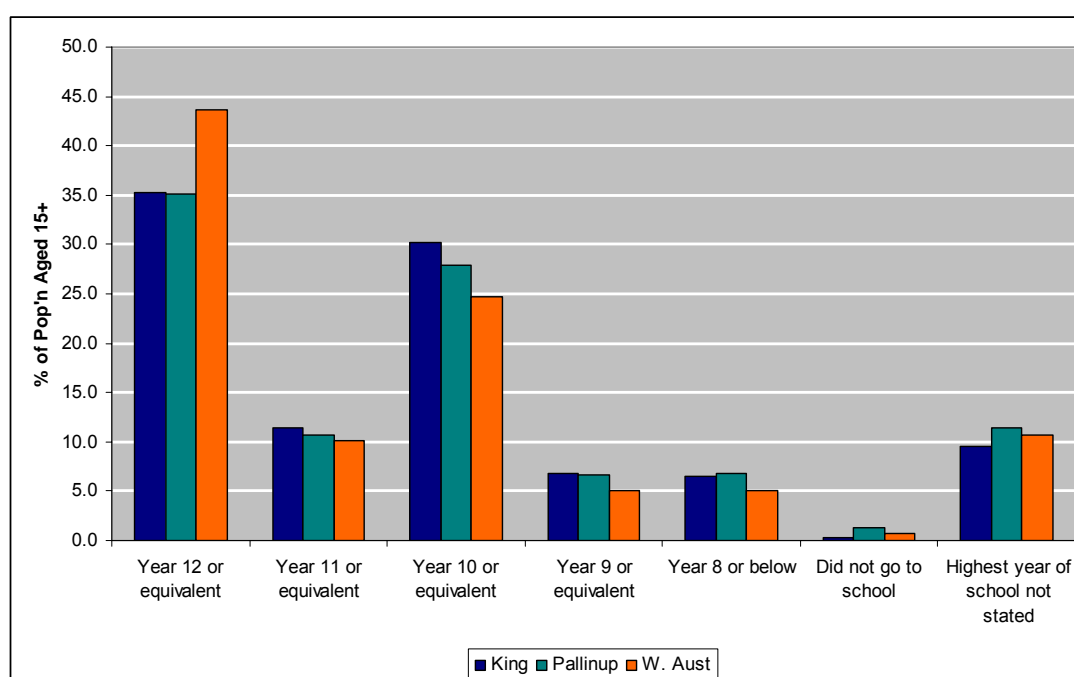


(Source: ABS, 2007)

## 2.5 The Education Base of the Region

The highest level of schooling achieved by residents in the Great Southern was lower than the Western Australian average in 2006 (Figure 2.13). This is not unusual in regions where primary and secondary industries dominate the local economy, and levels of required formal training are lower than in other sectors. In King and Pallinup, just over 35 per cent of people over the age of 15 had completed schooling to year 12 at the 2006 census, compared with 43.7 per cent for the Western Australian population. By contrast, King and Pallinup had much higher levels of completion to year 10 or 11 than the Western Australian average. The proportion people who had completed school prior to year 10 was relatively low, though still higher than for Western Australia as a whole.

**Figure 2.13 Highest Level of Schooling in the Great Southern, 2006<sup>1</sup>**



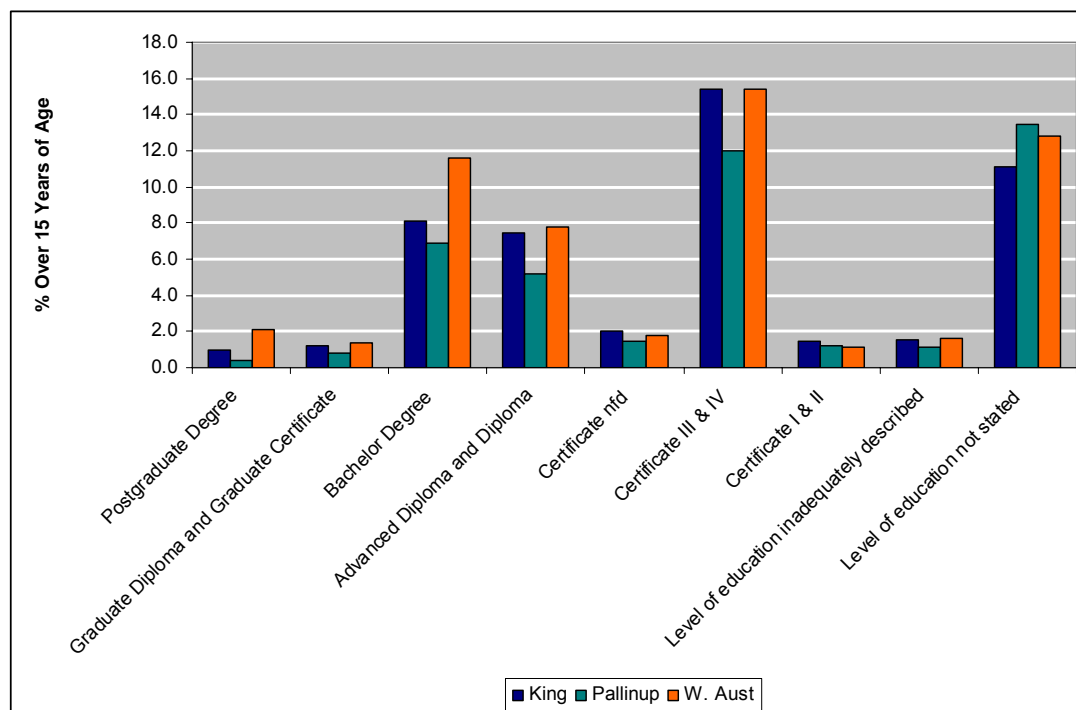
(Source: ABS, 2007)

Levels of post school education in the Great Southern vary considerably across the region (Figure 2.14). In King and Pallinup, the proportion of people with bachelors level education or higher was 10.3 per cent and 8.1 per cent respectively, which compares to 15.1 per cent for Western Australia as a whole. In King, the slightly higher figure than Pallinup is predominantly due to the mix of enterprises and services in the regional centre of Albany, which had a higher number of people in occupations and sectors requiring formal university level qualifications (e.g. in health, education etc.).

<sup>1</sup> For those no longer at school.

The proportion of people with Advanced Diploma qualifications was also higher in King (7.5 per cent) than Pallinup (5.2 per cent). Indeed, King was on par with the Western Australian average of 7.8 per cent. A similar situation exists with regard to certificate level qualifications, with both King and Western Australia having 15.4 per cent of people with certificate III or IV (normally equated with 'trade' level qualifications). Pallinup was slightly lower at 12 per cent. Certificate level I and II qualifications were uniformly low in King, Pallinup and Western Australia, at less than 1.5 per cent.

**Figure 2.14 Post School Qualifications in the Great Southern, 2006**



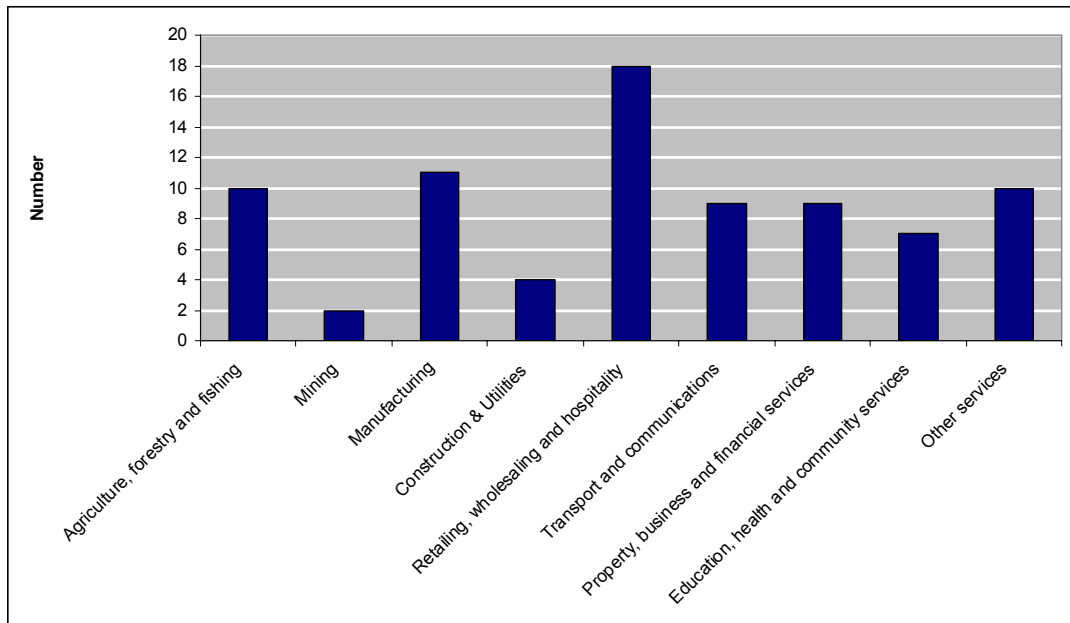
(Source: ABS, 2007)

## 2.6 Employer Perspectives

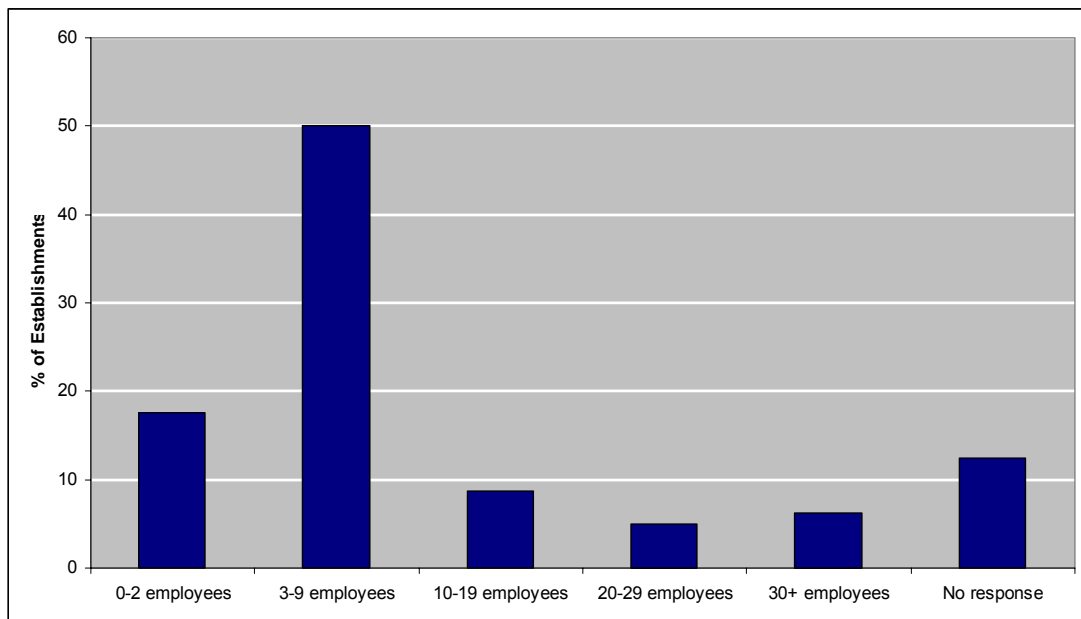
In 2006, a survey of private enterprises and public sector organisations was conducted to elicit employer perspectives on issues such as skilled labour shortages, employee attraction and retention, and local economic conditions. In the Great Southern, 80 responses were received from a range of industry sectors (Figure 2.15), with the highest number of respondents from: retailing, wholesaling and hospitality; manufacturing; agriculture, forestry and fishing; and, other services. The majority of respondents (50 per cent) in the Great Southern had between three and nine employees, with sole traders or organisations with less than three employees accounting for 17.5 per cent of respondents (Figure 2.16). A total of 13.8 per cent of respondents had between 10 and 29 employees, while just 6.2 per cent had more than 30 staff.



**Figure 2.15 Surveyed Establishments in the Great Southern by Industry Sector**



**Figure 2.16 Surveyed Establishments in the Great Southern by Employees**

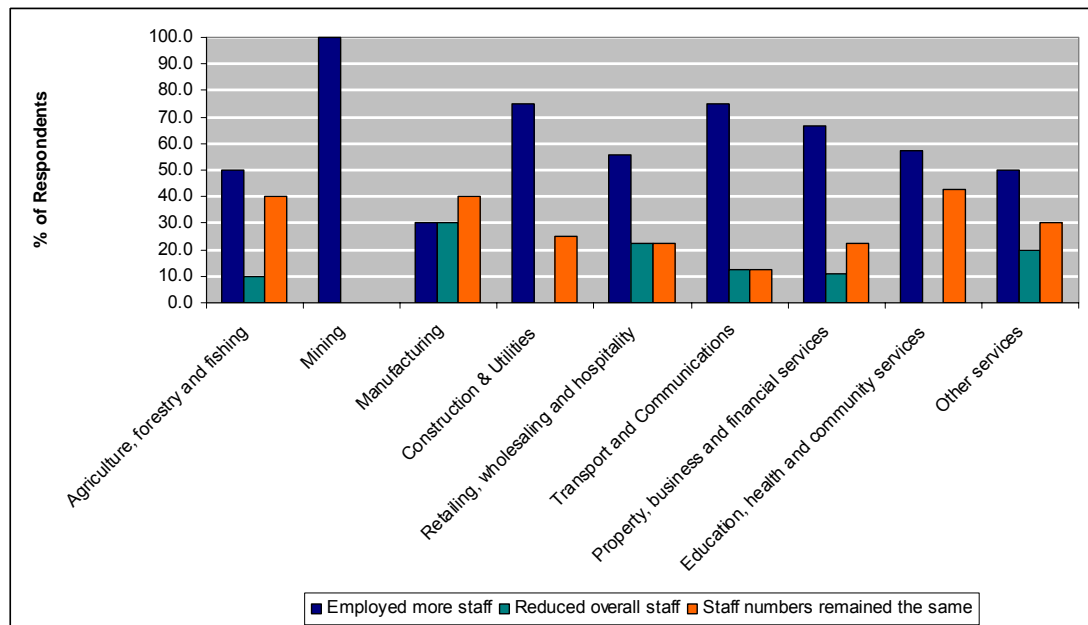


The majority of organisations (55 per cent) had increased the number of employees over the five years 2001-2006, while just 15 per cent reported a decrease (Figure 2.17). The sectors with the highest proportion of firms reporting an increase in employment included: mining; construction and utilities; retailing, wholesaling and hospitality; transport and communications; and property, business and financial services. This was broadly consistent with those sectors recording increases in employment at the 2006 census. Moreover, it is a

reflection of the nature of the regional economy of the Great Southern, with increasing levels of tourism and recreation occurring in the area, together with significant growth in the coastal and high amenity areas linked to lifestyle related in-migration. New industries such as agroforestry and mining are also contributing to rising levels of employment within existing firms and organisations.

There were, however, a number of firms and organisations that reported decreasing or stable employment levels. The majority of these were in manufacturing and retailing, wholesaling and hospitality. An analysis of the location of these respondents indicates that these trends were most significant in those inland areas highly dependent on agriculture. It was these establishments that were most affected by processes associated with farm amalgamation and expansion, out-migration, and economic contraction.

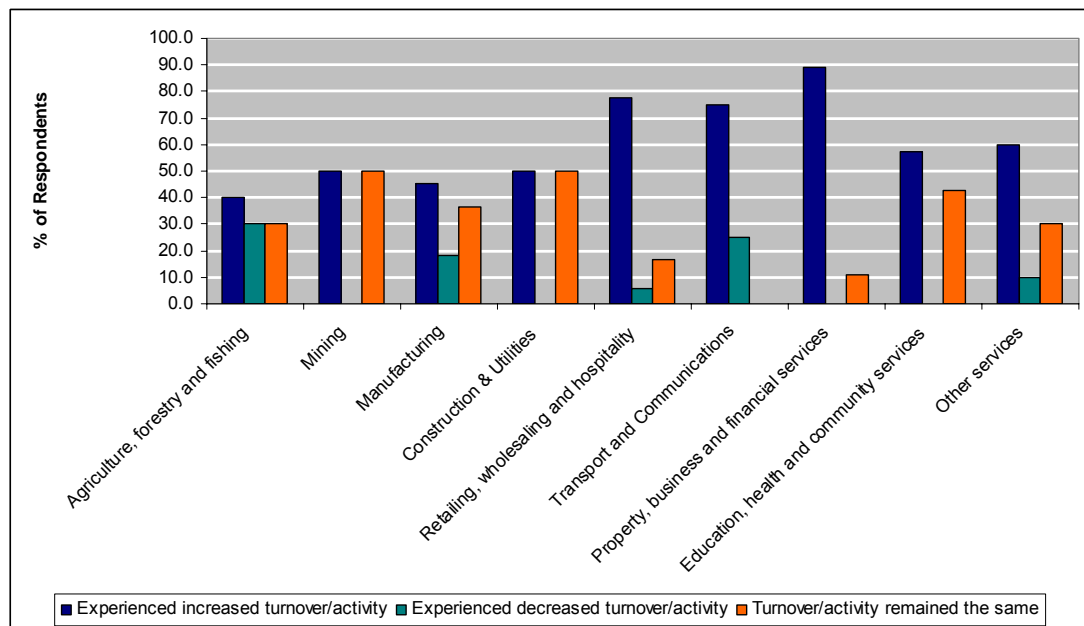
**Figure 2.17 Changes in Employee Numbers Between 2001 and 2006 in the Great Southern**



As with total employment, the majority of firms and organisations (63.3 per cent) reported an increase in either turnover or activity between 2001 and 2006 (Figure 2.18). Only 11.4 per cent recorded a decrease over this period, while 25.3 per cent recorded little change. The sectors to record the most significant growth were: retailing, wholesaling and hospitality (77.8 per cent of firms in this sector); property, business and financial services (88.9 per cent); and transport and communications (75 per cent). In all other sectors, between 40 and 60 per cent of firms and organisations recorded an increase in turnover/activity between 2001 and 2006.

For those firms and organisations reporting either stability or a decrease in turnover or activity, almost all were located outside of the City of Albany or the shires of Denmark and Plantagenet; the three local government areas that experienced the most significant economic and population growth between 2001 and 2006. The firms and organisations with relatively high proportions reporting either stability or decrease included: agriculture, forestry and fisheries (60 per cent); manufacturing (54.6 per cent); construction and utilities (50 per cent); and education health and community services (42.9 per cent).

**Figure 2.18 Changes in Turnover/Activity Between 2001 and 2006 in the Great Southern**



Increasing levels of employment, turnover and activity were accompanied by recruitment difficulties for a number of firms and organisations in the Great Southern (Figure 2.19). A total of 48.1 per cent of firms and organisations reported difficulties in recruiting staff. Those sectors most affected included: transport and communications (75 per cent of firms in the sector); other services (70 per cent); manufacturing (63.6 per cent); and construction and utilities (50 per cent). These sectors have also been reported as facing major labour shortages nationally, and at a State level (BTRE, 2006).

A number of sectors had relatively few firms and organisations reporting difficulties recruiting staff, indicating that labour shortages tend to be an industry specific phenomenon linked closely to the economic structure of particular regions and localities. Sectors with few firms and organisations reporting difficulties in recruitment included: agriculture, forestry and fishing (20 per cent of firms in the sector reporting difficulties); property, business and financial services (33.3 per cent); and retailing, wholesaling and hospitality (38.9 per cent).

**Figure 2.19 Proportion of Establishments in the Great Southern Reporting Difficulties in Recruiting Staff**

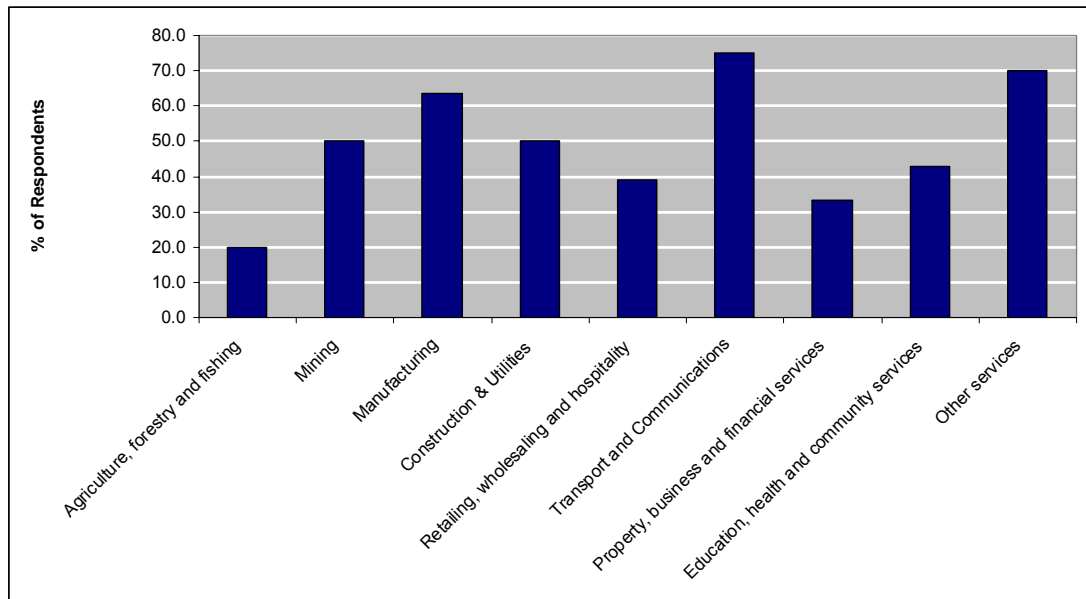
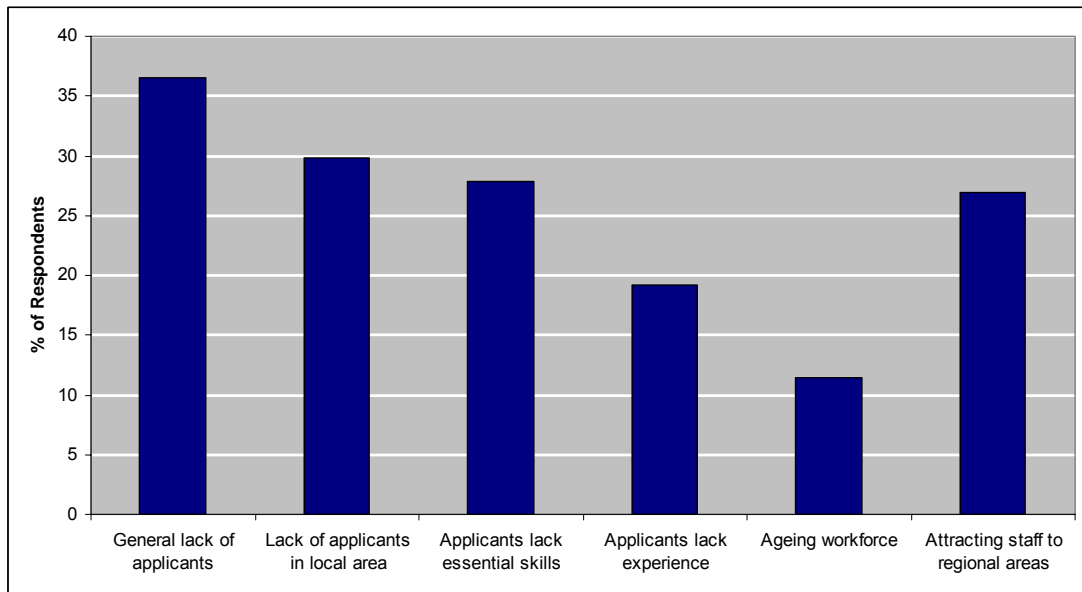


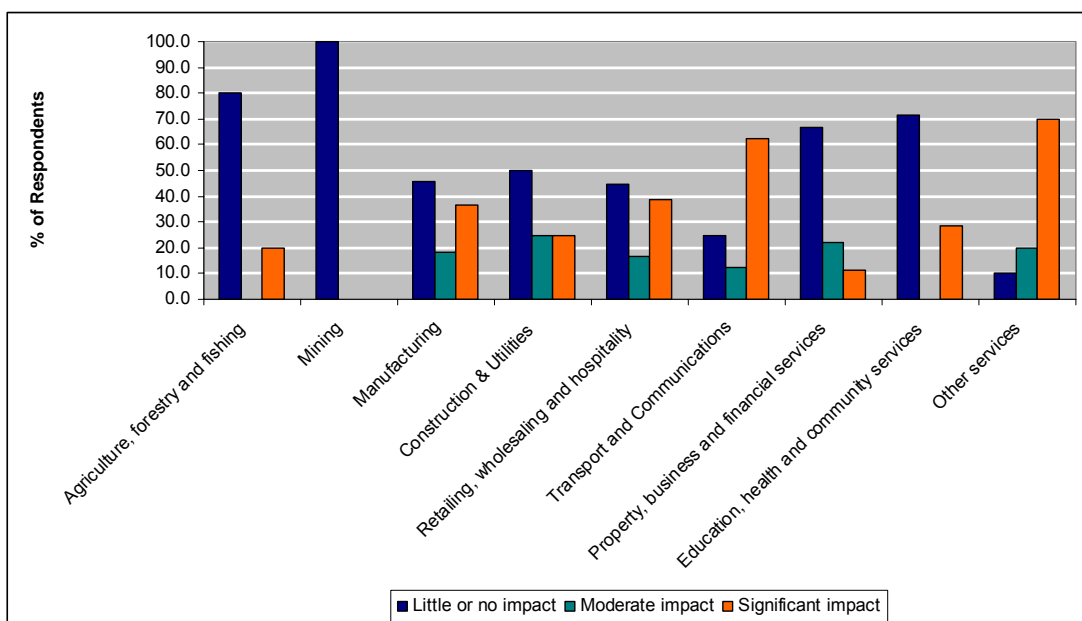
Figure 2.20 shows the reason given by firms and organisations for the difficulties in recruiting staff. The most common reason reflects broader national and State-wide challenges during a period of low unemployment and labour growth – a general lack of applicants (36.5 per cent). For many employers, the problem was a lack of applicants within the local area (defined as within 50 kilometres of the firm/organisation). The issue of skills shortages was also apparent, with 27.9 per cent of respondents reporting that applicants lacked essential skills, and 19.2 per cent indicating that applicants did not have adequate experience. While an ageing workforce is looming as a significant issue for many industries, respondents generally did not consider this to be a major issue, with only 11.9 per cent indicating this as a problem. More significant was the challenge of attracting staff to regional areas, with 26.9 per cent of respondents indicating that this was an important issue. This, of course, is also linked to issues such as the capacity of regions to pay competitive wages and offer attractive workplace conditions.

**Figure 2.20 Nature of Labour Shortages for Establishments Reporting Difficulties Recruiting Staff in the Great Southern**



The impact of difficulties in recruiting labour varied across industry sectors in the Great Southern (Figure 2.21). Across all sectors, 49.4 per cent of respondents indicated that it had little or no impact on their activities. Amongst particular sectors, the impact was least in: agriculture, forestry and fishing (80 per cent reporting little or no impact); mining (100 per cent); property and business services (66.7 per cent); and education, health and community services (71.4 per cent).

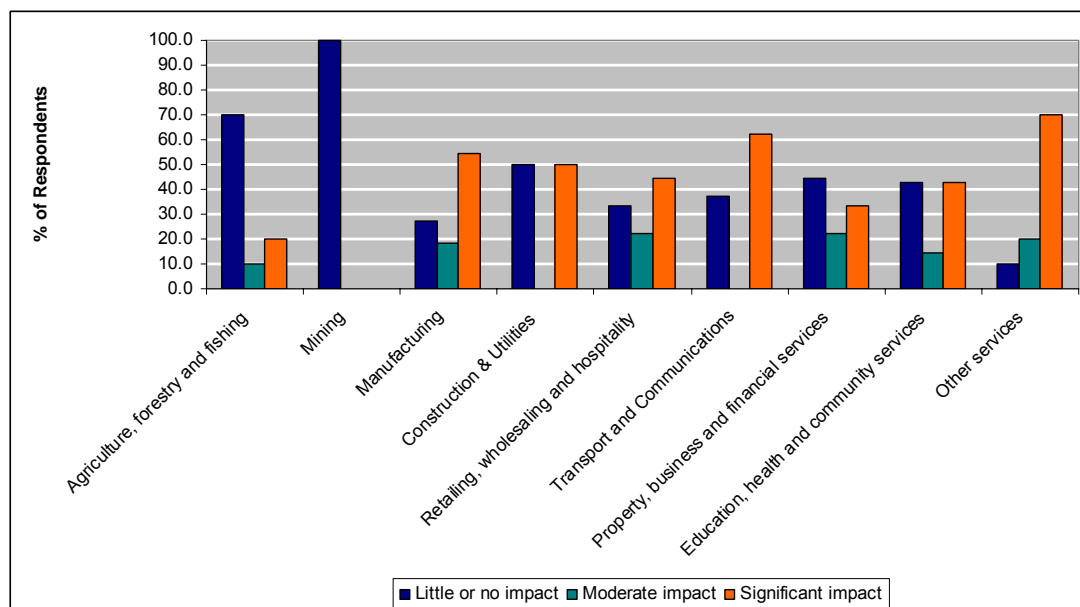
**Figure 2.21 Impact of Difficulties in Recruiting Staff on Establishments in the Great Southern**



While for some sectors the reported impacts of recruitment difficulties were minimal, for others the impact was more significant. These sectors included: other services (70 per cent); transport and communications (62.5 per cent); and retailing, wholesaling and hospitality (38.9 per cent). Perhaps surprisingly, a number of the sectors reporting difficulties in recruiting staff did not indicate that this had a major impact, including construction and utilities, and manufacturing. In part, this is because these industries are often able to absorb a degree of labour shortfall and maintain output, largely through working longer shifts or through a range of efficiency measures. However, in the longer run, such measures are unlikely to provide a sustainable solution in a growing economy such as the Great Southern, where eventually labour supply issues will need to be tackled if growth is to be sustained.

In terms of skilled labour, difficulties in recruiting appropriately trained staff had mixed impacts on firms and organisations (Figure 2.22). Across all sectors, 39.2 per cent of firms and organisations indicated that difficulties in recruiting skilled labour had little or no impact, while 15.2 per cent reported a moderate impact, and 45.6 per cent reported a significant impact. Thus, it is clear that it is shortages of skilled labour, as opposed to a more general labour shortage, that are having the most impact in the Great Southern. The industries reporting the most severe impacts as a result of skilled labour shortages included: manufacturing; construction and utilities; retailing, wholesaling and hospitality; transport and communications; education, health and community services; and other services.

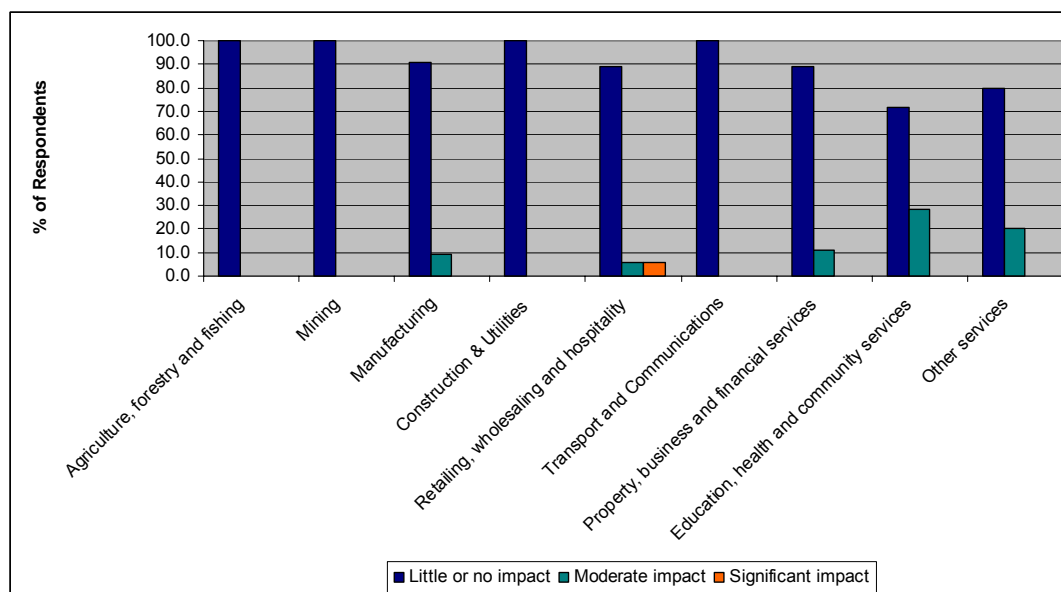
**Figure 2.22 Impact of Difficulties in Recruiting Appropriately Trained Staff on Establishments in the Great Southern**



Despite a general concern amongst policy makers and industry groups about the impact of the retirement of staff on businesses and organisations, very few establishments reported it as an important issue in the Great Southern (Figure 2.23). This is concerning given the data presented earlier in Figures 2.10 and 2.11, both of which indicate that a number of sectors face a significant loss of labour as a result of retirement over the next 10 years.

The sectors most at risk of an ageing workforce in the Great Southern include: agriculture, forestry and fishing; health care; and a number of other service sectors. Yet, only a small proportion of establishments indicated retirement as affecting their enterprise. There are a number of likely reasons for this. First, establishments may not yet be feeling the effects of an ageing labour force, with many baby boomers only just reaching retirement age. Second, enterprises may not be anticipating the likely changes, with succession planning often a major shortcoming in both small and large organisations (BTRE, 2006). Third, organisations and firms may be confident that retirements will not affect the enterprise, and that recruitment options in the future are likely to improve, thereby negating the outflow of older workers.

**Figure 2.23 Impact of Increased Numbers of People Retiring on Establishments in the Great Southern**

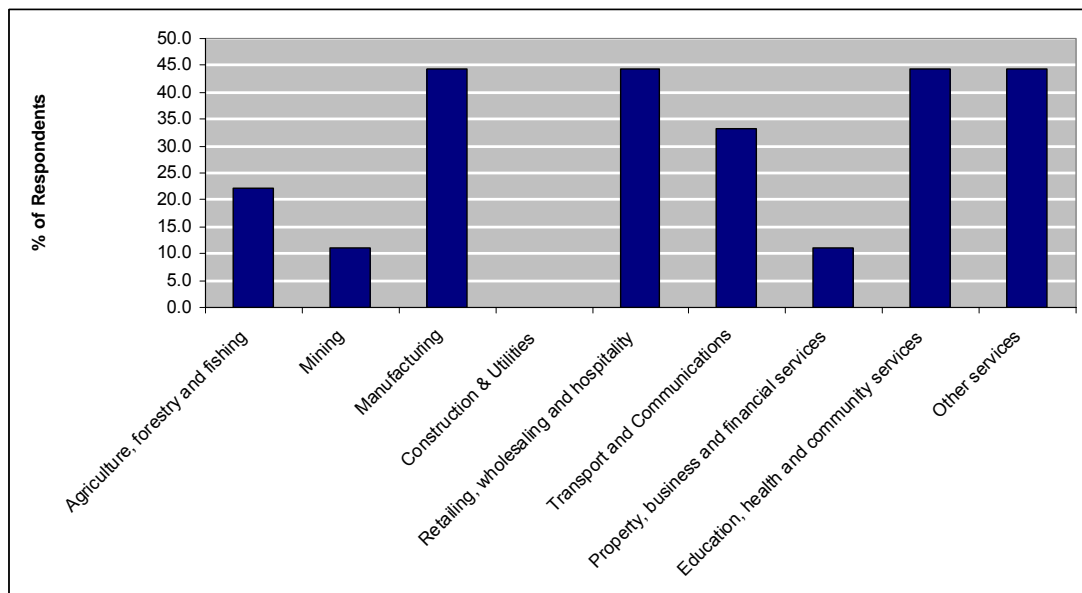


One of the important contributors to labour market stability is the ability of firms and organisations to retain staff. By reducing staff turnover, establishments can minimise recruitment and training costs, and maintain their output/service potential. Within the Great Southern, most firms and organisations have a relatively stable workforce, with only 31.5 per cent reporting that retaining staff is a problem (Figure 2.24). The sectors that reported the greatest problems in terms of retention were: manufacturing; retailing, wholesaling and

hospitality; education, health and community services; and other services. Given the recruitment difficulties facing the construction and utilities sector, it is perhaps surprising that no respondents in this industry reported problems with retaining staff. There could be a number of reasons for this: i) the industry has a culture of high staff turnover, so retention is not seen as a significant issue; ii) the industry has been able to retain workers through the wages system and other workplace incentives.

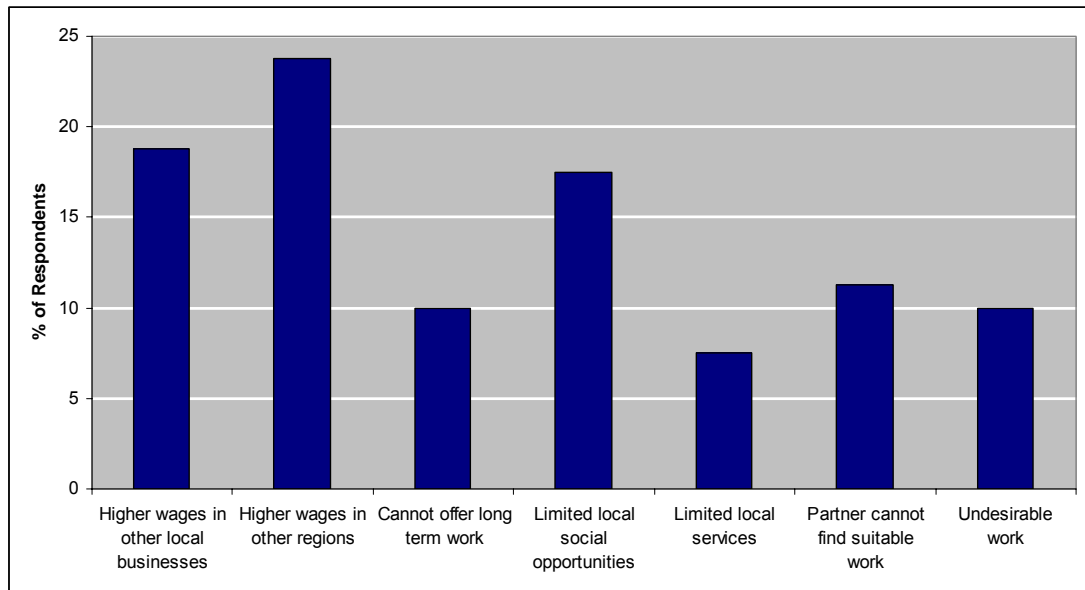
Amongst those firms and organisations that reported difficulties in retaining staff, the main reason was the higher wages on offer elsewhere. Higher wages in other local businesses was reported by 18.8 per cent of firms and organisations, while higher wages in other regions was reported by 23.8 per cent. These are common issues across Australia, and are symptomatic of a strong labour market, with considerable movement by employees from employer-to-employer, and from region-to-region. In periods of higher unemployment, the movement of employees between employers or geographically tends to be lower (Armstrong and Taylor, 1993). Other reasons for staff leaving local firms and organisations, include a lack of local social opportunities (17.5 per cent), and the inability of partners/spouses to find suitable employment (11.3 per cent).

**Figure 2.24 Proportion of Establishments Reporting Difficulties in Retaining Staff in the Great Southern**





**Figure 2.25 Reasons for Establishments Reporting Difficulties in Retaining Staff in the Great Southern**



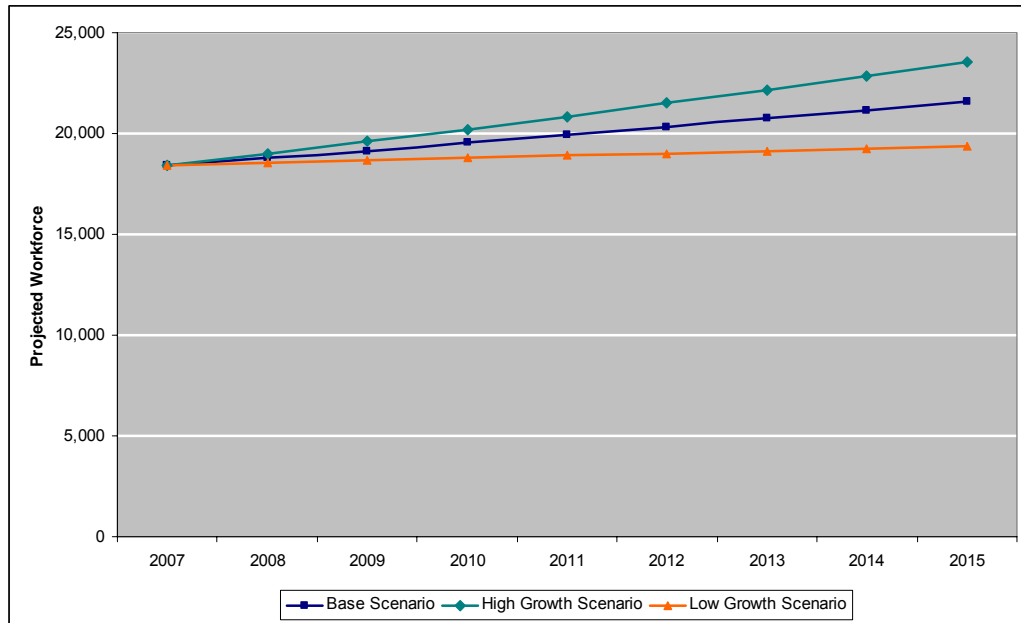
## 2.7 Workforce Futures

### 2.7.1 The King Statistical Subdivision

The next decade is likely to see the King subdivision experience an expansion in both the population and labour force. The southern coast and immediately adjacent high amenity areas continue to attract a strong flow of in-migrants, often on the basis of lifestyle and retirement, but also in pursuit of emerging economic opportunities. While agriculture continues to dominate the local economy, industries such as tourism, recreation, manufacturing and mining are likely to play an increasingly important role. There are, however, emerging challenges, including the ageing of the labour force and a growing income differential between the local and State average. This, together with an already constrained labour market, means that planning for future workforce needs are imperative. The following provides an overview of the expected labour market trends at both the sectoral and occupational level for the period 2007 to 2015.

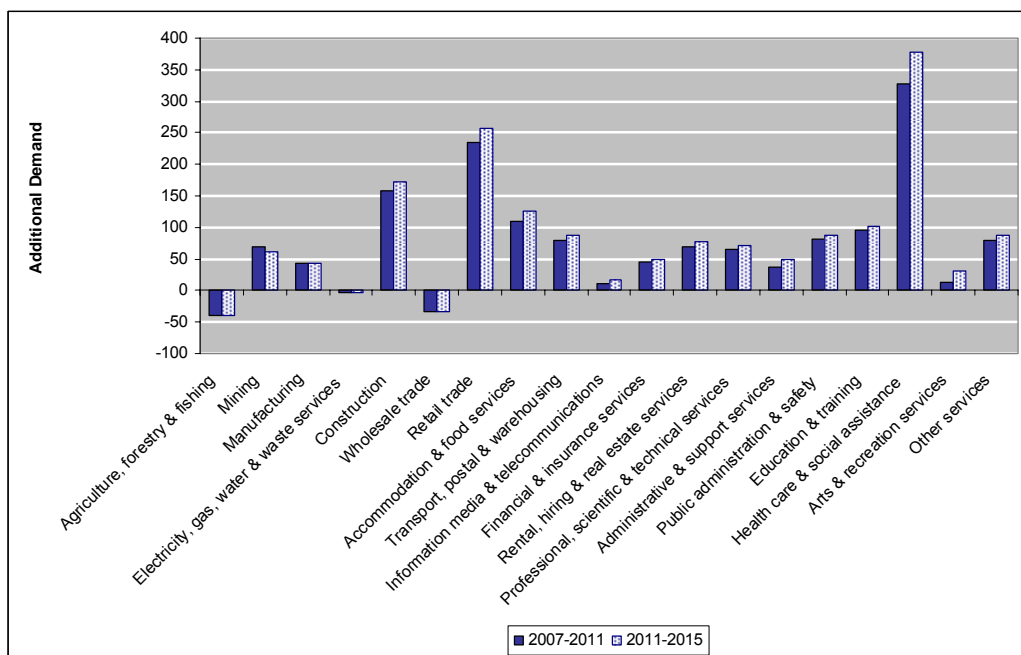
Under the base (or expected) scenario, the total employment demand in the King statistical subdivision is expected to increase from 18,437 in 2007 to 19,293 by 2011 (an increase of 8.1 per cent), and then to 21,586 by 2015; an increase over the entire period of 17.1 per cent (Figure 2.26). This represents an annual rate of increase of between 1.6 and 1.7 per cent. Under the high growth scenario, employment demand is expected to increase to 20,842 by 2011, and 23,650 by 2015 (an annual growth rate of 3.1 per cent). The low growth scenario sees demand increase to 18,893 by 2011, and 19,360 by 2015 (0.6 per cent per annum).

**Figure 2.26 Projected Total Employment Demand in the King Subdivision, 2007-2015**



The sectoral composition of employment in King is expected to change considerably over the medium term. Between 2007 and 2015, demand is likely to fall in: agriculture, forestry and fishing (-79), wholesale trade (-67), electricity, gas, water and waste services (-10)(Figure 2.27 and Table 2.10). Growth is expected in all other sectors, with the most significant additional demand occurring in: health care and social assistance (705); retail trade (493); construction (331); accommodation and food services (235); and transport, postal and warehousing (166).

**Figure 2.27 Additional Demand for Employment in Industry Sectors (Base Scenario), King Subdivision, 2007-2015**



**Table 2.10 Projected Total Employment Demand (Base Scenario) for Industry Sectors in the King Subdivision, 2007-2015**

	2007	2011	2015
Agriculture, forestry & fishing	2286	2245	2206
Mining	120	189	250
Manufacturing	1511	1554	1598
Electricity, gas, water & waste services	166	163	160
Construction	1715	1873	2046
Wholesale trade	463	429	396
Retail trade	2352	2587	2845
Accommodation & food services	1208	1318	1444
Transport, postal & warehousing	669	748	835
Information media & telecommunications	161	171	187
Financial & insurance services	377	423	471
Rental, hiring & real estate services	338	408	486
Professional, scientific & technical services	715	780	851
Administrative & support services	468	505	555
Public administration & safety	1133	1214	1302
Education & training	1547	1643	1745
Health care & social assistance	2014	2342	2719
Arts & recreation services	138	151	182
Other services	660	739	827
Other/NEI	398	439	484
<b>Total</b>	<b>18437</b>	<b>19923</b>	<b>21586</b>

Figure 2.28 combines three significant sets of data on workforce futures in King: i) the number of people employed in the 10 largest sectors (with employment size represented by the size of the circle); ii) the location quotient for each sector; iii) the projected percentage change between 2007 and 2015. This provides insights into linkages between the projected rate of growth and the relative size and importance of industries.

The sector with the highest location quotient (agriculture, forestry and fisheries) is likely to experience modest decline in employment between 2007 and 2015. In regional development terms, the decline or stagnation in a major propulsive industry can constrain economic and employment growth across a range of sectors. Thus, in the case of King, the gradual emergence of a number of other sectors, notably education and training, accommodation and food services, and construction, is important for the local economy. These sectors all have location quotients higher than 1.0 and are likely to increase by between 10 and 20 per cent between 2007 and 2015. The most significant growth in King is likely to occur in the large health and social assistance sector, although with a relatively low location quotient the broader economic impact of this industry is likely to be minimal. Similarly, transport, postal and warehousing, and other services while representing good growth are unlikely to contribute in a major way to broader regional economic development.

**Figure 2.28 Projected Employment Change by Location Quotient in the 10 Largest Sectors in King, 2007-2015**

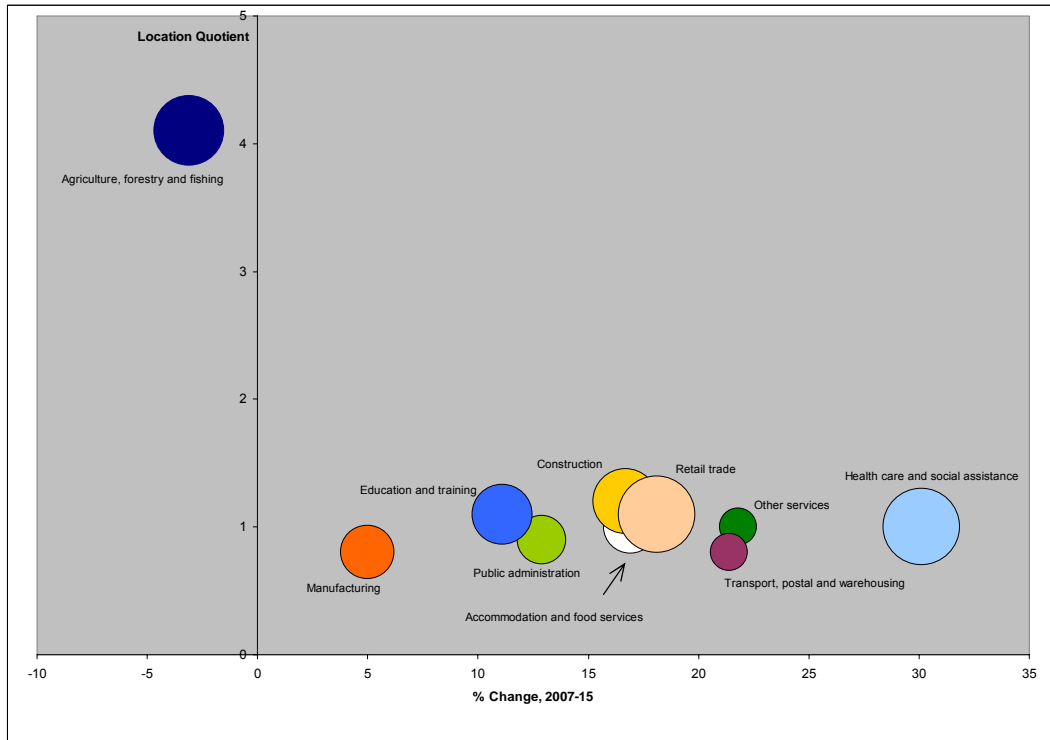


Table 2.11 shows projected growth/decline in demand of the 50 largest occupations in the King subdivision between 2007 and 2015 under the base scenario<sup>2</sup>. The 10 occupations forecast to experience the most rapid increase in demand over this period are:

- Sales assistants and sales persons
- Farm, forestry and garden workers
- Cleaners and laundry workers
- Personal carers and assistants
- Nursing and midwifery professionals
- Retail managers
- School teachers
- Truck drivers
- Mobile plant operators

<sup>2</sup> A list of projected demand for all occupations under different growth scenarios is available at the Institute for Regional Development on request.

**Table 2.11 Projected Employment Demand (Base Scenario) for Occupations in the King Subdivision, 2007-2015**

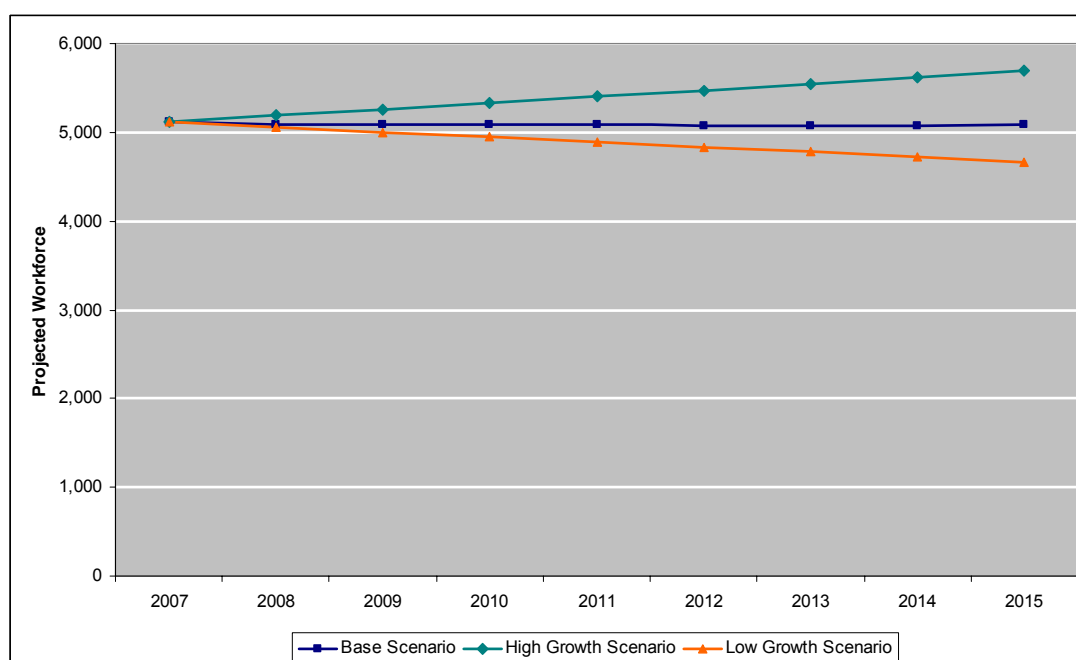
	2007	2011	2015	Change, '07-'11	Change '11-'15
Farmers and Farm Managers	1,551	1,524	1,497	-27	-27
Sales Assistants and Salespersons	1,243	1,367	1,504	124	136
Farm, Forestry and Garden Workers	730	818	916	88	98
School Teachers	687	730	775	43	45
Cleaners and Laundry Workers	610	683	765	73	82
Retail Managers	506	556	612	51	55
Personal Carers and Assistants	448	521	605	73	84
Midwifery and Nursing Professionals	371	432	501	60	70
Truck Drivers	353	395	441	42	46
Accounting Clerks and Bookkeepers	335	366	399	31	33
Mobile Plant Operators	319	356	398	38	41
General Clerks	318	344	378	26	34
Construction, Distribution and Production Managers	312	332	363	20	31
Miscellaneous Labourers	305	325	355	19	30
Bricklayers, and Carpenters and Joiners	304	324	353	19	30
Hospitality Workers	299	326	358	27	31
Construction Labourers	284	302	330	18	28
Accommodation and Hospitality Managers	279	304	333	25	29
Receptionists	277	300	329	22	29
Food Trades Workers	277	302	331	25	29
Natural and Physical Science Professionals	273	298	325	25	27
Food Preparation Assistants	271	295	324	25	28
Food Process Workers	253	276	302	23	26
Office and Practice Managers	238	257	283	19	25
Education Aides	228	243	258	14	15
Health and Welfare Support Workers	226	263	306	37	42
Automotive Electricians and Mechanics	217	243	272	26	29
Horticultural Trades Workers	216	242	271	26	29
Personal Assistants and Secretaries	209	226	248	17	22
Checkout Operators and Office Cashiers	191	210	231	19	21
Fabrication Engineering Trades Workers	189	194	199	5	5
Real Estate Sales Agents	177	213	254	36	41
Freight Handlers and Shelf Fillers	176	197	220	21	23
Miscellaneous Hospitality, Retail and Service Managers	167	183	200	15	17
Electricians	164	174	190	10	16
Child Carers	160	186	216	26	30
Prison and Security Officers	156	167	179	11	12
Stationary Plant Operators (Manufacturing)	154	158	163	4	4
Accountants, Auditors and Company Secretaries	153	167	182	14	15
Glaziers, Plasterers and Tilers	150	159	174	9	15
Clerical and Office Support Workers	148	160	176	12	16
Mechanical Engineering Trades Workers	138	142	146	4	4
Social and Welfare Professionals	136	159	184	22	26
Electronics and Telecommunications Trades Workers	136	145	159	9	14
Financial and Insurance Clerks	133	144	158	11	14
Machine Operators	126	130	134	4	4
Tertiary Education Teachers	123	131	139	8	8
Miscellaneous Clerical and Administrative Workers	121	131	144	10	13
Business Administration Managers	117	128	139	11	12
Personal Service and Travel Workers	117	131	146	14	16

### 2.7.2 The Pallinup Subdivision

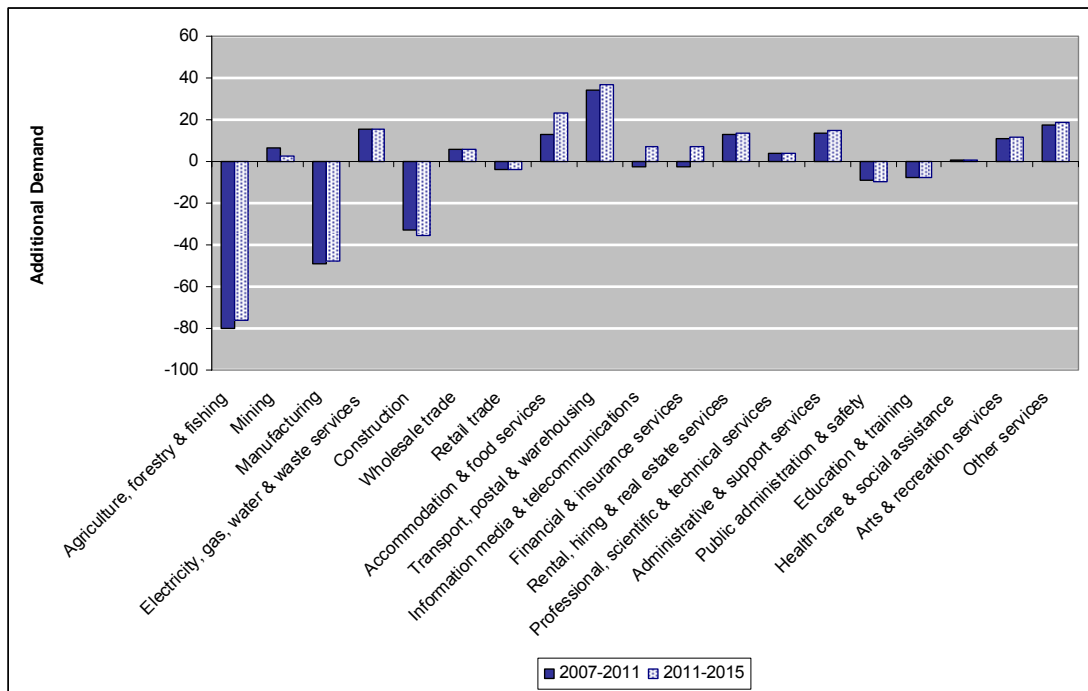
In the Pallinup statistical subdivision, the total labour force demand is expected to decrease from 5118 in 2007 to 5082 in 2011; a fall of -0.7 per cent (Figure 2.29). Between 2011 and 2015, the labour force is expected to remain at just over 5,000. The base scenario reflects the ongoing dependence on agriculture and the likelihood of further farm amalgamations, expansions and farm-related outmigration over the coming decade. The high growth scenario sees total labour demand increase to 5402 by 2011, and then to 5702 by 2015 (an annual rate of growth of 1.4 per cent). The low growth scenario sees a worsening of decline, with projected labour force demand of 4889 in 2011, falling further to 4669 by 2015 (an annual rate of decline of -1.1 per cent).

Within individual sectors, significant decline is projected for employment in agriculture, forestry and fishing, with total demand falling by 80 between 2007 and 2011 (-0.8 per cent per annum), and 79 between 2011 and 2015 (-0.8 per cent per annum)(Figure 2.30 and Table 2.12). The high level of dependence on agriculture has significant 'knock-on' impacts for labour demand in a range of other sectors. Those sectors projected to experience the most significant decreases for labour demand between 2007 and 2015 are: manufacturing (-97); construction (-69); and public administration and safety (-19). A number of other sectors are expected to remain relatively stable, including: wholesale trade; retail trade; and most of the services sector. The only sectors likely to experience significant growth between 2007 and 2015 are: accommodation and food services (36); transport, postal and warehousing (71); and other services (36).

**Figure 2.29 Projected Total Employment Demand in the Pallinup Subdivision, 2007-2015**



**Figure 2.30 Additional Demand for Employment in Industry Sectors (Base Scenario), Pallinup SSD, 2007-2015**



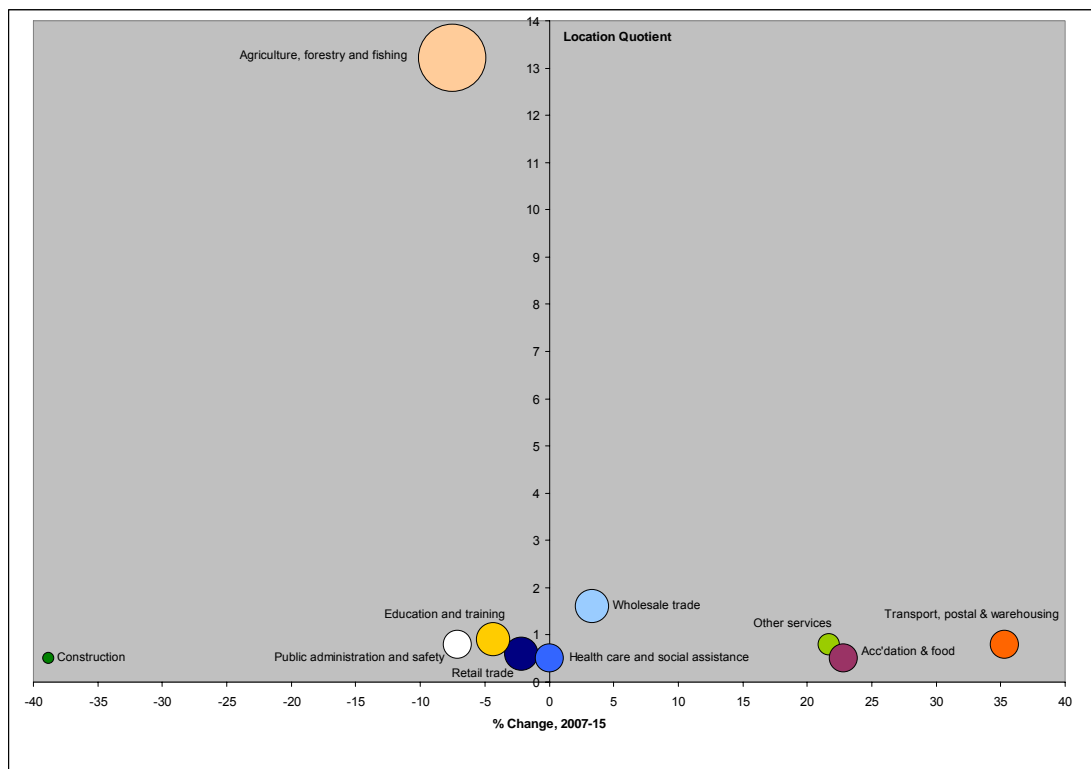
**Table 2.12 Projected Total Employment Demand (Base Scenario) for Industry Sectors in the Pallinup SSD, 2007-2015**

	2007	2011	2015
Agriculture, forestry & fishing	2072	1993	1916
Mining	23	29	32
Manufacturing	184	135	87
Electricity, gas, water & waste services	41	56	72
Construction	178	145	109
Wholesale trade	362	368	374
Retail trade	376	372	368
Accommodation & food services	158	171	194
Transport, postal & warehousing	201	235	272
Information media & telecommunications	18	15	22
Financial & insurance services	62	59	66
Rental, hiring & real estate services	24	37	50
Professional, scientific & technical services	133	137	141
Administrative & support services	60	74	89
Public administration & safety	269	260	250
Education & training	369	361	353
Health care & social assistance	262	263	263
Arts & recreation services	10	20	32
Other services	166	183	202
Other/NEI	150	168	188
<b>Total</b>	<b>5118</b>	<b>5082</b>	<b>5082</b>

Figure 2.31 shows the relationship between location quotients, the number of employees in the 10 largest sectors, and the expected growth to 2015. The ongoing dependence on the agriculture, forestry and fishing sector is clearly evident in an area dominated by broadacre agriculture. However, the challenge facing Pallinup is that its most important sector in terms of both the number of workers and location quotient is also likely to experience a decrease in employment of around 7.5 per cent between 2007 and 2015. There are likely to be significant impacts on other sectors as a result of this, particularly in: construction (-39 per cent); retail trade (-2.1 per cent); public administration (-7.1 per cent); and education and training (-4.3 per cent). None of these sectors, however, have location quotients of more than 1.0, and are not regarded as basic (or propulsive) sectors within the regional economy.

Those sectors likely to grow between 2007 and 2011 include: wholesale trade (3.3 per cent), other services (21.7 per cent), accommodation and food services (21.7 per cent), and transport, postal and warehousing (35.3 per cent). While this growth is encouraging, Figure 2.31 shows that these sectors are generally quite small employers, and none have a high location quotient (with only wholesale trade above the critical 1.0). Significant growth in accommodation and food services (above the national projected rate of growth for the period) is likely to see its location quotient increase to higher than 1.0 as tourism and related industries takes a more prominent role in the local economy.

**Figure 2.31 Projected Employment Change by Location Quotient in the 10 Largest Sectors in Pallinup, 2007-2015**





In Pallinup, occupation growth is likely to be more modest than in King (Table 2.13), with the following occupations projected to experience the largest increase in demand between 2007 and 2015 under the base scenario:

- Farm, forestry and garden workers
- Truck drivers
- General clerks
- Food process workers
- Mobile plant operators
- Personal assistants and secretaries
- Cleaners and laundry workers
- Finance and insurance clerks
- Office and practice managers
- Clerical and office support managers

**Table 2.13 Projected Employment Demand (Base Scenario) for Occupations in the Pallinup Subdivision, 2007-2015**

	2007	2011	2015	Change, '07-'11	Change, '11-'15
Farmers and Farm Managers	1,558	1,498	1,441	-60	-57
Farm, Forestry and Garden Workers	323	356	393	33	36
Sales Assistants and Salespersons	184	182	180	-2	-2
School Teachers	181	177	173	-4	-4
Food Process Workers	168	182	206	13	25
Animal Attendants and Trainers, and Shearers	147	142	136	-6	-5
Cleaners and Laundry Workers	116	128	141	12	13
Truck Drivers	113	133	153	19	21
Retail Managers	103	102	101	-1	-1
Accounting Clerks and Bookkeepers	94	97	99	3	3
Natural and Physical Science Professionals	81	84	86	2	2
Education Aides	75	74	72	-2	-2
Mobile Plant Operators	75	88	101	13	14
Packers and Product Assemblers	65	47	31	-17	-17
General Clerks	63	77	92	14	15
Midwifery and Nursing Professionals	57	58	58	0	0
Personal Assistants and Secretaries	55	67	80	12	13
Automotive Electricians and Mechanics	53	58	64	5	6
Personal Carers and Assistants	53	53	53	0	0
Construction, Distribution and Production Managers	50	47	35	-3	-12
Accommodation and Hospitality Managers	49	53	61	4	7
Food Trades Workers	48	51	58	4	7
Construction Labourers	44	41	31	-3	-10
Financial and Insurance Clerks	42	52	62	10	10
Checkout Operators and Office Cashiers	42	41	41	0	0
Office and Practice Managers	41	51	61	9	10

*Continued on next page*

Table 2.13 continued

Hospitality Workers	40	43	49	3	6
Horticultural Trades Workers	40	44	49	4	4
Mechanical Engineering Trades Workers	37	27	18	-10	-10
Miscellaneous Technicians and Trades Workers	37	27	18	-10	-10
Automobile, Bus and Rail Drivers	36	43	49	6	7
Health and Welfare Support Workers	35	35	35	0	0
Miscellaneous Labourers	34	32	24	-2	-8
Miscellaneous Hospitality, Retail and Service Managers	34	37	42	3	5
Clerical and Office Support Workers	34	42	50	8	8
Freight Handlers and Shelf Fillers	32	38	44	5	6
Food Preparation Assistants	30	33	37	2	4
Education, Health and Welfare Services Managers	30	30	30	0	0
Stationary Plant Operators (Manufacturing)	30	22	14	-8	-8
Insurance Agents and Sales Representatives	26	24	27	-1	3
Electricians	25	23	18	-2	-6
Accountants, Auditors and Company Secretaries	24	25	26	1	1
Bricklayers, and Carpenters and Joiners	24	23	17	-2	-6
Child Carers	22	22	22	0	0
Defence Force Members, Fire Fighters and Police	22	21	21	-1	-1
Receptionists	22	27	32	5	5
Sales, Marketing and Public Relations Professionals	21	21	21	0	0
Labourers, nfd	21	23	26	2	2
Hairdressers	20	22	24	2	2
Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	20	22	24	2	2

## 2.8 Conclusion

The Great Southern region is likely to continue to increase its population and expand its economy over the next decade or so. Much of the growth is likely to be concentrated in the south of the region, particularly in the local government areas of Plantagenet, Denmark, Albany. Further north, where broadacre agriculture dominates the economic and social structure, the pattern is likely to be one of relative stability, or modest decline. In line with these trends, employment demand is projected to increase in the south (King subdivision) at around 1.7 per cent per annum, while declining at around 0.7 per cent per annum in the north (Pallinup). There will, however, be considerable geographical variation within each region and by no means are the trends likely to be uniform. Emerging issues in both areas include the ageing of the workforce, difficulties in securing labour supply, and challenges in terms of offering competitive salaries and wages relative to other areas. The sectoral changes expected within the two subdivisions are quite different, with manufacturing, health care and social assistance, education, and retail trade amongst those sectors in King likely to expand at a relatively rapid rate over the coming years. In Pallinup, the pattern is generally one of stability or decline, although expansion is likely in accommodation and food services, and health care and social assistance. Of course, while Pallinup is not likely to expand at the rate of King, there is still a need for careful workforce planning, particularly as a means of dealing with employee attrition as a result of retirement and outmigration.

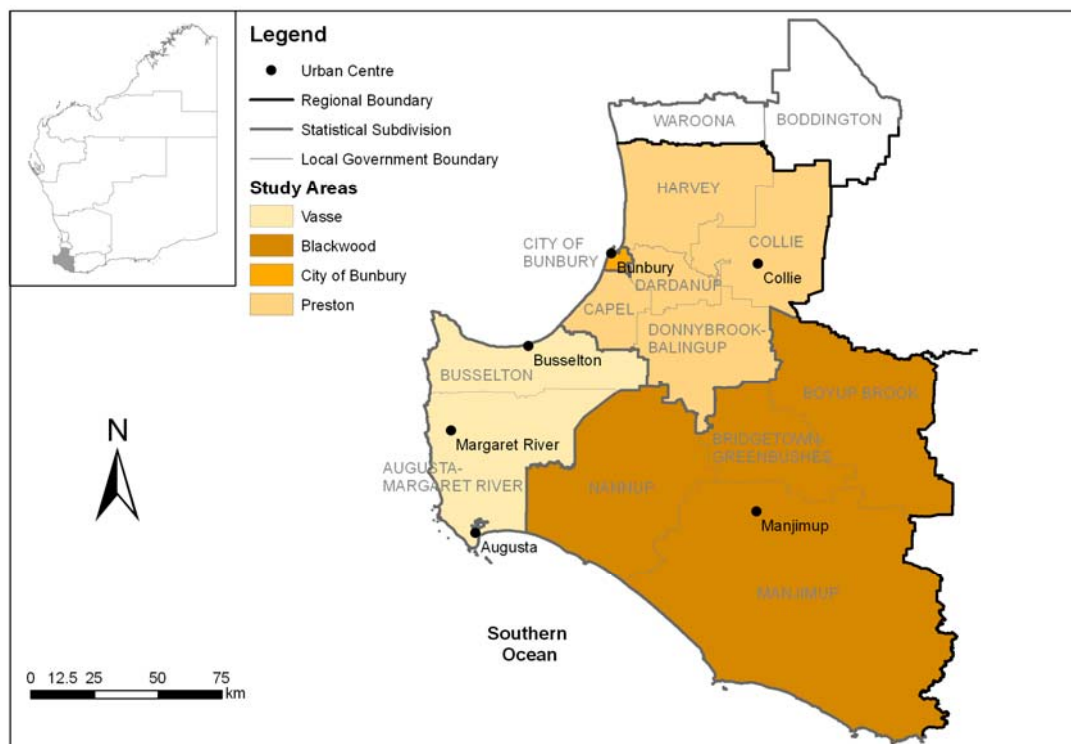
## 3 The South West

### 3.1 Introduction

The South West covers an area just under 24,000 square kilometres, and has a population approaching 140,000. The port town of Bunbury is the major administrative centre within the region, with Collie, Busselton, Manjimup and Margaret River playing important sub-regional roles. In geographical terms, the Australian Bureau of Statistics has divided the region into four statistical subdivisions: Blackwood, Bunbury, Preston and Vasse (Figure 3.1).

While for much of the 19<sup>th</sup> and 20<sup>th</sup> centuries the South West's economy was linked closely to agriculture and forestry, the past 30 years or so has seen increasing diversification, with activities such as tourism and mining now making a significant contribution to employment. Agriculture remains an important industry, with dairying, wool production, viticulture and horticulture the main activities. Forestry remains important, with agro-forestry making up a growing proportion of output. The expansion of mining since the 1970s has been an important part of the region's transformation, with significant deposits of bauxite and mineral sands underpinning production in this sector. The South West also has a large and dynamics manufacturing industry. A range of ancillary industries in manufacturing, transport and storage, construction and basic services are also important employers in the region.

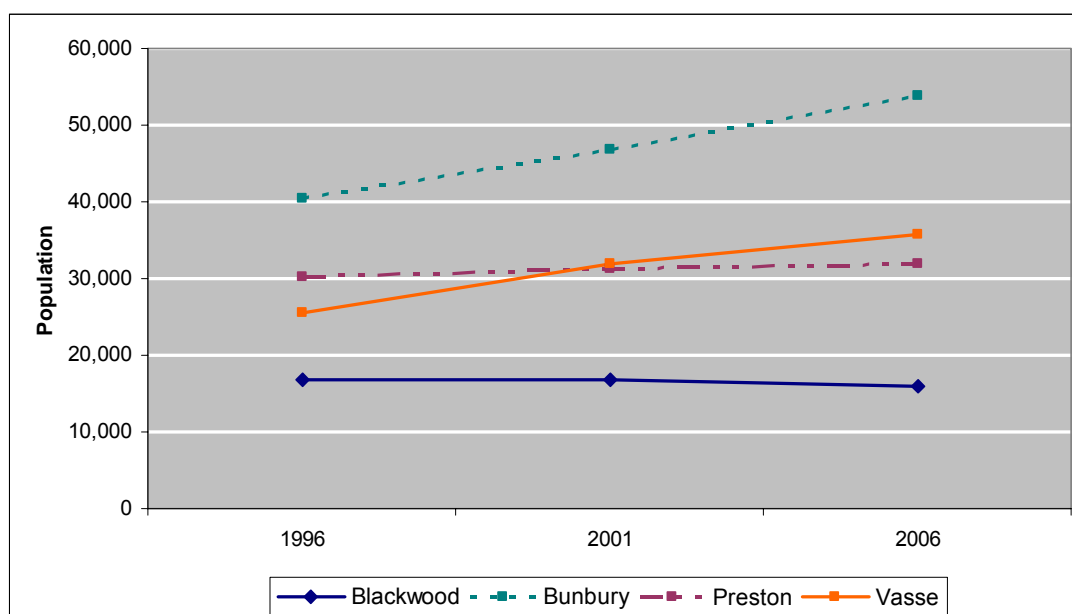
**Figure 3.1 The South West Region**



### 3.2 Regional Population Dynamics

The South West region has experienced a longstanding pattern of population growth. Between 1996 and 2006, the population of the region increased from 113,105 to 137,463; a rise of 24,358, or 21.5 per cent. Within the region, growth was geographically uneven, with the major regional centre of Bunbury and high amenity subdivision of Vasse (incorporating Busselton and Augusta-Margaret River) experiencing rapid growth, while Preston and Blackwood remained relatively stable or in modest decline. Figure 3.2 shows the sub-regional pattern of population change. The subdivision of Bunbury increased from 40,509 to 53,888 between 1996 and 2006 (a rise of 33 per cent), while Vasse grew from 25,537 to 35,745 (40 per cent). During the same period, Preston grew marginally from 30,314 to 31,956 (5.4 per cent), while Blackwood fell from 16,745 to 15,874 (5.2 per cent).

**Figure 3.2 Population Change in the South West, 1996-2006**



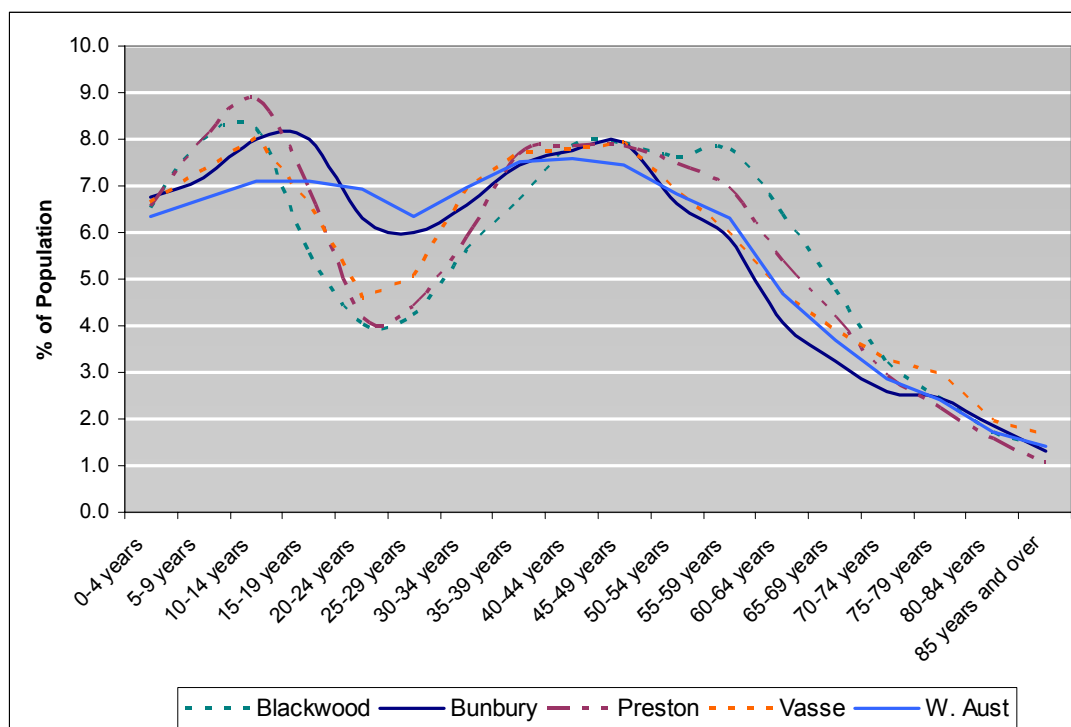
(Source: ABS, 2007)

The age structure of the South West reflects the region's relatively complex population and economic geography (Figure 3.3). All of the subdivisions were over-represented in the 0-14 year age cohorts, and in the 35-49 age cohorts at the 2006 census. The combination of these groups is not unusual in regions where young families are an important part of the age profile. All subdivisions were under-represented in the 15-34 year age range, which is not uncommon in regional areas, where young people often leave to pursue education and other lifestyle opportunities in larger urban centres. This under-representation is particularly evident in the 20-24 age cohort, with Blackwood, Preston and Vasse all having 4.6 per cent or less of the population in the group, compared to the Western Australian average of 6.9 per cent. The exception here is Bunbury, which while under-represented in the younger age-cohorts was much closer to the State average than other parts of the South West. This is

largely because of the range of education, employment and social opportunities that a small city such as Bunbury offers.

While Bunbury had a higher proportion of people in the 15-34 age range than the other parts of the South West, it was under-represented in the 50+ age groups. Indeed, Blackwood and Preston were significantly over-represented in the 50-69 age range. Vasse, which incorporates the towns of Busselton, Margaret River and Augusta (and a number of smaller coastal and high amenity settlements), tended to be only marginally above the Western Australian profile beyond the age of 50, although this over-representation tended to become more pronounced beyond the age of 65. The ageing population in Blackwood, Preston and Vasse reflects two processes: first, the Australia-wide phenomenon of ageing *in-situ*; second, the strong in-migration of retirees and lifestyle migrants relocating to high amenity coastal and inland environments (Burnley and Murphy, 2004).

**Figure 3.3 Age Structure of the South West, 2006**



(Source: ABS, 2007)

The level of in-migration to the South West is reflected in Table 3.1, which shows population mobility in each of the subdivisions (Table 3.1). In Bunbury and Preston, around 43.5 per cent of the population lived at the same address in 2006 as in 2001, which compares to a Western Australian average of 47.7 per cent. In terms of new arrivals, more than 27.1 and 23.2 per cent, respectively, in Bunbury and Preston moved to their present address from a different Statistical Local Area (SLA) in Western Australia (compared to 13.2 per cent for

Western Australia as a whole). Levels of in-migration to these subdivisions from overseas or interstate were lower than for Western Australia as a whole.

Blackwood had the most stable population, with 54.4 per cent remaining at the same address in 2006 as 2001, while only 23.3 per cent moved into their present SLA from elsewhere (compared to 30.7 for WA). This pattern is typical of areas experiencing population decline, as well as those with large agricultural industries (which tend to have relatively stable populations).

In Vasse, the level of population mobility was relatively high, with 43.6 per cent living at the same address in 2006 as in 2001. There was, however, considerable population movement within the two SLAs in the subdivision, with 21.5 per cent living at a different address, but in the same local area (compared to 13.2 per cent for WA). This reflects considerable 'churning' within the local housing market, as both renters and owner-residents relocate within the region. The relatively high level of internal movement is likely to be the outcome of two main factors: first, the desire on the part of some locals to upgrade their residence/location; and, second, tightening housing market leading to an increasing movement amongst renters as they adjust housing circumstances to better match incomes and rising rental prices.

**Table 3.1 Population Mobility in the South West, 2001-2006 (% of Pop'n)**

	<b>Blackwood</b>	<b>Bunbury</b>	<b>Preston</b>	<b>Vasse</b>	<b>W. Aust</b>
Same address as 2001	54.4	43.4	52.4	43.6	47.7
Same SLA as 2001, but different address	16.2	15.5	14.0	21.5	13.2
Different address in WA in 2001	19.7	27.1	23.2	21.8	21.7
Different address interstate in 2001	1.9	3.1	2.1	3.1	3.5
Overseas in 2001	1.7	3.3	1.5	2.7	5.5
Not stated	6.0	7.6	6.9	7.2	8.5

(Source: ABS, 2007)

### 3.3 The Regional Economy

#### 3.3.1 Gross Regional Product

The economy of the South West has performed strongly in recent years, reflecting the level of economic diversity and the strength of key industries, notably mining, agriculture, and tourism. Between 2000/01 and 2005/06, gross regional product (GRP) increased from just over \$4.5 billion to nearly \$8 billion; a rise of \$3.39 billion, or 74 per cent. By comparison, gross state product in Western Australia increased by 61 per cent.

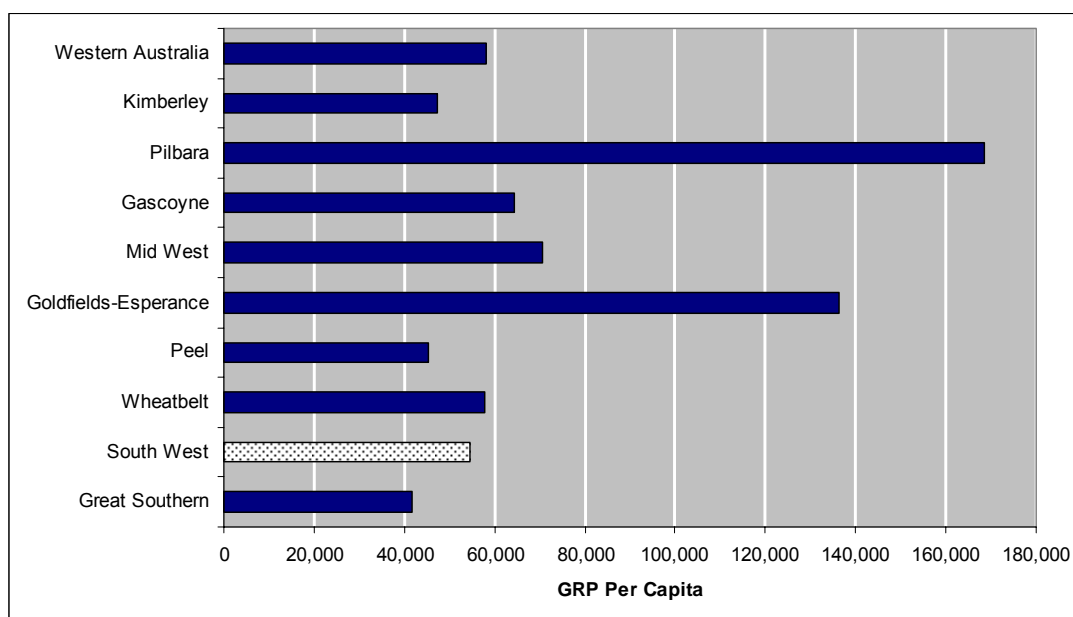
While the overall performance of the region is very strong, in per capita terms the South West ranks fifth amongst the nine non-metropolitan regions in Western Australia. In 2005/06, the South West had per capita GRP of \$54,683, which is considerably higher than the neighbouring regions of Peel (\$45,402) and the Great Southern (\$41,624), but lower than the Wheatbelt (\$57,926). The region is marginally lower than the Western Australian average of \$58,116.

**Table 3.2 Gross Regional Product in the South West, 2000/01 - 2005/06**

	2000/01		2005/06		Change 2001 - 2006	% Change
	\$ Billion	% of State	\$ Billion	% of State	\$ Billion	%
South West	4.56	6.2	7.95	6.7	3.39	74.3
Western Australia	74.12	-	119.19	-	45.07	60.8

(Source: Department of Local Government and Regional Development, 2003; 2007)

**Figure 3.3 Gross Regional Product Per Capita in the South West, 2005/06**



(Source: Department of Local Government and Regional Development, 2007)

### 3.3.2 Local Economic Concentration

Table 3.3 shows the location quotients for each industry sector in the South West. Location quotients are a means of determining concentrations of employment that are higher or lower than might be expected given the national employment structure. Quotients of more than 1.0 indicate local specialisation (or concentration), and suggest that an industry is a basic (or 'propulsive') sector within the local or regional economy. A quotient of less than 1.0 suggests

that an industry is not a significant driver of the economy. It should be noted that these quotients are calculated from employment data based on employees' place of residence. As such, the quotients shown here reflect concentrations of employees, rather than businesses or other establishments (which are discussed later in this chapter).

In the South West, the location quotients (LQs) for each subdivision highlight the level of economic diversity within the region. In Blackwood, Preston and Vasse, agriculture, forestry and fishing underpins the local economy. In Blackwood, this sector is particularly dominant with an LQ of 6.6. The other sector of significance in Blackwood is mining (largely as a result of activity at Greenbushes). Mining is particularly significant in Preston (6.2), along with electricity, gas, water and waste services (2.3) and manufacturing (1.5). The importance of tourism and lifestyle migration is particularly evident in Vasse, with a quotient of 1.8 for accommodation and food services.

As a large regional centre, Bunbury has a more diverse structure than the other three subdivisions within the South West. The highest LQ is for mining, reflecting the importance of the bauxite and mineral sands industries. Other significant industries include: manufacturing (1.4); electricity, gas, water and waste services (1.7), and construction (1.7).

**Table 3.3 Location Quotients by Industry Sector in the South West, 2006**

Industry Group	Blackwood	Bunbury	Preston	Vasse
Agriculture, forestry & fishing	6.6	0.4	3.8	2.6
Mining	1.9	2.6	6.2	1.4
Manufacturing	1.0	1.4	1.5	0.9
Electricity, gas, water & waste services	0.7	1.7	2.3	0.8
Construction	0.7	1.7	1.3	1.8
Wholesale trade	0.7	0.7	0.6	0.5
Retail trade	0.8	1.2	0.8	1.1
Accommodation & food services	1.1	0.9	0.8	1.8
Transport, postal & warehousing	0.8	0.8	0.7	0.6
Information media & telecommunications	0.3	0.6	0.2	0.4
Financial & insurance services	0.3	0.5	0.3	0.5
Rental, hiring & real estate services	0.7	1.2	0.8	1.6
Professional, scientific & technical services	0.4	0.6	0.3	0.6
Administrative & support services	0.6	0.9	0.7	1.1
Public administration & safety	1.1	0.8	0.7	0.6
Education & training	1.1	0.9	0.9	0.8
Health care & social assistance	0.8	0.9	0.7	0.8
Arts & recreation services	0.5	0.6	0.5	0.7
Other services	0.7	1.2	0.8	0.9

(Calculated by the authors from ABS, 2007)



### 3.3.3 Enterprise Structure

Tables 3.4 to 3.8 provide an overview of the structure of private enterprise in the South West by statistical subdivision. In 2006, there were 2,184 businesses in Blackwood. The largest number of businesses was concentrated in agriculture, forestry and fishing (comprising 47.2 per cent of the total), with the majority being farm businesses that did not employ staff (Table 3.4). The significance of agriculture, forestry and fishing in Blackwood is further emphasised by comparison to the proportion of firms in this sector Australia-wide (10.9 per cent). Other significant sectors included: construction (10.3 per cent, compared to 15.7 per cent nationally); retail trade (9.8 per cent, compared to 11.1 per cent nationally); and property and business services (8.8 per cent, compared to 25.2 per cent nationally)(Table 3.4).

In the Bunbury subdivision, there were 4,518 businesses in 2006. Enterprises were spread across a range of industry sectors, with 24.2 per cent in construction, 21.5 per cent in property and business services, 14.8 per cent in retail trade, and 6.0 per cent in agriculture, forestry and fishing (Table 3.4). Bunbury's diversity in terms of business structure is predominantly linked to two factors: first, its strategic location and role as a port and administrative centre mean that it forms a hub for a range of economic activities; second, its relative size within the region helps to underpin a large internal economy, particularly in the services sector.

**Table 3.4 Percentage of Businesses by Sector in the South West, 2006**

Industry Sector	Blackwood	Bunbury	Preston	Vasse	Australia
Agriculture	47.3	6.0	41.9	19.5	10.9
Mining	0.4	0.7	0.7	0.4	0.4
Manufacturing	5.5	5.9	4.8	5.7	5.4
Electricity, Gas & Water	0.3	0.1	0.1	0.2	0.1
Construction	10.3	24.2	14.3	22.6	15.7
Wholesale Trade	2.7	3.1	2.5	2.8	4.3
Retail Trade	9.8	14.9	10.1	10.6	11.1
Accommodation Cafes and Rest'	5.1	2.7	2.7	5.3	2.8
Transport & Storage	3.4	4.2	3.5	3.3	5.9
Communication Services	0.8	0.8	0.7	0.4	1.2
Finance & Insurance	2.2	5.0	2.5	3.8	6.6
Property & Business Services	8.8	21.5	11.2	17.6	25.1
Education	0.1	0.9	0.3	0.1	0.8
Health & Community Services	1.5	5.3	2.0	3.0	4.5
Cultural & Recreational Services	0.4	1.5	1.2	2.0	2.3
Personal & Other Services	1.4	3.3	1.5	2.6	2.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(Source: ABS, 2006)

The business profile of Preston in 2006 reflected its strong agricultural base, with nearly 42 per cent of the subdivision's 2,201 businesses in the agriculture, forestry and fishing sector (Table 3.4). The subdivision also had a strong construction sector, linked in part to mining/industrial activity in the region, and its growing residential population. While the proportion of mining enterprises was relatively small in Preston, the sector does occupy an important role in the local economy. Under normal circumstances, a very small number of mining enterprises tend to generate numerous other business opportunities in sectors such as construction, transport, manufacturing and the services sector. Thus, of more significance than the proportion of mining enterprises is: i) the location quotient of the sector (see Table 3.3 and Figure 3.4); ii) the number of employees per business (Table 3.7).

The business sector of Vasse reflected the subdivision's increasingly diverse economy (Table 3.4). While the region was dominated by farming enterprises more than 30 years ago (see Houghton, 2003), by 2006 its 4,881 business were spread across a range of sectors. Agriculture, forestry and fishing still occupied an important position in the local economy, comprising 19.5 per cent of all business. Of increasing importance was the construction sector (22.6 per cent), which reflects the rapid population and economic growth of the area. Also significant in an area where tourism is a fundamental part of the local economy was the accommodation, cafes and restaurants sector, comprising 5.3 per cent of businesses, compared to the national average of 2.8 per cent. Manufacturing was also higher than the national average, with 5.7 per cent of all businesses in this sector. A major contributor to this is the growing number of craft-based enterprises and food processing firms in the region.

In terms of the relative size of firms, the South West's economy is based on small and medium enterprises. In Blackwood, more than half (59.6 per cent) of all enterprises were sole traders in 2006, while a further 20.6 per cent had between one and four staff (Table 3.5). The larger employers in Blackwood included agriculture, forestry and fishing, with 201 businesses with more than five staff (including 24 with more than 50), while retail trade had 60 businesses with more than five staff. Three businesses in each of the following had more than 50 staff: manufacturing; retail trade; accommodation, cafes and restaurants; finance and insurance; and personal and recreational services.

Of all businesses in Bunbury, 58.6 per cent were sole traders, 21.6 per cent had between one and four staff, 13.7 per cent had 5-19 staff, and 6.1 per cent had more than 20 employees (Table 3.6). Larger employers included retail trade (225 firms with more than 5 staff, including 12 with more than 50), property and business services (132 firms with more than 5 staff, including 12 with more than 50), construction (117 firms with more than 5 staff, and 12 with more than 50), and accommodation, cafes and restaurants (90 with more than 5 staff, and 15 with more than 50), and manufacturing (84 firms with more than 5 staff, including 15 with more than 50).

**Table 3.5 Number of Businesses by Employment in Blackwood, 2006**

	<b>No staff</b>	<b>1-4 staff</b>	<b>5-19 staff</b>	<b>20-49 staff</b>	<b>50+ staff</b>	<b>Total employing</b>	<b>Total</b>
Agriculture, Forestry and Fishing	657	174	126	51	24	375	1032
Mining	6	3	0	0	0	3	9
Manufacturing	57	24	21	6	3	54	120
Electricity, Gas and Water	0	3	0	3	0	6	6
Construction	141	66	15	0	0	81	225
Wholesale Trade	27	12	12	6	0	30	60
Retail Trade	96	48	45	12	3	108	213
Accommodation Cafes & Rest's	48	30	27	6	3	66	111
Transport and Storage	39	24	15	3	0	42	75
Communication Services	12	6	0	0	0	6	18
Finance and Insurance	42	6	0	0	3	9	48
Property and Business Services	141	33	21	0	0	54	192
Education	3	0	0	0	0	0	3
Health and Community Services	15	9	12	6	0	27	33
Cultural and Recreational Services	9	0	0	0	0	0	9
Personal and Other Services	9	12	6	0	3	21	30
<b>Total</b>	<b>1302</b>	<b>450</b>	<b>300</b>	<b>93</b>	<b>39</b>	<b>882</b>	<b>2184</b>

(Source: ABS, 2006)

**Table 3.6 Number of Businesses by Employment in Bunbury, 2006**

	<b>No staff</b>	<b>1-4 staff</b>	<b>5-19 staff</b>	<b>20-49 staff</b>	<b>50+ staff</b>	<b>Total employing</b>	<b>Total</b>
Agriculture, Forestry and Fishing	212	33	18	6	3	60	273
Mining	21	9	3	0	0	12	33
Manufacturing	131	51	54	15	15	135	267
Electricity, Gas and Water	3	3	0	0	0	3	3
Construction	729	246	84	21	12	363	1092
Wholesale Trade	54	39	24	9	6	78	138
Retail Trade	243	204	165	48	12	429	672
Accommodation Cafes & Rest's	18	18	51	24	15	108	120
Transport and Storage	120	36	18	15	0	69	192
Communication Services	24	6	6	0	0	12	36
Finance and Insurance	177	36	15	0	0	51	228
Property and Business Services	657	182	93	27	12	314	972
Education	24	12	3	3	0	18	39
Health and Community Services	117	60	42	18	3	123	240
Cultural and Recreational Services	42	9	6	6	3	24	66
Personal and Other Services	75	33	36	3	0	72	147
<b>Total</b>	<b>2647</b>	<b>977</b>	<b>618</b>	<b>195</b>	<b>81</b>	<b>1871</b>	<b>4518</b>

(Source: ABS, 2006)

In the Preston subdivision, 64 per cent of the 2,201 businesses were sole traders, with the majority of these in agriculture, forestry and fishing (Table 3.7). Other large sole traders included construction, retail trade, and property and business services. Enterprises with a small number of employees (between one and four) were concentrated in agriculture, forestry and fishing (168 businesses), construction (81 businesses), and retail trade (60 businesses). The larger employers were concentrated in agriculture, forestry and fishing, manufacturing, and retail trade. However, it should also be pointed out that, although mining has just a handful of businesses employing more than 50 staff, these enterprises are extremely large and play an important role in the local economy.

**Table 3.7 Number of Businesses by Employment in Preston, 2006**

	No staff	1-4 staff	5-19 staff	20-49 staff	50+ staff	Total employing	Total
Agriculture, Forestry and Fishing	627	168	75	36	15	294	921
Mining	9	0	3	3	2	6	17
Manufacturing	69	18	9	6	6	39	105
Electricity, Gas and Water	0	0	0	0	0	0	3
Construction	195	81	36	0	3	120	315
Wholesale Trade	36	12	6	6	0	24	54
Retail Trade	102	60	51	12	0	123	222
Accommodation Cafes & Rest's	27	9	21	3	0	33	60
Transport and Storage	42	21	6	6	0	33	78
Communication Services	9	3	3	0	0	6	15
Finance and Insurance	51	3	0	0	0	3	54
Property and Business Services	189	33	18	0	0	51	246
Education	3	0	3	0	0	3	6
Health and Community Services	18	12	9	3	0	24	45
Cultural and Recreational Services	21	3	3	0	0	6	27
Personal and Other Services	27	9	0	0	0	9	33
<b>Total</b>	<b>1425</b>	<b>432</b>	<b>243</b>	<b>75</b>	<b>26</b>	<b>774</b>	<b>2201</b>

(Source: ABS, 2006)

In Vasse, again sole traders were the norm, with 2,995 of the subdivision's 4,881 businesses (or 61.4 per cent) falling into this category. The majority of these were in construction, property and business services, and agriculture, forestry and fishing sectors. A further 21.7 per cent of enterprises employed between one and four staff, with concentrations in construction, agriculture, forestry and fishing, retail trade, and property and business services. The Vasse subdivision also has a number of large employers, particularly in agriculture, forestry and fishing (with vineyards playing an important role), manufacturing (including wineries, food processing etc.), and accommodation, cafes and restaurants.

**Table 3.8 Number of Businesses by Employment in Vasse, 2006**

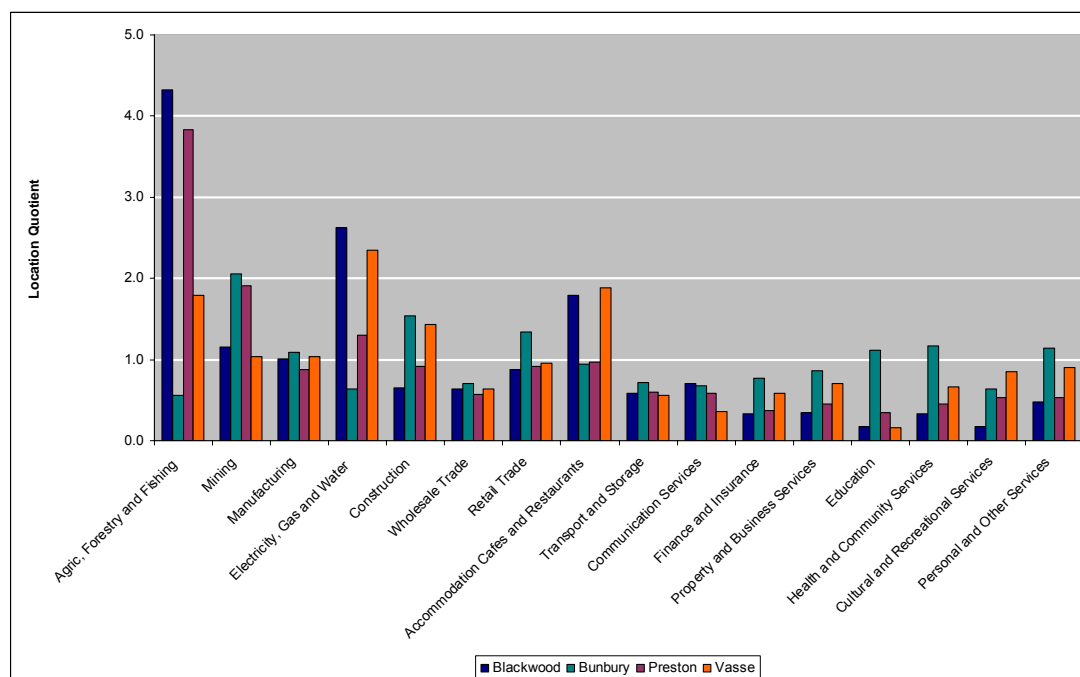
	No staff	1-4 staff	5-19 staff	20-49 staff	50+ staff	Total employing	Total
Agriculture, Forestry and Fishing	606	183	123	33	12	351	954
Mining	18	3	0	0	0	3	18
Manufacturing	149	66	42	12	9	129	276
Electricity, Gas and Water	9	0	0	0	0	0	12
Construction	795	218	69	15	3	305	1101
Wholesale Trade	60	48	27	3	0	78	135
Retail Trade	201	165	111	33	9	318	519
Accommodation Cafes & Rest's	101	57	69	21	15	162	261
Transport and Storage	87	39	21	9	3	72	162
Communication Services	12	9	0	0	0	9	21
Finance and Insurance	138	30	15	3	0	48	186
Property and Business Services	618	156	69	15	6	246	861
Education	6	0	3	0	0	3	6
Health and Community Services	75	30	27	3	3	63	147
Cultural and Recreational Services	57	15	15	6	0	36	96
Personal and Other Services	63	39	21	3	0	63	126
<b>Total</b>	<b>2995</b>	<b>1058</b>	<b>612</b>	<b>156</b>	<b>60</b>	<b>1886</b>	<b>4881</b>

(Source: ABS, 2006)

Location quotients were calculated for private enterprises in the South West's subdivisions to provide an indication of the relative importance of different business sectors (Figure 3.4). The results are broadly consistent with the LQs calculated on the basis of sectoral employment (Table 3.3). In Blackwood, with an LQ of 4.3 enterprises in the agriculture, forestry and fishing sectors are clearly the drivers of the local economy. Other leading sectors in this subdivision include electricity, gas and water (2.6), and accommodation, cafes and restaurants, highlighting the growing role of tourism.

Given its status as a regional city and economic hub, Bunbury has a number of sectors with LQs above the critical 1.0 threshold. Mining, with an LQ of 2.1, leads the local economy, with other significant contributors including construction (1.5), retail trade (1.3), health and community services (1.2), education (1.1), and manufacturing (1.1). The significant role of Bunbury as a regional service provider is evident in the relatively high LQs for retailing and service sectors.

In the Preston subdivision, agriculture forestry and fisheries has the highest LQ (3.9), followed by mining (1.9). The only other sector with an LQ greater than 1.0 is electricity, gas and water. In Vasse, the highest LQ is in the electricity, gas and water sector (2.3), closely followed by accommodation, cafes and restaurants (1.9). Other sectors with LQs higher than 1.0 include: agriculture, forestry and fishing (1.8), and construction (1.4).

**Figure 3.4 Location Quotients for Businesses by Industry Sector, 2006**

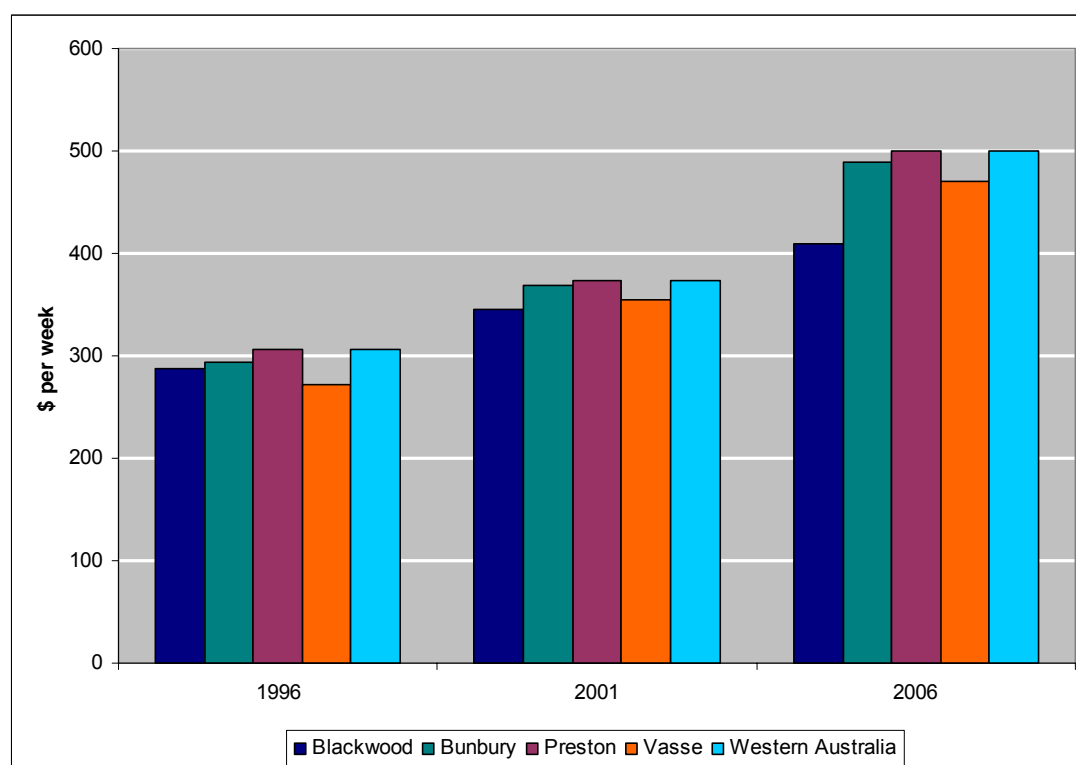
(Calculated by the authors from ABS, 2007)

### 3.3.4 Income Distribution

The capacity to pay competitive wages and salaries is an important issue for both public and private sector businesses and organisations in the South West. Competitive wages within a regional economy help to reduce the outflow of labour to other regions, and can help prevent high levels of turnover for individual enterprises. Figure 3.5 shows the changing median individual income in the South West's subdivisions.

In 1996, median incomes in Blackwood, Bunbury and Vasse were lower than the State average, while Preston was on par with the rest of Western Australia (\$307 per week). The Blackwood subdivision was 93.4 per cent of the State average, while Bunbury and Vasse were at 95.8 per cent and 88.6 per cent, respectively.

By 2006, median incomes in Blackwood had slipped to 82 per cent of the State average. However, in other parts of the South West, competitiveness had improved, with Preston remaining the same as the Western Australian average (\$500 per week), while Bunbury increased to 97.8 per cent and Vasse to 94.2 per cent. In the case of Bunbury and Preston, the relative increase in wages was a direct consequence of the strength of the local economy, and the competitiveness of local firms, particularly in the mining, manufacturing, construction and tourism sectors. In Vasse, the in-migration of higher income earners, together with an relatively innovative and prosperous local economy, helped improve the subdivision's median incomes. In Blackwood, ongoing challenges facing the agricultural and forestry industries contributed to the relative decrease in median incomes.

**Figure 3.5 Median Individual Weekly Income in the South West, 2006**

(Source: ABS, 2007)

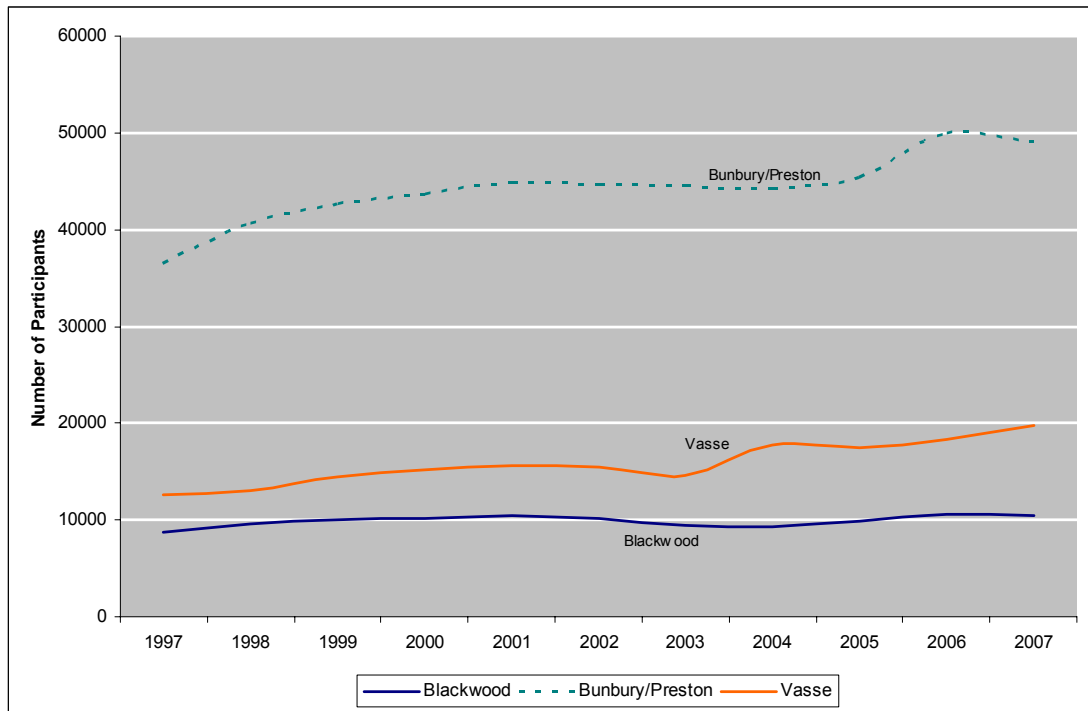
## 3.4 The Labour Force

### 3.4.1 Employment and Unemployment Trends

The Small Area Labour Market data from the Department of Employment and Workplace Relations show that the general pattern within the South West over the past decade was one of increasing employment (Figures 3.6 and 3.7). In Blackwood, the estimated labour force increased from 8,701 in 1997 to 10,393 in 2007; an average annual growth rate of 1.8 per cent (Figure 3.6). However, much of this growth occurred in the late 1990s, and since 2000 the labour force has been relatively stable. In Bunbury/Preston<sup>3</sup>, the labour force increased from 36,492 to 49,099; an average annual growth rate of 3.1 per cent. Much of this growth was fuelled by increasing activity in the resources sector and ancillary industries, such as transport, construction, manufacturing and services. The Vasse subdivision experienced an increase from 12,566 to 19,777, representing an average annual rate of growth of 5.2 per cent. This rapid growth is consistent with rapid expansion of the local economy and population over the decade. Indeed, few other rural subdivisions in Western Australia have experienced such rapid growth in the labour force in recent years.

<sup>3</sup> In this component of the analysis, the Bunbury and Preston subdivisions have been combined to account for changes in statistical boundaries during the 1997-2007 period.

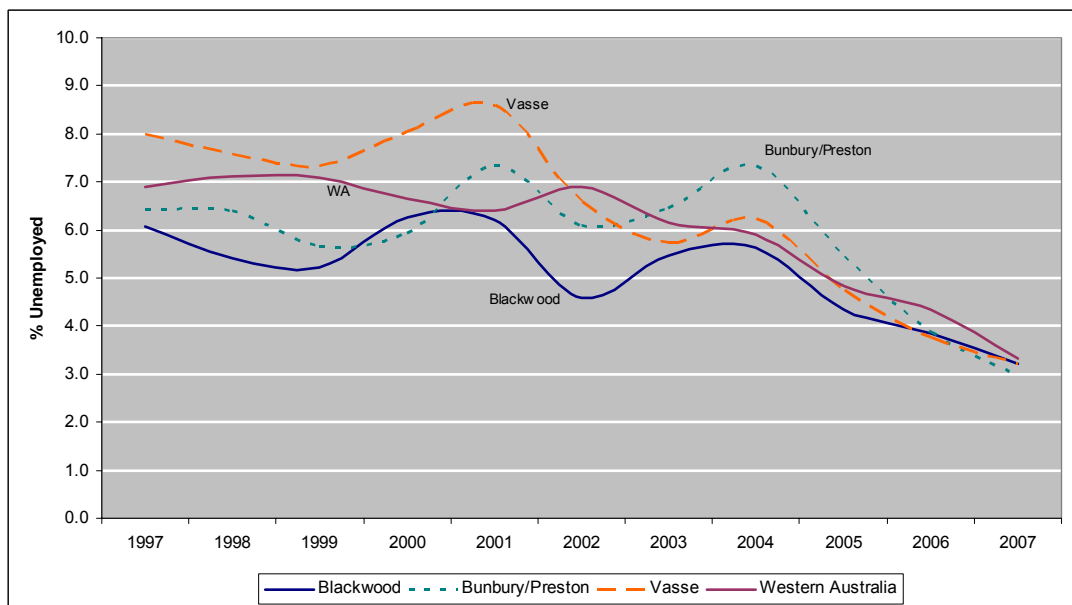
**Figure 3.6 Estimated Size of the Labour Force in the South West, 1996-2007**



(Source: DEWR, various issues)

In terms of unemployment rates, all subdivisions were below the Western Australian rate in 2006 and 2007 (Figure 3.7). Blackwood, as with most subdivisions with a predominantly agricultural economy, has remained below the State average over the entire 1997-2007 period. Bunbury/Preston fluctuated around the State average between 1997 and 2005, as did Vasse. The strength of the regional economy has been the critical driver of employment growth and, of course, falling unemployment rates.

**Figure 3.7 Unemployment Rates in the South West, 1996-2007**



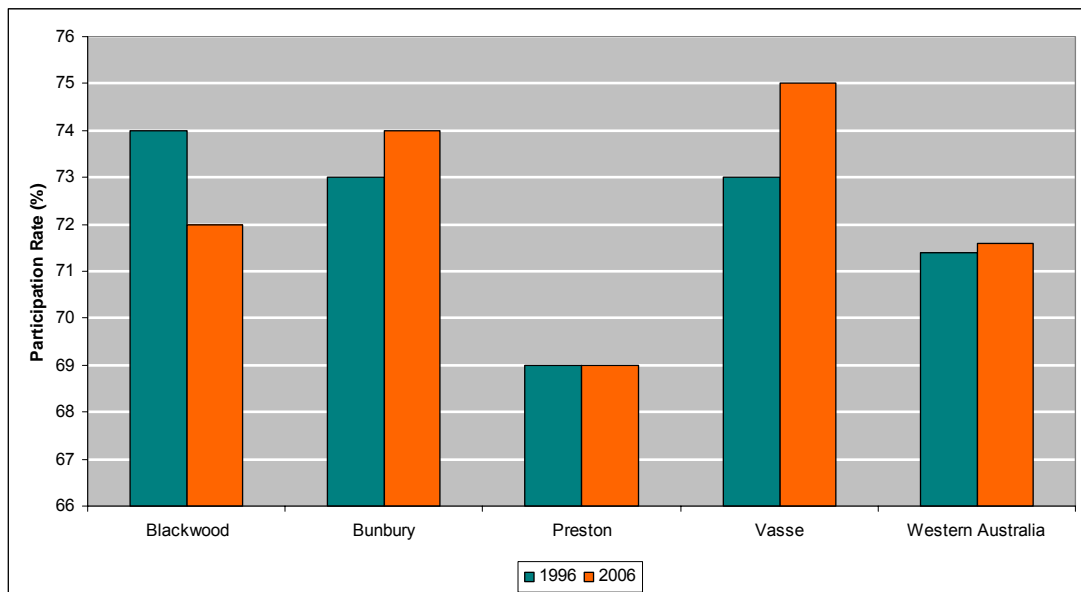
(Source: DEWR, various issues)



### 3.4.2 Labour Force Participation

Labour force participation rates vary considerably across the South West (Figure 3.8). In Blackwood, participation rates were higher than the State average in both 1996 and 2006, although decreased from 74 to 72 per cent. By contrast, Bunbury’s strong economy saw participation increase from 73 to 74 per cent over the same period. Intriguingly, participation in Preston is much lower than the State average, and remained constant at 69 per cent in 1996 and 2006. By 2006, Vasse had the highest participation rate in the region, at 75 per cent, further emphasising both the strong economy and the tightness of supply within the local labour market.

**Figure 3.8 Labour Force Participation Rates in the South West, 1996-2006**



(Source: ABS, 2007)

Figure 3.9 shows how labour force participation varied across different age cohorts in 2006. In Blackwood, participation was similar to, or marginally lower than, the Western Australian average for almost all age cohorts until 40-44 years, after which it was uniformly higher. This indicates an ageing labour force, which is not inconsistent with other regions based largely around agriculture and, to a lesser extent, forestry.

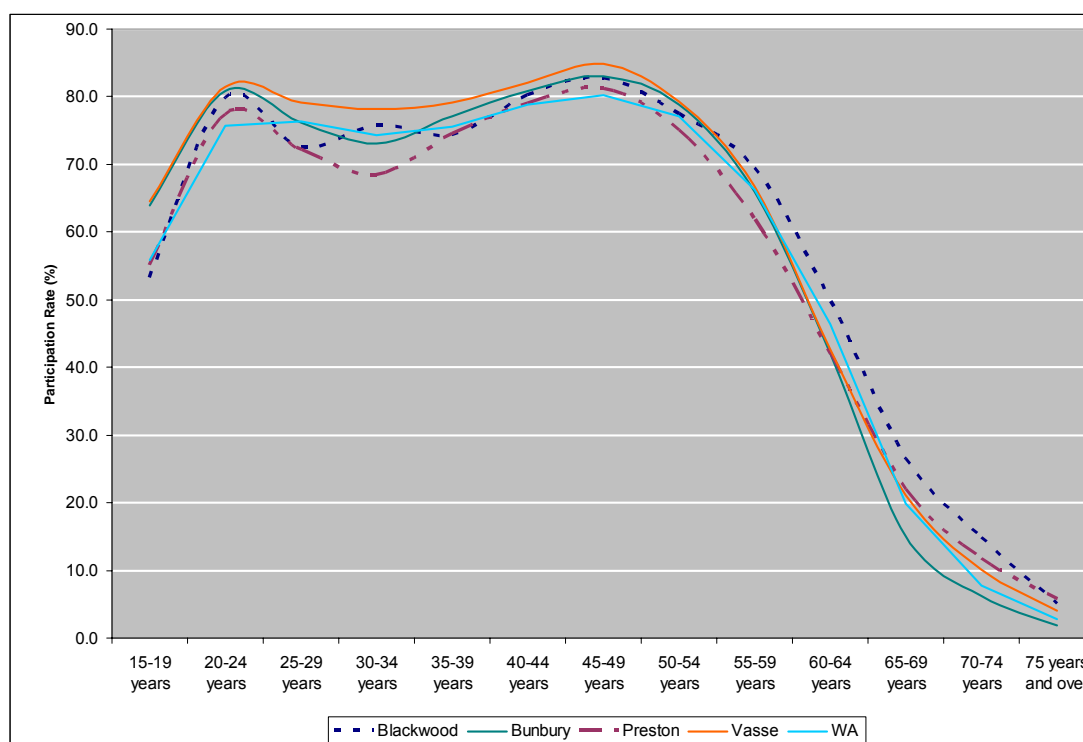
Bunbury represented a quite different situation to Blackwood, with a generally younger workforce, and high participation rates in the 15 to 54 age cohorts. Beyond the age of 55, participation drops to below the State average. The age structure of the labour force in Bunbury is an outcome of its industrial mix, with vibrant mining, manufacturing, construction sectors tending to favour a younger workforce.

Preston’s labour force had lower participation rates than the State average in most age cohorts in 2006, and indeed tended to be considerably lower than other subdivisions in the

South West. Only in the 20-24, 40-44, 45-49, and 65+ age cohorts did it have participation rates close to or exceeding the Western Australian average. In the 30-34 age group, normally a segment of the labour force that is highly engaged, participation was particularly low (68.5 per cent) compared to Western Australia (74.3).

In Vasse, participation rates in 2006 in the 15-54 age groups were the highest in the region. Participation peaked at 84.9 per cent in the 45-49 age cohort, compared with 80.2 per cent in Western Australia as a whole. Even in the older age cohorts, Vasse was comparable with the State average.

**Figure 3.9 Labour Force Participation in the South West by Age, 1996-2006**



(Source: ABS, 2007)

### 3.4.3 Employment by Industry Sector

In terms of the distribution of employment across industry sectors, agriculture, forestry and fishing comprised more than 20 per cent of the labour force in Blackwood in 2006 (Table 3.9). Other significant employers included: manufacturing (10.9 per cent); retail trade (9.6 per cent), education and training (8.1 per cent), health care and social assistance (8.0 per cent), and accommodation and food services (7.2 per cent).

By contrast, the employment structure of the regional centre, Bunbury, was considerably more diverse. In Bunbury, the largest employer was manufacturing (14.2 per cent), followed by construction (13.3 per cent), retail trade (13.2 per cent), and health care and social assistance (9.5 per cent).

In Preston, agriculture and manufacturing were the most important employers, comprising 11.7 and 15.4 per cent of the labour force, respectively. The importance of mining was also reflected in the labour force structure, with 7.2 per cent engaged in this sector. Indeed, it is interlinkages between mining and manufacturing (which includes minerals processing, and the manufacture of inputs to mining) that are the basic drivers of the local economy.

The labour force of Vasse was spread across a range of sectors. Construction was the largest sector, accounting for 13.9 per cent of all employment. The size of this sector was linked to the strong growth in the local economy, and the expansion of a range of other industries. Other employers of note were: agriculture, forestry and fishing (8.2 per cent); manufacturing (9.6 per cent), accommodation and food services (11.1 per cent), and retail trade (12.9 per cent). While agriculture, forestry and fishing is linked in part to traditional agricultural enterprises such as dairying, the emergence of viticulture, agroforestry and a range of food industries has been important. The relatively high levels of employment in manufacturing are linked to food processing (including employment in wineries) and a range of craft-based industries. Accommodation and food services and retail trade, are linked in part to local demand, but are clearly major components of the region's tourism economy.

**Table 3.9 Percentage of the Labour Force in Different Industry Sectors in the South West, 2006**

Industry Sector	Blackwood	Bunbury	Preston	Vasse	W. Aust
Agriculture, forestry & fishing	20.3	1.2	11.7	8.2	3.3
Mining	2.3	3.1	7.2	1.7	4.3
Manufacturing	10.9	14.2	15.4	9.6	9.4
Electricity, gas, water & waste services	0.7	1.6	2.2	0.8	1.0
Construction	5.5	13.3	9.8	13.9	9.1
Wholesale trade	3.2	3.2	2.7	2.2	4.0
Retail trade	9.6	13.2	9.2	12.9	11.1
Accommodation & food services	7.2	5.6	4.9	11.1	5.8
Transport, postal & warehousing	3.8	3.9	3.4	2.8	4.2
Information media & telecommunications	0.5	1.1	0.5	0.7	1.3
Financial & insurance services	1.0	1.9	1.0	2.0	2.9
Rental, hiring & real estate services	1.2	2.1	1.4	2.6	2.0
Professional, scientific & technical services	2.5	3.8	2.2	4.1	6.3
Administrative & support services	2.0	2.8	2.3	3.4	3.2
Public administration & safety	7.0	5.3	4.7	3.7	6.4
Education & training	8.1	7.0	7.1	6.1	7.7
Health care & social assistance	8.0	9.5	7.6	8.1	10.2
Arts & recreation services	0.7	0.9	0.7	0.9	1.2
Other services	2.7	4.6	3.0	3.2	3.8
Other	2.6	1.8	2.8	2.0	2.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(Source: ABS, 2007)

### 3.4.4 Shift-Share Analysis

Table 3.10 shows data produced from a shift-share analysis of employment change in the Blackwood subdivision for the period 2001-2006<sup>4</sup>. Census figures indicate that the labour force of Blackwood decreased by 6.2 per cent between 2001 and 2006. The results suggest that local economic conditions, together with the overall industry structure were the main contributors to decline. The regional shift component saw a decrease of 834 people, while the industry composition of Blackwood led to a loss of a further 394. It was largely national effects that dampened the impact of these on the overall labour force, contributing some 748 jobs.

**Table 3.10 Shift-Share Decomposition of Employment Change by Industry in Blackwood, 2001-2006**

Industry Sector	National Share	Industry Composition	Regional Shift	Total	% Change
Agriculture, forestry & fishing	194	-495	-229	-530	-26.5
Mining	20	67	-126	-39	-19.5
Manufacturing	79	-103	2	-22	-2.7
Elect, gas, water & waste services	4	3	1	8	19.0
Construction	39	84	-124	-1	-0.5
Wholesale trade	38	-59	-145	-166	-41.9
Retail trade	62	15	-15	62	9.6
Accommodation & food services	54	-19	-75	-40	-7.0
Transport, postal & warehousing	26	4	-25	5	1.9
Information media & teleco's	3	-8	6	1	2.9
Financial & insurance services	8	2	-18	-8	-9.6
Rental, hiring & real estate services	10	-1	-22	-13	-12.7
Professional, scientific & technical services	19	0	-33	-14	-7.1
Administrative & support services	17	-10	-35	-28	-17.1
Public administration & safety	30	49	124	203	66.3
Education & training	50	8	7	65	12.7
Health care & social assistance	51	57	-60	48	9.1
Arts & recreation services	7	1	-28	-20	-27.4
Other services	18	-14	5	9	4.9
Other	19	25	-44	0	0.0
<b>Total</b>	<b>748</b>	<b>-394</b>	<b>-834</b>	<b>-480</b>	<b>-6.2</b>

(Calculated by the authors from ABS, 2007)

The most significant decreases in employment occurred in: agriculture, forestry and fisheries (-26.9 per cent); wholesale trade (-41.9 per cent); accommodation and food services (-7.0 per cent), and mining (-19.5 per cent). In the case of agriculture, forestry and fishing, it was the industry composition component that contributed to the significant falls, with more than

<sup>4</sup> For a discussion of shift-share analysis see Appendix 1.

495 jobs lost largely as a result of the heavy dependence on farming. In the other three sectors, it was the regional shift component that contributed to decline, indicating that local factors were the major constraints. In those sectors experiencing growth, public administration and safety grew largely as a result of local level drivers, while health care and social assistance increased on the back of national effects and the local mix of sectors.

In Bunbury, total employment increased by 1,801 jobs between 2001 and 2006, representing an increase of 19.8 per cent (Table 3.11). The majority of this growth was made up of national effects and regional shift. In absolute terms, growth was concentrated in construction (1,370 new jobs), manufacturing (724 jobs), health care and social assistance (523 jobs), and retail trade (428 jobs). In the case of construction and manufacturing, the most significant driver of new employment was the regional shift component, highlighting the competitiveness and performance of locally-based businesses. In other sectors, a combination of national growth and the industry mix of Bunbury underpinned growth.

**Table 3.11 Shift-Share Decomposition of Employment Change by Industry in Bunbury, 2001-2006**

Industry Sector	National Share	Industry Composition	Regional Shift	Total	% Change
Agriculture, forestry & fishing	42	-106	-55	-119	-28.0
Mining	62	207	-121	148	23.1
Manufacturing	279	-364	809	724	25.2
Electricity, gas, water & waste services	36	24	-11	49	13.1
Construction	196	423	751	1,370	67.9
Wholesale trade	103	-158	-184	-239	-22.5
Retail trade	284	67	77	428	14.6
Accommodation & food services	129	-44	2	87	6.5
Transport, postal & warehousing	78	11	92	181	22.5
Information media & telecommunications	32	-75	8	-35	-11.0
Financial & insurance services	40	8	17	65	15.8
Rental, hiring & real estate ser's	41	-3	76	114	27.0
Professional, scientific & technical services	84	0	1	85	9.9
Administrative & support services	73	-46	-84	-57	-7.4
Public administration & safety	102	170	32	304	28.9
Education & training	147	24	89	260	17.1
Health care & social assistance	184	205	134	523	27.6
Arts & recreation services	19	2	8	29	14.6
Other services	85	-65	263	283	32.3
Other	44	59	-103	0	0.0
<b>Total</b>	<b>2,060</b>	<b>339</b>	<b>1,801</b>	<b>4,200</b>	<b>19.8</b>

(Calculated by the authors from ABS, 2007)

In Preston, employment increased by 936, or 7.1 per cent, between 2001 and 2006. Growth was concentrated in manufacturing and construction, which was in part linked to mining activity in the region (Table 3.12). In the case of manufacturing, the regional shift component was the major driver of employment growth, indicating a set of local competitive factors underpinning the expansion. In construction, a combination of regional shift and industry composition contributed to increases in employment. In overall terms, direct employment in mining decreased between 2001 and 2006, with local factors contributing to the fall. The decrease in mining is somewhat surprising, however it should be borne in mind that the statistics here are based on place of usual residence, rather than place of work. This means that while employment in mining enterprises in the region might have increased, the number of people employed who live locally may not have changed, or may have even fallen. Sharp increases in mining employment in Bunbury suggest that part of the labour force engaged in this industry live in that centre, or other coastal settlements such as Australind. The only major decreases in the area were experienced in agriculture, forestry and fishing (-311 jobs), and wholesale trade (-315). In the former, it was largely industry compositional effects that contributed to the decrease, while in the latter local effects were the driver of decline.

**Table 3.12 Shift-Share Decomposition of Employment Change by Industry in Preston, 2001-2006**

Industry Sector	National Share	Industry Composition	Regional Shift	Total	% Change
Agriculture, forestry & fishing	191	-487	-15	-311	-15.9
Mining	116	388	-678	-174	-14.6
Manufacturing	165	-215	524	474	27.9
Elect, gas, water & waste services	30	20	-42	8	2.3
Construction	90	195	164	449	48.3
Wholesale trade	68	-104	-279	-315	-45.1
Retail trade	107	25	63	195	17.7
Accommodation & food services	62	-21	2	43	6.7
Transport, postal & warehousing	41	6	21	68	16.0
Information media & telecomm's	12	-28	-41	-57	-46.7
Financial & insurance services	14	3	-20	-3	-2.0
Rental, hiring & real estate serv's	15	-1	29	43	27.7
Professional, scientific & technical services	27	0	8	35	12.6
Administrative & support services	34	-21	-45	-32	-9.0
Public administration & safety	48	79	42	169	34.3
Education & training	86	14	18	118	13.3
Health care & social assistance	87	96	1	184	20.6
Arts & recreation services	11	1	-22	-10	-8.8
Other services	37	-28	42	51	13.5
Other	39	53	-91	1	0.0
<b>Total</b>	<b>1,280</b>	<b>-25</b>	<b>-319</b>	<b>936</b>	<b>7.1</b>

(Calculated by the authors from ABS, 2007)

Total employment in the subdivision of Vasse increased by 18 per cent, or 2,566 jobs, between 2001 and 2006 (Table 3.13). A combination of national growth and regional shift contributed to the increase, while the area's industry composition tended to constrain employment growth. Increases in employment occurred in a number of sectors, with the largest real gains experienced in: construction (812 new jobs); retail trade (452 jobs); health care and social assistance (299 jobs); and accommodation and food services (247 jobs). Industry compositional effects contributed to significant increases in a number of sectors, while a relatively large regional shift in construction, retail trade, and accommodation and food services suggest highly competitive local conditions are the drivers of growth. In terms of decline, agriculture, forestry and fishing shed more than 200 jobs, largely as a result of the local industry mix, although the regional shift component points to an efficient and competitive local industry. While manufacturing was disadvantaged by the industry composition component, the regional shift indicates a highly competitive local industry.

**Table 3.13 Shift-Share Decomposition of Employment Change by Industry in Vasse, 2001-2006**

Industry Sector	National Share	Industry Composition	Regional Shift	Total	% Change
Agriculture, forestry & fishing	154	-393	27	-212	-13.4
Mining	20	66	-12	74	36.3
Manufacturing	153	-199	78	32	2.0
Electricity, gas, water & waste services	10	7	6	23	21.7
Construction	147	317	348	812	53.6
Wholesale trade	38	-58	3	-17	-4.3
Retail trade	166	39	247	452	26.5
Accommodation & food services	158	-54	143	247	15.1
Transport, postal & warehousing	38	5	36	79	20.1
Information media & telecommunications	13	-30	11	-6	-4.6
Financial & insurance services	24	5	59	88	35.5
Rental, hiring & real estate services	32	-2	88	118	36.2
Professional, scientific & technical services	51	0	106	157	30.0
Administrative & support services	53	-33	7	27	4.9
Public administration & safety	43	72	58	173	38.8
Education & training	83	14	84	181	21.2
Health care & social assistance	102	114	83	299	28.3
Arts & recreation services	16	2	-26	-8	-4.8
Other services	48	-36	34	46	9.1
Other	33	45	-77	1	0.0
<b>Total</b>	<b>1,382</b>	<b>-119</b>	<b>1,303</b>	<b>2,566</b>	<b>18.0</b>

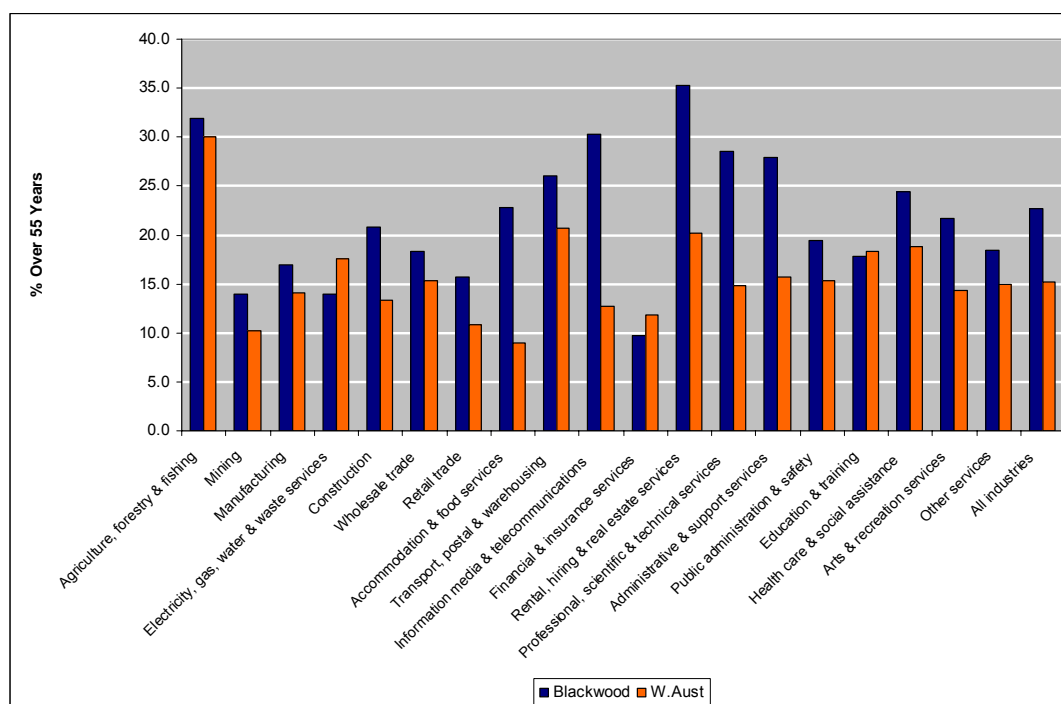
(Calculated by the authors from ABS, 2007)

### 3.4.5 The Ageing of the Labour Force

One of the major challenges facing regional Australia is the ageing of the workforce, with many employees within a decade or so of retirement. In the South West, there are a number of sectors where the ageing of the workforce is a significant issue, notably: agriculture, forestry and fishing; transport; and a number of service sectors.

In Blackwood, at the 2006 census the oldest sector was rental, hiring and real estate services, with more than 35 per cent of the workforce over the age of 55 (compared with 20.1 per cent in Western Australia)(Figure 3.10). The next oldest was agriculture, forestry and fishing, which is a major employer in the subdivision. More than 30 per cent of the workforce in this sector was over 55. Eight other sectors had more than 20 per cent of the labour force over the age of 55 years, while only two had fewer people over 55 than the WA average (electricity, gas water and waste services, and financial and insurance services).

**Figure 3.10 Proportion of Labour Force Over 55 Years of Age by Industry in Blackwood, 2006**

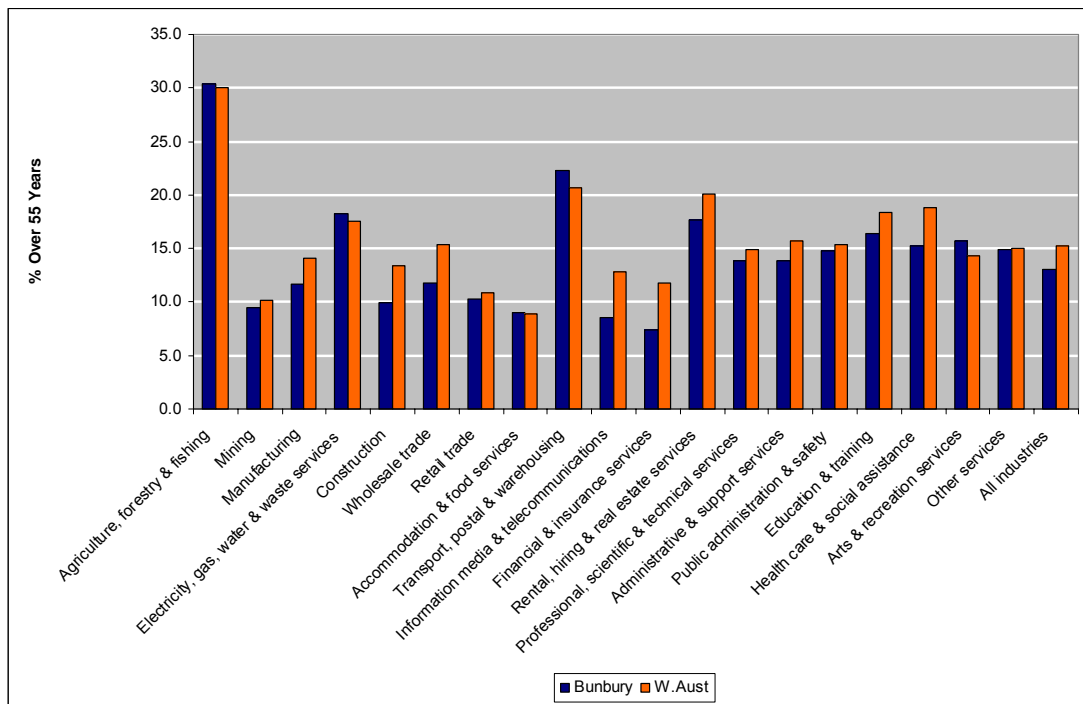


(Source: ABS, 2007)

The subdivision of Bunbury was in sharp contrast to Blackwood, with very few sectors having an older age structure than the Western Australian average (Figure 3.11). Only agriculture forestry and fishing (30.3 per cent), electricity, gas water and waste (18.3 per cent), accommodation and food services (9.0 per cent), and transport, postal and warehousing (22.3 per cent) had older age structures than Western Australia as a whole. Indeed, many sectors had a very low proportion of workers within 10 years of retirement when compared to the State average, notably: construction, wholesale trade, information, media and telecommunications, and financial and insurance services.



**Figure 3.11 Proportion of Labour Force Over 55 Years of Age by Industry in Bunbury, 2006**

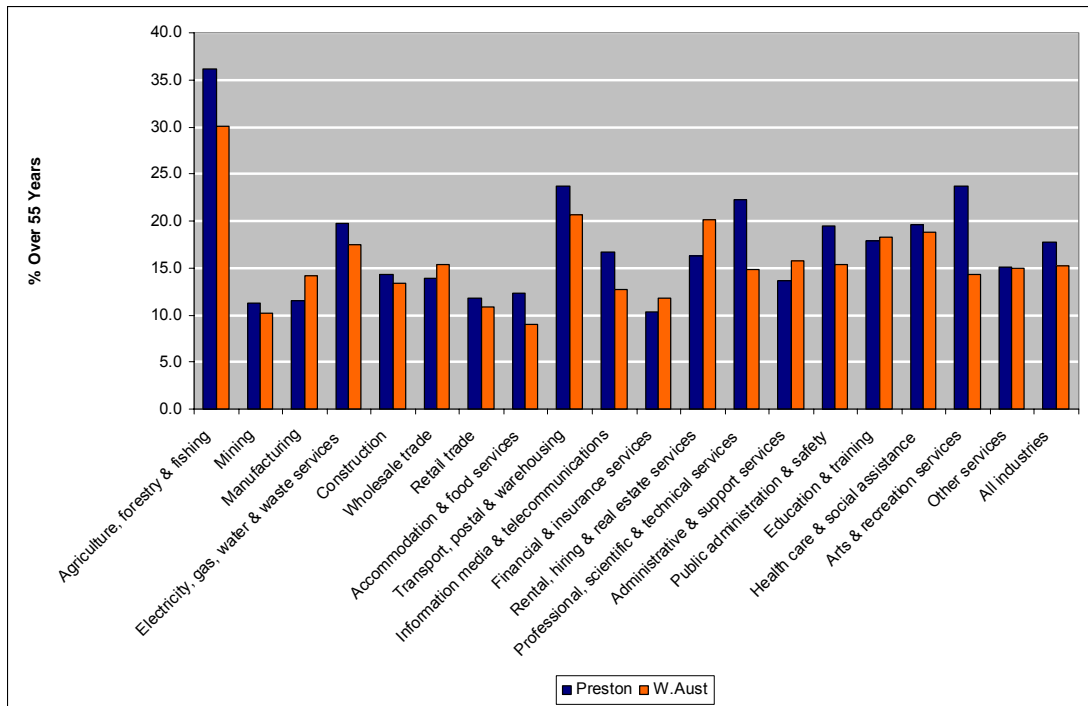


(Source: ABS, 2007)

As in many other parts of rural Australia, the Preston subdivision has a relatively old agricultural sector, with more than 36 per cent over the age of 55 in 2006 (Figure 3.12). A number of other sectors also had concentrations of people in the labour force over 55 that were much higher than the State average. These included: electricity, gas, water and waste services (19.7 per cent); transport, postal and warehousing (23.7 per cent); professional, technical and scientific services (22.2 per cent); and arts and recreation services (23.8 per cent). In general, however, the labour force of Preston does not have the looming retirement issues of other rural areas, such as the subdivision of Blackwood or some of those in the Great Southern and Wheatbelt.

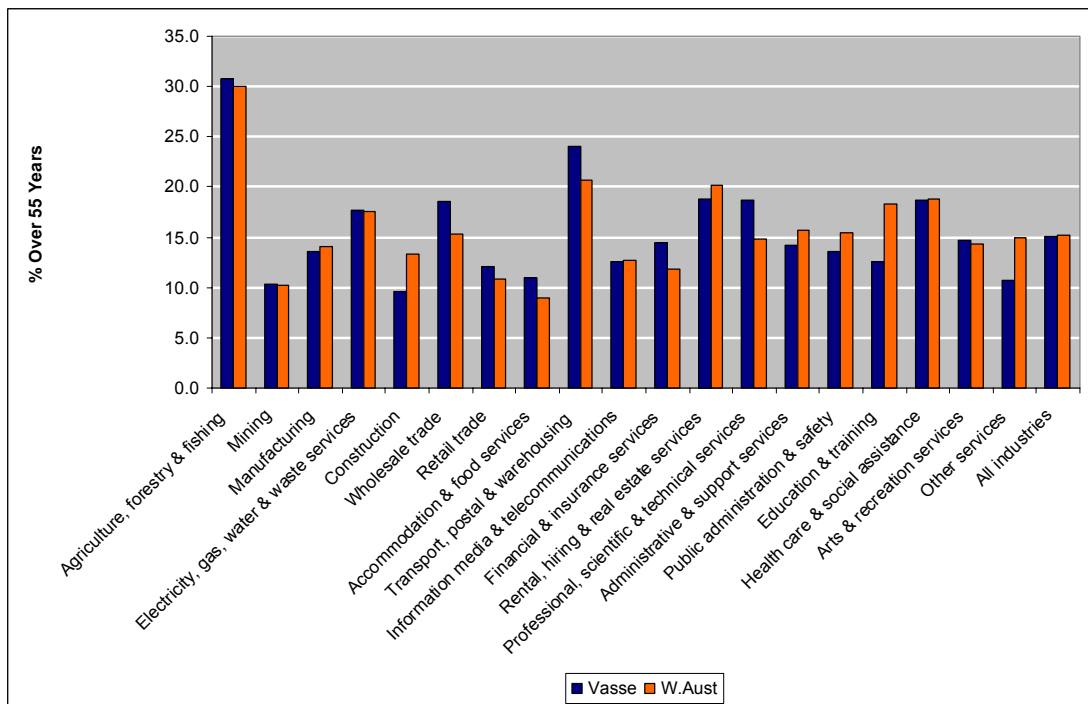
In the subdivision of Vasse, relatively few industries had more than 20 per cent of the labour force over the age of 55 in 2006 (Figure 3.13). The oldest sector was agriculture, forestry and fishing, with more than 30 per cent in this age cohort. The only other sector with more than 20 per cent over 55 years was transport, postal and warehousing (24 per cent). All other sectors had relatively young workforces, with only the following approaching the 20 per cent over 55 threshold: wholesale trade (18.6 per cent), rental, hiring and real estate services (18.8 per cent), professional, scientific and technical services (18.7 per cent); and health care and social assistance (18.7 per cent). Unlike many other regional areas, the Vasse subdivision has been able to regenerate its workforce, and in most sectors does not face the imminent retirement of large numbers of people.

**Figure 3.12 Proportion of Labour Force Over 55 Years of Age by Industry in Preston, 2006**



(Source: ABS, 2007)

**Figure 3.13 Proportion of Labour Force Over 55 Years of Age by Industry in Vasse, 2006**

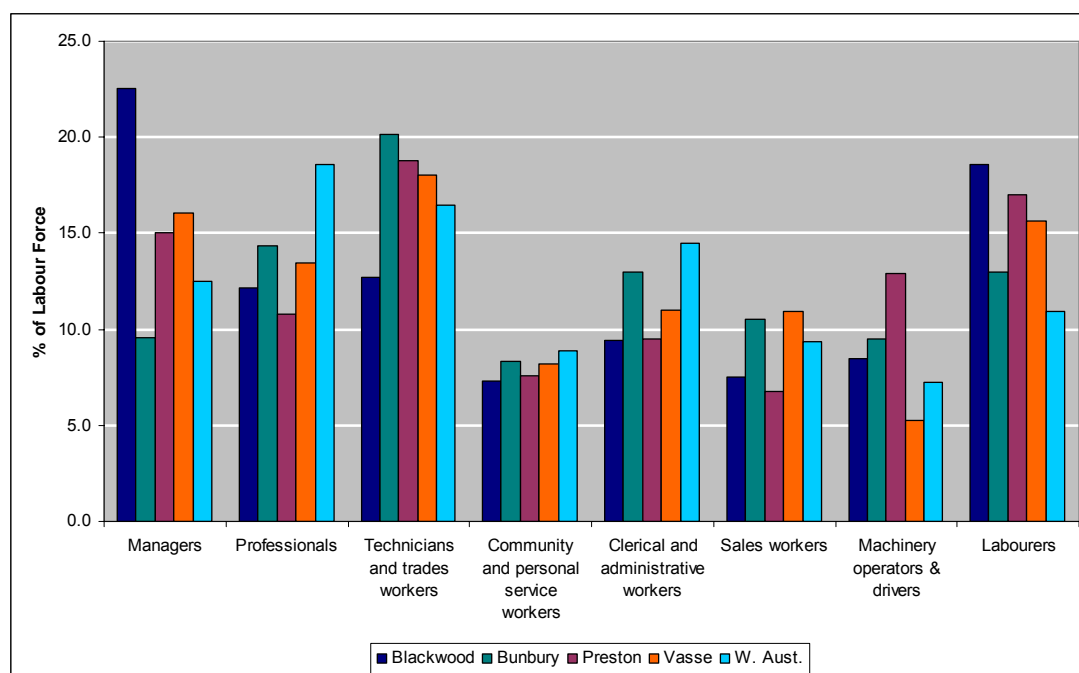


(Source: ABS, 2007)

### 3.4.6 Occupational Structure

Figure 3.14 shows the occupational structure of the South West at the 2006 census. The most common occupation in the region was technicians and trades workers, reflecting the high levels of employment in sectors such as construction, manufacturing and mining. In Blackwood, the proportion of managers was relatively high, largely as a result of the majority of farmers being included in this category. In more general terms, the proportion of people in professional occupations was relatively low compared to the State average, though this is not unusual in regional areas. The proportion of labourers was high, again reflecting the particular industrial mix of the region. Bunbury’s role as a regional administrative centre and economic hub shaped its occupational structure, with the proportion of professionals, clerical and administrative workers and sales workers relatively high. The significance of Vasse as a tourism destination resulted in a relatively high proportion of people working in sales.

**Figure 3.14 Labour Force by Occupation in the South West, 2006**



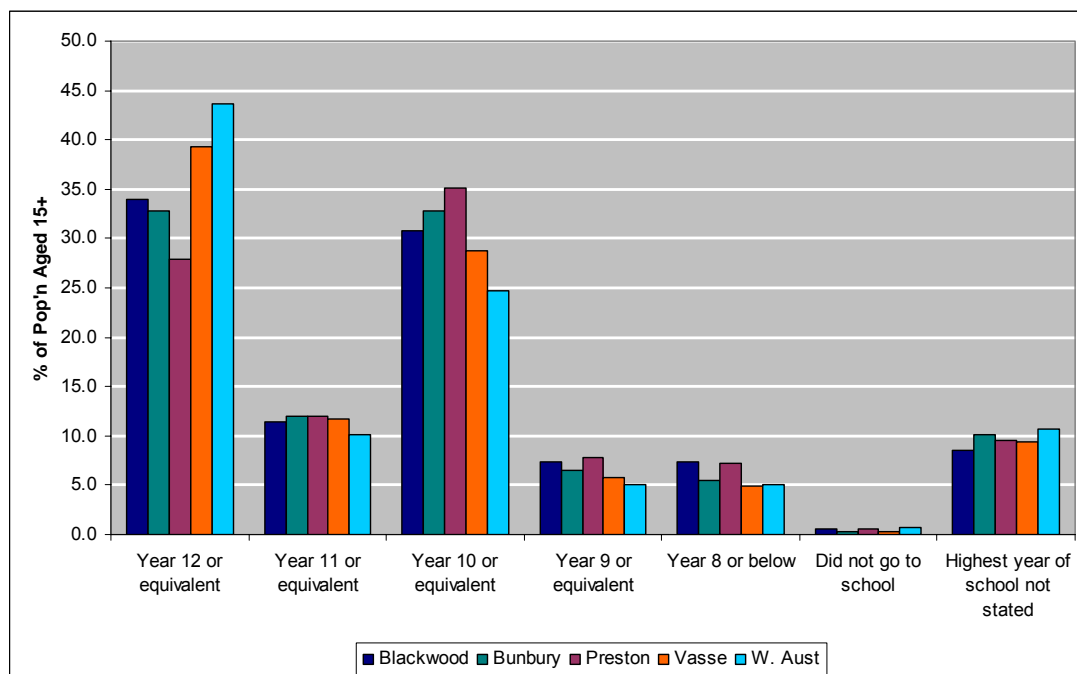
(Source: ABS, 2007)

### 3.5 The Education Base of the Region

In 2006, the highest level of schooling in the South West was uniformly lower than the Western Australian average (Figure 3.15). The lowest proportion of people to complete year 12 or equivalent was in Preston (28.8 per cent), with the highest in Vasse (39.3 per cent). In Preston, 35.1 per cent completed schooling to year 10, with 32.8 per cent and 30.8 per cent having schooling to this level in Bunbury and Blackwood, respectively. In Vasse, 28.8 per cent had schooling to year 10. In Bunbury, Blackwood and Preston, higher proportions of people had completed year 8 or equivalent than the State average (5.1 per cent). The level

of schooling is, in part, linked to the economic structure of the subdivisions, with sectors such as agriculture, construction, manufacturing and mining requiring trade level qualifications that often see people leave school at the end of year 10 to take up vocational education.

**Figure 3.15 Highest Level of Schooling in the South West, 2006<sup>5</sup>**



(Source: ABS, 2007)

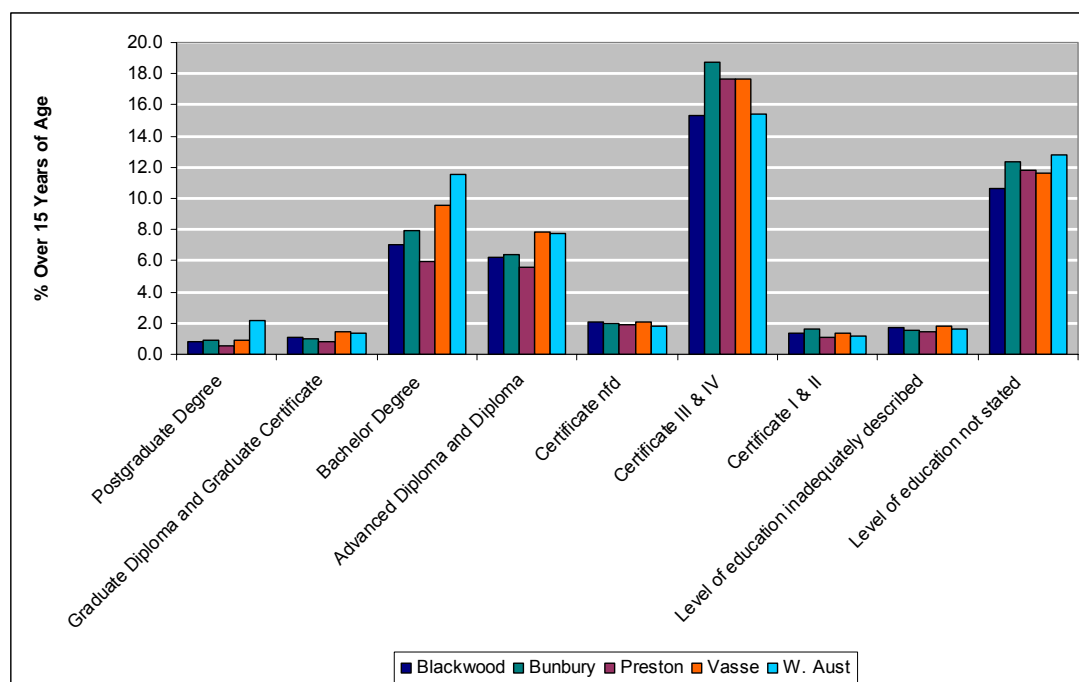
The importance of vocational training to the economy of the South West is illustrated in Figure 3.16. In Bunbury (18.8 per cent), Preston (17.7 per cent) and Vasse (17.7 per cent) the proportion of people with certificate level III and IV was higher than the Western Australian average (15.4 per cent). Qualifications of this nature are often associated with trades and para-professional activities, and in the South West are linked to sectors such as manufacturing, construction, mining, health care and social assistance, and transport. In Blackwood, the proportion with these qualifications was marginally lower than in Western Australia as a whole, at 15.3 per cent, largely as the subdivision does not have the scale of mining, construction and manufacturing activities of the other subdivisions in the South West.

Across the entire region, the proportion of the population with bachelors level education or higher was lower than the Western Australian average (15.1 per cent). The proportion was highest in Vasse (11.9), followed by Bunbury (9.8 per cent). In Blackwood and Preston, 9.0 and 7.2 per cent, respectively, had bachelors qualifications or higher. The relatively high proportion in Vasse possibly reflects the in-migration of retirees and lifestyle migrations with bachelors or higher qualifications, while in Bunbury the range of higher-order services (e.g.

<sup>5</sup> For those no longer at school.

in education, health and social assistance) typical of a regional centre help to explain the higher proportions of these qualifications than in Blackwood and Preston.

**Figure 3.16 Post School Qualifications in the South West, 2006**



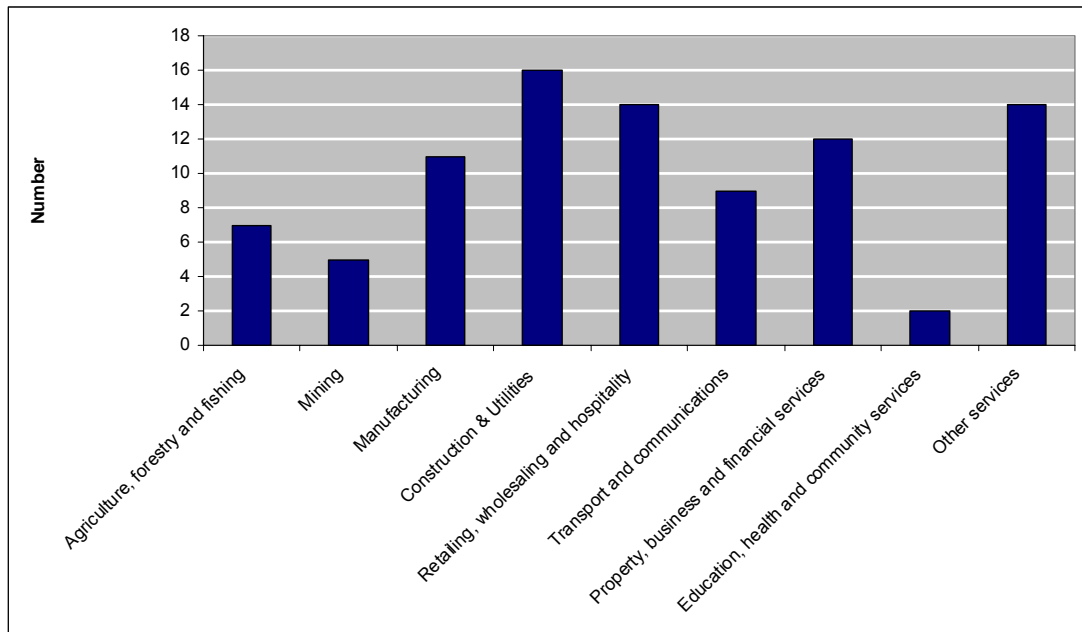
(Source: ABS, 2007)

### 3.6 Employer Perspectives

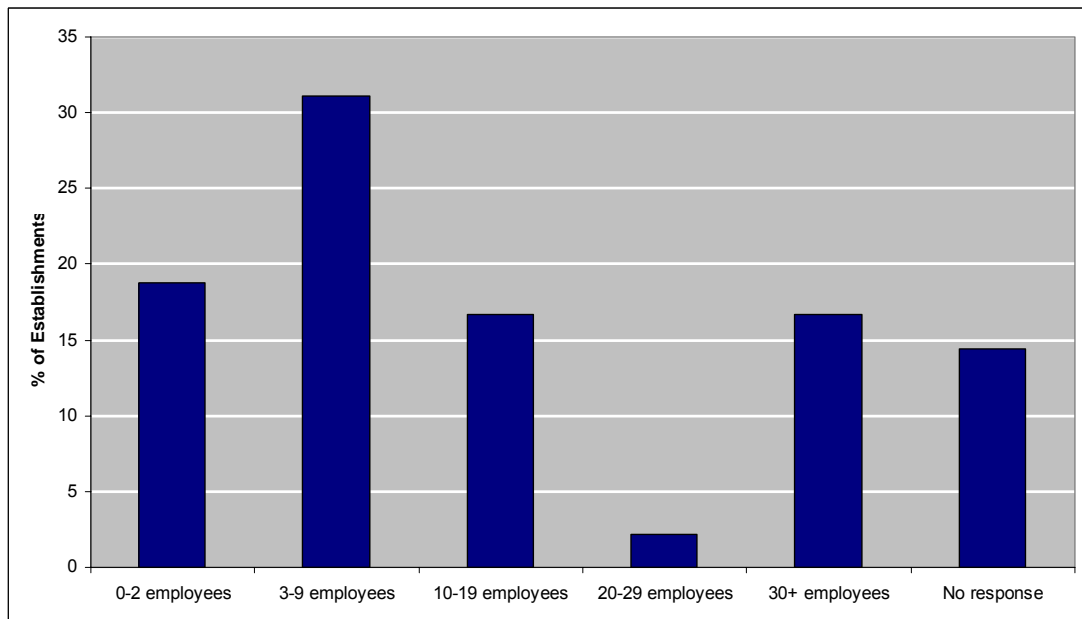
The 2006 survey of private enterprises and public sector organisations in southern Western Australia yielded 90 responses from the South West, including: 16 respondents from construction and utilities; 14 from retailing, wholesaling and hospitality; 14 from other services; 12 from property and business services; and 34 from a range of other sectors (see Figure 3.17). In terms of geographical spread, responses were received from across the region, with 33.3 per cent from Bunbury, 21.2 per cent from Preston, 24.4 per cent from Vasse, and 21.2 per cent from Blackwood.

The majority of respondents were either sole traders or had less than 10 employees (Figure 3.18). A total of 18.8 per cent had two employees or less, while 31.1 per cent had between three and nine employees. A total of 18.9 per cent had between 10 and 29 employees, while 16.7 per cent had more than 30 staff. The size of enterprises is not dissimilar to the regional structure reported in Tables 3.5 to 3.8, although the proportion of larger employers in the survey sample is higher than the regional average.

**Figure 3.17 Surveved Establishments in the South West by Industry Sector**



**Figure 3.18 Surveved Establishments in the South West by Employees**



The majority of respondents (52.9 per cent) had increased the number of employees over the five years 2001-2006, with 16.5 per cent reporting a decrease and 30.6 per cent indicating that there had been little change (Figure 3.19). The sectors with the highest proportion of establishments reporting an increase in staff included property, business and financial services (75 per cent), wholesaling and hospitality (69.2 per cent), construction and utilities (56.3 per cent), and transport and communications (55.6 per cent). This is broadly

consistent with increases in employment recorded at the 2006 census. It is also a reflection of the strength of the regional economy, with increasing levels of activity in tourism and recreation, mining, and manufacturing fuelling growth in a range of other sectors, such as construction, transport and services. The movement of retirees and lifestyle migrants into a number of areas is also contributing to an expansion in employment.

There are, however, a number of industry sectors where decline or stability were widely reported. The majority of these were in agriculture, forestry and fishing (83.3 per cent of establishments in the sector), mining (60 per cent), and manufacturing (66.6 per cent). This is significant, since these three sectors are important drivers of the economy. In the case of agriculture, forestry and fishing, the decline or stagnation is the outcome of ongoing restructuring in both the farming and timber industries. In mining and manufacturing, qualitative responses indicate that, rather than a reduction in employment being linked to decline, it has been the outcome of efficiency gains and changing labour management practices. Moreover, in a number of cases, it was shortages of staff that had contributed to the decrease in employment.

**Figure 3.19 Changes in Employee Numbers Between 2001 and 2006 in the South West**

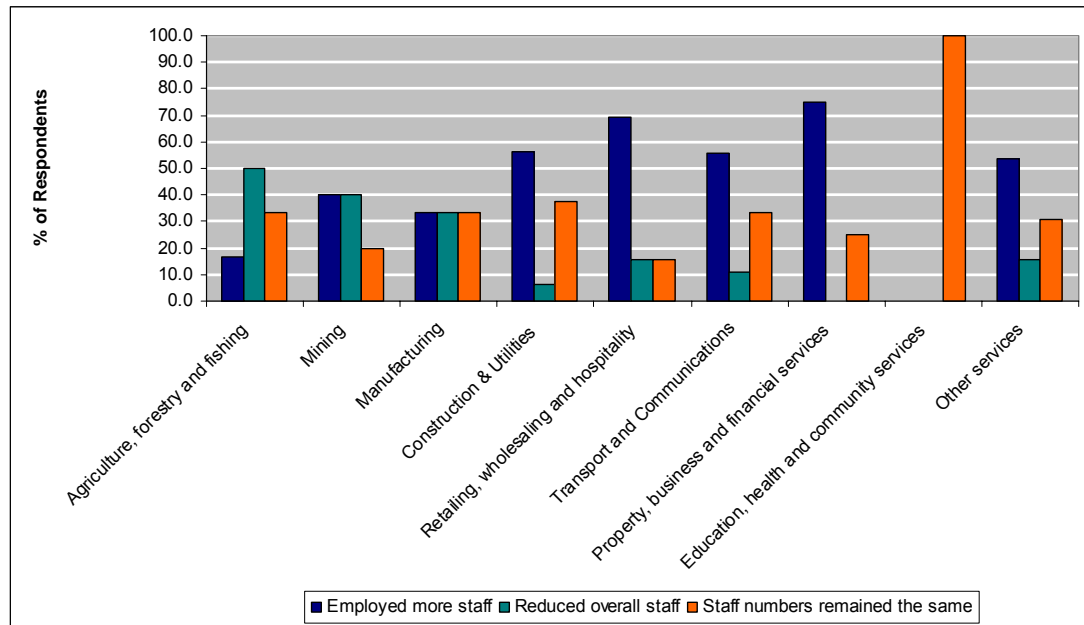
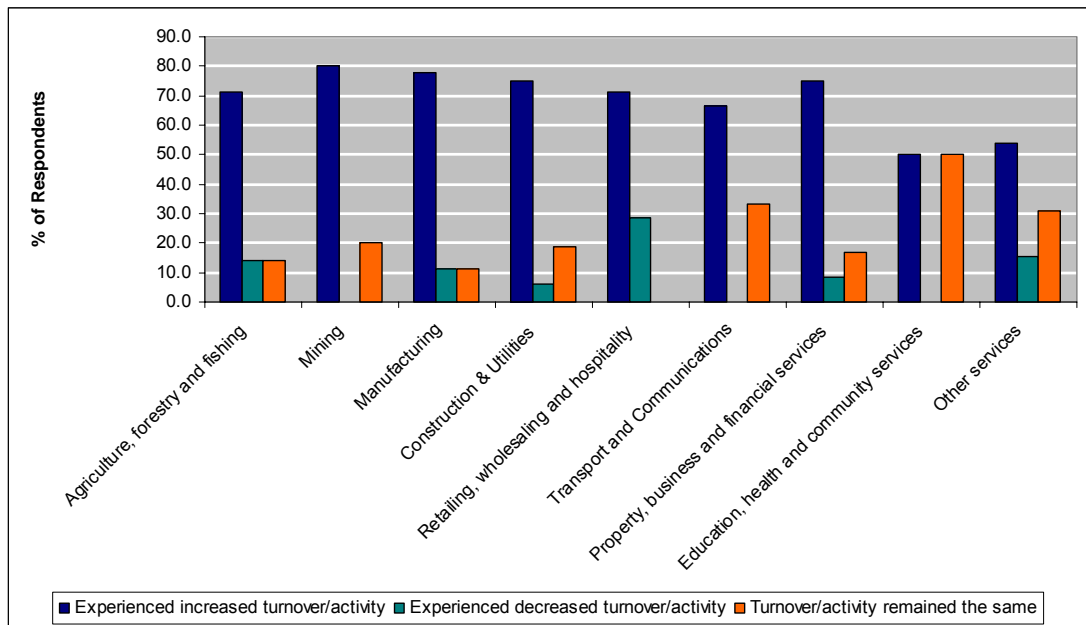


Figure 3.20 further emphasises that changes in employment are not necessarily linked to turnover or activity. All sectors, including those that had recorded a decrease in employment, had a majority of respondents indicate that activity or turnover had increased in recent years. Indeed, across all sectors 70.1 per cent indicated an increase in turnover or activity. The highest proportions of establishments reporting an increase were in: mining (80 per cent); manufacturing (77.8 per cent); and construction and utilities (75 per cent). The

sectors with the highest proportions of firms and organisations reporting a decrease were in: retailing, wholesaling and hospitality (28.6 per cent); other services (15.4 per cent); and agriculture, forestry and fishing (14.3 per cent).

**Figure 3.20 Changes in Turnover/Activity Between 2001 and 2006 in the South West**



In terms of labour shortages, 48.3 per cent of businesses and organisations reported difficulties in recruiting staff (Figure 3.21). Those most affected included: agriculture, forestry and fishing (71.4 per cent of firms in the sector); manufacturing (66.7 per cent); construction and utilities (56.3 per cent); other services (53.8 per cent). A number of these sectors have also reported shortages nationally, or at the State level (BTRE, 2006).

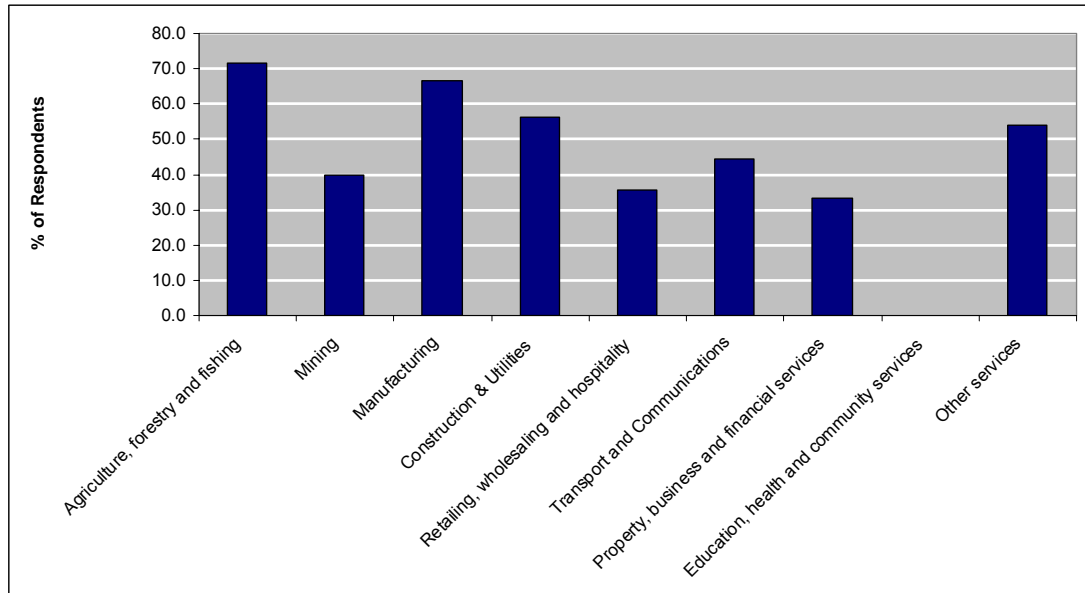
While recruitment difficulties were a major problem for a number of sectors, others did not regard finding new staff as a significant issue (Figure 3.21). Those sectors that did not record a high proportion of firms with recruitment problems were: mining (60 per cent did not regard recruitment as an issue); retailing wholesaling and hospitality (64.3 per cent); and, property, business and financial services (66.7 per cent). No firms or organisations in the education, health, and community services sector regarded recruitment as a major problem, although it should be borne in mind that this sector comprised a very small survey sample.

Figure 3.22 shows the reason given by firms and organisations for the difficulties in recruiting staff. The most common reason (37.8 per cent) was applicants lacking the necessary skills, helping to underscore the significance of skills shortages. When combined with the problem of applicants having a lack of experience (21.1 per cent), the magnitude of the skills shortage in the South West becomes apparent. The other reason for recruitment difficulties highlights

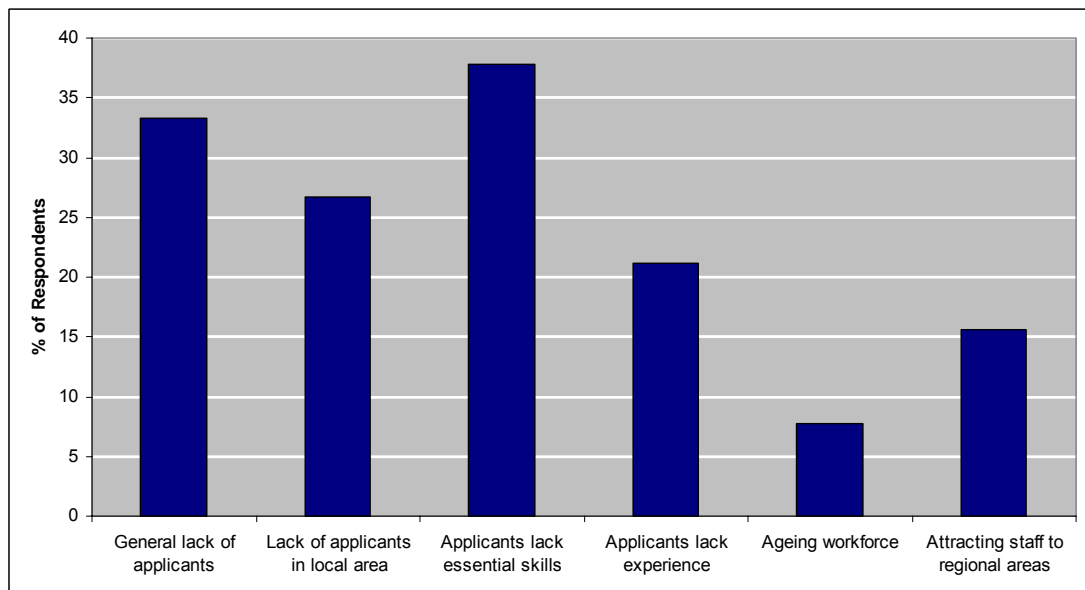


a more widespread problem in a tight State and regional labour market – a general shortage of applicants (33.3 per cent). A shortage of applicants in the local area (26.7 per cent) was also regarded as a major problem. The ageing of the workforce was only seen as a problem by 7.8 per cent of respondents.

**Figure 3.21 Proportion of Establishments in the South West Reporting Difficulties in Recruiting Staff**

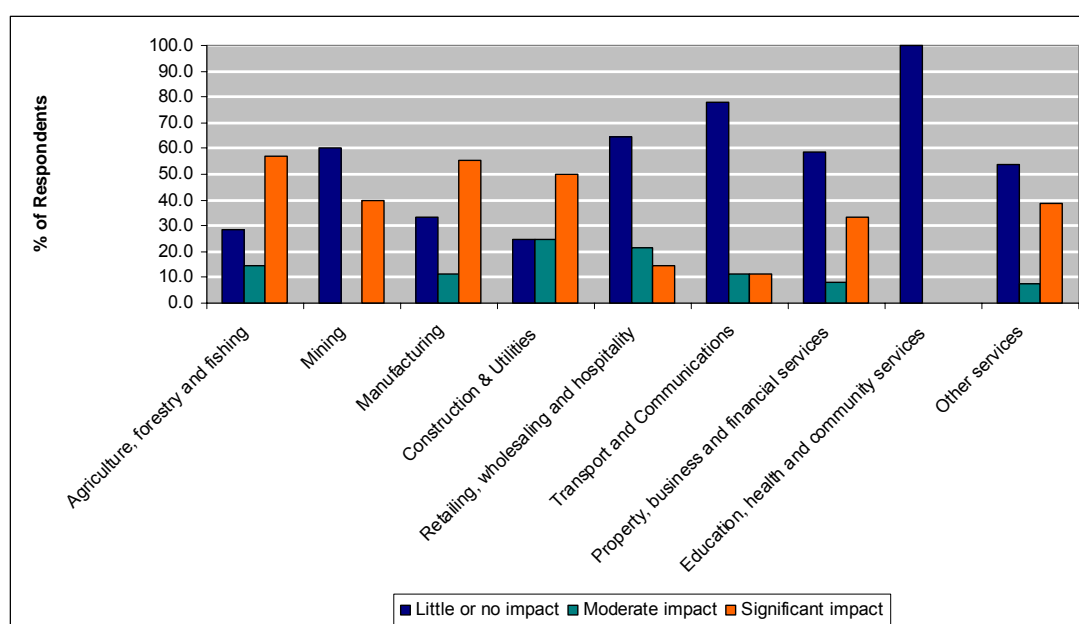


**Figure 3.22 Nature of Labour Shortages for Establishments Reporting Difficulties Recruiting Staff in the South West**



The impact of difficulties in recruiting staff on firms and organisations varied across sectors in the South West (Figure 3.23). For all sectors, 50.6 per cent of respondents reported that it had little or no impact on their activities. Amongst individual sectors, the proportion of firms where the impact was seen as minimal were concentrated in: transport and communications (77.8 per cent of firms reporting little or no impact); retailing, wholesaling and hospitality (64.3 per cent); mining (60 per cent); and, property, business and financial services (58.3 per cent). Those sectors with the highest proportion of firms and organisations reporting a significant impact included: other services (61.5 per cent); agriculture, forestry and fishing (57.1 per cent); manufacturing (55.6 per cent); and construction and utilities (50 per cent).

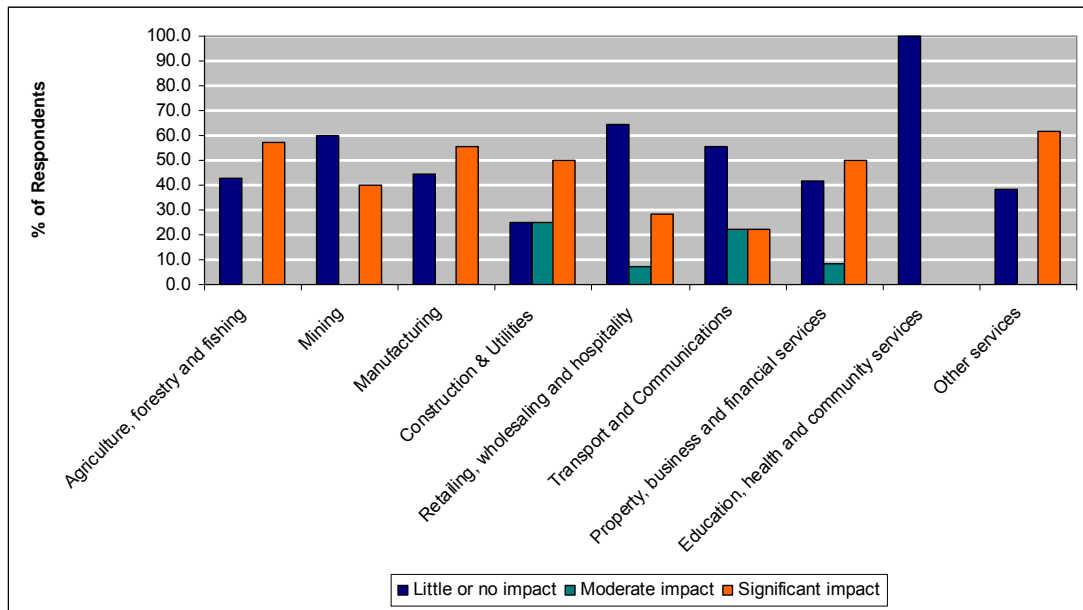
**Figure 3.23 Impact of Difficulties in Recruiting Staff on Establishments in the South West**



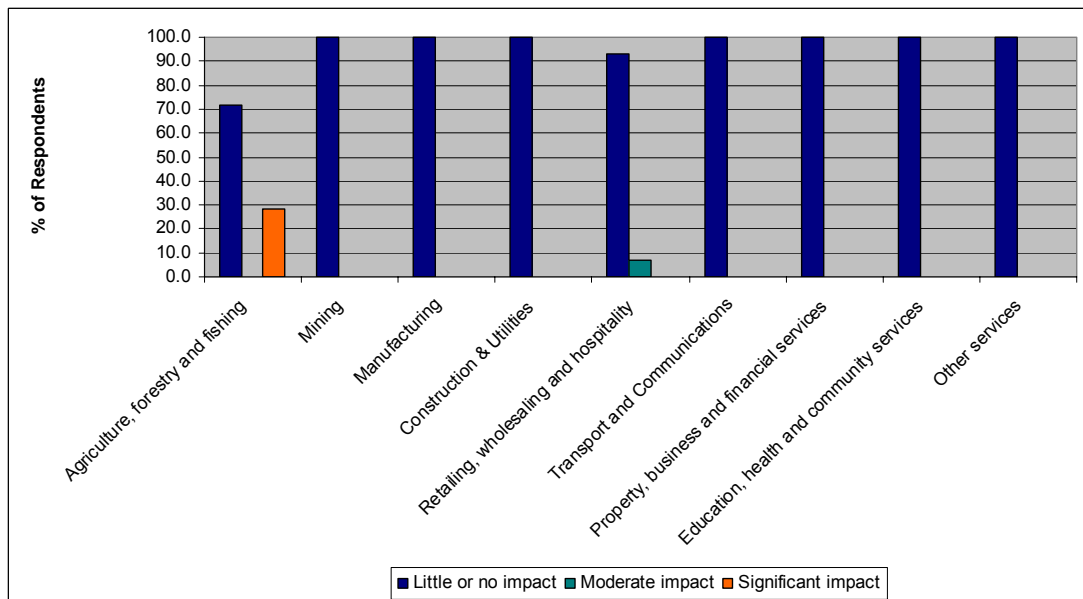
A number of firms reported that there were significant impacts associated with difficulties in recruiting appropriately trained staff (Figure 3.24). Across all sectors, 54 per cent of firms and organisations reported that this was having a moderate or significant impact on their activities. The industries reporting moderate or significant impacts as a result of skilled labour shortages included: construction and utilities (75 per cent of firms in the sector); other services (61 per cent); agriculture, forestry and fishing (57.1 per cent); manufacturing (55.6 per cent); and transport and communications (44.4 per cent).

The ageing of the workforce was not seen as a significant problem by firms and enterprises in the South West (Figure 3.25). Indeed, only in agriculture, forestry and fishing (28.6 per cent of respondents), and retailing, wholesaling and hospitality (7.1 per cent) was it seen as having an impact. This is consistent with the age structure of the region's industry sectors, where relatively low numbers of people are within 10 years of retirement (see Figures 3.10 to 3.13).

**Figure 3.24 Impact of Difficulties in Recruiting Appropriately Trained Staff on Establishments in the South West**



**Figure 3.25 Impact of Increased Numbers of People Retiring on Establishments in the South West**

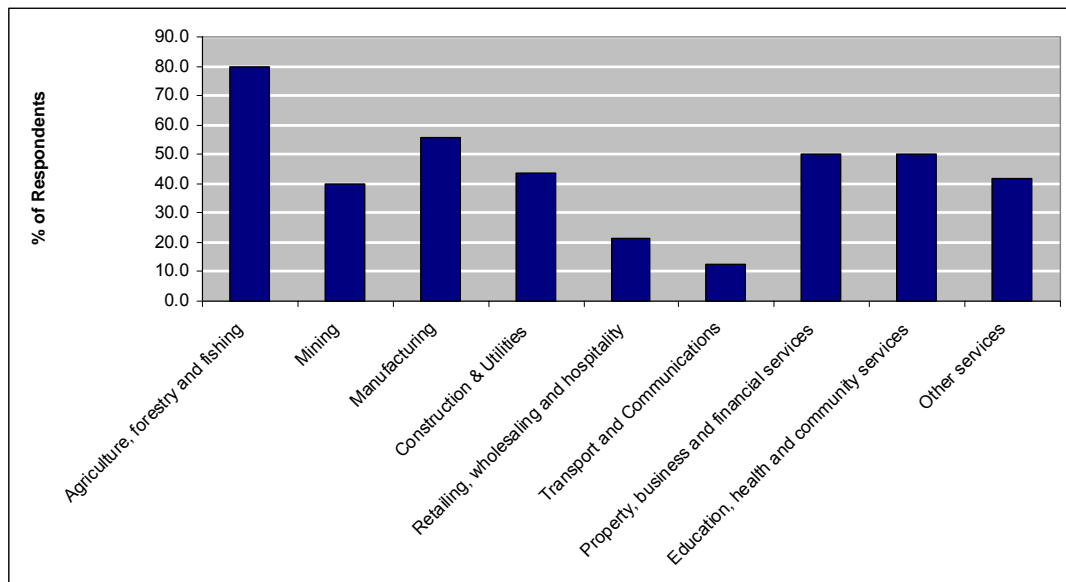


An important issue for labour market stability is the capacity of firms and organisations to retain staff. Keeping staff turnover to a minimum can reduce costs associated with recruitment and training, and ensure that firms and organisations are able to maintain output and service. Within the South West, the labour force experiences a reasonable amount of turnover, with 40.7 per cent of respondents indicating that retaining staff had proved difficult in recent years (Figure 3.26). The sectors with the greatest problems in terms of retention were: agriculture, forestry and fishing (80 per cent); manufacturing (55.6 per cent); property,

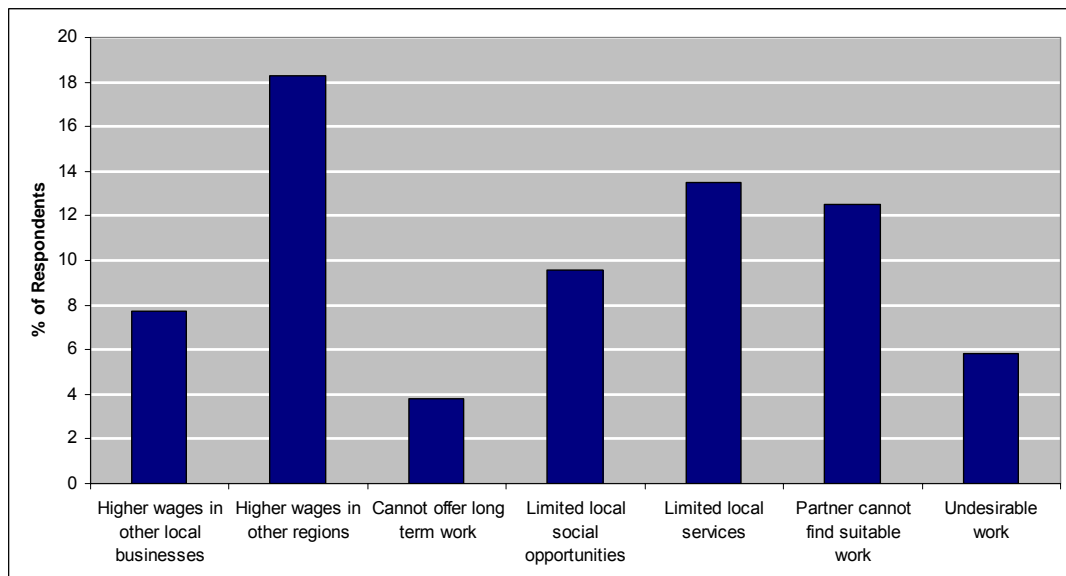
business and financial services (50 per cent); education (50 per cent); construction and utilities (43.8 per cent); and mining (40 per cent).

For those firms and organisations that reported difficulties in retaining staff, the main reason was higher wages in other regions (18.3 per cent)(Figure 3.27). In addition, 7.7 per cent of establishments indicated higher wages on offer in other local businesses/organisations was an issue. This emphasises the need for both the region and individual firms to remain competitive in salaries and wages if they are to retain (and attract) staff. Other issues raised by respondents included, limited local services (13.5 per cent), a partner not being able to find suitable work locally (12.5 per cent), and limited local social opportunities (9.6 per cent).

**Figure 3.26 Proportion of Establishments Reporting Difficulties in Retaining Staff in the South West**



**Figure 3.27 Reasons for Establishments Reporting Difficulties in Retaining Staff in the South West**

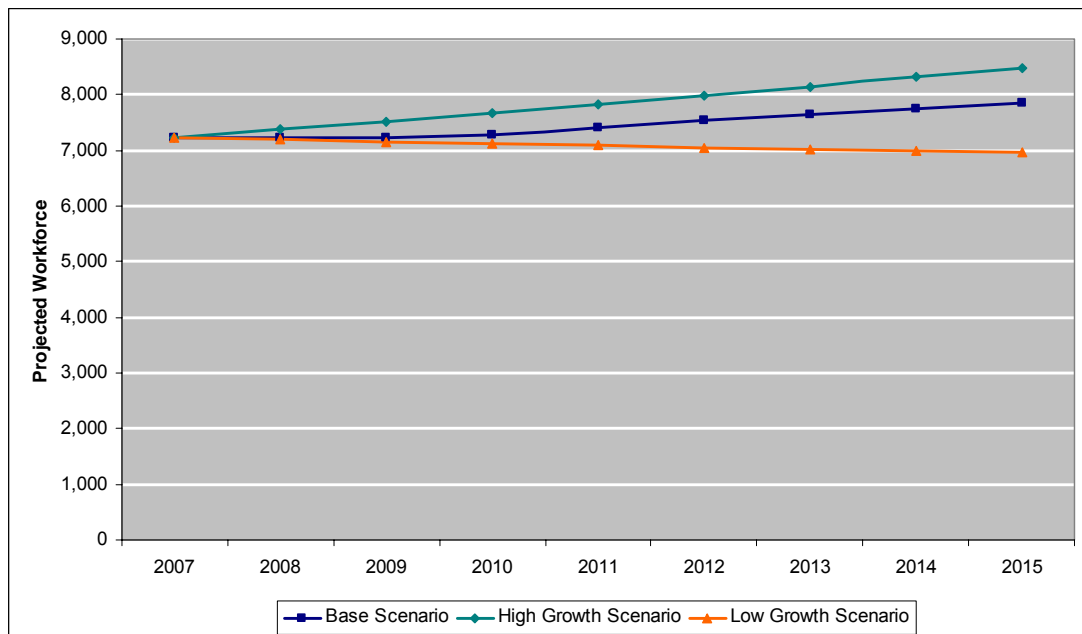


### 3.7 Workforce Futures

#### 3.7.1 The Blackwood Subdivision

Under the base (or expected) scenario, total employment demand in Blackwood is expected to rise from 7,225 in 2007 to 7,416 by 2011 (an increase of 2.6 per cent), and then to 7,848 between 2001 and 2015; an increase of 5.5 per cent (Figure 3.28). Under the high growth scenario, employment demand is expected to increase to 7,829 by 2011, and 8,484 by 2015 (an annual rate of growth of 2.0 per cent). The low growth scenario sees demand fall to 7,123 by 2011, and to 6,956 by 2015 (-0.5 per cent per annum).

**Figure 3.28 Projected Total Employment Demand in the Blackwood Subdivision, 2007-2015**



In terms of sectoral change, demand is likely to fall in agriculture, forestry and fishing (-130 jobs) and wholesale trade (-34) between 2007 and 2015, while decline (albeit modest) is expected between 2007 and 2001 for mining (-36), construction (-1), and a number of service sectors (Table 3.14 and Figure 3.29). Those sectors expected to grow between 2007 and 2015 include: health care and social assistance (139 jobs); retailing (119); public administration and safety (104); accommodation and food services (100); and transport, postal and warehousing (67). The growth of retailing and accommodation and food services is, in part, linked to an expected increase in tourism activity in the region in the next decade or so. The rise in health care and social assistance reflects the changing age structure of the region, and broader national and regional drivers in these sectors.

**Table 3.14 Projected Total Employment Demand (Base Scenario) for Industry Sectors in the Blackwood Subdivision, 2007-2015**

	2007	2011	2015
Agriculture, forestry & fishing	1452	1386	1322
Mining	150	113	139
Manufacturing	788	791	802
Electricity, gas, water & waste services	51	55	58
Construction	393	392	439
Wholesale trade	215	184	181
Retail trade	709	766	828
Accommodation & food services	526	569	625
Transport, postal & warehousing	275	304	342
Information media & telecommunications	43	72	103
Financial & insurance services	67	66	74
Rental, hiring & real estate services	83	79	97
Professional, scientific & technical services	181	183	185
Administrative & support services	135	133	152
Public administration & safety	533	586	637
Education & training	592	625	659
Health care & social assistance	591	656	731
Arts & recreation services	56	71	86
Other services	199	224	251
Other/NEI	186	162	137
<b>Total</b>	<b>7225</b>	<b>7416</b>	<b>7848</b>

**Figure 3.29 Additional Employment Demand in Industry Sectors (Base Scenario), Blackwood Subdivision, 2007-2015**

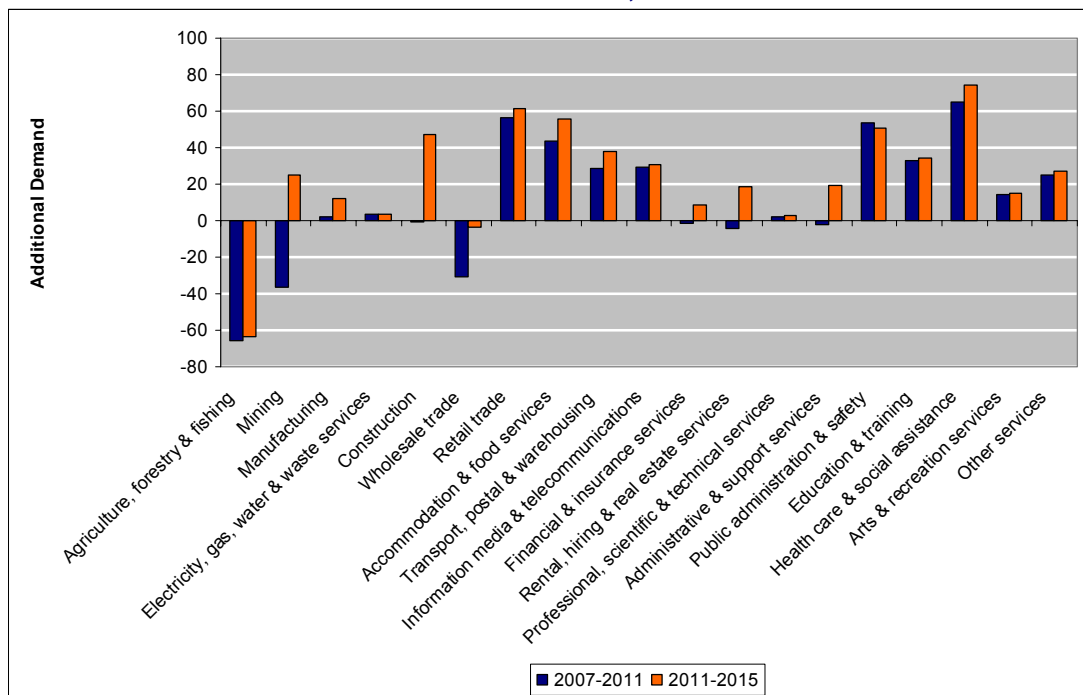
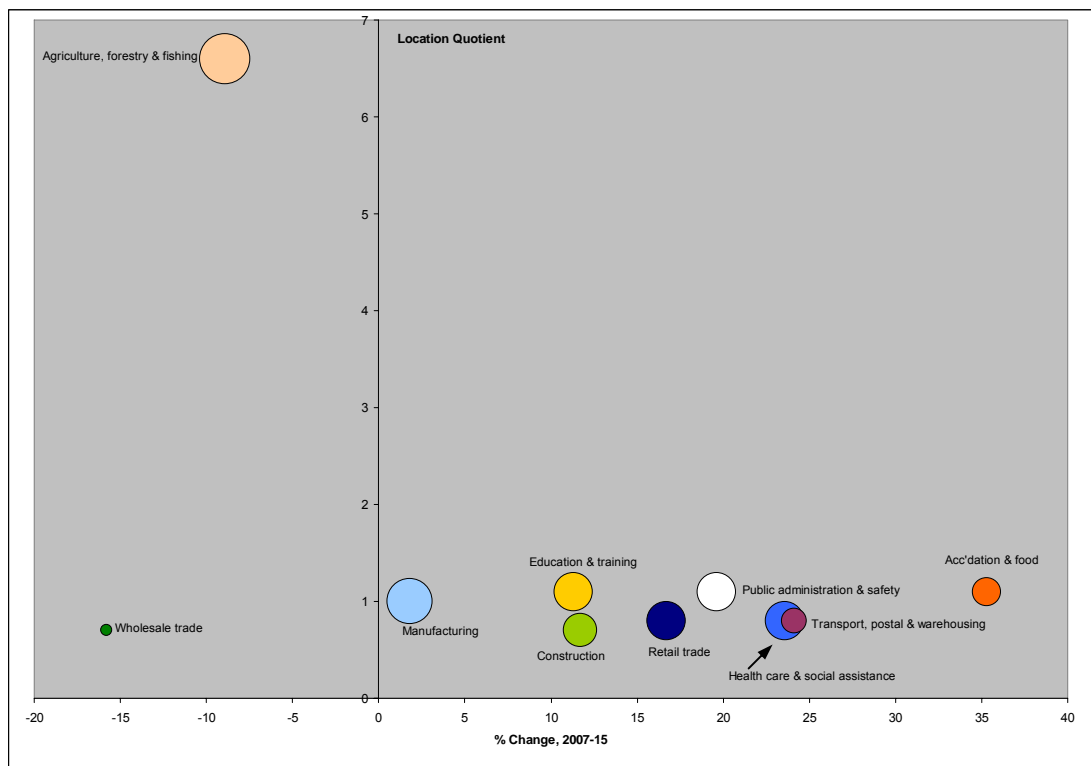


Figure 3.30 combines data on i) the number of people employed in the 10 largest sectors (represented by the size of the circle); ii) the location quotient for each sector; iii) the projected percentage change between 2007 and 2015. The Figure shows that in Blackwood, the industry with the highest location quotient (agriculture, forestry and fisheries) is likely to experience decline between 2007 and 2015. From a regional economic development perspective, the problem is that the decline or stagnation of a major industry can impact on growth in other sectors. In Blackwood, no other industry has a location quotient even approaching agriculture, forestry and fisheries, and it is this high level of dependence that presents a challenge for the local economy.

A number of other sectors with location quotients above the critical level of 1.0 or more are anticipated to grow between 2007 and 2015, including manufacturing, education and training, and accommodation and food services. However, these are relatively small employers with quite low location quotients (1.0 or 1.1) and their impact will only partly mitigate against a declining agriculture, forestry and fishing sector.

Strong growth in the public sector, particularly health and social assistance, education and training, and public administration and safety will play an important role in maintaining the labour force in Blackwood between 2007 and 2015. However, the relatively low location quotients for these industries suggest that their wider benefits are limited and that they are not a major driver of the local economy.

**Figure 3.30 Projected Employment Change by Location Quotient in the 10 Largest Sectors, Blackwood SSD, 2007-2015**



In terms of specific occupations in Blackwood, the following are projected to experience the most rapid increase in demand over this period:

- Electronics and telecommunications trades workers
- Cleaners and laundry workers
- Sales assistants and salespersons
- Mobile plant operators
- School teachers
- Truck drivers
- Midwifery and nursing professionals
- Personal carers and assistants
- Accommodation and hospitality managers
- Automotive electricians and mechanics

**Table 3.15 Projected Employment Demand (Base Scenario) for the Largest 50 Occupations in the Blackwood Subdivision, 2007-2015**

	2007	2011	2015	Change, '07-'11	Change '11-'15
Farmers and Farm Managers	1,041	994	948	-47	-46
Farm, Forestry and Garden Workers	477	455	434	-22	-21
Sales Assistants and Salespersons	361	389	421	29	31
School Teachers	280	296	312	15	16
Cleaners and Laundry Workers	246	277	311	31	34
Miscellaneous Factory Process Workers	240	240	244	1	4
Mobile Plant Operators	189	209	235	20	26
Accommodation and Hospitality Managers	144	155	171	12	15
Truck Drivers	139	154	173	14	19
Retail Managers	136	147	159	11	12
Natural and Physical Science Professionals	131	132	134	1	2
Accounting Clerks and Bookkeepers	128	129	131	1	2
Hospitality Workers	126	136	149	10	13
General Clerks	125	123	141	-2	18
Midwifery and Nursing Professionals	120	133	148	13	15
Construction, Distribution and Production Managers	117	120	135	3	14
Food Trades Workers	116	125	138	10	12
Machine Operators	113	114	115	0	2
Personal Carers and Assistants	113	125	139	12	14
Mechanical Engineering Trades Workers	103	103	104	0	2
Education Aides	96	101	107	5	6
Automotive Electricians and Mechanics	94	105	118	12	13
Miscellaneous Labourers	92	94	106	2	11
Stationary Plant Operators (Manufacturing)	91	91	92	0	1
Horticultural Trades Workers	83	94	105	10	11
Food Preparation Assistants	77	83	91	6	8
Bricklayers, and Carpenters and Joiners	74	76	85	2	9
Receptionists	74	73	83	-1	11
Health and Welfare Support Workers	65	72	80	7	8
Checkout Operators and Office Cashiers	61	66	72	5	5

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*Table 3.15 continued*

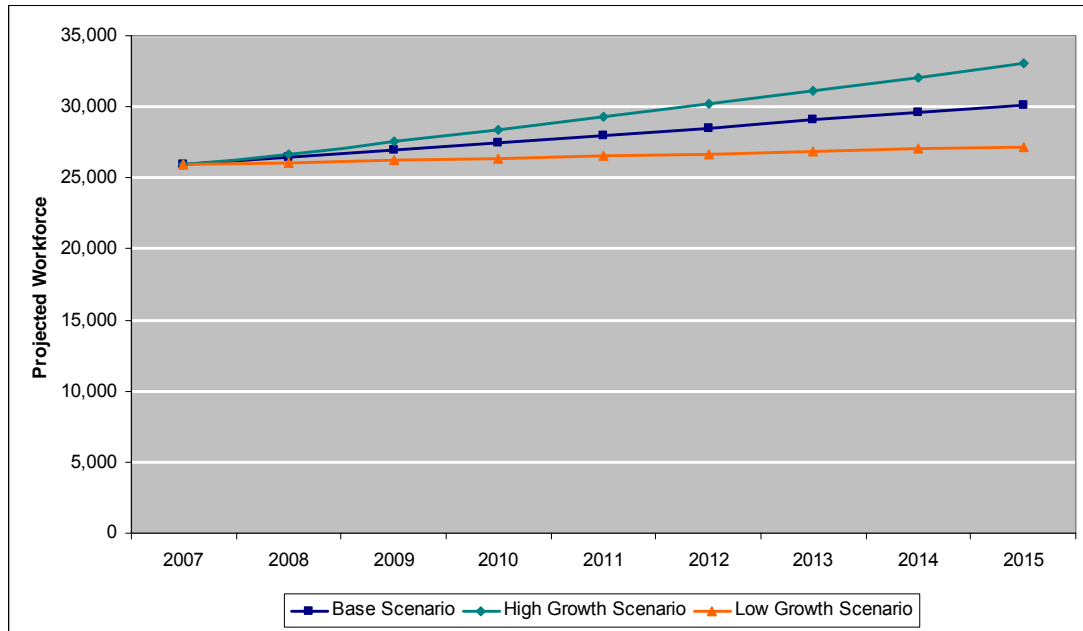
Clerical and Office Support Workers	61	60	68	-1	9
Electricians	59	60	67	2	7
Building and Engineering Technicians	59	60	67	2	7
Construction Labourers	57	59	66	1	7
Office and Practice Managers	56	55	63	-1	8
Personal Assistants and Secretaries	54	53	61	-1	8
Electronics and Telecommunications Trades Workers	51	85	122	35	36
Fabrication Engineering Trades Workers	50	50	51	0	1
Miscellaneous Hospitality, Retail and Service Managers	50	54	59	4	5
Real Estate Sales Agents	50	47	58	-3	11
Automobile, Bus and Rail Drivers	44	48	54	5	6
Packers and Product Assemblers	43	44	44	0	1
Miscellaneous Sales Support Workers	41	45	48	3	4
Personal Service and Travel Workers	41	46	51	5	6
Social and Welfare Professionals	41	45	50	4	5
Education, Health and Welfare Services Managers	41	45	50	4	5
Financial and Insurance Clerks	40	39	45	-1	6
Freight Handlers and Shelf Fillers	39	43	48	4	5
Child Carers	39	43	48	4	5
Wood Trades Workers	37	38	38	0	1

### **3.7.2 The Bunbury Subdivision**

In the Bunbury statistical division, the total labour force demand is expected to increase from 25,895 in 2007 to 27,984 in 2011; a rise of 7.7 per cent (Figure 3.31). Between 2011 and 2015, it is anticipated that the workforce will grow to 30,158, representing an increase of 7.8 per cent over this period. This is a lower growth rate than in recent years, largely because a number of projects in the area are moving from the construction to production, thereby tempering the rate of labour force growth marginally. Should new projects continue to emerge at the rate experienced in the past decade or so, then the high growth scenario is likely to come into play. The high growth scenario sees total labour demand increase to 29,273 by 2011, and then to 33,093 by 2015 (an annual rate of growth of 3.1 per cent). The low growth scenario sees a much more modest increase in the labour force, with demand rising to 26,536 by 2011, and on to 27,193 by 2015 (an annual rate of increase of 0.6 per cent). This scenario is considered unlikely given the strength of the economy of Bunbury (and environs). Indeed, any unexpected increases in minerals activity are likely to see the high growth scenario become a distinct possibility.

In the Bunbury subdivision, demand is projected to fall for wholesale trade (-54 jobs), agriculture forestry and fisheries (-37 jobs), and electricity, gas, water and waste services (-10 jobs) between 2007 and 2015 (Table 3.16 and Figure 3.32). Growth is expected across all other industry sectors, with the largest increases occurring in: health care and social assistance (799 jobs); construction (724); and retail trade (634).

**Figure 3.31 Projected Total Employment Demand in the Bunbury Subdivision, 2007-2015**



**Table 3.16 Projected Total Employment Demand (Base Scenario) for Industry Sectors in the Bunbury Subdivision, 2007-2015**

	2007	2011	2015
Agriculture, forestry & fishing	303	284	266
Mining	817	1016	1173
Manufacturing	3601	3617	3615
Electricity, gas, water & waste services	414	409	405
Construction	3473	3837	4198
Wholesale trade	816	790	763
Retail trade	3426	3730	4060
Accommodation & food services	1438	1552	1674
Transport, postal & warehousing	1012	1124	1242
Information media & telecommunications	294	313	332
Financial & insurance services	483	511	541
Rental, hiring & real estate services	557	644	740
Professional, scientific & technical services	972	1041	1115
Administrative & support services	715	775	840
Public administration & safety	1379	1475	1578
Education & training	1803	1909	2020
Health care & social assistance	2507	2879	3306
Arts & recreation services	232	255	280
Other services	1201	1375	1568
Other/NEI	452	447	442
<b>Total</b>	<b>25895</b>	<b>27984</b>	<b>30158</b>

**Figure 3.32 Additional Employment Demand in Industry Sectors (Base Scenario), Bunbury Subdivision, 2007-2015**

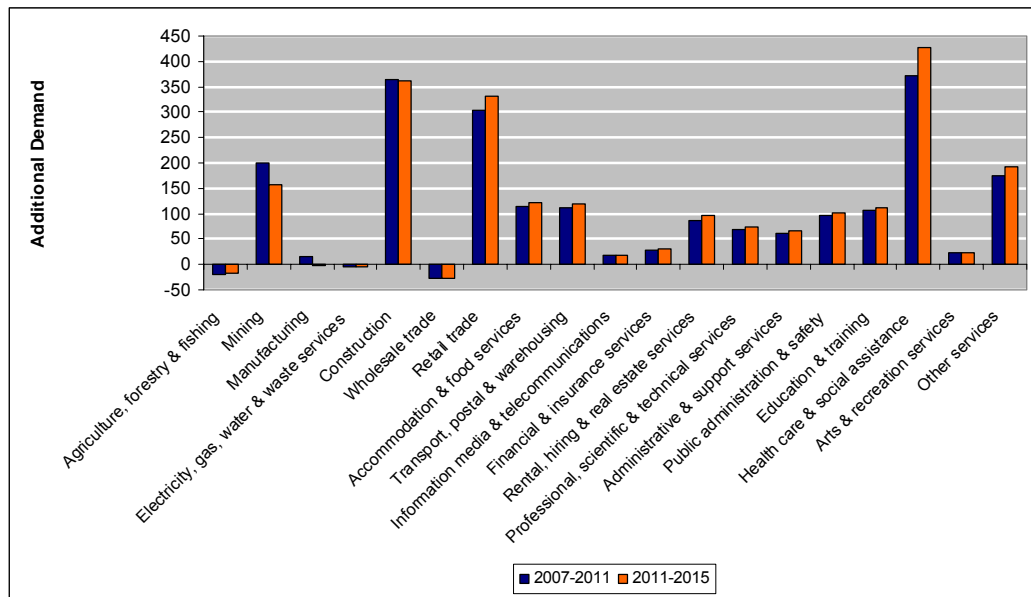
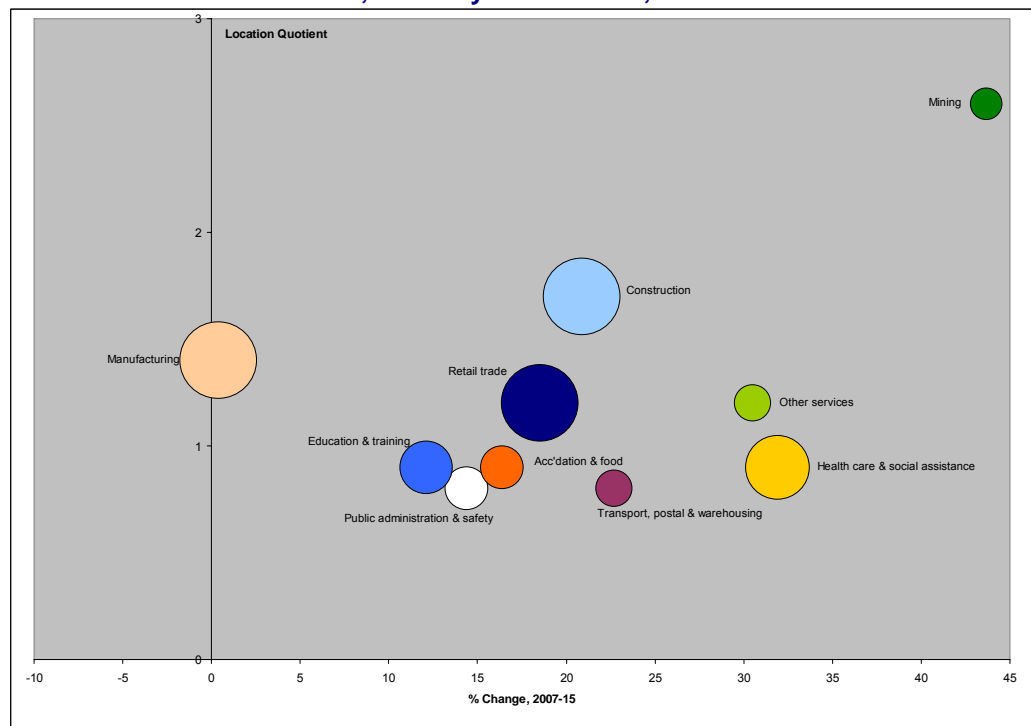


Figure 3.33 helps to illustrate the strength of the Bunbury economy, and its likely future growth according to industry location quotients. It shows the sectors with the two highest location quotients (mining and construction) experiencing considerable growth over the period 2007 to 2015, with manufacturing growing more slowly. A number of other sectors with location quotients greater than the 1.0 threshold are also growing, notably retail trade and other services. The expansion of propulsive industries point to ongoing economic expansion, with a number of the service sectors benefitting from flow-on effects.

**Figure 3.33 Projected Employment Change by Location Quotient in the 10 Largest Sectors, Bunbury Subdivision, 2007-2015**



At the occupational level, growth is expected to be highest in the following between 2007 and 2015:

- Sales assistants and salespersons
- Cleaners and laundry workers
- Personal carers and assistants
- Midwifery and nursing professionals
- Truck drivers
- Retail managers
- Building and engineering technicians
- Automotive electricians and mechanics
- School teachers
- Mobile plant operators

**Table 3.17 Projected Employment Demand (Base Scenario) for the Largest 50 Occupations in the Bunbury Subdivision, 2007-2015**

	2007	2011	2015	Change, '07-'11	Change '11-'15
Sales Assistants and Salespersons	1,804	1,964	2,137	160	174
School Teachers	848	897	950	50	52
Cleaners and Laundry Workers	742	850	969	108	119
Retail Managers	618	673	732	55	60
Truck Drivers	609	676	747	67	71
Mechanical Engineering Trades Workers	604	606	606	3	0
Building and Engineering Technicians	596	641	701	44	60
Stationary Plant Operators (Manufacturing)	582	585	584	3	0
Bricklayers, and Carpenters and Joiners	559	600	657	42	56
Construction, Distribution and Production Managers	555	596	652	41	56
Construction Labourers	521	560	613	39	53
Personal Carers and Assistants	520	597	686	77	88
General Clerks	490	532	577	42	45
Accounting Clerks and Bookkeepers	485	519	556	34	37
Midwifery and Nursing Professionals	472	542	622	70	80
Receptionists	427	463	502	36	39
Mobile Plant Operators	415	461	509	46	49
Fabrication Engineering Trades Workers	415	417	416	2	0
Food Preparation Assistants	411	444	479	32	35
Hospitality Workers	408	440	475	32	35
Electricians	391	420	460	29	40
Miscellaneous Labourers	379	407	446	28	38
Checkout Operators and Office Cashiers	369	401	437	33	36
Office and Practice Managers	353	383	415	30	32
Automotive Electricians and Mechanics	339	388	442	49	54
Glaziers, Plasterers and Tilers	327	352	385	24	33
Food Trades Workers	325	351	379	26	28
Food Process Workers	317	343	370	25	27
Personal Assistants and Secretaries	288	312	338	24	26
Miscellaneous Hospitality, Retail and Service Managers	285	308	332	23	24

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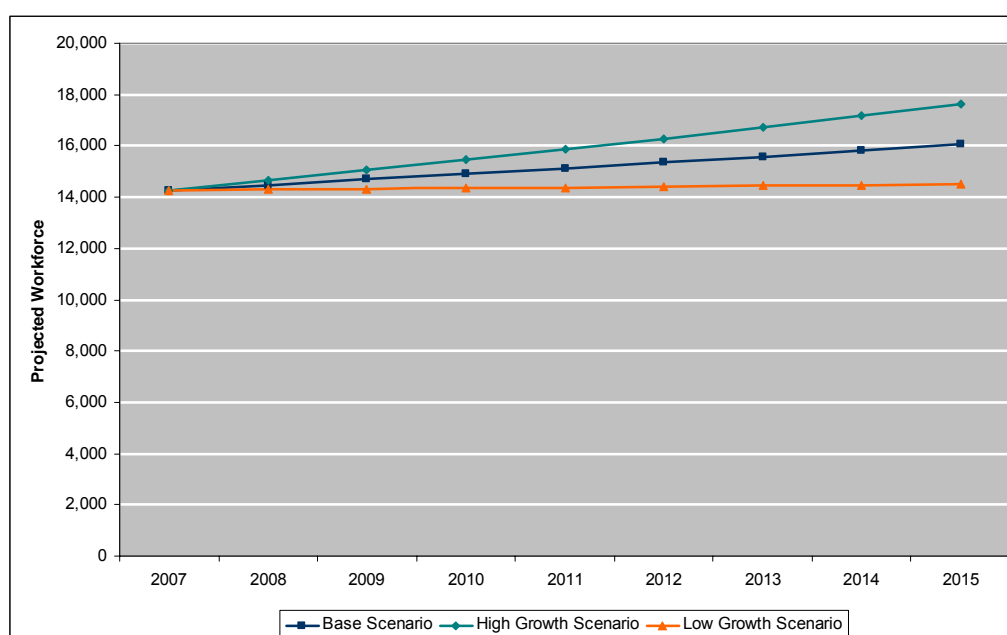
Table 3.17 Continued

Engineering Professionals	276	295	316	19	21
Real Estate Sales Agents	274	317	365	43	48
Freight Handlers and Shelf Fillers	267	296	328	29	31
Miscellaneous Clerical and Administrative Workers	261	284	307	22	24
Education Aides	254	269	284	15	16
Health and Welfare Support Workers	252	289	332	37	43
Miscellaneous Technicians and Trades Workers	251	253	252	1	0
Storepersons	229	222	214	-8	-8
Farm, Forestry and Garden Workers	225	258	294	33	36
Machine Operators	222	223	223	1	0
Child Carers	221	254	292	33	38
Electronics and Telecommunications Trades Workers	217	230	245	14	14
Call or Contact Centre Information Clerks	215	233	253	18	20
Natural and Physical Science Professionals	214	229	246	15	16
Logistics Clerks	213	237	262	23	25
Financial and Insurance Clerks	210	228	247	18	19
Accountants, Auditors and Company Secretaries	209	224	240	15	16
Insurance Agents and Sales Representatives	206	218	230	12	13
Packers and Product Assemblers	204	205	205	1	0
Clerical and Office Support Workers	197	214	231	17	18

### 3.7.3 The Preston Subdivision

In the Preston subdivision, under the base scenario the labour force demand is anticipated to grow from 14,268 in 2007 to 15,119 in 2011 (a rise of 5.6 per cent), and then 16,081 by 2015 (6.4 per cent)(Figure 3.34). The high growth scenario sees workforce demand increase to 16,295 by 2011, and then 17,648 by 2015 (an annual rate of increase of 2.7 per cent). The low growth projection suggests that labour force demand will rise to 14,406 by 2011, and then 14,490 by 2015 (0.2 per cent per annum).

Figure 3.34 Projected Total Employment Demand in Preston, 2007-2015



The strongest growth in employment demand over the period 2007 to 2015 is projected to be in the mining sector (423 jobs), followed by health care and social assistance (321), construction (240), other services (127), and transport, postal and warehousing (122). Those sectors likely to experience a decrease in demand include: agriculture, forestry and fishing (-127); wholesale trade (-55); electricity, gas, water and waste services (-47); finance and insurance services (-33); and information media and telecommunications (-15).

**Figure 3.35 Projected Employment Change by Location Quotient in the 10 Largest Sectors, Preston Subdivision, 2007-2015**

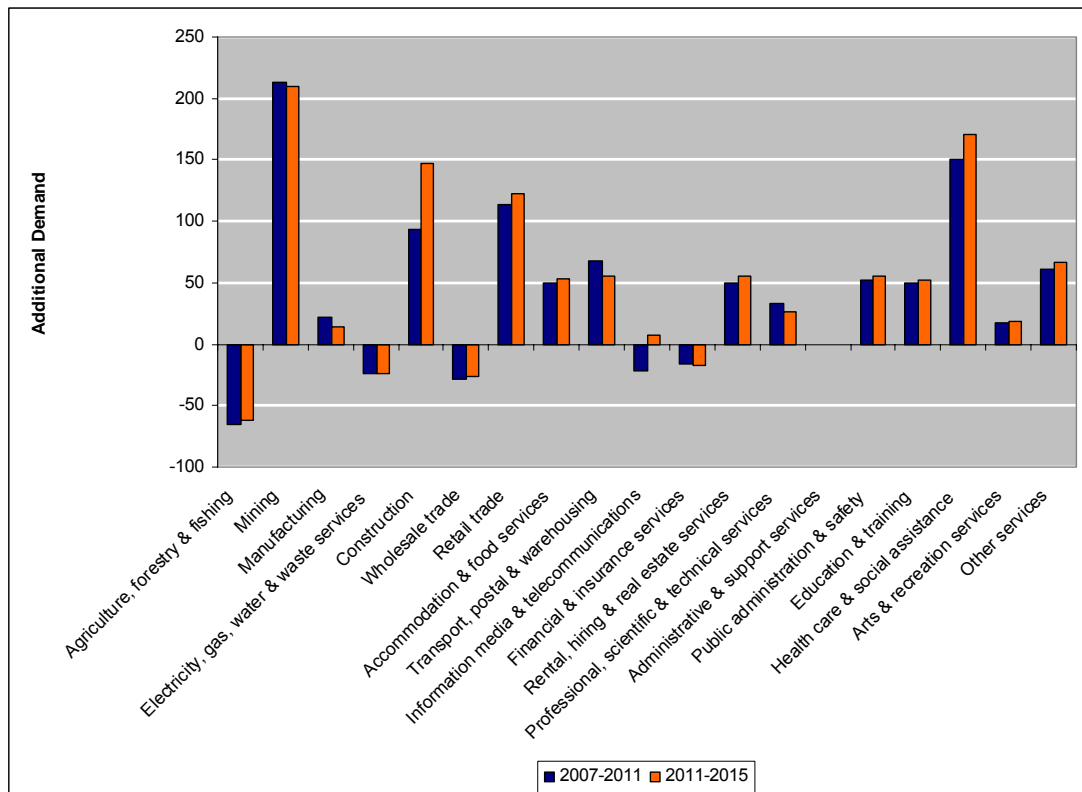
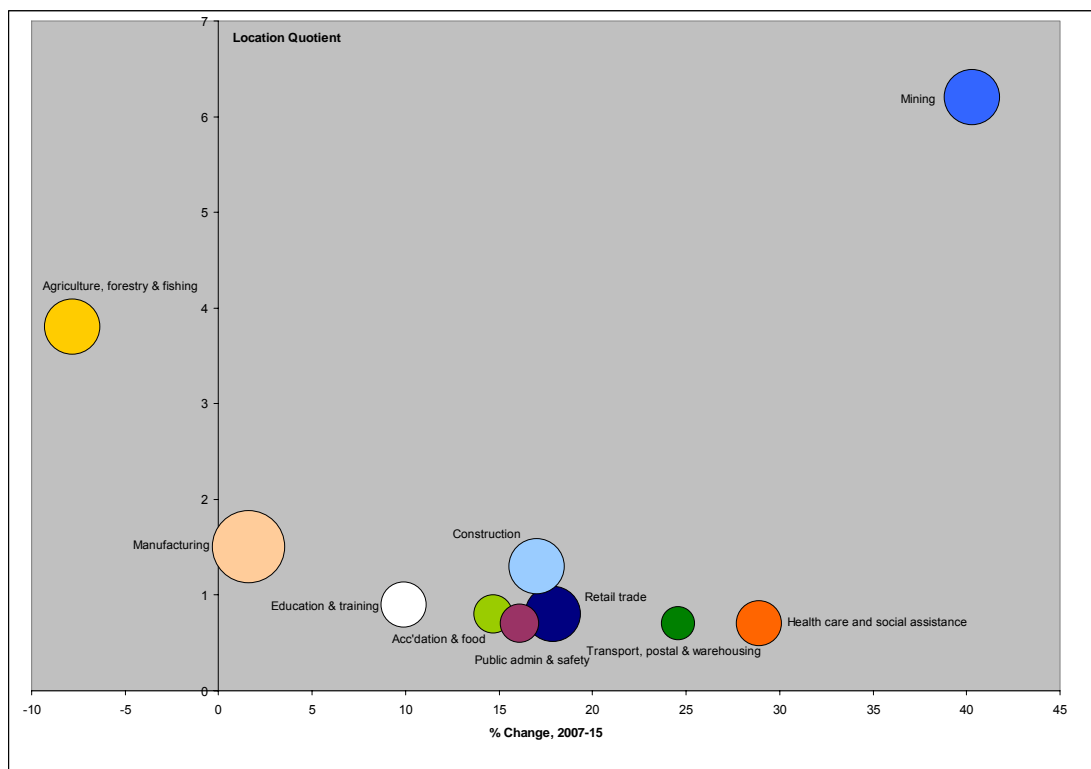


Figure 3.36 shows that three of the sectors with location quotients larger than 1.0 are expected to record increasing demand between 2007 and 2015: mining; manufacturing; and construction. The only industry with a high quotient likely to experience a decrease in demand is agriculture. In this respect, Preston benefits from having a relatively diverse economy (at least in comparison to many other rural areas), with the decline of one sector counterbalanced by growth in others. As a consequence of the growth of these basic industries, a range of non-basic sectors are also projected to grow between 2007 and 2010.

**Table 3.18 Projected Total Employment Demand (Base Scenario) for Industry Sectors in the Preston Subdivision, 2007-2015**

	2007	2011	2015
Agriculture, forestry & fishing	1638	1573	1511
Mining	1050	1264	1474
Manufacturing	2174	2195	2209
Electricity, gas, water & waste services	307	283	260
Construction	1412	1505	1652
Wholesale trade	367	338	312
Retail trade	1321	1434	1557
Accommodation & food services	696	745	798
Transport, postal & warehousing	498	565	620
Information media & telecommunications	53	30	38
Financial & insurance services	140	124	107
Rental, hiring & real estate services	210	260	315
Professional, scientific & technical services	318	351	377
Administrative & support services	322	322	321
Public administration & safety	674	726	782
Education & training	1017	1066	1118
Health care & social assistance	1111	1261	1432
Arts & recreation services	108	125	143
Other services	444	505	571
Other/NEI	409	444	482
<b>Total</b>	<b>14268</b>	<b>15119</b>	<b>16081</b>

**Figure 3.36 Projected Employment Change by Location Quotient in the 10 Largest Sectors, Preston SSD, 2007-2015**



Preston's economy, with a rapidly growing mining and industrial base, is expected to have the strongest occupational growth in the following:

- Cleaners and laundry workers
- Sales assistants and salespersons
- Stationary plant operators
- Truck drivers
- Mobile plant operators
- Personal carers and assistants
- Automotive electricians and mechanics
- Midwifery and nursing professionals
- Mining labourers

**Table 3.19 Projected Employment Demand (Base Scenario) for the Largest 50 Occupations in the Preston Subdivision, 2007-2015**

	2007	2011	2015	Change, '07-'11	Change '11-'15
Farmers and Farm Managers	1,143	1,098	1,054	-45	-44
Sales Assistants and Salespersons	685	744	807	59	63
Farm, Forestry and Garden Workers	543	617	698	74	81
Stationary Plant Operators (Manufacturing)	541	547	550	5	3
Mechanical Engineering Trades Workers	481	485	489	5	3
School Teachers	479	502	526	23	24
Cleaners and Laundry Workers	432	491	556	59	65
Truck Drivers	373	423	464	50	41
Mobile Plant Operators	329	373	409	44	36
Fabrication Engineering Trades Workers	284	287	289	3	2
Personal Carers and Assistants	281	319	362	38	43
Retail Managers	278	302	327	24	26
Stationary Plant Operators (Other)	262	315	367	53	52
Miscellaneous Labourers	261	266	292	5	26
General Clerks	248	247	247	0	0
Automotive Electricians and Mechanics	246	279	316	33	37
Accounting Clerks and Bookkeepers	240	265	285	25	20
Construction, Distribution and Production Managers	238	243	266	5	24
Building and Engineering Technicians	234	239	262	5	23
Midwifery and Nursing Professionals	227	257	292	31	35
Food Process Workers	211	226	243	15	16
Hospitality Workers	210	225	241	15	16
Food Preparation Assistants	187	200	214	13	14
Packers and Product Assemblers	183	185	186	2	1
Bricklayers, and Carpenters and Joiners	182	186	204	4	18
Food Trades Workers	180	192	206	13	14
Construction Labourers	178	182	199	4	18
Electricians	178	182	199	4	18
Education Aides	170	178	187	8	9
Horticultural Trades Workers	156	177	201	21	23
Natural and Physical Science Professionals	151	167	179	16	13

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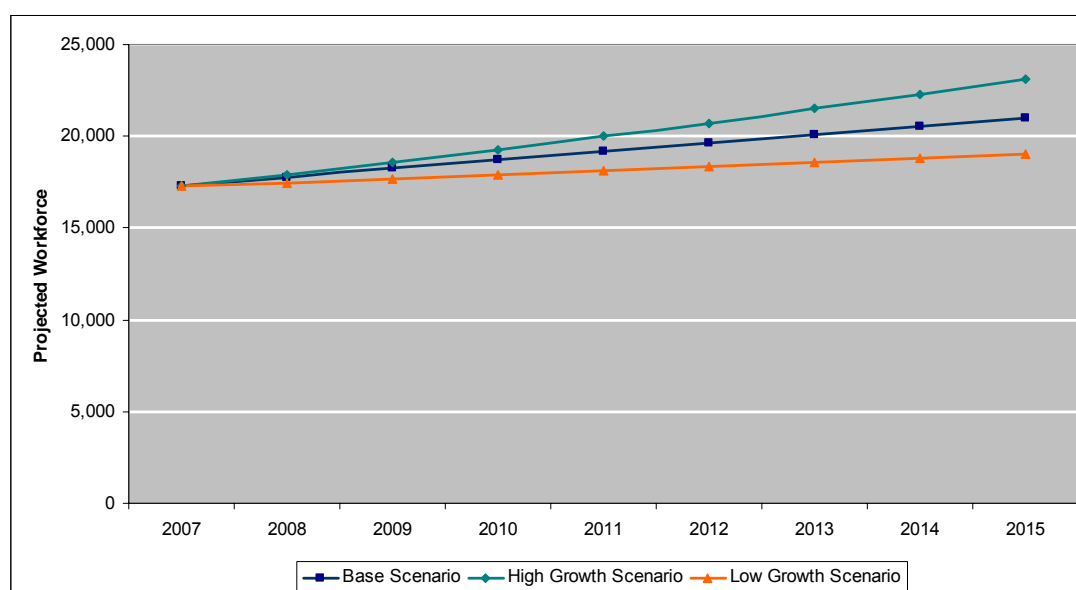
Table 3.19 continued

Miscellaneous Factory Process Workers	148	149	150	1	1
Machine Operators	143	144	145	1	1
Receptionists	137	137	137	0	0
Checkout Operators and Office Cashiers	132	144	156	11	12
Mining Labourers	132	159	186	27	26
Office and Practice Managers	131	131	130	0	0
Personal Assistants and Secretaries	125	125	125	0	0
Miscellaneous Technicians and Trades Workers	124	125	126	1	1
Miscellaneous Hospitality, Retail and Service Managers	113	121	130	8	9
Health and Welfare Support Workers	113	128	145	15	17
Freight Handlers and Shelf Fillers	112	127	139	15	12
Clerical and Office Support Workers	111	111	111	0	0
Accommodation and Hospitality Managers	110	118	126	8	8
Automobile, Bus and Rail Drivers	106	120	132	14	12
Real Estate Sales Agents	90	111	135	22	24
Child Carers	86	97	110	12	13
Glaziers, Plasterers and Tilers	85	87	95	2	8
Financial and Insurance Clerks	84	84	84	0	0
Storepersons	78	71	66	-6	-5

### 3.7.4 The Vasse Subdivision

In Vasse, the labour force is expected to increase from 17,263 to 19,179 between 2007 and 2011 under the base scenario (an increase of 7.7 per cent)(Figure 3.37). By 2015, the labour demand is expected to reach 21,000. The high growth scenario anticipates growth to 19,979 by 2011, and 23,122 by 2015 (annual growth of 3.7 per cent). The low growth scenario would see demand grow modestly to 18,121 in 2011, and 19,022 by 2015 (annual growth of 1.2 per cent).

Figure 3.37 Projected Total Employment Demand in Vasse, 2007-15



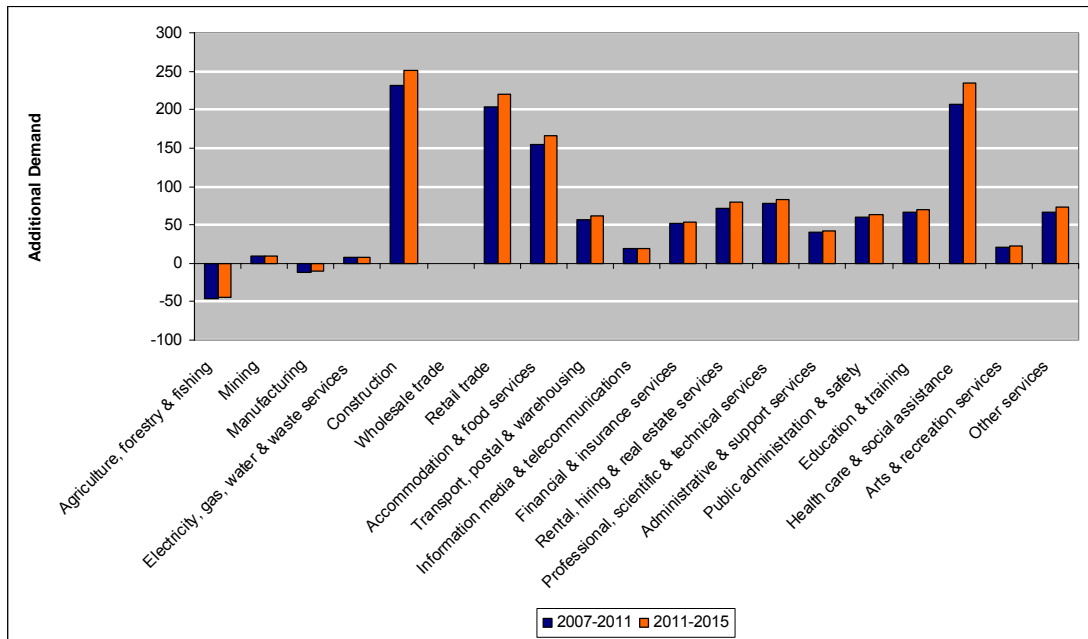
The most significant growth in demand is projected for the construction and health care and social assistance sectors (Table 3.20 and Figure 3.38). This reflects the rapid development of the area, as well as the changing demographic structure, particularly the ageing of the population. The tourism and recreation industries are expected to underpin strong growth in demand for employment in retail trade, and accommodation and food services. Most other sectors are expected to experience more modest increases over both the short and medium terms.

**Table 3.20 Projected Total Employment Demand (Base Scenario) for Industry Sectors in the Vasse Subdivision, 2007-2015**

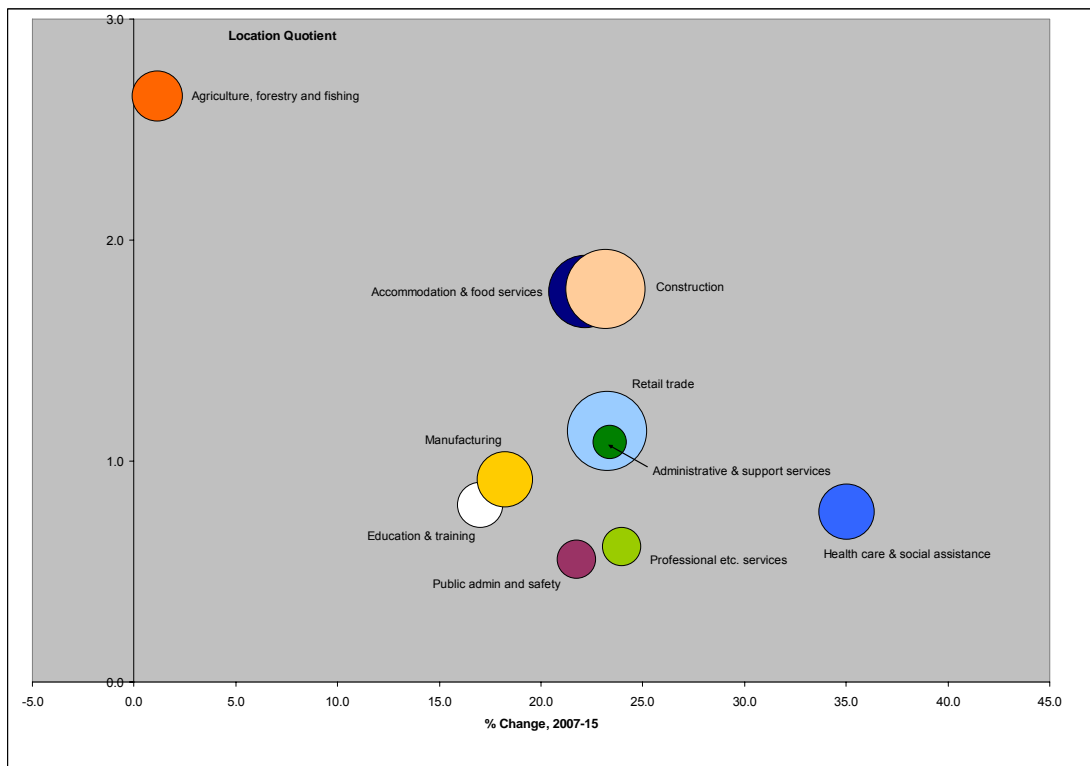
	2007	2011	2015
Agriculture, forestry & fishing	1397	1436	1413
Mining	280	295	306
Manufacturing	1650	1843	1951
Electricity, gas, water & waste services	132	140	149
Construction	2393	2670	2948
Wholesale trade	377	385	392
Retail trade	2222	2481	2739
Accommodation & food services	1923	2148	2349
Transport, postal & warehousing	489	562	637
Information media & telecommunications	129	148	169
Financial & insurance services	349	402	458
Rental, hiring & real estate services	466	539	621
Professional, scientific & technical services	699	780	867
Administrative & support services	589	655	727
Public administration & safety	638	705	777
Education & training	1052	1139	1231
Health care & social assistance	1407	1637	1900
Arts & recreation services	170	210	249
Other services	553	622	697
Other/NEI	347	382	419
<b>Total</b>	<b>17263</b>	<b>19179</b>	<b>20999</b>

Figure 3.39 shows that three of the sectors with location quotients above 1.0 are expected to grow in the period 2007 to 2015 (construction, retail trade, manufacturing, agriculture, forestry and fishing, and accommodation and food services). Clearly, among the major drivers of growth are tourism (and associated recreation and leisure activities) and lifestyle migration. The ongoing diversification of agricultural and manufacturing activities is also important. The majority of other sectors expected to expand over the period 2007 to 2015 have location quotients less than one.

**Figure 3.38 Projected Employment Change by Location Quotient in the 10 Largest Sectors, Vasse Subdivision, 2007-2015**



**Figure 3.39 Projected Employment Change by Location Quotient in the 10 Largest Sectors, Vasse Subdivision, 2007-2015**



Occupational demand in the Vasse subdivision is expected to be strongest in:

- Sales Assistants and Salespersons
- Cleaners and Laundry Workers
- Bricklayers, and Carpenters and Joiners
- Retail Managers
- Accounting Clerks and Book keepers
- Midwifery and Nursing Professionals
- Personal Carers and Assistants
- School Teachers
- Hospitality Workers

**Table 3.21 Projected Employment Demand (Base Scenario) for the Largest 50 Occupations in the Preston Subdivision, 2007-2015**

	2007	2011	2015	Change, '07-'11	Change '11-'15
Sales Assistants and Salespersons	1,324	1,477	1,632	154	154
Farmers and Farm Managers	948	974	958	27	-16
Farm, Forestry and Garden Workers	760	854	958	94	104
Cleaners and Laundry Workers	692	778	872	86	95
Bricklayers, and Carpenters and Joiners	598	659	728	61	69
School Teachers	569	616	666	47	50
Retail Managers	533	595	657	62	62
Hospitality Workers	435	486	531	51	46
Accounting Clerks and Bookkeepers	418	467	519	48	52
Accommodation and Hospitality Managers	401	448	490	47	42
Food Trades Workers	401	448	490	47	42
Construction, Distribution and Production Managers	325	358	396	33	37
Construction Labourers	315	347	383	32	36
Food Preparation Assistants	261	292	319	31	27
Midwifery and Nursing Professionals	259	302	350	42	49
Receptionists	259	288	319	29	31
Natural and Physical Science Professionals	254	283	315	29	31
Personal Carers and Assistants	251	292	339	41	47
General Clerks	248	276	306	28	30
Truck Drivers	248	285	323	37	38
Horticultural Trades Workers	248	278	312	31	34
Glaziers, Plasterers and Tilers	246	272	300	25	28
Mobile Plant Operators	243	279	317	36	37
Personal Assistants and Secretaries	238	265	293	27	29
Miscellaneous Labourers	227	250	276	23	26
Real Estate Sales Agents	220	255	294	35	39
Building and Engineering Technicians	202	223	246	21	23
Electricians	202	223	246	21	23
Office and Practice Managers	200	223	247	23	24
Checkout Operators and Office Cashiers	192	214	237	22	22
Miscellaneous Hospitality, Retail and Service Managers	184	206	225	22	19
Personal Service and Travel Workers	173	195	218	21	24

*Continued on next page*

*Table 3.21 continued*

Automotive Electricians and Mechanics	172	194	217	21	24
Stationary Plant Operators (Manufacturing)	160	179	189	19	11
Education Aides	152	164	178	13	13
Freight Handlers and Shelf Fillers	149	171	194	22	23
Floor Finishers and Painting Trades Workers	148	163	180	15	17
Insurance Agents and Sales Representatives	147	170	193	22	23
Electronics and Telecommunications Trades Workers	144	166	189	22	23
Food Process Workers	139	156	170	16	15
Accountants, Auditors and Company Secretaries	138	154	172	16	17
Architects, Designers, Planners and Surveyors	134	150	166	16	17
Financial and Insurance Clerks	133	148	164	15	16
Child Carers	127	148	172	21	24
Health and Welfare Support Workers	119	138	160	19	22
Packers and Product Assemblers	115	129	136	13	8
Chief Executives, General Managers and Legislators	115	127	140	12	13
Business Administration Managers	114	128	142	13	14
Mechanical Engineering Trades Workers	114	128	135	13	8
Wood Trades Workers	112	125	133	13	7

### 3.8 Conclusion

The South West is one of the State's most dynamic growth regions. The expansion of a range of industries has contributed to a substantial increase in demand. Much of the growth can be attributed to an expanding minerals sector, together with manufacturing, agriculture, construction, and tourism. Like other regions, however, the trends within the South West are spatially variable. The Blackwood subdivision, with a relatively heavy dependence on agriculture and forestry, has not performed as strongly as Bunbury, Preston and Vasse. The rapid growth of the region, against the background of a strong State economy, means that there is little excess capacity in local labour markets. Indeed, the South West is facing not just a critical skills shortage, but a more widespread labour shortage with unemployment at historic lows and participation rates generally very high.

Future demand is likely to follow a similar path to the past decade, with growth concentrated in Vasse, Bunbury and Preston. These latter subdivisions are likely to see further expansion of the minerals sector, as well as ancillary industries such as manufacturing, construction and transport. The health, education and social services sector is also likely to grow, with an ageing population likely to shape the nature of many services. The growing tourism economy is also likely to require an increase in staff willing and able to work in retail trade and accommodation and food services. Agriculture in the region is likely to remain reasonably stable, though this is, of course, contingent on world commodity prices and climatic conditions. The heavy dependence of the economy in Blackwood on agriculture will constrain growth. There are, however, sectors such as tourism and niche manufacturing enterprises that will require new skills and that are likely to help counterbalance falls in other industries.

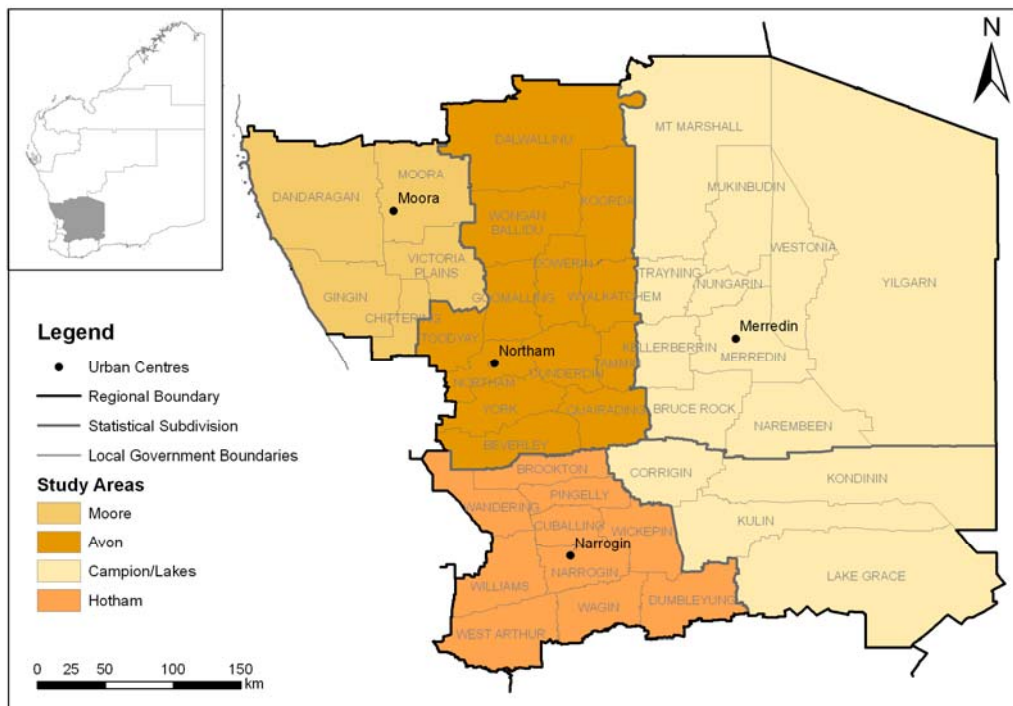
## 4 The Wheatbelt

### 4.1 Introduction

The Wheatbelt is one of Australia's most important agricultural regions, covering an area of some 154,862 square kilometres with a population of close to 70,000. While crop and livestock production dominate the regional economy, other major industries include fishing, mining and tourism. The region also has a number of specialised manufacturing enterprises, some of which serve national and international markets. The government sector is also a significant employer, with health, education, social services, and local government playing an important role in the local economy.

Unlike most other regions in Western Australia, no single town dominates the economic or population geography of the Wheatbelt. While Northam has the largest population (with nearly 7,000 residents), other important regional centres include Narrogin, Merredin, Moora and the coastal town of Jurien. All of these act as sub-regional economic and social hubs. In geographical terms, the Australian Bureau of Statistics has divided the region into five statistical subdivisions – Avon, Campion, Lakes, Hotham and Moore (Figure 4.1). For the purposes of this analysis, the contiguous subdivisions of Campion and Lakes have been amalgamated on the basis of their similar economic structure, settlement pattern and demographic characteristics.

**Figure 4.1 The Wheatbelt Region**

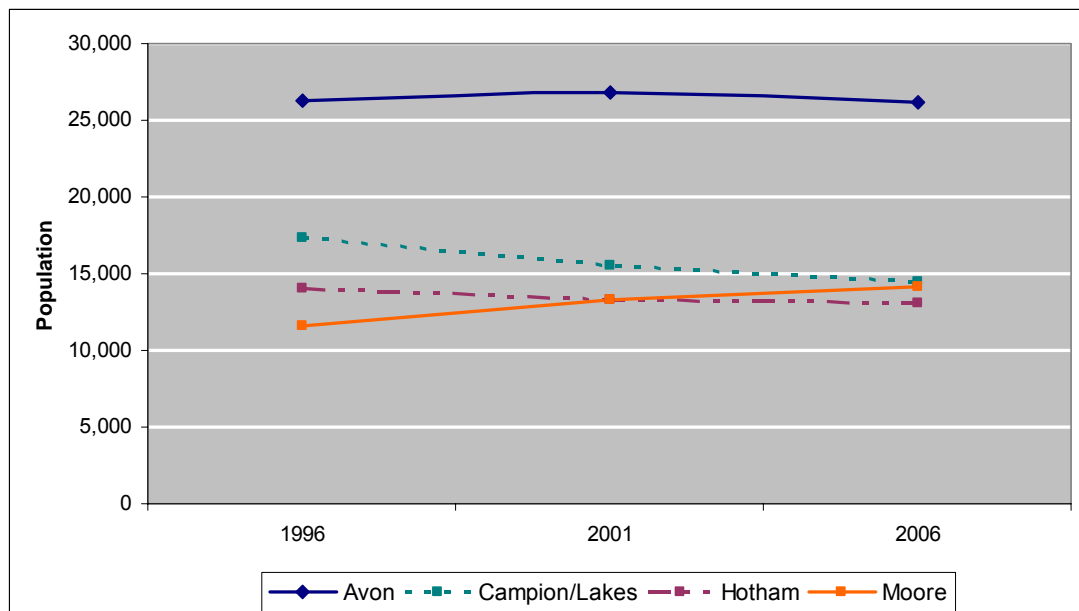


## 4.2 Regional Population Dynamics

Like many parts of regional Australia, for much of the period between the mid 1950s and the early 2000s the Wheatbelt experienced a longstanding pattern of population decline. This was linked to a number of inter-related processes, including technological innovations in farming, farm amalgamation and expansion, and the concomitant decrease in the size of the service and business sector of country towns (see Haslam-McKenzie, 2000; Tonts, 2005). Figure 4.2 shows that these processes continued to affect much of the Wheatbelt between 1996 and 2006. Over this period, the subdivisions of Campion/Lakes and Hotham recorded decreases in population of 16.7 per cent and 7.1 per cent, respectively. By contrast, the subdivision of Avon remained relatively stable at a little over 26,000, while Moore increased from 11,590 to 14,102; a rise of 21.7 per cent.

The growth experienced in Moore and Avon was, in large part, associated with the ongoing expansion of the urban field, which now penetrates well into the Avon Valley, Chittering Valley and in some cases, remoter parts of the region. Coastal towns such as Lancelin, Cervantes and Jurien have also recorded rapid growth in recent years. The reasons for the population turnaround in these parts of the Wheatbelt are complex, but include: the high price differential between metropolitan and regional land; a growing preference for living in high amenity rural and coastal environments; the expansion of regional tourism; and the emergence of new regional industries (discussed later)(see also Burnley and Murphy, 2004; Walmsley *et al.*, 2008).

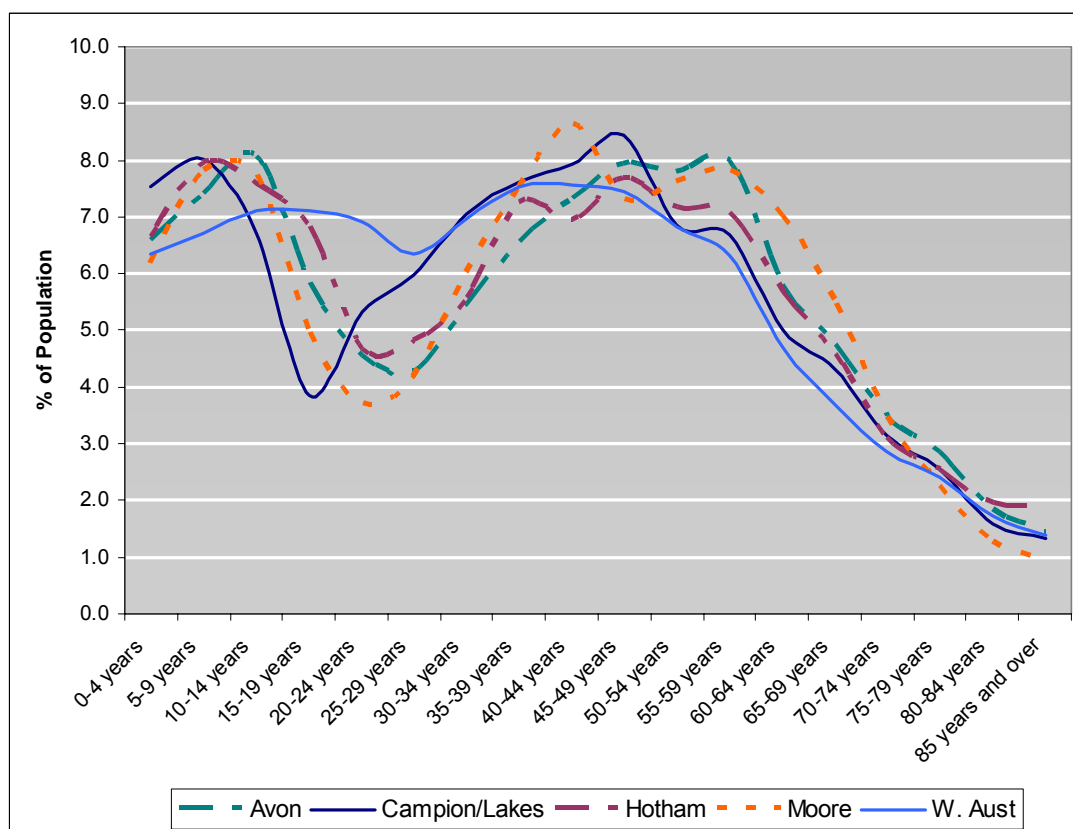
**Figure 4.2 Population Change in the Wheatbelt, 1996-2006**



(Source: ABS, 2007)

The age structure of the subdivisions in the Wheatbelt is typical of those in many other parts of rural Australia, particularly those regions with a high level of dependence on agriculture (Figure 4.3). In all of the subdivisions, there was an over-representation of people in the 0-9 age cohort, corresponding with a similar over-representation in the mid 30s to mid 40s age range at the 2006 census. This indicates a population with a relatively high proportion of young families compared to Western Australia as a whole. In contrast, there was a significant under-representation emerging in the 10-29 age cohorts. This reflects a longstanding pattern of out-migration to the metropolitan area amongst those in the high school and post-school age groups (see Davies and Tonts, 2007). Between the ages of 35 and 75, there was an over-representation of all cohorts compared to Western Australia; in the 75+ age cohorts Moore and Campion/Lakes fall below the State average. This ageing of the population is a common theme in rural Australia, and has significant implications for the labour force, with a growing number of people approaching retirement age and likely to leave full-time employment within the next 10-15 years.

**Figure 4.3 Age Structure of the Wheatbelt, 2006**



(Source: ABS, 2007)

Table 4.1 provides insights into the spatial mobility of the population. When compared to Western Australia as a whole, the subdivisions of Avon, Campion/Lakes and Hotham had relatively stable populations. In these subdivisions more than half of all residents lived at the same address in 2006 as in 2001. The subdivisions of Moore had a population that was



more mobile than other parts of the Wheatbelt, though was still more stable than Western Australia as a whole. In Avon, Hotham and Moore, the proportion of people who lived at a different address in Western Australia in 2006 to their 2001 residence was higher than the State average. In all subdivisions, levels of in-migration from interstate or overseas were much lower than for Western Australia as a whole.

**Table 4.1 Population Mobility in the Wheatbelt, 2001-2006 (% of Pop'n)**

	Avon	Campion/Lakes	Hotham	Moore	W. Aust
Same address as 2001	52.5	57.7	54.9	48.7	47.7
Same SLA as 2001, but different address	11.3	11.9	11.2	9.1	13.2
Different address in WA in 2001	25.5	19.8	24.5	28.2	21.7
Different address interstate in 2001	1.9	2.1	1.3	1.9	3.5
Overseas in 2001	1.5	2.1	1.4	2.1	5.5
Not stated	7.4	6.5	6.7	10.0	8.5

(Source: ABS, 2007)

### 4.3 The Regional Economy

#### 4.3.1 Gross Regional Product

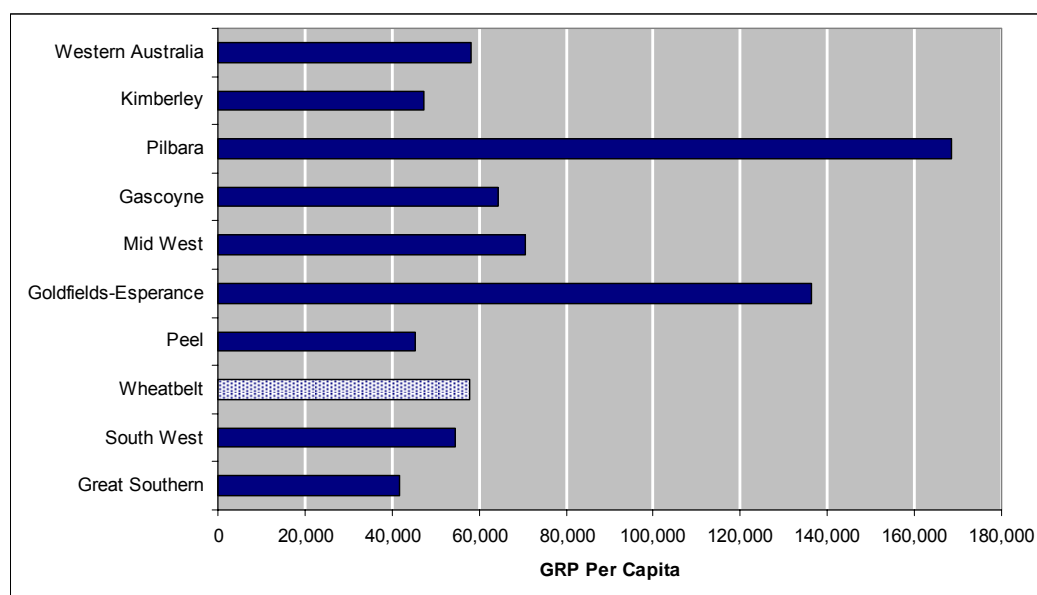
The economic output of the Wheatbelt increased between 2000/01 and 2005/06, with Gross Regional Product (GRP) rising from \$3.01 billion to \$4.04 billion; an increase of 34.2 per cent (Table 4.2). While the Wheatbelt's economy did not grow at the same rate as the Western Australian economy, this is in large part to the rapid resources-led growth experienced in the Pilbara and Goldfields.

**Table 4.2 Gross Regional Product in the Wheatbelt, 2000/01 - 2005/06**

	2000/01		2005/06		Change 2000 - 2006	% Change
	\$ Billion	% of State	\$ Billion	% of State	\$ Billion	%
Wheatbelt	3.01	3.9	4.04	3.4	1.03	34.2
Western Australia	74.12	-	119.19	-	45.07	60.8

(Source: Department of Local Government and Regional Development, 2007)

The continuing strong performance of the Wheatbelt's economy is reflected in its per capita GRP (Figure 4.4). In 2005/06, per capita GRP stood at \$57,296, which ranks sixth amongst the nine non-metropolitan regions, and only just below the State average (\$58,116). It is also higher than the neighbouring Great Southern (\$41,264), South West (\$54,683) and Peel (\$45,402) regions. This highlights the efficiency of the regional economy and, in particular, the agricultural sector. Indeed, only the resource-intensive regions have higher levels of productivity per person than the Wheatbelt.

**Figure 4.4 Gross Regional Product Per Capita in the Wheatbelt, 2005/06**

(Source: Department of Local Government and Regional Development, 2007)

### 4.3.2 Local Economic Concentration

Table 4.3 presents location quotients in the Wheatbelt's subdivisions based on ABS employment data. Location quotients (LQs) are a measure of the level of concentration of activity in a particular sector, and are used to identify those industries that can be regarded as the drivers (or basic industries) within a local or regional economy. A quotient of 1.0 or higher suggests a local or regional advantage in that sector, while a figure of less than this indicates that an industry is non-basic, or a 'non-propulsive' industry.

Across all subdivisions, it is clear that agriculture, forestry and fishing dominates local and regional economies. This is particularly evident in Campion/Lakes and Hotham, with LQs of 12.3 and 11.4 respectively. In these subdivisions, broadacre grain and livestock production is at the heart of regional economic output. Even in the more economically diverse subdivisions of Avon and Moore, the dominance of the agriculture, forestry and fishing sector is apparent. While farming is the major driver in Avon, in the Moore subdivision a combination of agriculture and fishing (particularly the rock lobster industry) underpins the economy.

In addition to the agriculture, forestry and fishing sector, a number of other industries also make an important contribution to the Wheatbelt economy. The most notable is mining, with Avon (1.3), Campion/Lakes (4.6) and Moore (3.1) all having LQs higher than the critical threshold of 1.0. In Campion/Lakes it is predominantly gold mining in the Yilgarn area that contributes to the high quotient, while in Moore the role of the mineral sands industry near Eneabba is significant. Other sectors with relatively high LQs include: electricity, gas, water and waste services in Avon; transport, postal and warehousing in Avon and Campion; and education and training in Avon.

**Table 4.3 Location Quotients by Industry Sector in the Wheatbelt, 2006**

Industry Group	Avon	Campion/Lakes	Hotham	Moore
Agriculture, forestry & fishing	7.4	12.3	11.4	9.2
Mining	1.3	4.6	0.6	3.1
Manufacturing	0.6	0.3	0.4	0.7
Electricity, gas, water & waste services	1.4	1.0	0.8	1.0
Construction	0.8	0.5	0.6	1.2
Wholesale trade	0.9	0.8	0.9	0.9
Retail trade	0.9	0.7	0.8	0.6
Accommodation & food services	0.7	0.5	0.6	0.8
Transport, postal & warehousing	1.1	1.2	0.7	1.0
Information media & telecommunications	0.3	0.2	0.3	0.3
Financial & insurance services	0.4	0.4	0.4	0.3
Rental, hiring & real estate services	0.7	0.2	0.3	0.9
Professional, scientific & technical services	0.4	0.2	0.3	0.3
Administrative & support services	0.6	0.3	0.4	0.6
Public administration & safety	1.0	0.9	0.9	0.8
Education & training	1.1	0.9	1.0	0.9
Health care & social assistance	0.8	0.6	0.9	0.5
Arts & recreation services	0.4	0.2	0.4	0.5
Other services	0.9	0.8	0.7	0.7

(Calculated by the authors from ABS, 2007)

### 4.3.3 Enterprise Structure

In 2006, there were 9,513 private businesses in the Wheatbelt, of which 5,184 (or 54.5 per cent) were in the agriculture, forestry and fishing sector. The majority of these were non-employing farm enterprises. In the Avon subdivision, there were 3,078 businesses, of which 48.1 per cent were in the agriculture, forestry and fishing sector (Table 4.4). The next most common sector was property and business services (10 per cent), followed closely by construction (9.6 per cent) and retail trade (8.4 per cent).

The dominance of broadacre farming businesses was reflected in the sectoral distribution of firms in Campion/Lakes, with more than 61 per cent of enterprises in the agriculture, forestry and fishing sector (Table 4.4). The next most common businesses were in property and business services and retail trade (both 7.7 per cent). A similar business mix in Hotham saw 56.6 per cent of businesses in agriculture, forestry and fishing, 8.4 per cent in property and business services and retail trade. In Moore, after agriculture, forestry and fishing (52.9 per cent) the construction sector comprised 11.2 per cent of all businesses, largely as a result of the growth of both the regional economy and population, particularly on the coast. Other important sectors included property and business services (8.8 per cent) and retail trade (7.9 per cent).

**Table 4.4 Percentage of Businesses by Sector in the Wheatbelt, 2006**

<b>Industry Sector</b>	<b>Avon</b>	<b>Campion/Lakes</b>	<b>Hotham</b>	<b>Moore</b>	<b>Aust.</b>
Agriculture	48.1	61.6	56.6	52.9	10.9
Mining	0.6	0.9	0.4	0.4	0.4
Manufacturing	3.4	1.9	2.6	3.1	5.4
Electricity, Gas & Water	0.0	0.0	0.1	0.1	0.1
Construction	9.6	5.5	7.1	11.2	15.7
Wholesale Trade	3.3	3.0	3.4	1.8	4.3
Retail Trade	8.4	7.7	8.4	7.9	11.1
Acc'dation Cafes and Restaurants	2.9	1.7	1.9	2.7	2.8
Transport & Storage	5.2	3.9	3.7	4.6	5.9
Communication Services	0.9	1.1	0.3	0.3	1.2
Finance & Insurance	3.1	2.9	2.8	2.7	6.6
Property & Business Services	10.0	7.7	8.4	8.8	25.1
Education	0.3	0.0	0.4	0.0	0.8
Health & Community Services	2.0	1.2	1.3	1.0	4.5
Cultural & Recreational Services	1.0	0.1	0.7	0.9	2.3
Personal & Other Services	1.3	0.9	1.8	1.5	2.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(Source: ABS, 2006)

As in much of regional Australia, small and medium enterprises dominate the Wheatbelt (Table 4.5). Of the region's more than 9,500 businesses, 55.7 per cent are sole traders, with a further 27.5 per cent employing between one and four staff. As a proportion of businesses per sector, sole traders were most common in: cultural and recreational services (86 per cent); finance and insurance (85 per cent); mining (77 per cent); and property and business services (73 per cent). Of the larger employers in the Wheatbelt, agriculture, forestry and fishing had 144 enterprises with more than 20 staff (including 33 with more than 50 staff), while retail trade had 42 businesses with more than 20 staff. Other large employers included: accommodation, cafes and restaurants; manufacturing; and cultural and recreational services.

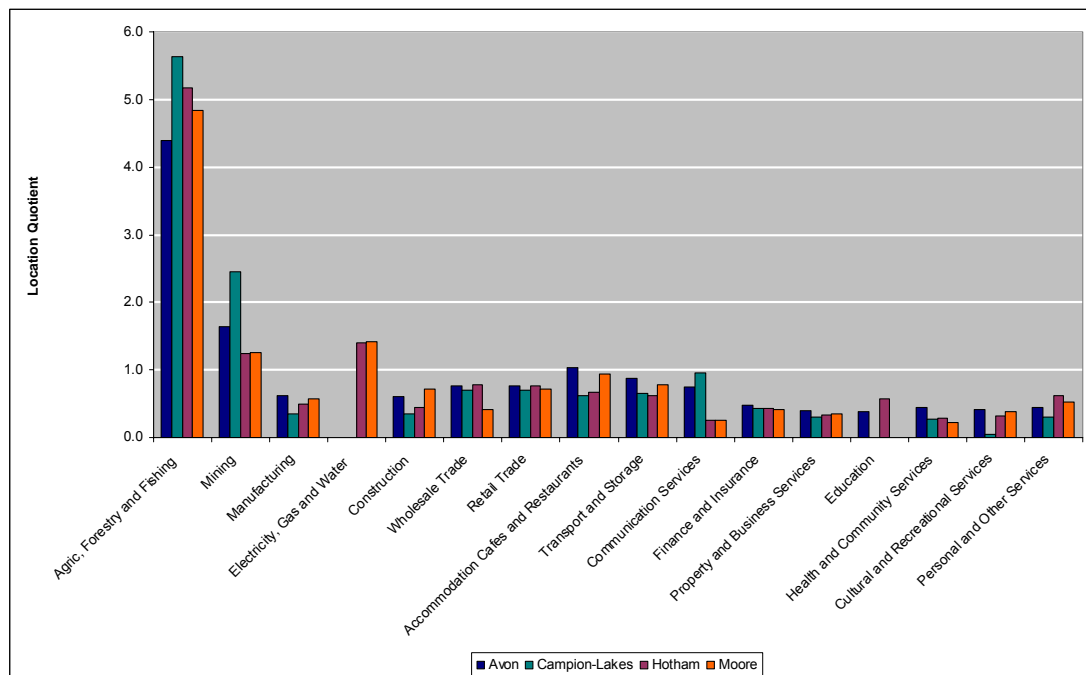
Location quotients were calculated for private businesses in the Wheatbelt to provide further insights into the relative importance of difference sectors (Figure 4.5). In terms of private enterprise, agriculture, forestry and fishing have very high quotients in all subdivisions (all above 4.0). Mining is also significant across the region's subdivisions, while the electricity, gas, water and waste services sector was significant in Hotham and Moore.

**Table 4.5 Number of Businesses by Employment in the Wheatbelt, 2006<sup>6</sup>**

	No staff	1-4 staff	5-19 staff	20-49 staff	50+ staff	Total employing	Total
Agriculture, Forestry and Fishing	2706	1611	705	111	33	2460	5184
Mining	44	7	3	0	3	9	57
Manufacturing	153	51	48	18	6	123	267
Electricity, Gas and Water	6	0	0	0	0	0	6
Construction	522	207	48	6	3	264	795
Wholesale Trade	150	66	45	6	6	123	279
Retail Trade	336	246	165	36	6	453	774
Accommodation Cafes & Rest's	72	45	87	30	6	168	225
Transport and Storage	225	126	57	9	0	192	420
Communication Services	30	30	6	0	3	39	66
Finance and Insurance	234	21	15	0	0	36	276
Property and Business Services	615	138	66	6	6	216	843
Education	9	9	6	0	0	15	18
Health and Community Services	72	39	30	3	3	75	141
Cultural and Recreational Services	57	3	0	15	0	18	66
Personal and Other Services	81	30	12	0	0	42	126
<b>Total</b>	<b>5312</b>	<b>2629</b>	<b>1293</b>	<b>240</b>	<b>75</b>	<b>4233</b>	<b>9543</b>

(Source: ABS, 2006)

**Figure 4.5 Location Quotients for Businesses by Industry Sector, 2006**



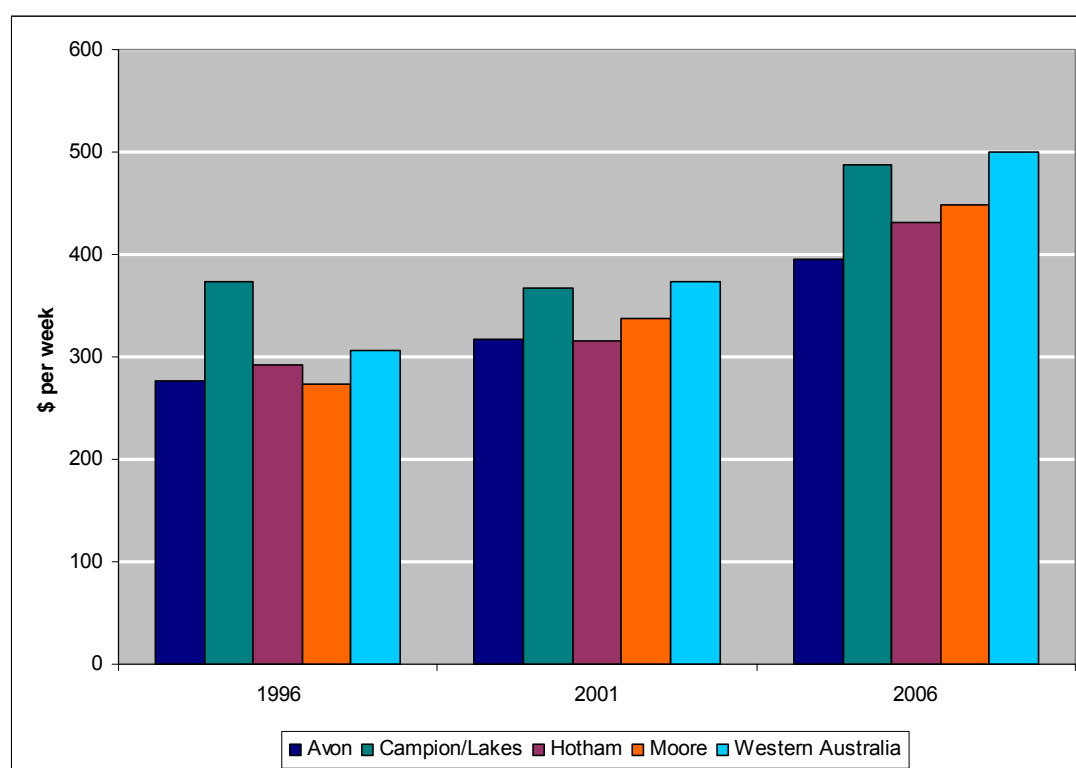
(Calculated by the authors from ABS, 2007)

<sup>6</sup> Disaggregated data for each subdivision are provided in Appendix 2.

#### 4.3.4 Income Distribution

One of the major challenges facing the public and private sector in attracting and retaining labour is the capacity to pay competitive wages. Figure 4.6 illustrates changing median individual incomes between 1996 and 2006 for the Wheatbelt's statistical subdivisions. It shows that median incomes varied across the region, with Campion/Lakes the most competitive when compared to the State average. In Campion/Lakes in 1996, median incomes were 121.5 per cent of the median Western Australian individual income. While this fell to 98.1 per cent in 2001 and then 97.6 per cent in 2006, incomes remained competitive with elsewhere in Western Australia. In part, the performance of Campion/Lakes is linked to the relatively high incomes received in the resources sector in the Yilgarn area.

**Figure 4.6 Median Individual Weekly Income in the Wheatbelt, 2006**



(Source: ABS, 2007)

In other parts of the region, incomes were uniformly below the State average between 1996 and 2006. Moreover, as a proportion of the State average, incomes in the Wheatbelt deteriorated in most subdivisions. While Moore remained stable at between 88.9 and 89.9 per cent of the Western Australian average, in Hotham incomes fell from 95 to 86.2 per cent of the State median. The most significant decline was experienced in Avon, where incomes fell from 90.2 to 79.2 per cent of the Western Australian average between 1996 and 2006.

The declining relative incomes are the outcome of a number of factors. First, farm incomes have decreased in relative terms across Australia over the past two decades, which has

major direct impacts on median incomes in regions with a heavy dependence on farming (Stayner, 2005). Second, many businesses in the Wheatbelt, because of their close links to agriculture, have not been able to increase their wages in line with the State average (Tonts, 2004). Third, there has been a shifting geography of trade in agricultural regions with increasing amounts of business being conducted in larger regional centres, often bypassing local economies (see Smailes, 2000). This has led to a contraction of many private enterprises and restricted wages growth. Fourth, rapid increases in wages elsewhere, particularly in those regions with strong resources sectors, has contributed to a strong increase in the Western Australian average when compared to the median incomes received in the Wheatbelt.

The declining relative incomes in the Wheatbelt pose a major regional development challenge. Given the importance of competitive incomes as a means of attracting high quality, skilled employees, the inability to pay wages and salaries commensurate with other regions (especially those immediately adjacent to the Wheatbelt) places firms and organisations at a disadvantage in the labour market. While other factors, such as lifestyle, environmental amenity and cost of living are also important, the international and national evidence indicates that wages and salaries are an important determinant in staff attraction and retention (Green and Owen, 2003; Green *et al.*, 2004; BTRE, 2006). In the Wheatbelt, the situation is made all the more complex by the relative size of the firms. In terms of both employees and turnover, Wheatbelt enterprises are generally very small, and subject to the vagaries of international markets, climatic conditions, and ex-regional processes. It is these small firms that also face significant challenges in terms of attracting and retaining staff, yet are not necessarily in a position to offer wages equal to, or even approaching, those paid in other regions.

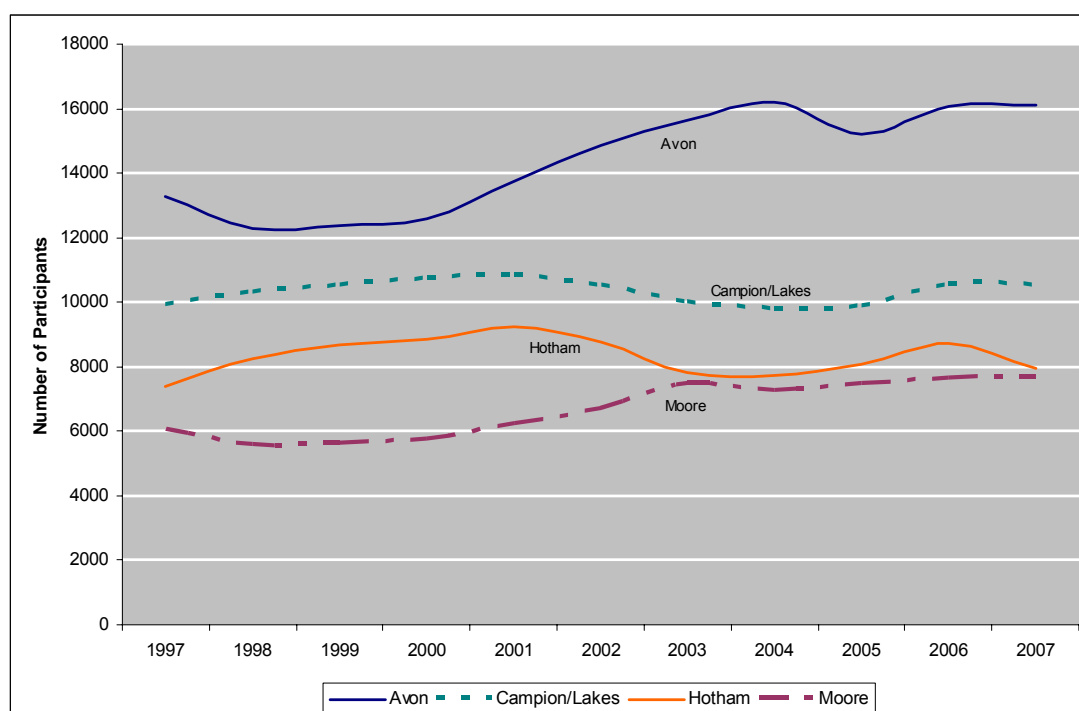
## **4.4 The Labour Force**

### **4.4.1 Employment and Unemployment Trends**

The labour force of the Wheatbelt has remained relatively stable over the past decade, though there is a degree of spatial variability across the region. According to the Department of Employment and Workplace Relations' Small Area Labour Market data, the workforce of Avon increased between 1997 and 2007 (Figure 4.7). While there were some fluctuations, the estimated number of people employed in the subdivision rose from 13,268 to 16,128 over the period; an increase of 21.6 per cent. This increase is largely a reflection of the population growth and economic expansion in the Avon Valley (incorporating Northam, Toodyay, York and Beverley) over the past decade. In the eastern parts of the subdivision, levels of employment were either stable or in decline between 1997 and 2007.

The labour force in both Campion/Lakes and Hotham rose steadily between 1997 and 2001, before a contraction during the early 2000s. The estimated employment in Campion/Lakes stabilised around 10,500 between 2005 and 2007, while Hotham decreased in 2006/07, settling at a little under 8,000. In Moore, the pattern was one of steady growth throughout most of the period between 1997 and 2007, with the labour market rising from 6,049 to 7,689 (a 27.1 per cent increase). The expansion in employment was linked to strong coastal and peri-urban population and economic growth, with major concentrations of new employment around the Chittering Valley, Jurien and some of the smaller coastal settlements.

**Figure 4.7 Estimated Size of the Labour Force in the Wheatbelt, 1996-2007**



(Source: DEWR, various issues)

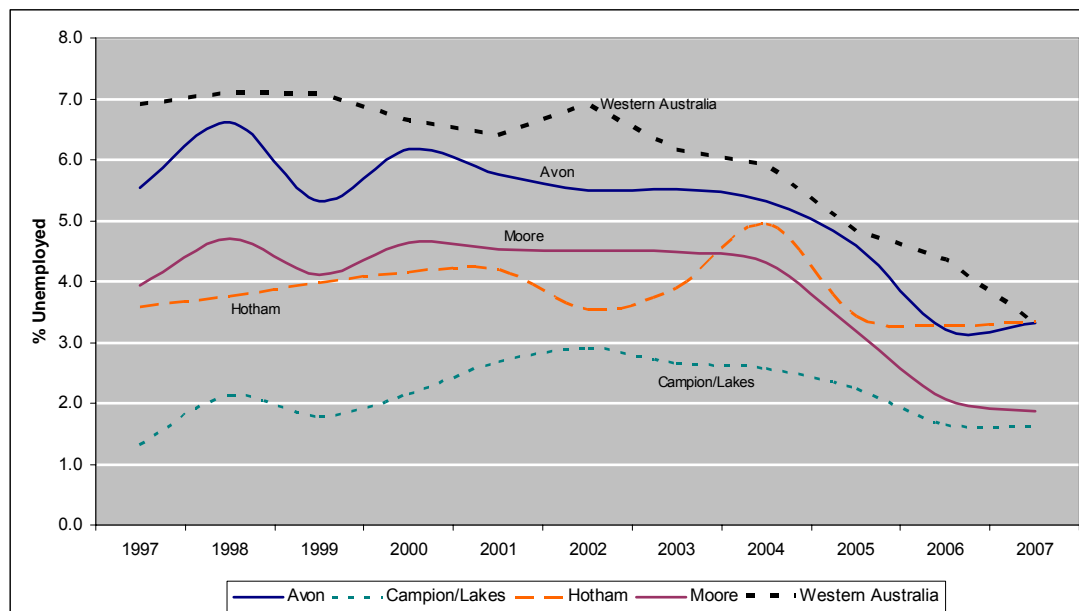
Unemployment rates across the region remained below the State average between 1997 and 2007. Rates were highest in the Avon subdivision, peaking at 6.6 per cent in 1998, before steadily falling to 3.3 per cent in 2007. In Campion/Lakes, rates were extremely low, often below two per cent, while in Hotham rates remained between about 4.0 and 3.2 per cent. In Moore, unemployment peaked at 6.9 per cent in 2002, before falling to 1.9 per cent in 2007.

The low unemployment rates in the Wheatbelt are typical of broadacre farming regions across Australia. In part, this is because there is a strong tendency amongst the unemployed in rural areas to migrate to areas with strong employment opportunities, thereby keeping rates relatively low (Hugo, 2005). However, the unemployment rates in the Wheatbelt are also symptomatic of the strong economic conditions in Western Australia and



a more general labour shortage. With rates in some areas lower than two per cent, the capacity of the regional market to provide labour is extremely limited, and with low unemployment across the State, there is little scope for an immediate fix to the labour shortages facing many Wheatbelt private enterprises and public sector organisations.

**Figure 4.8 Unemployment Rates in the Wheatbelt, 1996-2007**



(Source: DEWR, various issues)

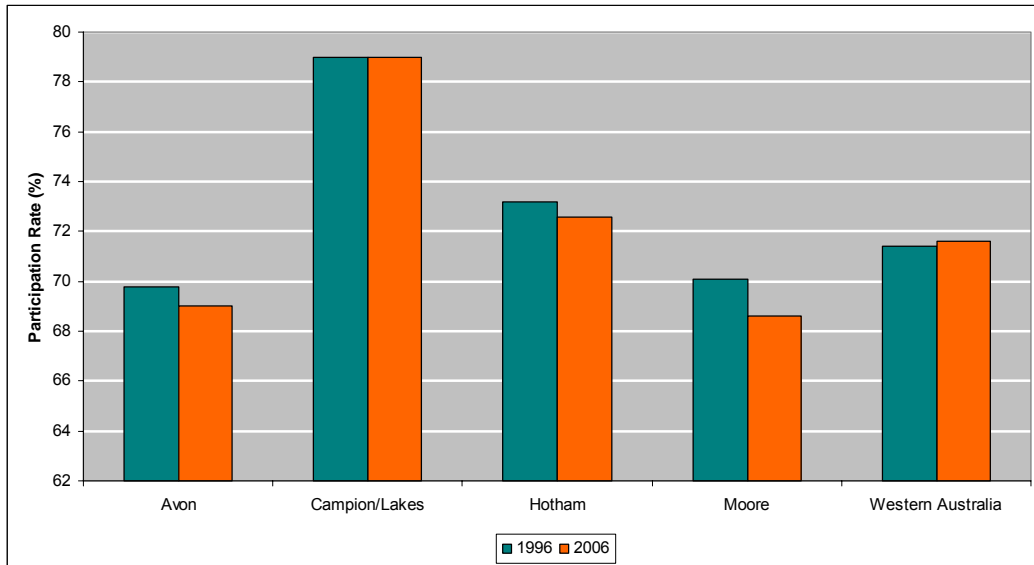
#### 4.4.2 Labour Force Participation

Labour force participation rates varied considerably in the Wheatbelt between 1996 and 2006 (Figure 4.9). In Avon, participation was well below the State average in both 1996 and 2006, falling from 70 to 69.2 per cent. Participation in Campion/Lakes was very high, remaining at 79 per cent in both 1996 and 2006. The rate fell slightly in Hotham over the same period, from 73.2 to 72.6, though remained above the rate for Western Australia as a whole. In Moore, participation was lower than the State average in both 1996 and 2006, falling from 70.1 to 68.6 per cent.

Figure 4.10 shows how labour force participation rates varied across different age cohorts at the 2006 census. In Avon, rates of participation were lower than the State average in all age cohorts until the post 55 year groups. The combination of Avon's relatively low participation rates, together with an unemployment rate higher than in other parts of the Wheatbelt, suggests that there is at least some scope for addressing some labour needs locally. The situation in Moore is similar to Avon, with participation rates relatively low in the younger cohorts, and increasing beyond the age of 65 years. In part, this reflects the older demographic structure of Moore when compared to Avon and the rest of the Wheatbelt, but also points to some underutilisation of local resources.

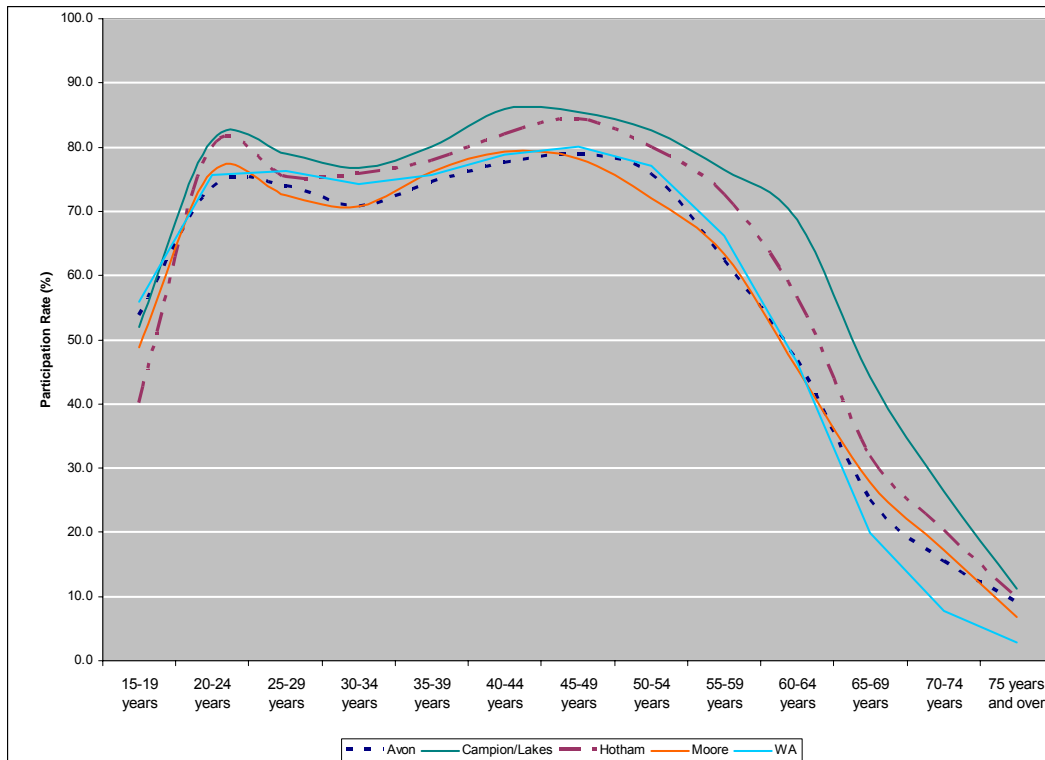
In Campion/Lakes, participation is higher in virtually every age cohort than the State average, and other Wheatbelt subdivisions. Participation peaked at 85.9 per cent in the 40-44 years age cohort, compared to 78.8 per cent in the same cohort at the State level. Hotham also had high participation rates, and beyond the 20-24 age group was uniformly higher than Western Australia as a whole. Participation peaked 84.4 per cent in the 45-49 age cohort, compared to 80.2 per cent in the same age group at the State level.

**Figure 4.9 Labour Force Participation Rates in the Wheatbelt, 1996-2006**



(Source: ABS, 2007)

**Figure 4.10 Labour Force Participation in the Wheatbelt by Age, 2006**



(Source: ABS, 2007)

#### 4.4.3 Employment by Industry Sector

The dominance of farming within the Wheatbelt's economy is further evident in data on the distribution of employment across industry sectors (Table 4.6). Employment in the agriculture, forestry and fishing sector was lowest in Avon at 22.9 per cent, and Moore at 28.9 per cent. This compared with just 3.3 per cent of the Western Australian labour force having been engaged in this sector in 2006. The importance of farming was even higher in Campion/Lakes and Hotham, where more than 35 per cent of the population were employed in agriculture. The next most important employer across the region was retail trade, normally contributing between 7.0 and 10.1 per cent of employment. Other significant employers included education and training, health care and social assistance, and public administration and safety.

**Table 4.6 Percentage of the Labour Force in Different Industry Sectors in the Wheatbelt, 2006**

Industry Sector	Avon	Campion/Lakes	Hotham	Moore	W. Aust
Agriculture, forestry & fishing	22.9	38.0	35.1	28.5	3.3
Mining	1.6	5.5	0.7	3.7	4.3
Manufacturing	6.7	2.9	4.1	7.2	9.4
Electricity, gas, water & waste services	1.4	1.0	0.7	1.0	1.0
Construction	6.2	3.8	4.5	9.2	9.1
Wholesale trade	4.1	3.5	3.9	3.8	4.0
Retail trade	10.1	7.4	8.8	7.0	11.1
Accommodation & food services	4.3	3.2	3.6	5.0	5.8
Transport, postal & warehousing	5.1	5.5	3.4	4.5	4.2
Information media & telecommunications	0.6	0.4	0.5	0.5	1.3
Financial & insurance services	1.5	1.4	1.7	1.3	2.9
Rental, hiring & real estate services	1.2	0.3	0.6	1.5	2.0
Professional, scientific & technical services	2.7	1.5	1.9	1.8	6.3
Administrative & support services	1.9	1.1	1.3	2.0	3.2
Public administration & safety	6.9	5.8	6.1	5.5	6.4
Education & training	8.4	6.8	7.9	6.8	7.7
Health care & social assistance	8.2	6.2	9.2	4.9	10.2
Arts & recreation services	0.6	0.3	0.6	0.6	1.2
Other services	3.5	3.0	2.6	2.5	3.8
Other	2.3	2.5	2.8	2.7	2.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(Source: ABS, 2007)

#### 4.4.4 Shift-Share Analysis

Table 4.7 presents the output of a shift-share analysis of employment change in the Avon statistical subdivision for the period 2001-2006<sup>7</sup>. It shows the total change in employment in each sector, and the different components of growth/decline (national share, industry composition, or regional shift). Overall, the labour force of Avon increased by 24 (0.2 per

<sup>7</sup> For a description of the shift-share technique, see Appendix 1.

cent) between 2001 and 2006. National growth contributed to 1,565 jobs, though 507 were lost as a result of the industry mix, and a further 571 lost as a result of regional level factors.

The major constraint on employment growth was the agriculture, forestry and fishing sector, which fell by 348 over the period, with 731 lost as a result of industry compositional effects. The high level loss in this component is largely as a result of the high level of dependence on this sector within the economy. Other sectors that experienced significant declines included: accommodation and food services; information media and telecommunications; wholesale trade; and administrative and support services. For most of these industries it was a combination of the industry mix and local competitive factors that contributed to the decline.

**Table 4.7 Shift-Share Decomposition of Employment Change by Industry in Avon, 2001-2006**

Industry Sector	National Share	Industry Composition	Regional Shift	Total	% Change
Agriculture, forestry & fishing	286	-731	97	-348	-11.8
Mining	9	31	42	82	86.3
Manufacturing	67	-87	96	76	11.0
Electricity, gas, water & waste services	16	11	-30	-3	-2.4
Construction	71	154	-252	-27	-3.5
Wholesale trade	50	-76	-23	-49	-9.6
Retail trade	99	23	17	139	13.7
Accommodation & food services	52	-18	-88	-54	-10.0
Transport, postal & warehousing	50	7	1	58	11.2
Information media & telecommunications	12	-29	-38	-55	-44.0
Financial & insurance services	17	3	-24	-4	-2.3
Rental, hiring & real estate services	11	-1	12	22	20.0
Professional, scientific & technical services	30	0	-41	-11	-3.2
Administrative & support services	25	-16	-46	-37	-14.4
Public administration & safety	68	112	-88	92	13.2
Education & training	89	15	-64	40	4.3
Health care & social assistance	80	89	-65	104	12.7
Arts & recreation services	7	1	-13	-5	-6.8
Other services	38	-29	-5	4	1.0
Other	25	34	-59	0	0.0
<b>Total</b>	<b>1,102</b>	<b>-507</b>	<b>-571</b>	<b>24</b>	<b>0.2</b>

(Calculated by the authors from ABS, 2007)

While the decline of one of the subdivision's largest employers, agriculture, constrained overall growth, the subdivision experienced increases in a number of sectors, including: retail trade; health care and social assistance; education and training; manufacturing; and

mining. While the majority of these grew on the back of wider national processes, mining and manufacturing show significant regional shift components of growth, suggesting that local factors are at play. In manufacturing this is particularly important, since rural manufacturing has struggled to remain viable in many parts of Australia. The analysis suggests that the Avon region has certain competitive advantages that are enabling this industry to expand, despite the broader challenges facing manufacturing in rural areas.

In the period between 2001 and 2006, the subdivision of Campion/Lakes experienced a contraction in the labour force of 455 (-5.7 per cent)(Table 4.8). Much of this was driven by the industry mix and regional shift components. The main contributor to decline was the agriculture, forestry and fishing sector (with a net loss of 400 jobs), which was largely driven by the industry composition component (and the result of a high level of dependence on farming).

**Table 4.8 Shift-Share Decomposition of Employment Change by Industry in Campion/Lakes, 2001-2006**

Industry Sector	National Share	Industry Composition	Regional Shift	Total	% Change
Agriculture, forestry & fishing	315	-804	89	-400	-12.3
Mining	35	117	-103	49	13.6
Manufacturing	20	-27	15	8	4.3
Electricity, gas, water & waste	7	4	-4	7	10.4
Construction	34	73	-166	-59	-17.3
Wholesale trade	31	-47	-36	-52	-16.4
Retail trade	54	13	-70	-3	-0.5
Accommodation & food services	31	-11	-102	-82	-25.2
Transport, postal & warehousing	35	5	15	55	15.3
Info media & telecommunications	4	-10	-10	-16	-35.6
Financial & insurance services	10	2	-6	6	6.0
Rental, hiring & real estate ser's	3	0	-5	-2	-11.5
Prof, scientific & technical services	13	0	-33	-20	-15.4
Administrative & support services	11	-7	-37	-33	-29.5
Public administration & safety	34	57	-13	78	22.0
Education & training	51	8	-73	-14	-2.7
Health care & social assistance	40	45	-39	46	11.1
Arts & recreation services	4	0	-27	-23	-52.4
Other services	22	-17	-5	0	0.0
Other	19	25	-44	0	0.0
<b>Total</b>	<b>773</b>	<b>-574</b>	<b>-654</b>	<b>-455</b>	<b>-5.7</b>

(Calculated by the authors from ABS, 2007)

Relatively small falls were experienced in a number of Campion/Lakes' other sectors, largely as a result of regional shift effects. The most significant of these were: construction; accommodation and food services; administrative and support services. The decline as a

result of regional shift indicates that it is largely local competitive issues that are driving the falls. However, decline was not uniform, and a number of sectors experienced growth, including: mining; public administration and safety; transport, postal and warehousing; and, health care and social assistance. The growth in these sectors was largely as a result of national effects (e.g. broader growth in the economy or public expenditure) or compositional effects.

In Hotham, the labour force expanded by 0.7 per cent between 2001 and 2006, with agriculture, forestry and fishing the main driver of decline (Table 4.9). This sector fell by 5.6 per cent, with industry mix the main contributor to decline. As in industry, agriculture in the region demonstrated high levels of efficiency, with the regional shift component increasing. A number of other sectors experienced modest declines, including: other services; administrative and support services; and wholesale trade. The most significant contributor to decline in these sectors was the industry composition component, suggesting that the particular mix of sectors within the subdivision is the major constraint to growth. A number of sectors expanded, including: public administration and safety; health care and social assistance; and education and training.

**Table 4.9 Shift-Share Decomposition of Employment Change by Industry in Hotham, 2001-2006**

Industry Sector	National Share	Industry Composition	Regional Shift	Total	% Change
Agriculture, forestry & fishing	223	-569	218	-128	-5.6
Mining	3	9	8	20	70.4
Manufacturing	24	-31	17	10	4.1
Elect, gas, water & waste services	3	2	8	13	39.4
Construction	27	57	-78	6	2.2
Wholesale trade	25	-38	-4	-17	-6.6
Retail trade	48	11	-9	50	10.1
Accommodation & food services	22	-7	-14	1	0.0
Transport, postal & warehousing	18	2	10	30	16.6
Information media & telecomm's	4	-9	-2	-7	-19.5
Financial & insurance services	10	2	-9	3	2.9
Rental, hiring & real estate serv's	3	0	0	3	9.1
Prof, scientific & technical services	13	0	-26	-13	-10.1
Administrative & support services	10	-6	-27	-23	-21.9
Public administration & safety	32	53	-35	50	15.0
Education & training	44	7	-20	31	7.0
Health care & social assistance	51	56	-61	46	8.8
Arts & recreation services	3	0	2	5	16.7
Other services	19	-14	-36	-31	-16.6
Other	17	23	-40	0	0.0
<b>Total</b>	<b>599</b>	<b>-452</b>	<b>-98</b>	<b>49</b>	<b>0.7</b>

(Calculated by the authors from ABS, 2007)

The shift-share analysis in Moore highlights not only a strong rate of growth, but also the changing structure of the local economy (Table 4.10). Overall, employment increased by 9.7 per cent between 2001 and 2006, with national share and regional shift the drivers of growth. Industry compositional effects constrained growth, largely because of the high dependence on agriculture. While agriculture, forestry and fishing declined as a sector (-5.7 per cent), mainly as a result of industry mix factors, few other components of the economy declined substantially. Significant increases were experienced in: manufacturing; construction; retail trade; transport, postal and warehousing; and a range of service sectors. Most of this growth was led by the regional shift component, indicating that local competitive effects are the main reasons for the increases. The emergence of new local industries as a result of conditions/factors within the subdivision suggests that Moore is diversifying and reducing its dependence on agriculture. There is, however, a strong geographical divide in Moore, with coastal and peri-urban areas generally growing, while more traditional agricultural areas in the inland parts of the subdivision continue to decline.

**Table 4.10 Shift-Share Decomposition of Employment Change by Industry in Moore, 2001-2006**

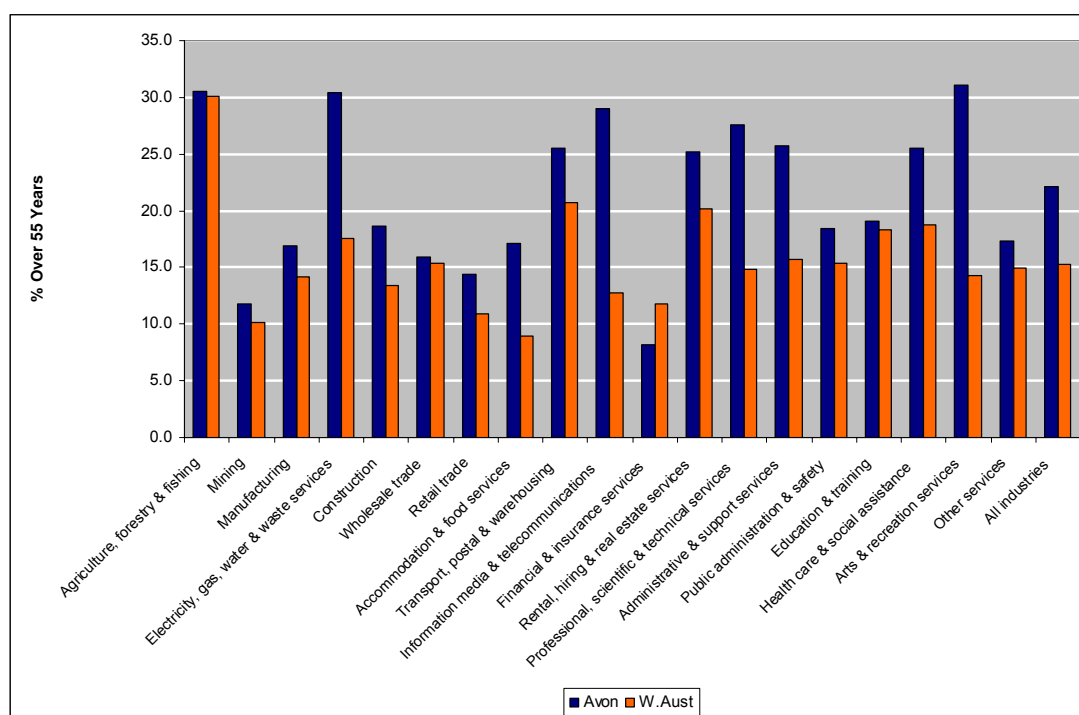
Industry Sector	National Share	Industry Composition	Regional Shift	Total	% Change
Agriculture, forestry & fishing	184	-470	178	-108	-5.7
Mining	24	79	-116	-13	-5.3
Manufacturing	32	-41	138	129	39.3
Electricity, gas, water & waste services	6	4	-13	-3	-3.0
Construction	38	83	61	182	46.0
Wholesale trade	23	-35	12	0	0.0
Retail trade	39	9	-13	35	8.7
Accommodation & food services	31	-11	-23	-3	-1.0
Transport, postal & warehousing	21	3	41	65	30.2
Information media & telecommunications	4	-9	0	-5	-13.2
Financial & insurance services	5	1	21	27	48.2
Rental, hiring & real estate services	6	0	24	30	47.6
Professional, scientific & technical services	12	0	-18	-6	-4.9
Administrative & support services	11	-7	4	8	6.8
Public administration & safety	25	41	28	94	37.0
Education & training	37	6	1	44	11.6
Health care & social assistance	24	26	12	62	25.5
Arts & recreation services	4	0	-3	1	2.6
Other services	14	-11	11	14	9.7
Other	16	22	-38	0	0.0
<b>Total</b>	<b>556</b>	<b>-310</b>	<b>307</b>	<b>553</b>	<b>9.7</b>

(Calculated by the authors from ABS, 2007)

#### 4.4.5 The Ageing of the Labour Force

One of the major challenges facing regional areas is the ageing of the workforce. Figure 4.11 shows the proportion of the workforce in Avon that were within 10 years of the traditional retirement age of 65 years at the 2006 census. It shows that, in almost every sector, the workforce was older than the State average. Moreover, in three sectors (agriculture, forestry and fishing; electricity, gas, water and waste services; and arts and recreation services) more than 35 per cent of the labour force were aged over 55 years. A number of other sectors had more than 20 per cent of their labour force over the page of 55, including: transport, postal and warehousing (25.5 per cent); information media and telecommunications (29 per cent); and professional, scientific and technical services (27.6 per cent).

**Figure 4.11 Proportion of Labour Force Over 55 Years of Age by Industry in Avon, 2006**

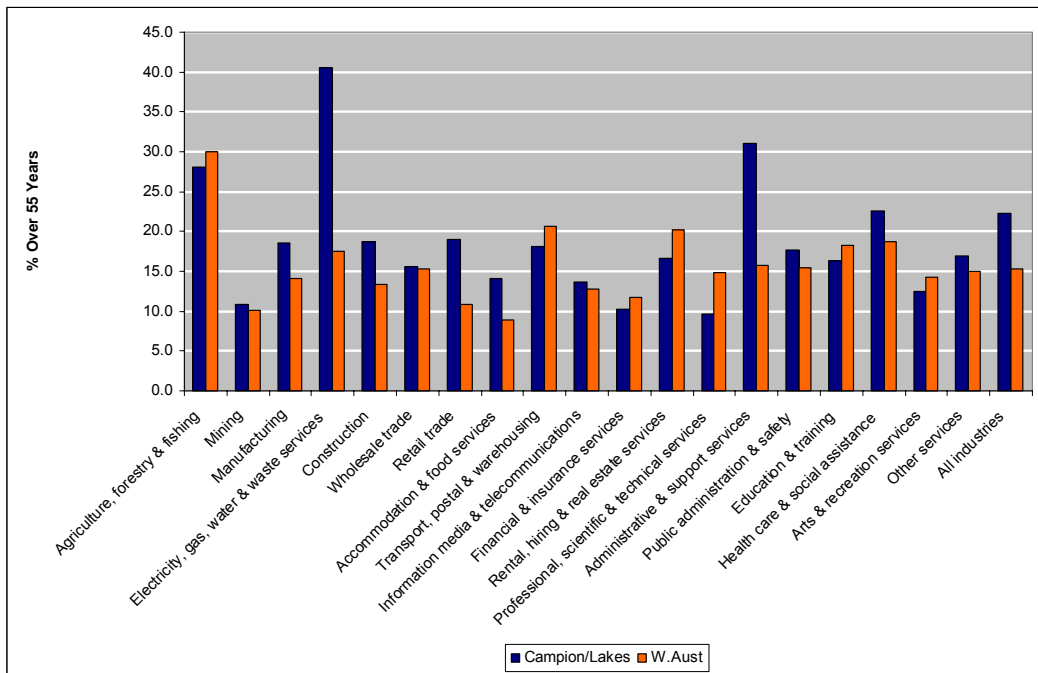


(Source: ABS, 2007)

The ageing of the workforce is also a serious issue in the Campion/Lakes subdivision (Figure 4.12). Despite the age of workers in Campion/Lakes' agriculture, forestry and fishing sector being below the State average (30.3 per cent of people over 55), more than a quarter are still within 10 years of the official retirement age. While only a small employer, more than 45 per cent of people in the electricity, gas, water and waste services sector are over 55, while 31 per cent of employees in administrative and support services are in the same age cohort. The other sector with more than 20 per cent of its workforce over the age of 55 was health care and social assistance (22.6 per cent).



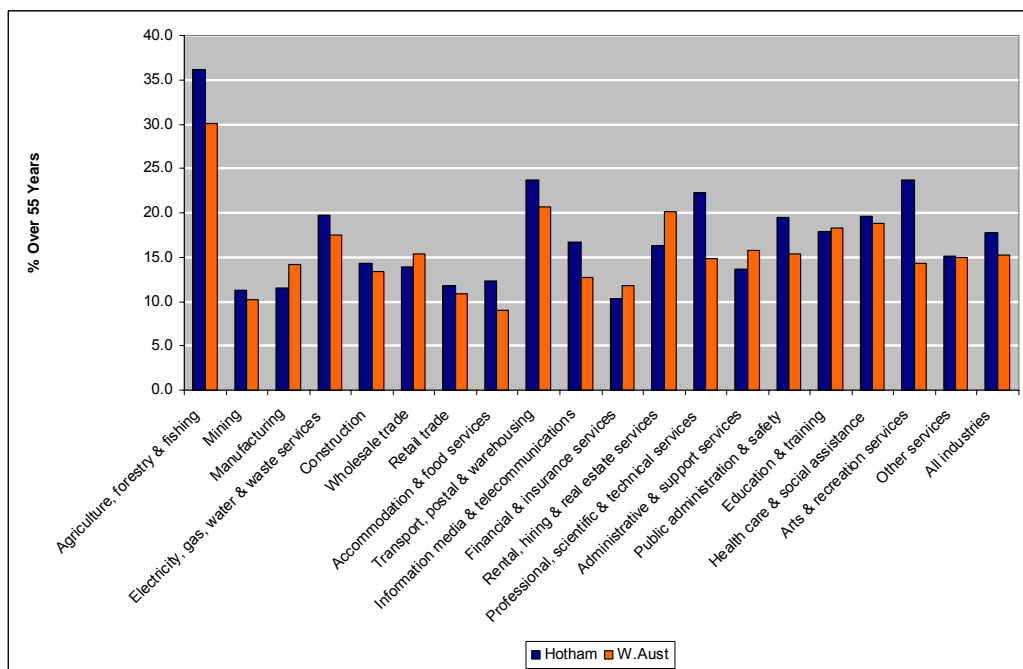
**Figure 4.12 Proportion of Labour Force Over 55 Years of Age by Industry in Campion/Lakes, 2006**



(Source: ABS, 2007)

In Hotham, the ageing of the workforce is most evident in the agriculture, forestry and fishing sector, with more than 35 per cent of people engaged in this industry over the age of 55 (Figure 4.13). Most sectors have older age structures than the State average, with more than 20 per cent of the labour force over 55 years in: transport, postal and warehousing, professional scientific and technical services, and arts and recreational services

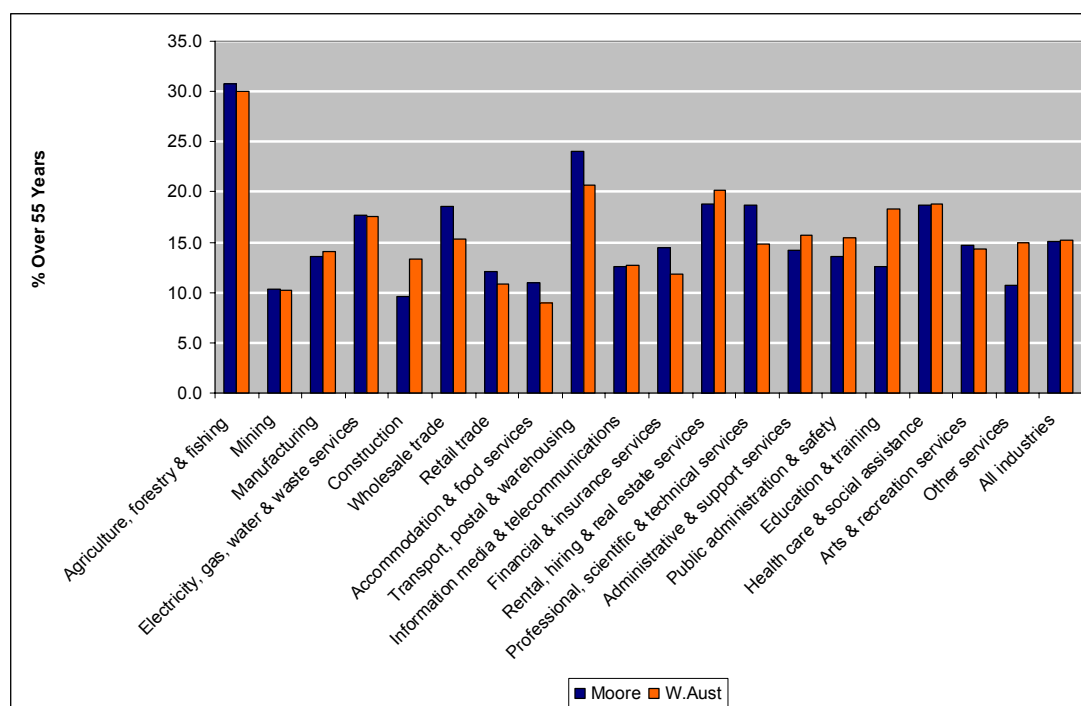
**Figure 4.13 Proportion of Labour Force Over 55 Years of Age by Industry in Hotham, 2006**



(Source: ABS, 2007)

The proportion of people over the age of 55 in each sector in the Moore subdivision was not dissimilar to Western Australia as a whole in 2006 (Figure 4.14). There was a slight over-representation in a number of sectors, notably wholesale trade, transport, postal and warehousing, and professional, scientific and technical services. The majority of sectors had a labour force with fewer than 20 per cent over 55, with the exceptions being agriculture, forestry and fishing, and transport, postal and warehousing.

**Figure 4.14 Proportion of Labour Force Over 55 Years of Age by Industry in Moore, 2006**

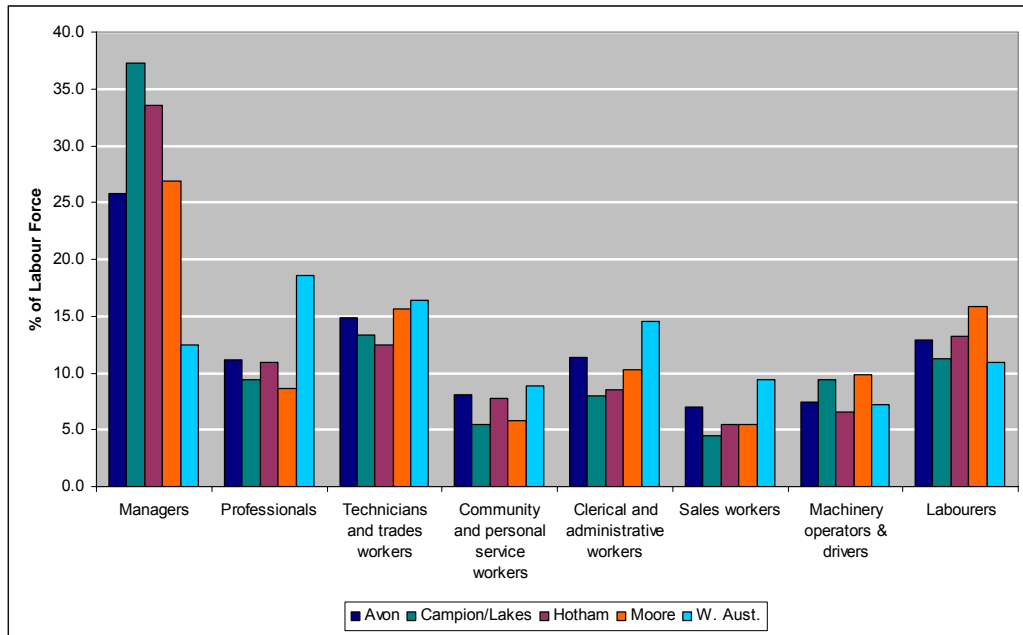


(Source: ABS, 2007)

#### 4.4.6 Occupational Structure

The broad occupational structure of the Wheatbelt is presented in Figure 4.15. The most common occupation was managers, with more than 25 per cent of the labour force in this category (compared to 12.5 per cent in Western Australia). This was largely a result of the dominance of family farmers, with farmers normally classified as managers. The region had a relatively a small proportion of its labour force employed in professional occupations. In part, this reflects the absence of a major regional centre or economic hub. Moreover, the proximity of large parts of the region to the Perth metropolitan area tends to result in a high degree of leakage of activities associated with this occupation. Trade and technical occupations were strongly represented in the region, as were machinery operators and drivers, and labours. This is not surprising in a region where primary and, to a lesser degree, secondary industries dominate the economy.

**Figure 4.15 Labour Force by Occupation in the Wheatbelt, 2006**

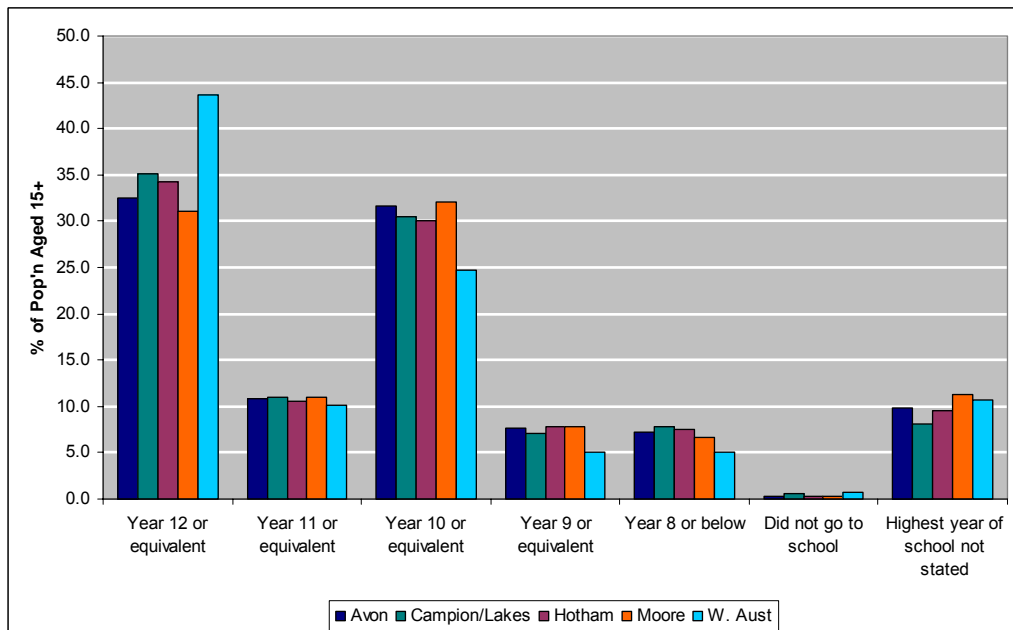


(Source: ABS, 2007)

#### 4.5 The Education Base of the Region

The highest average level of schooling in the Wheatbelt was well below the Western Australian average at the 2006 census (Figure 4.16). This is typical of many agricultural regions across Australia, where minimal levels of required formal training do not apply to the leading industry sectors. While completion of schooling to year 12 is lower than the State average, completion to year 10 is considerably higher.

**Figure 4.16 Highest Level of Schooling in the Wheatbelt, 2006<sup>8</sup>**

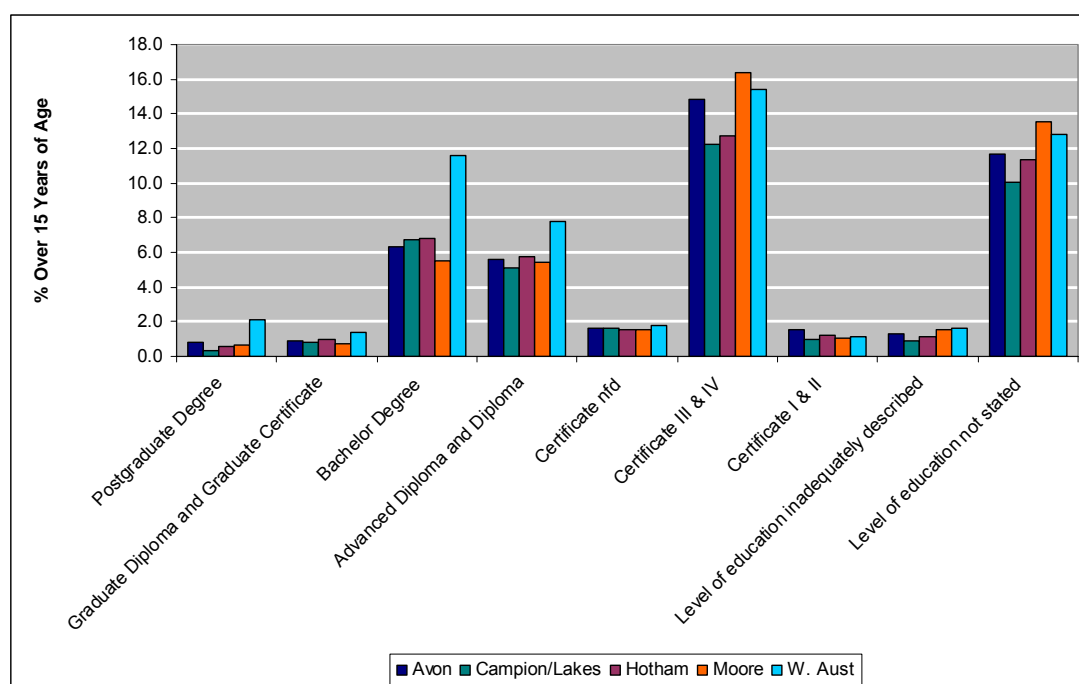


(Source: ABS, 2007)

<sup>8</sup> For those no longer at school.

Levels of post-school education in the Wheatbelt were uniformly lower than the Western Australian average in 2006 (Figure 4.17). In most subdivisions the proportion of the population with bachelors level qualifications was around half the State average. This is largely a reflection of the structure of the economy, with agriculture and other primary industries dominating employment, and is not uncommon in areas where farming dominates local employment. Certificate level qualifications were on par with the rest of Western Australia, indicating the importance of trades and para-professional activities within the Wheatbelt.

**Figure 4.17 Post School Qualifications in the Wheatbelt, 2006**



(Source: ABS, 2007)

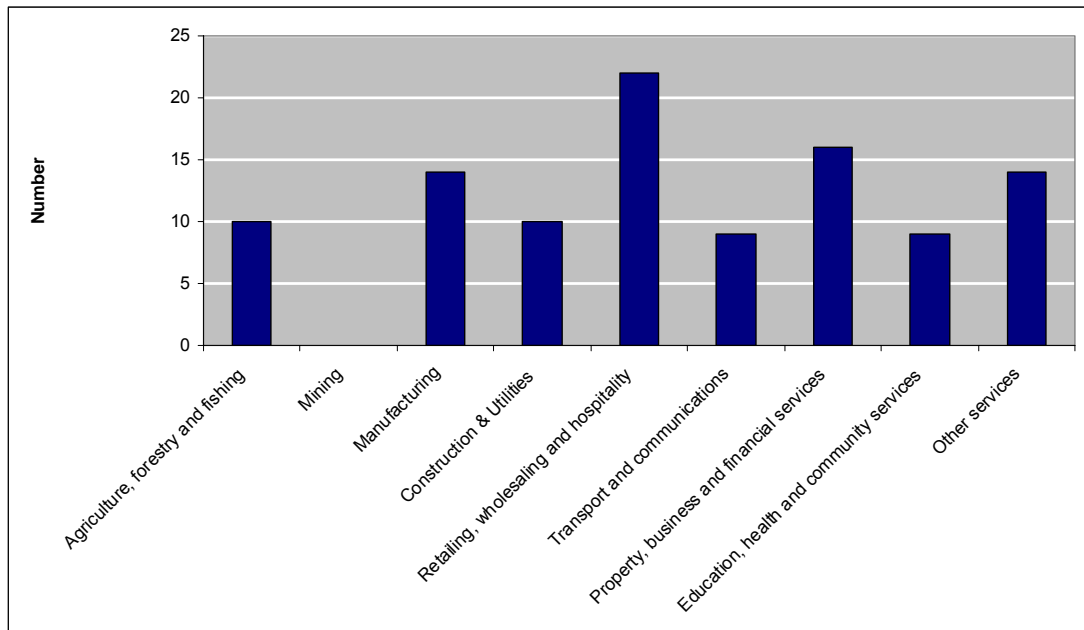
## 4.6 Employer Perspectives

The 2006 survey of labour force issues yielded 104 responses from public and private sector employers across the region. The sector of respondents was broadly consistent with the distribution of businesses within the region (Figure 4.18).<sup>9</sup> The only sector with no responses was mining, and while this is an emerging sector in the Wheatbelt (and well established in the Yilgarn area), it is not yet a major employer (see Table 4.6). The largest number of responses were from the retailing, wholesaling and hospitality sector (22), followed by property, business and financial services (16), and manufacturing (14).

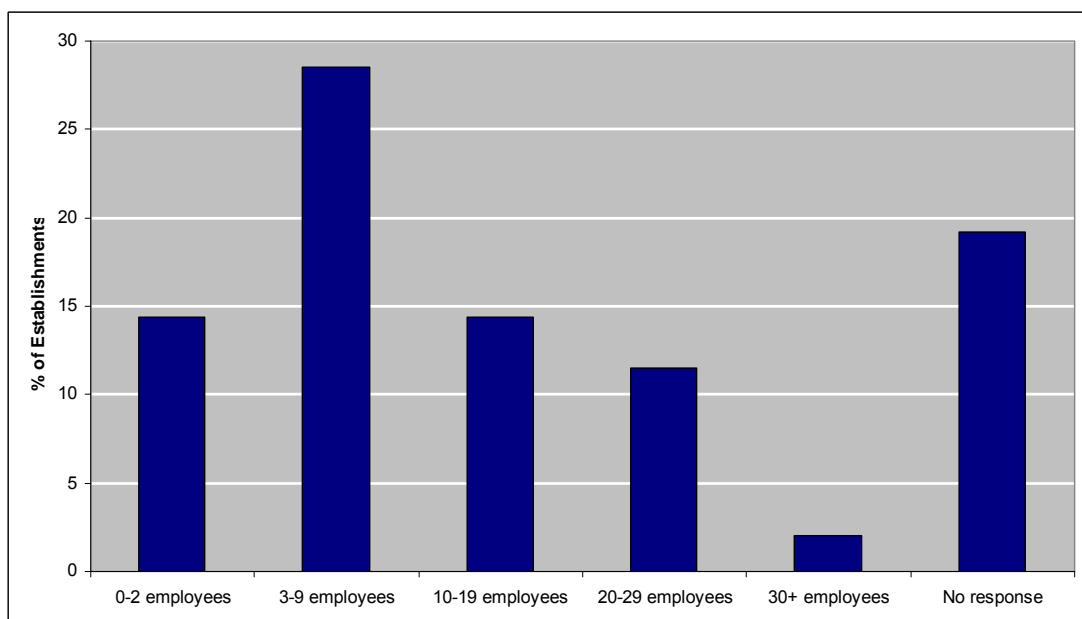
<sup>9</sup> Note that the survey was not sent to farm enterprises.

The majority of respondents (28.5 per cent) in the region had between 3 and 9 employees, with sole traders or organisations with less than three employees accounting for 14.4 per cent of respondents (Figure 4.19). Larger employers with between 10 and 29 employees accounted for 25.9 per cent of respondents, while more than 30 staff accounted for just two per cent. This is consistent with other parts of rural Australia, where small enterprises dominate the business sector, and relatively small public sector organisations are the dominant means of service delivery.

**Figure 4.18 Survey Responses in the Wheatbelt by Industry Sector**



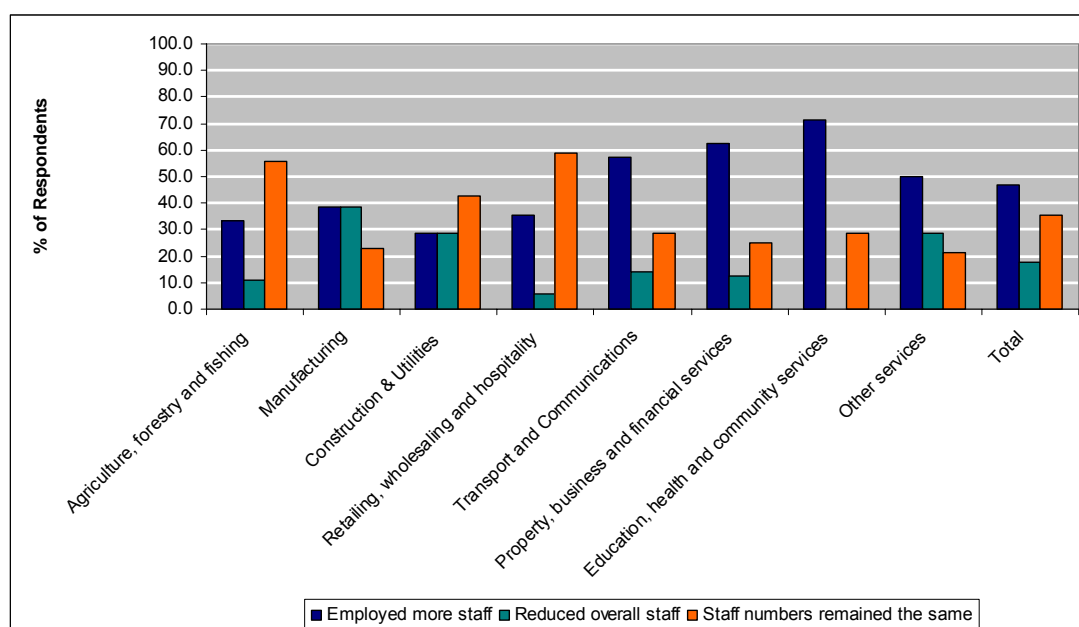
**Figure 4.19 Surveyed Establishments in the Wheatbelt by Employees**



The majority of establishments (46.7 per cent) had increased the number of employees over the five year 2001-2006, while 17.8 per cent recorded a decrease (Figure 4.20). A further 35.5 per cent reported little or no change. The sectors with the highest proportion of respondents reporting an increase in staff were: education, health and community services; property, business and financial services; and transport and communication services.

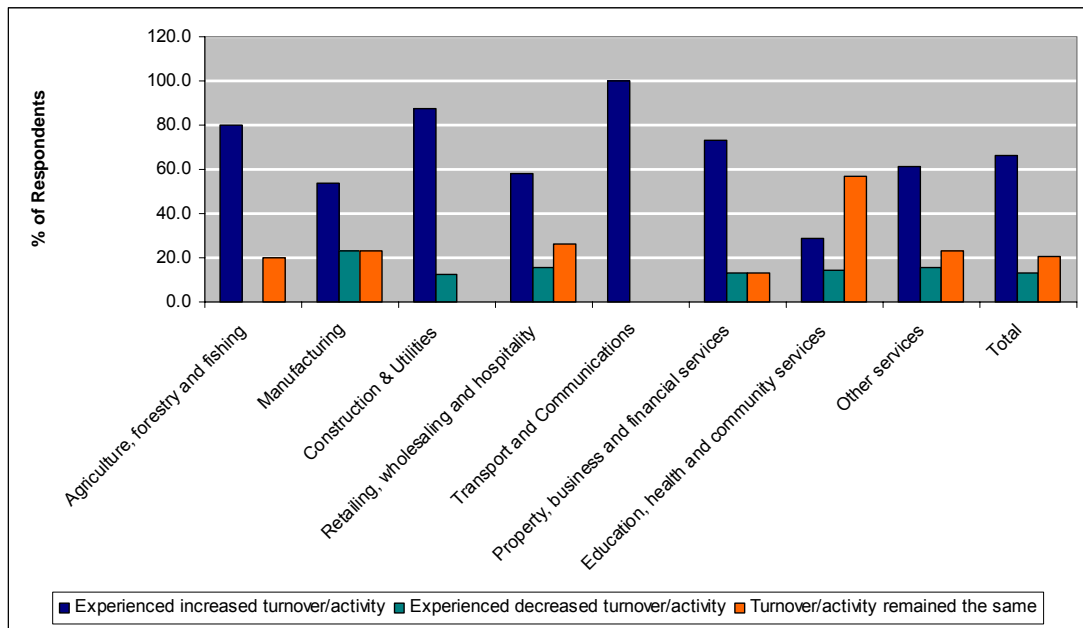
The sectors with significant proportions of respondents reporting a decrease or stability in employment included: agriculture, forestry and fishing; manufacturing; construction and utilities; and other services. These decreases are linked to two factors: i) processes of broader agricultural restructuring, including farm amalgamation/expansion, out-migration, and the changing spatial patterns of trade favouring larger regional centres (see Smailes, 2000); ii) improvements in labour efficiency as a result of the adoption of new technologies and management practices (Lawrence, 2005).

**Figure 4.20 Changes in Employee Numbers Between 2001 and 2006 in the Wheatbelt**



As with total employment, the majority of businesses and organisations (66.3 per cent) experienced an increase in activity/turnover (Figure 4.21). All sectors had more than 50 per cent of respondents indicate that turnover/activity had increased, with the exception of education, health and community services. This latter decrease is likely to be linked to the population decline experienced in some parts of the region, as well as centralisation tendencies on the part of both consumers/patrons and organisations. The sectors with the highest proportions of respondents indicating stability or decline were education, health and community services (71.4 per cent), manufacturing (46.2 per cent), and retailing, wholesaling and hospitality (42.1 per cent).

**Figure 4.21 Changes in Turnover/Activity Between 2001 and 2006 in the Wheatbelt**



Compared to the Great Southern and South West, the Wheatbelt had a very high proportion of respondents indicating that recruiting staff had presented difficulties in recent years. Across all sectors, 52.1 per cent of respondents indicated difficulties in recruiting staff (Figure 4.22). However, considerable variations occurred across sectors, with the problem most widely reported by respondents in the construction and utilities, manufacturing, and services sector. The lowest proportion of respondents indicating that recruitment was a problem were from the agriculture, forestry and fishing sector (22.2 per cent).

**Figure 4.22 Proportion of Establishments in the Wheatbelt Reporting Difficulties in Recruiting Staff**

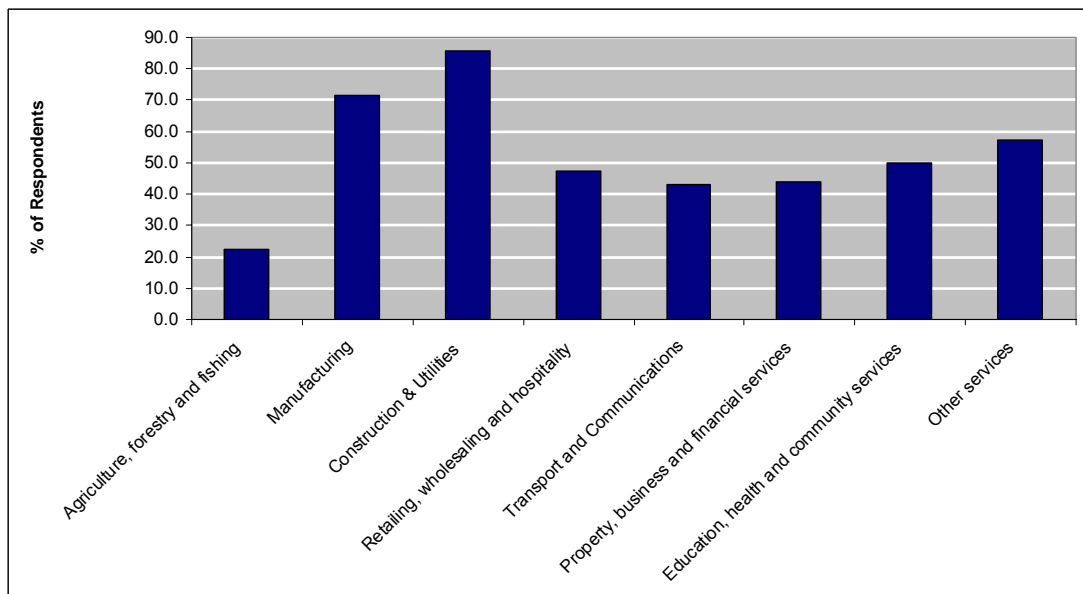
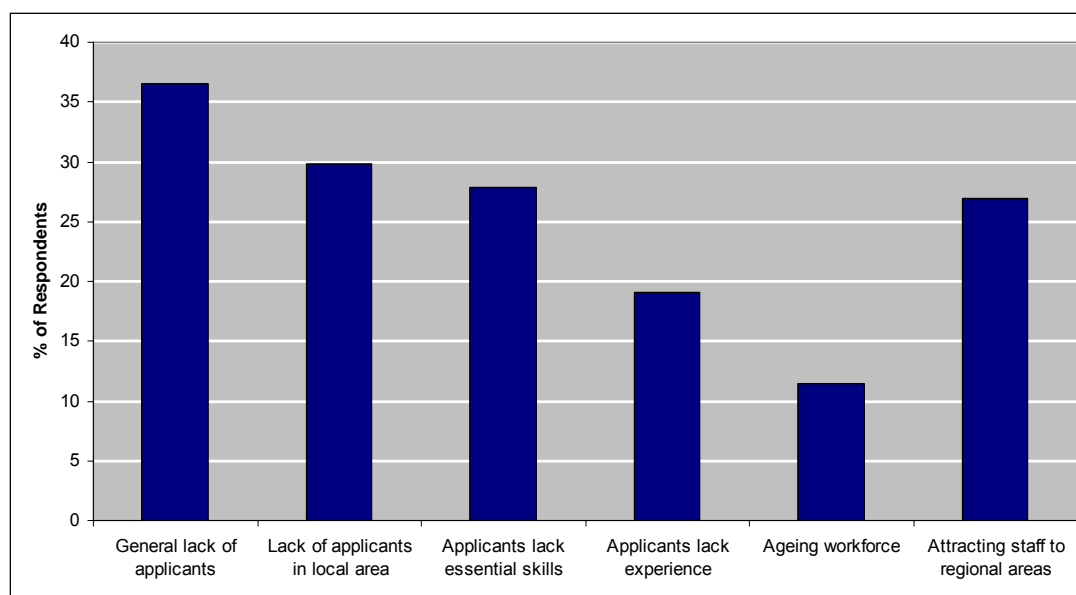


Figure 4.23 shows the reasons given by firms and organisations for the difficulties in recruiting staff. The most common reason reflects the broader labour shortage facing Western Australia and Australia – a general lack of applicants (36.5 per cent). For many employers, the major problem is a lack of applicants in the local area (defined as within 50 kilometres of the firm/organisation). The issue of skills deficiencies is a major problem in the Wheatbelt, with 27 per cent of respondents indicating that applicants lack essential skills, while a further 19.1 per cent suggest that they lack experience. Perhaps surprisingly given the demographic data presented earlier, relatively few respondents believed the ageing of the workforce was a contributor to recruitment difficulties. Attracting staff to the region from elsewhere was viewed as a key reason for recruitment difficulties (27 per cent of respondents). Qualitative data collected as part of the survey suggested that a combination of factors contributed to negative perceptions about the region by potential recruits, including a lack of social opportunities, environmental amenity (or perceived lack thereof), limited career opportunities, and low wages.

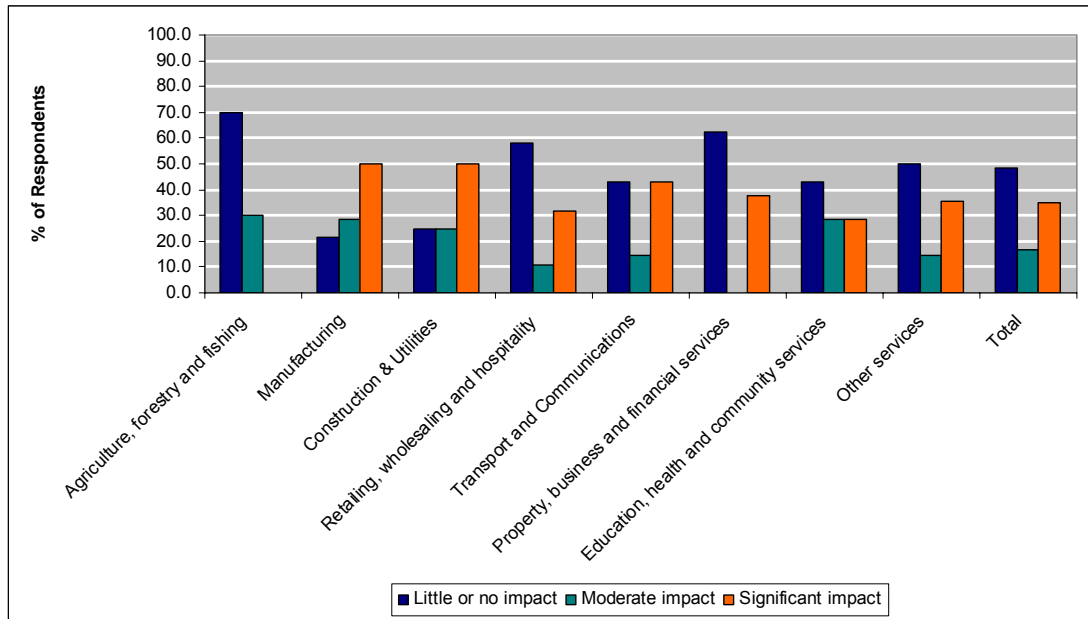
**Figure 4.23 Nature of Labour Shortages for Establishments Reporting Difficulties Recruiting Staff in the Wheatbelt**



The impact of difficulties in recruiting labour varied across industry sectors in the Wheatbelt (Figure 4.24). For all sectors, 48.4 per cent believed that it had little or no impact on their enterprise, while 34.7 indicated that labour shortages were having a major impact. For individual sectors, the impact was generally seen as minimal in: agriculture, forestry and fishing; property, business and financial services; and retailing, wholesaling and hospitality. However, a number of sectors reported that difficulties in recruiting staff were having a major impact, including: manufacturing; construction and utilities, and transport and communications.

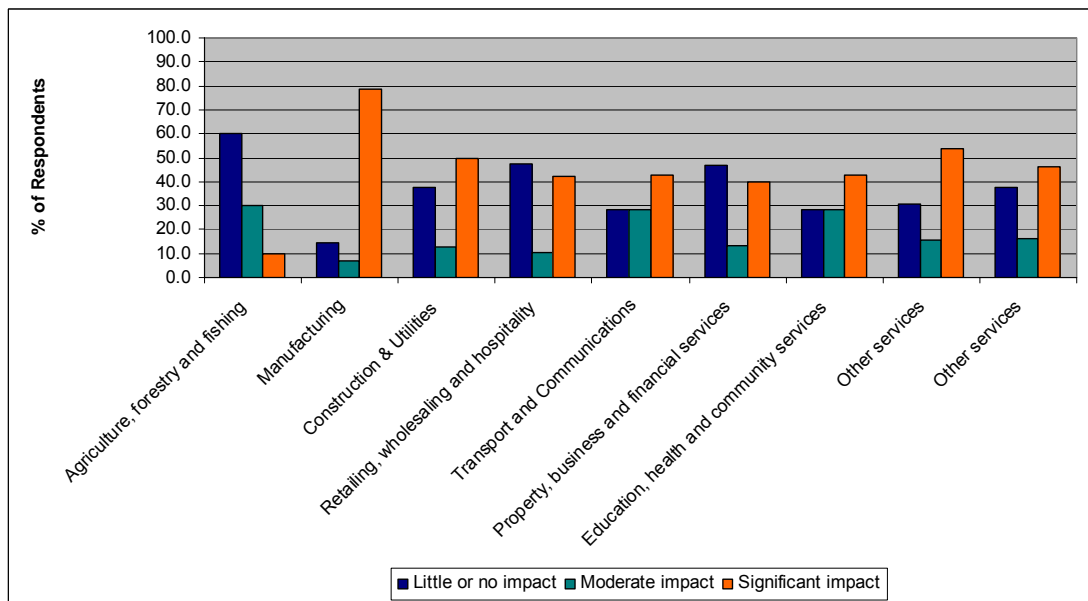
**Figure 4.24 Impact of Difficulties in Recruiting Staff on Establishments in the Wheatbelt**





In terms of skilled labour, difficulties in recruiting appropriately trained staff had mixed impacts on firms and organisations (Figure 4.25). Reports of significant impact were highest in manufacturing, other services, and construction and utilities. Little or no impact was highest in agriculture, forestry and fishing, retailing, wholesaling and hospitality, and property, business and financial services.

**Figure 4.25 Impact of Difficulties in Recruiting Appropriately Trained Staff on Establishments in the Wheatbelt**

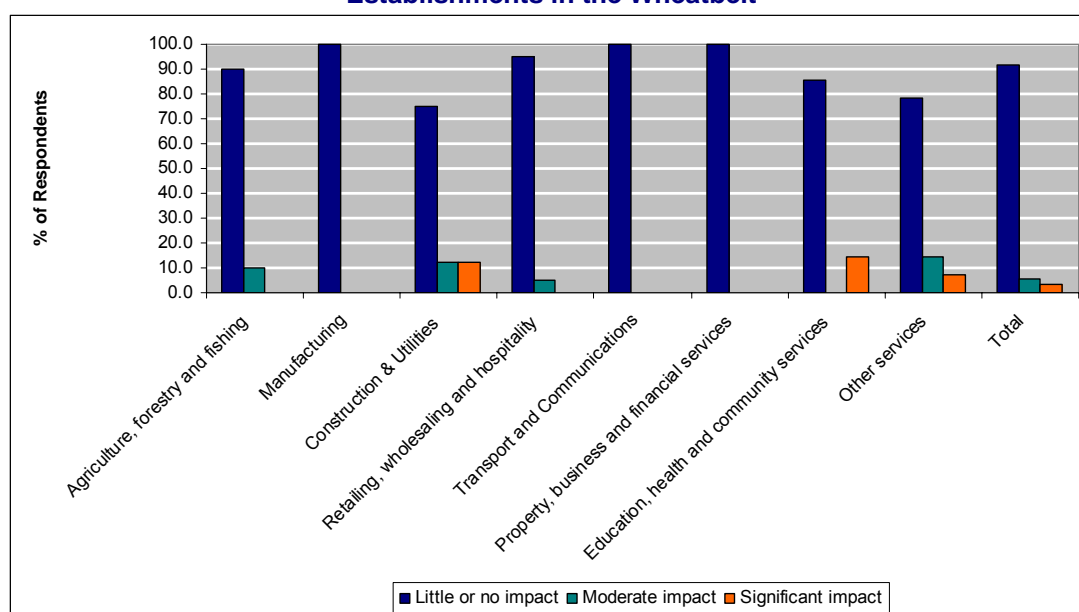


While there are widespread concerns amongst many regional development organisations, industry groups and other stakeholders about the impact of the retirement of staff on businesses and organisations, very few establishments reported it as an important issue in

the Wheatbelt (Figure 4.26). This is concerning given the data presented earlier in Figures 4.11 to 4.14, all of which indicate that a number of sectors face the likelihood of a significant loss of labour as a result of retirement over the next 10 years.

The sectors most at risk of an ageing workforce in the Wheatbelt include: agriculture, forestry and fishing; manufacturing, transport, and a number of other service sectors. Despite this, only a handful of establishments indicated retirement as affecting their enterprise. Thus, one of the issues in need of attention in the region is succession planning amongst both private and public sector organisations. Given the demographic structure of the region, together with the existing labour shortage, a failure to act in a strategic way is likely to result in further labour market constraints.

**Figure 4.26 Impact of Increased Numbers of People Retiring on Establishments in the Wheatbelt**

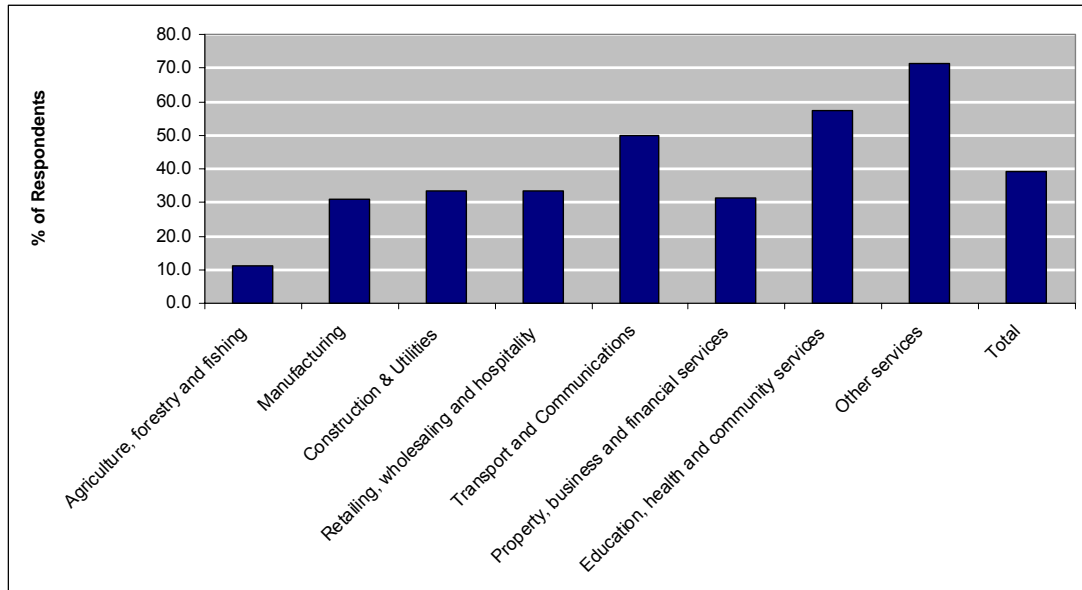


One of the major costs facing public and private sector enterprises is staff turnover. Costs associated with recruitment, training and missed market opportunities can have major impacts on the commercial viability of businesses and the service delivery capacity of public sector organisations. In the Wheatbelt, 39.5 per cent of establishments reported difficulties in retaining staff in the previous two years (Figure 4.27). The sectors facing the greatest staff retention problems were: other services; education, training and health, and transport and communications. For most other sectors, between 30 and 40 per cent of organisations had problems in retaining staff, although in the agriculture, forestry and fishing sector just 11.1 per cent reported any issues.

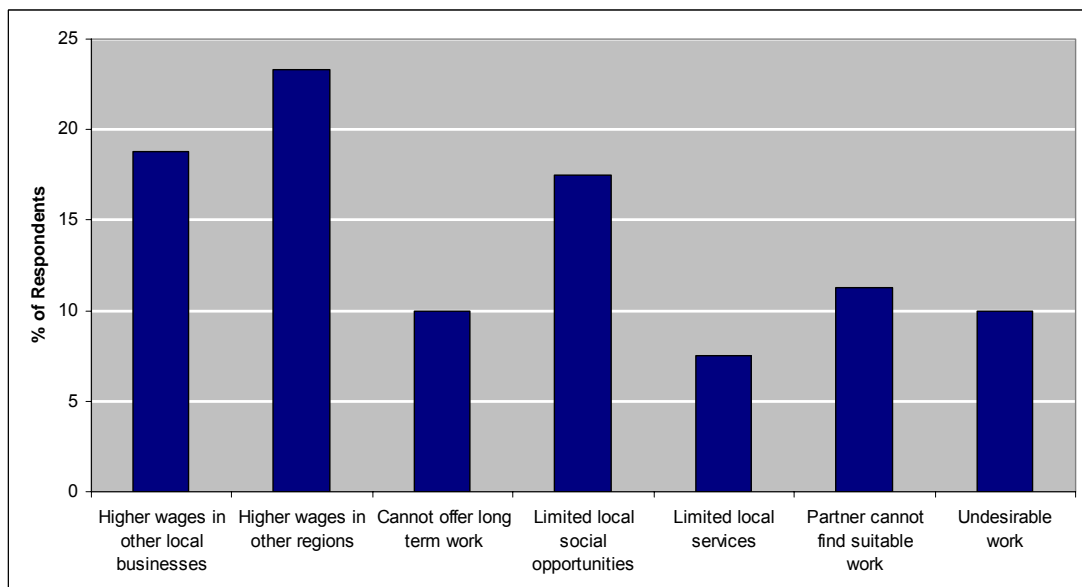
Amongst those firms and organisations that reported difficulties in retaining staff, the most significant reasons were the higher wages on offer in other regions or sectors (Figure 4.28). This relates closely to the data provided earlier indicating that incomes were generally lower

in the Wheatbelt than other regions. Accordingly, there is a flow of labour from areas of relatively low wages to: i) sectors paying higher wages; ii) regions paying higher wages. There are, however, other reasons for staff leaving businesses and organisations within the Wheatbelt. These include: limited local social opportunities, the inability of partners to find work, undesirable work, and an inability to offer long term work.

**Figure 4.27 Proportion of Establishments Reporting Difficulties in Retaining Staff in the Wheatbelt**



**Figure 4.28 Reasons for Establishments Reporting Difficulties in Retaining Staff in the Wheatbelt**



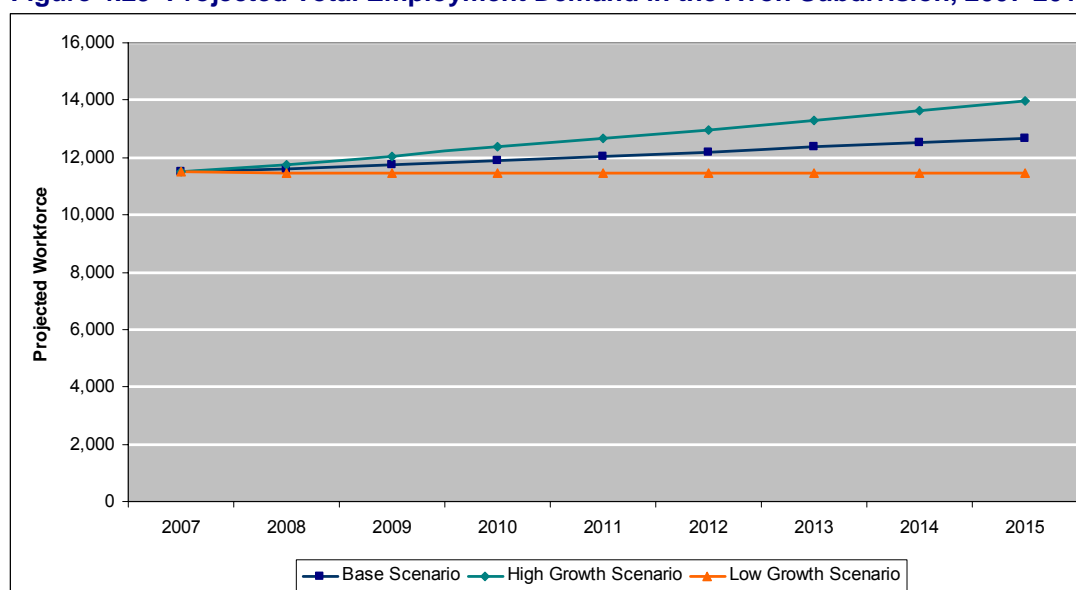
## 4.7 Workforce Futures

### 4.7.1 The Avon Statistical Subdivision

The Avon subdivision is expected to see increases in population and demand for labour between 2007 and 2015. Under the base (or expected) scenario, the total employment demand in the Avon statistical subdivision is expected to rise from 11,482 in 2007 to 12,038 by 2011 (an increase of 4.8 per cent), and then to 12,685 by 2015; a further rise of 5.4 per cent (Figure 4.29). It is important to stress that this growth is likely to be geographically uneven within the subdivision. Higher rates of growth are expected in the peri-urban shires, such as Toodyay, York, Beverley, Northam and even Goomalling. However, much lower rates of growth, or even decline, are expected further inland, particularly in those more remote areas unlikely to benefit from metropolitan spillover effects and lifestyle migration.

The high growth scenario (i.e. the base rate plus 1.5 per cent per annum) sees employment demand increase to 12,658 in 2011, and 13,955 in 2015 (an annual rate of growth of 2.5 per cent). The low growth scenario would result in demand remaining relatively stable, falling to 11,467 in 2007 and 11,453 in 2015 (an annual rate of -0.03 per cent). Even under this scenario, growth is a strong likelihood for the Avon Valley as a result of the expansion of the urban field. Decline would be concentrated in those areas with a heavy dependence on traditional broadacre agriculture.

**Figure 4.29 Projected Total Employment Demand in the Avon Subdivision, 2007-2015**



The projected demand varies across sectors in the Avon subdivision, with demand likely to fall most rapidly in agriculture, forestry and fishing (Figure 4.30 and Table 4.11). Small decreases are also expected in electricity, gas, water and waste services, wholesale trade and information, media and telecommunications. The sectors likely to experience the most significant growth include: mining; construction; retail trade; transport, postal and warehousing; and health care and social assistance. The changing economic structure of the Avon is likely to result in increasing diversity in employment. As a result, a number of

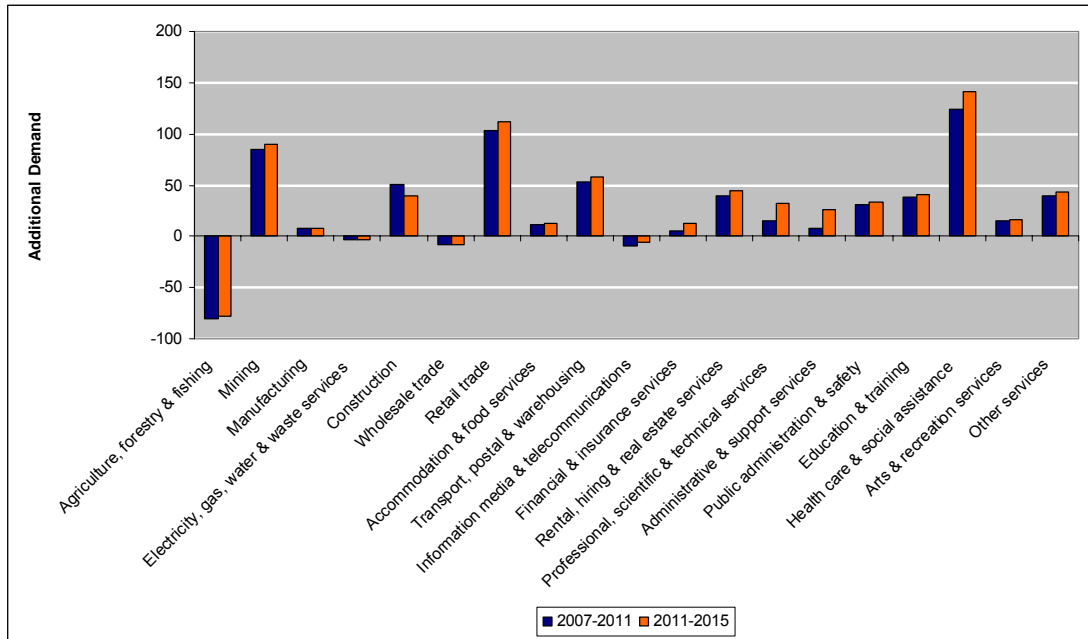
other sectors are expected to see modest increases in employment, including: public administration and safety; rental, hiring and real estate services, and financial and insurance services.

**Table 4.11 Projected Total Employment Demand (Base Scenario) for Industry Sectors in the Avon Subdivision, 2007-2015**

	2007	2011	2015
Agriculture, forestry & fishing	2580	2500	2422
Mining	203	288	378
Manufacturing	767	775	784
Electricity, gas, water & waste services	159	156	152
Construction	711	762	802
Wholesale trade	459	451	444
Retail trade	1180	1283	1395
Accommodation & food services	488	499	511
Transport, postal & warehousing	591	644	702
Information media & telecommunications	59	50	44
Financial & insurance services	163	168	181
Rental, hiring & real estate services	140	179	223
Professional, scientific & technical services	303	318	350
Administrative & support services	217	225	251
Public administration & safety	795	826	859
Education & training	963	1002	1043
Health care & social assistance	961	1085	1226
Arts & recreation services	73	88	104
Other services	405	445	488
Other/NEI	264	292	323
<b>Total</b>	<b>11482</b>	<b>12038</b>	<b>12685</b>

Figure 4.31 shows that the sector with the highest location quotient (agriculture, forestry and fishing) is in decline within the Avon subdivision. This has significant implications for those areas dependent on this industry, with negative flow-on effects for other segments of the local economies that service this industry. However, this decline is being counterbalanced by the emergence of a number of new industries with location quotients over the critical 1.0. A number of these are likely to increase in importance over the next few years, particularly as the Avon Valley and other parts of the subdivision within easy access of Perth are influenced by new economic realities. The extension of the urban field into the Avon will contribute to the expansion of new service sector industries, and contribute to increasing economic diversity. Sectors such as construction and transport are also likely to grow as a result of the expansion of other industries and the growth of the subdivision's population.

**Figure 4.30 Additional Employment Demand in Industry Sectors (Base Scenario), Avon Subdivision, 2007-2015**



**Figure 4.31 Projected Employment Change by Location Quotient in the 10 Largest Sectors, Avon Subdivision, 2007-2015**

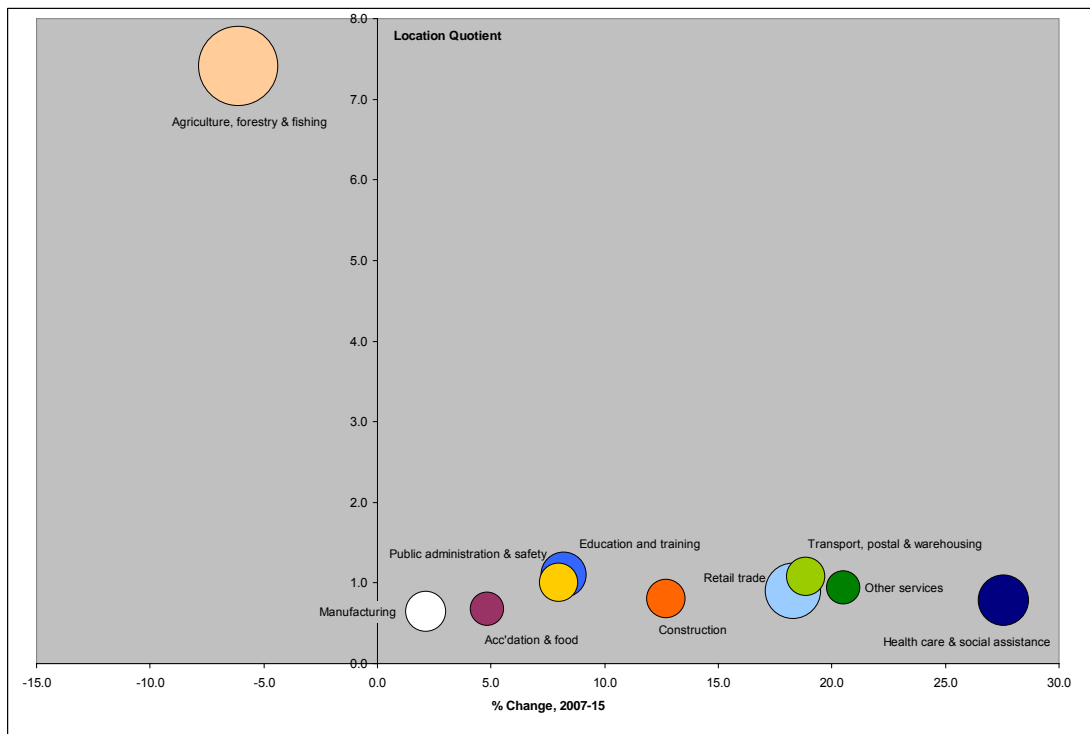


Table 4.12 shows the projected demand for specific occupational groups in the Avon subdivision. Those occupations likely to grow the fastest between 2007 and 2015 include:

- Personal carers and assistants
- Sales assistants and salespersons
- Cleaners and laundry workers
- Truck drivers
- Midwifery and nursing professionals
- Retail managers
- Mobile plant operators
- Health and welfare support officers
- School teachers
- Automotive electricians and mechanics

**Table 4.12 Projected Employment Demand (Base Scenario) for Occupations in the Avon Subdivision, 2007-2015**

	2007	2011	2015	Change, '07-'11	Change '11-'15
Farmers and Farm Managers	1,937	1,877	1,818	-60	-58
Sales Assistants and Salespersons	569	619	673	50	54
Farm, Forestry and Garden Workers	397	384	372	-12	-12
School Teachers	368	383	398	15	16
Cleaners and Laundry Workers	326	358	393	32	35
Truck Drivers	276	301	328	25	27
Retail Managers	255	277	301	22	24
General Clerks	243	252	280	9	29
Personal Carers and Assistants	235	265	299	30	34
Accounting Clerks and Bookkeepers	202	212	234	10	21
Mobile Plant Operators	189	206	224	17	19
Automotive Electricians and Mechanics	188	206	227	18	20
Midwifery and Nursing Professionals	178	201	227	23	26
Construction, Distribution and Production Managers	175	185	195	10	10
Mechanical Engineering Trades Workers	173	175	177	2	2
Food Trades Workers	173	177	181	4	4
Stationary Plant Operators (Manufacturing)	165	167	168	2	2
Education Aides	163	169	176	7	7
Miscellaneous Labourers	158	167	175	9	9
Construction Labourers	140	148	155	8	8
Personal Assistants and Secretaries	134	139	155	5	16
Hospitality Workers	128	131	134	3	3
Food Preparation Assistants	128	131	134	3	3
Accommodation and Hospitality Managers	125	128	131	3	3
Receptionists	121	126	140	4	14
Horticultural Trades Workers	121	133	146	12	13
Miscellaneous Hospitality, Retail and Service Managers	119	122	125	3	3
Health and Welfare Support Workers	119	134	152	15	17
Office and Practice Managers	102	106	118	4	12
Bricklayers, and Carpenters and Joiners	102	108	113	6	6

*Continued on next page*

Table 4.12 continued

Checkout Operators and Office Cashiers	100	109	118	9	10
Natural and Physical Science Professionals	99	104	114	5	10
Food Process Workers	95	98	100	2	2
Building and Engineering Technicians	90	95	100	5	5
Financial and Insurance Clerks	89	92	102	3	11
Electronics and Telecommunications Trades Workers	87	74	65	-14	-8
Freight Handlers and Shelf Fillers	79	86	94	7	8
Insurance Agents and Sales Representatives	76	79	85	2	6
Chief Executives, General Managers and Legislators	75	78	81	3	3
Electricians	73	78	82	4	4
Real Estate Sales Agents	66	85	106	19	21
Business Administration Managers	63	66	72	3	7
Child Carers	62	70	80	8	9
Accountants, Auditors and Company Secretaries	62	65	71	3	7
Personal Service and Travel Workers	45	49	54	4	5
Glaziers, Plasterers and Tilers	42	45	47	2	2
Floor Finishers and Painting Trades Workers	33	35	37	2	2
Wood Trades Workers	32	33	33	0	0
Packers and Product Assemblers	25	26	26	0	0
Architects, Designers, Planners and Surveyors	23	25	27	1	2

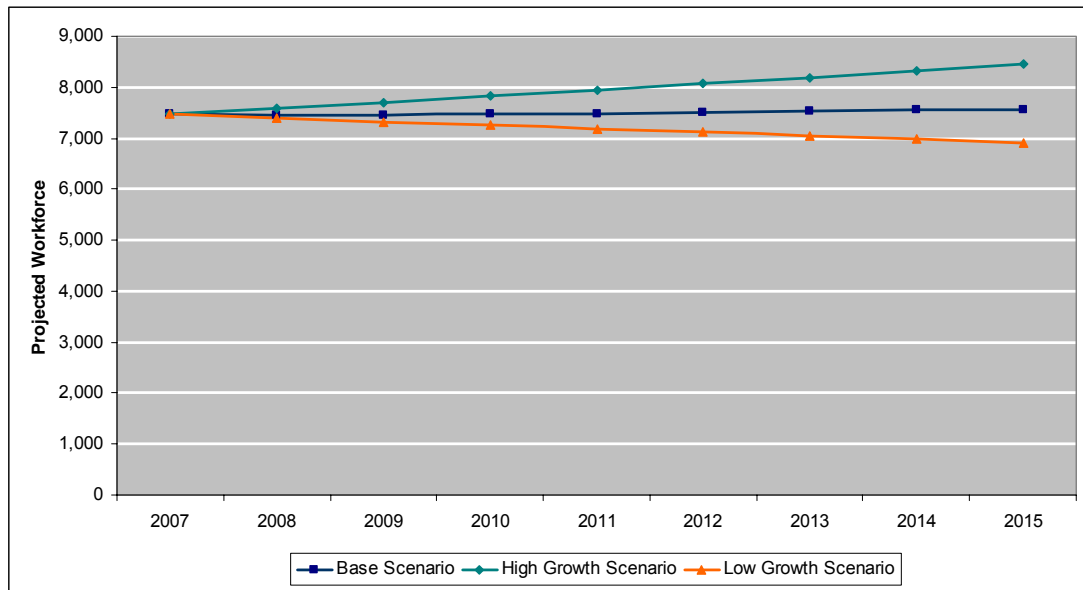
#### 4.7.2 The Campion and Lakes Subdivisions

In the Campion/Lakes subdivision, the rate of growth is likely to be much slower than in Avon, with the labour force increasing from 7,468 to 7,554 between 2007 and 2015; a rise of just 1.2 per cent (Figure 4.32). However, as in Avon, there is likely to be considerable spatial variation in the trends. Relatively strong growth is expected in the Yilgarn and Westonia areas as a result of mineral resource activity. However, this is likely to be counterbalanced by further falls in broadacre farming areas, particularly in the Lakes statistical subdivision. The high growth scenario would result in annual growth of around 1.5 per cent, taking the total demand to around 8,443 by 2015. The low growth scenario sees demand fall to 6,917, representing an annual rate of decline of -1.0 per cent.

The employment demand in the agriculture, forestry and fishing sector is expected to decrease substantially over the next decade or so (Table 4.13, Figures 4.33 and 4.34). Improvements in efficiency, a stronger focus on grains production, and a continuation of the process of farm amalgamation and expansion is expected to lead to a reduction in employment by a little over 100 persons between 2007 and 2011, and a further 100 between 2011 and 2015. Other sectors likely to contract include: professional, scientific and technical services; administrative and support services; and financial and insurance services. In part, these will decline as a result of the contraction of the dominant sector (agriculture), and in part because of centralisation processes that are concentrating these activities in larger centres, including the Perth metropolitan area. A number of sectors are expected to expand, including mining, retail trade, and transport, postal and warehousing, as well as a number of service activities. Growth is expected to be concentrated in the Yilgarn, largely as a result of the ongoing buoyant conditions in the mining sector.



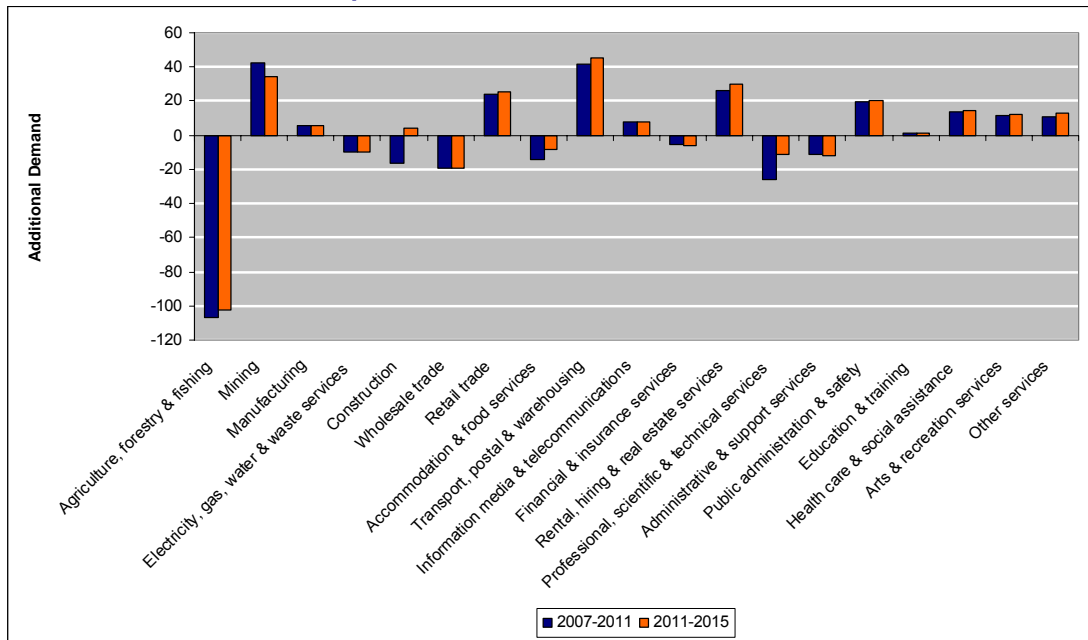
**Figure 4.32 Projected Total Employment Demand in the Campion/Lakes Subdivisions, 2007-2015**



**Table 4.13 Projected Total Employment Demand (Base Scenario) for Industry Sectors in the Campion/Lakes Subdivisions, 2007-2015**

	2007	2011	2015
Agriculture, forestry & fishing	2818	2711	2609
Mining	418	461	495
Manufacturing	220	226	232
Electricity, gas, water & waste services	72	62	52
Construction	273	257	261
Wholesale trade	260	240	221
Retail trade	560	584	609
Accommodation & food services	233	218	210
Transport, postal & warehousing	425	467	512
Information media & telecommunications	31	38	46
Financial & insurance services	105	99	93
Rental, hiring & real estate services	16	42	72
Professional, scientific & technical services	102	76	65
Administrative & support services	76	65	53
Public administration & safety	437	456	476
Education & training	511	512	513
Health care & social assistance	465	479	494
Arts & recreation services	23	35	47
Other services	228	238	251
Other/NEI	196	219	243
<b>Total</b>	<b>7468</b>	<b>7485</b>	<b>7554</b>

**Figure 4.33 Additional Employment Demand in Industry Sectors (Base Scenario), Campion/Lakes Subdivisions, 2007-2015**



**Figure 4.34 Projected Employment Change by Location Quotient in the 10 Largest Sectors, Campion/Lakes Subdivisions, 2007-2015**

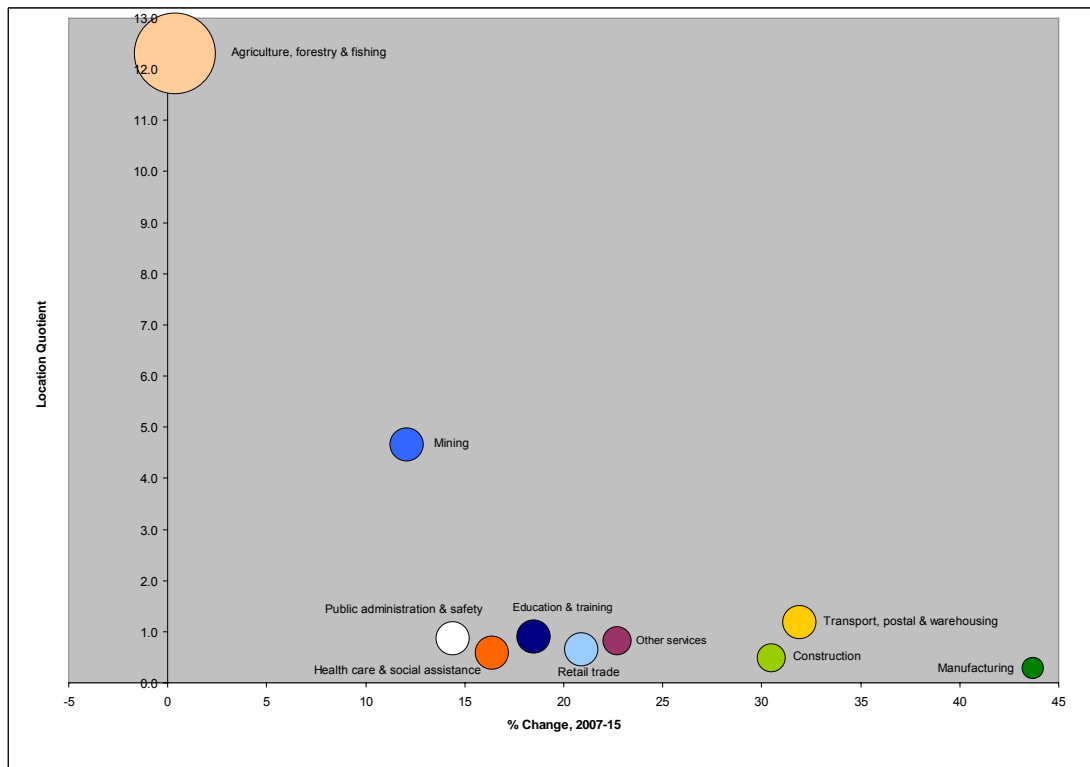


Table 4.14 shows projected demand under the base scenario for specific occupational groups in the Campion and Lakes subdivisions between 2007 and 2015. The fastest growth is likely to occur in the following occupations: truck drivers; mobile plant operators; stationary plant operators; cleaners and laundry workers; and automotive electricians and mechanics.

**Table 4.14 Projected Employment Demand (Base Scenario) for Occupations in the Campion and Lakes Subdivisions, 2007-2015**

	2007	2011	2015	Change, '07-'11	Change '11-'15
Farmers and Farm Managers	2,380	2,290	2,203	-90	-86
Farm, Forestry and Garden Workers	365	351	338	-14	-13
Sales Assistants and Salespersons	247	258	269	11	11
School Teachers	235	235	236	0	0
Truck Drivers	185	203	222	18	20
Retail Managers	171	178	186	7	8
Cleaners and Laundry Workers	155	162	171	7	9
Mobile Plant Operators	151	166	182	15	16
Animal Attendants and Trainers, and Shearers	123	118	114	-5	-4
Automotive Electricians and Mechanics	115	120	127	5	7
Midwifery and Nursing Professionals	110	114	117	3	3
Personal Carers and Assistants	108	111	115	3	3
General Clerks	108	92	75	-16	-17
Automobile, Bus and Rail Drivers	105	115	126	10	11
Stationary Plant Operators (Other)	104	114	123	11	8
Accounting Clerks and Bookkeepers	101	75	64	-26	-11
Fabrication Engineering Trades Workers	98	100	103	3	3
Food Trades Workers	95	89	86	-6	-4
Education Aides	93	93	94	0	0
Mechanical Engineering Trades Workers	91	93	95	2	2
Hospitality Workers	78	73	70	-5	-3
Miscellaneous Labourers	77	74	75	-3	1
Horticultural Trades Workers	70	74	78	3	4
Accommodation and Hospitality Managers	67	63	61	-4	-2
Miscellaneous Hospitality, Retail and Service Managers	64	60	58	-4	-2
Financial and Insurance Clerks	63	54	44	-9	-10
Personal Assistants and Secretaries	62	53	43	-9	-10
Education, Health and Welfare Services Managers	56	57	59	2	2
Natural and Physical Science Professionals	55	41	35	-14	-6
Stationary Plant Operators (Manufacturing)	55	56	57	1	1
Food Preparation Assistants	53	50	48	-3	-2
Chief Executives, General Managers and Legislators	53	55	58	2	2
Electronics and Telecommunications Trades Workers	52	65	78	13	13
Receptionists	49	42	34	-7	-8
Insurance Agents and Sales Representatives	49	46	43	-3	-3
Construction, Distribution and Production Managers	47	45	45	-2	1
Mining Labourers	46	51	55	5	4
Office and Practice Managers	43	36	30	-6	-7
Clerical and Office Support Workers	41	35	28	-6	-6
Sales, Marketing and Public Relations Professionals	39	41	43	2	2
Labourers, nfd	38	40	42	2	2
Defence Force Members, Fire Fighters and Police	36	38	40	2	2
Child Carers	34	35	36	1	1
Health and Welfare Support Workers	32	33	34	1	1
Social and Welfare Professionals	31	32	33	1	1
Construction Labourers	30	29	29	-1	0
Freight Handlers and Shelf Fillers	29	32	35	3	3
Hairdressers	29	30	32	1	2
Checkout Operators and Office Cashiers	29	30	32	1	1
Electricians	28	27	27	-1	0

### **4.7.3 The Hotham Subdivision**

Hotham presents significant challenges for labour force projection. These are largely associated with estimating the direct and indirect employment associated with new mining activity in Boddington, and the way that this will impact on the neighbouring shires of Wandering, Williams, West Arthur, Narrogin and Pingelly. Relatively good data exist on the direct and indirect employment associated with the Boddington Gold Mine, though its spatial impact is much less certain. Not only is it expected that a number of mine employees will choose to live in neighbouring shires, there will also be new opportunities in manufacturing, construction and other industries allied to mining.

The other trend affecting parts of Hotham is lifestyle migration. This is becoming increasingly evident in shires such as Wandering, Williams, Brookton, Pingelly, Cuballing and Narrogin (town and shire). To date, the impacts of these developments have yet to show up in the census and other statistical indicators. There are two main reasons for this. First, in many parts of the region, rates of out-migration are still higher than in-migration, contributing to a net decrease in the population. However, this masks the gradual momentum that is generated by lifestyle migration. Indeed, there is considerable evidence to suggest that those areas that have been affected by counterurbanisation processes continue to record population decline for a number of years, even though the economic and demographic turnaround has commenced (e.g. Salamon, 2002; Tonts and Greive, 2002; Beale, 1975). Research by Herold *et al.* (2005) in the United States shows that some of the best leading indicators of future population growth include the rate of land subdivision, improvements in the transport networks into amenity areas, and land values that increase at a more rapid rate than agricultural production values (see also Barr, 2005).

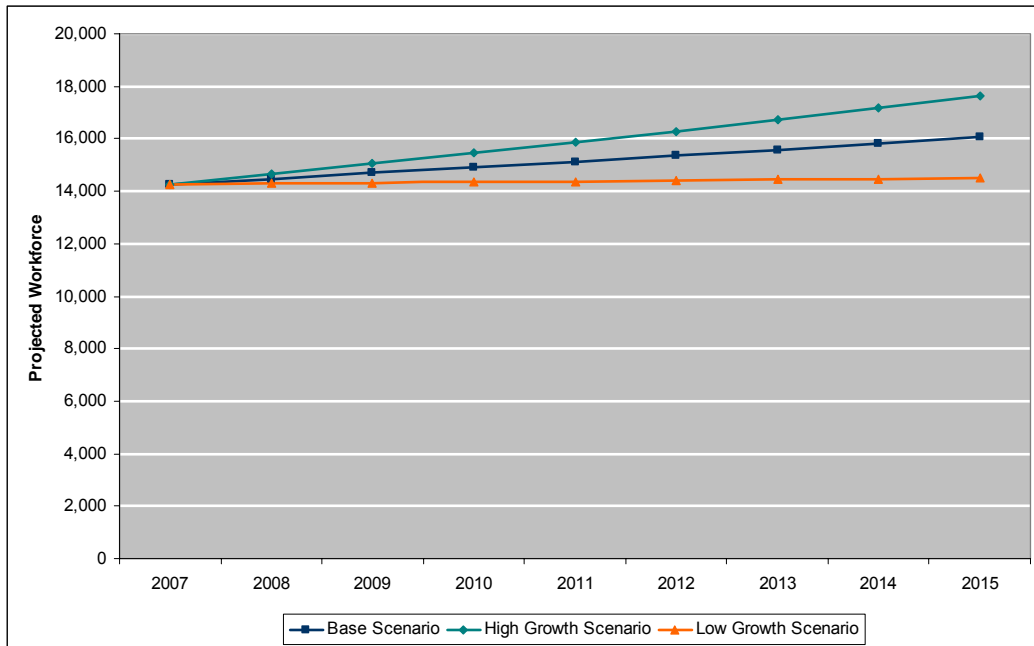
While parts of Hotham are benefiting from mining and lifestyle led migration, other areas remain either stable or in decline. Those areas that are relatively remote, not on major transport routes, and are heavily dependent on broadacre agriculture are likely to experience a decrease in overall employment demand. Thus, as in the Avon subdivision, Hotham is subject to considerable geographical diversity in terms of labour force futures.

Under the base scenario, total employment demand is expected to increase from 6,242 in 6,725 between 2007 and 2011, with a further increase to 7,027 in 2015 (Figure 4.35). The high growth scenario would see labour demand rise to 7,936 by 2015, representing an annual growth rate of 3.0 per cent. The low growth projection sees labour demand rising to 6,520 by 2015; an annual growth rate of 0.5 per cent.

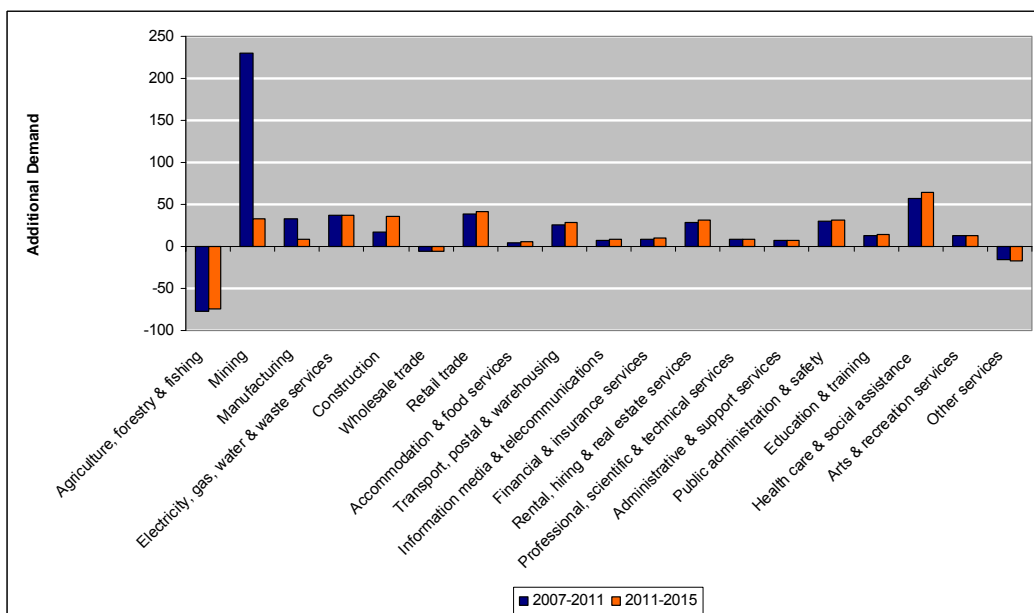
As in other broadacre farming regions, total employment in the agriculture, forestry and fishing sector is expected to fall between 2007 and 2015 (Figures 4.36 and 4.37, Table 4.15). However, agriculture in this region is relatively stable, and has not experienced the

degree of change in other areas. In part this is as a result of relatively secure rainfall and relatively productive agricultural land. Most other sectors are expected to grow, largely as a result of the impact of mining and, to a lesser degree, lifestyle migration. Much of the expansion is expected to occur in the western parts of the subdivision, close to the Boddington Gold Mine and the extended Perth urban field.

**Figure 4.35 Projected Total Employment Demand in the Hotham Subdivision, 2007-2015**



**Figure 4.36 Additional Employment Demand in Industry Sectors (Base Scenario), Hotham Subdivision, 2007-2015**



**Table 4.16 Projected Total Employment Demand (Base Scenario) for Industry Sectors in the Hotham Subdivision, 2007-2015**

	2007	2011	2015
Agriculture, forestry & fishing	2150	2073	1999
Mining	60	290	323
Manufacturing	258	291	300
Electricity, gas, water & waste services	55	92	129
Construction	273	290	325
Wholesale trade	240	235	230
Retail trade	553	592	633
Accommodation & food services	223	228	233
Transport, postal & warehousing	217	243	271
Information media & telecommunications	35	42	50
Financial & insurance services	107	116	126
Rental, hiring & real estate services	37	65	97
Professional, scientific & technical services	118	126	135
Administrative & support services	84	90	97
Public administration & safety	382	412	444
Education & training	493	507	521
Health care & social assistance	580	637	701
Arts & recreation services	38	51	64
Other services	157	142	125
Other/NEI	181	202	224
<b>Total</b>	<b>6242</b>	<b>6725</b>	<b>7027</b>

**Figure 4.37 Projected Employment Change by Location Quotient in the 10 Largest Sectors, Hotham Subdivision, 2007-2015**

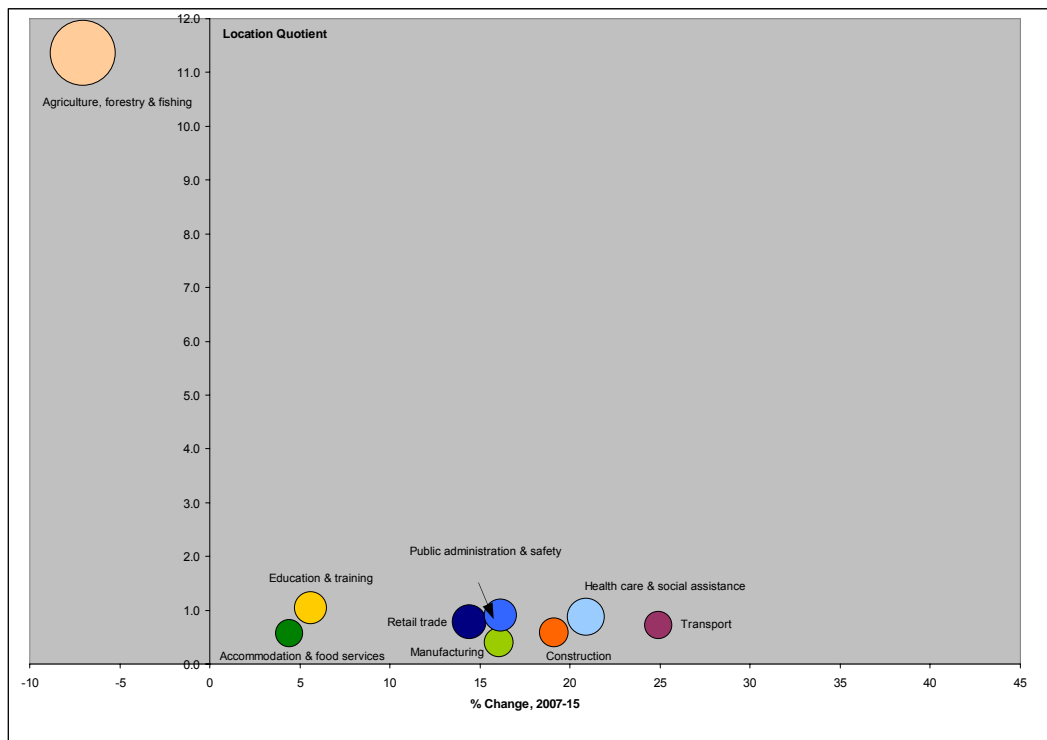


Table 4.16 shows the projections for individual occupational groups in Hotham between 2007 and 2015. Those occupations likely to grow the fastest over this period include:

- Construction, distribution and production managers
- Sales assistants and salespersons
- Personal carers and assistants
- Miscellaneous labourers
- Mobile plant operators
- Construction labourers
- Truck drivers
- Midwifery and nursing professionals
- Bricklayers, carpenters and joiners
- Fabrication engineering trades workers

**Table 4.16 Projected Employment Demand (Base Scenario) for Occupations in the Hotham Subdivision, 2007-2015**

	2007	2011	2015	Change, '07-'11	Change '11-'15
Farmers and Farm Managers	1,609	1,552	1,496	-58	-55
Farm, Forestry and Garden Workers	322	311	300	-12	-11
Sales Assistants and Salespersons	240	257	275	17	18
School Teachers	230	236	242	6	7
Retail Managers	164	176	188	11	12
Personal Carers and Assistants	161	177	195	16	18
Animal Attendants and Trainers, and Shearers	136	131	126	-5	-5
Cleaners and Laundry Workers	134	120	106	-13	-14
Midwifery and Nursing Professionals	129	141	156	13	14
Mobile Plant Operators	125	139	156	15	16
Truck Drivers	119	134	149	14	15
General Clerks	94	101	109	7	8
Food Trades Workers	94	96	98	2	2
Accounting Clerks and Bookkeepers	91	97	104	6	7
Education Aides	85	87	90	2	2
Automotive Electricians and Mechanics	84	76	67	-8	-9
Personal Assistants and Secretaries	68	73	78	5	6
Miscellaneous Hospitality, Retail and Service Managers	67	68	70	1	2
Natural and Physical Science Professionals	67	71	76	5	5
Construction, Distribution and Production Managers	65	81	91	16	10
Automobile, Bus and Rail Drivers	64	72	80	8	8
Miscellaneous Labourers	64	80	89	16	10
Food Preparation Assistants	63	64	66	1	1
Financial and Insurance Clerks	61	65	70	5	5
Construction Labourers	59	74	82	14	9
Hospitality Workers	58	59	60	1	1
Horticultural Trades Workers	57	52	45	-6	-6
Fabrication Engineering Trades Workers	57	64	66	7	2
Accommodation and Hospitality Managers	57	58	59	1	1
Food Process Workers	54	55	56	1	1

*Continued on next page*

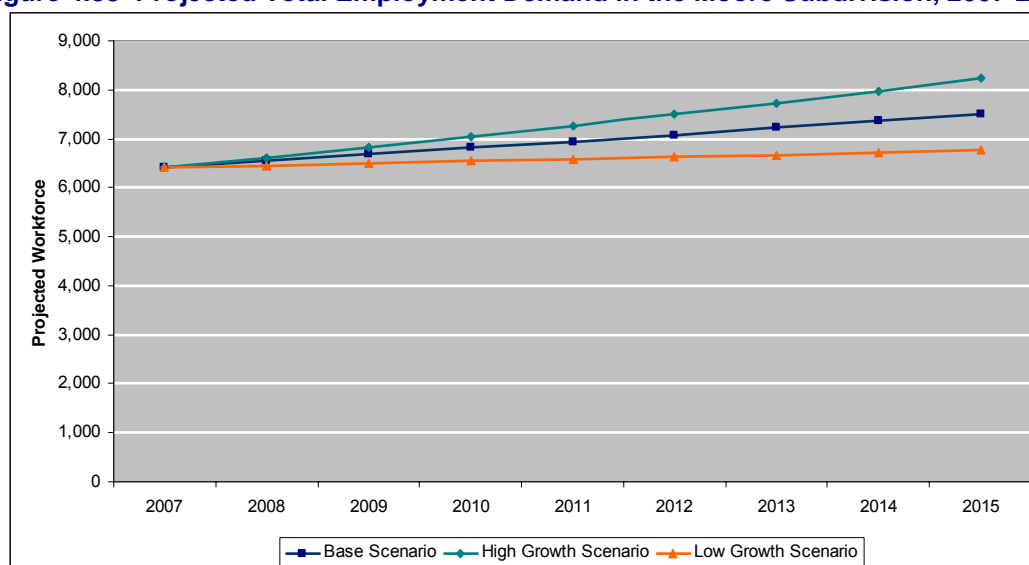
Table 4.16 continued

Health and Welfare Support Workers	52	57	63	5	6
Mechanical Engineering Trades Workers	49	55	57	6	2
Clerical and Office Support Workers	47	51	55	4	4
Office and Practice Managers	46	50	54	4	4
Education, Health and Welfare Services Managers	46	50	55	4	5
Defence Force Members, Fire Fighters and Police	44	48	52	4	4
Receptionists	44	48	51	3	4
Stationary Plant Operators (Manufacturing)	42	48	49	5	1
Freight Handlers and Shelf Fillers	42	47	52	5	5
Bricklayers, and Carpenters and Joiners	41	51	57	10	6
Chief Executives, General Managers and Legislators	40	44	47	3	3
Child Carers	40	43	48	4	4
Insurance Agents and Sales Representatives	39	43	46	3	3
Checkout Operators and Office Cashiers	38	41	44	3	3
Miscellaneous Technicians and Trades Workers	38	43	44	5	1
Social and Welfare Professionals	33	37	40	3	4
Labourers, nfd	33	30	26	-3	-4
Accountants, Auditors and Company Secretaries	30	32	35	2	2
Agricultural, Medical and Science Technicians	30	32	35	2	2
Electricians	29	36	41	7	4

#### 4.7.4 The Moore Subdivision

Total employment demand in the Moore subdivision is expected to increase in line with the expanding population along the coastal parts of the Wheatbelt, and the peri-urban belt to the north and north-west of Perth. Under the base scenario, employment demand is expected to increase from 6,415 in 2007 to 7,509 by 2015 (an increase of 1.7 per cent per annum)(Figure 4.38). The high growth scenario sees demand increase to 8,226 (3.2 per cent per annum), while the low growth projection has total demand at 6,760 in 2015 (0.7 per cent per annum).

Figure 4.38 Projected Total Employment Demand in the Moore Subdivision, 2007-2015





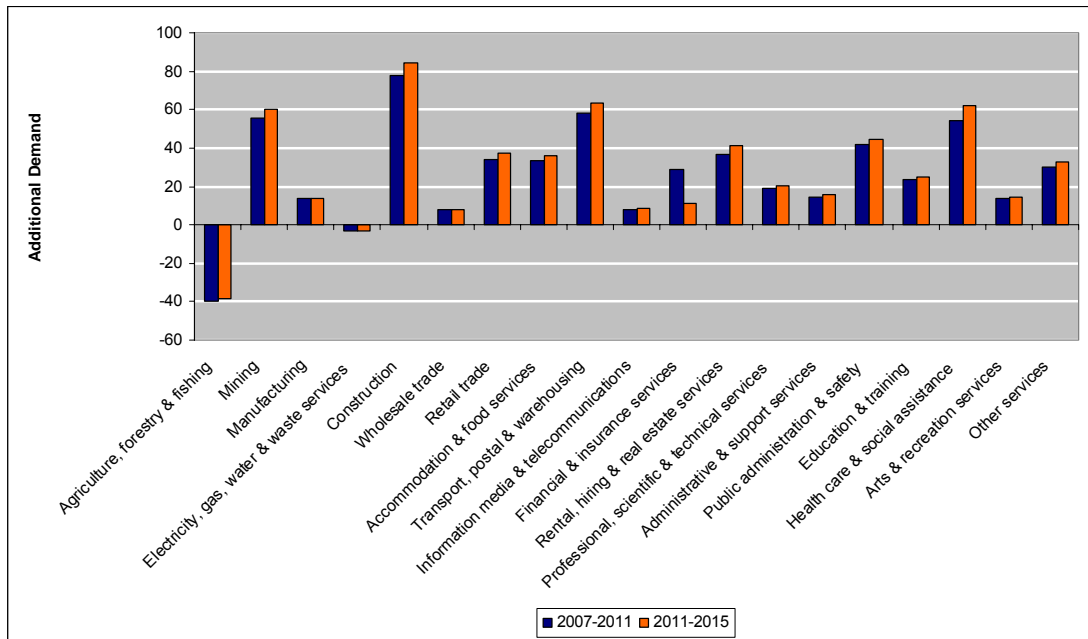
Sectoral shifts in the period between 2007 and 2015 see a sharp decrease in employment demand in the agriculture, forestry and fishing sector (Table 4.17, Figure 4.39). The majority of other sectors are projected to increase over this period, with strong growth concentrated in: mining; construction; transport, postal and warehousing; and health care and social assistance.

**Table 4.17 Projected Total Employment Demand (Base Scenario) for Industry Sectors in the Moore Subdivision, 2007-2015**

	2007	2011	2015
Agriculture, forestry & fishing	1777	1737	1699
Mining	244	300	360
Manufacturing	458	472	485
Electricity, gas, water & waste services	63	60	57
Construction	596	674	758
Wholesale trade	239	247	255
Retail trade	444	478	515
Accommodation & food services	320	354	390
Transport, postal & warehousing	294	352	415
Information media & telecommunications	35	43	52
Financial & insurance services	99	127	139
Rental, hiring & real estate services	110	147	188
Professional, scientific & technical services	121	140	160
Administrative & support services	129	143	159
Public administration & safety	358	400	444
Education & training	430	454	479
Health care & social assistance	317	372	434
Arts & recreation services	43	57	71
Other services	166	196	229
Other/NEI	172	195	219
<b>Total</b>	<b>6415</b>	<b>6946</b>	<b>7509</b>

Figure 4.30 shows the relationship between location quotient, growth and size of employment sector in Moore. While the industry with the highest location quotient (agriculture, forestry and fishing) is likely to decline in the near to medium future, a number of other sectors with an LQ of more than 1.0 are projected to increase, including mining and construction. Continued lifestyle and retirement migration into the coastal parts of the region is likely to result in substantial increases in the services sector. An expanding tourism economy is expected to contribute to rises in demand for employees in the accommodation and food services sector.

**Figure 4.39 Projected Employment Change by Location Quotient in the 10 Largest Sectors, Moore Subdivision, 2007-2015**



**Figure 4.40 Projected Employment Change by Location Quotient in the 10 Largest Sectors, Moore Subdivision, 2007-2015**

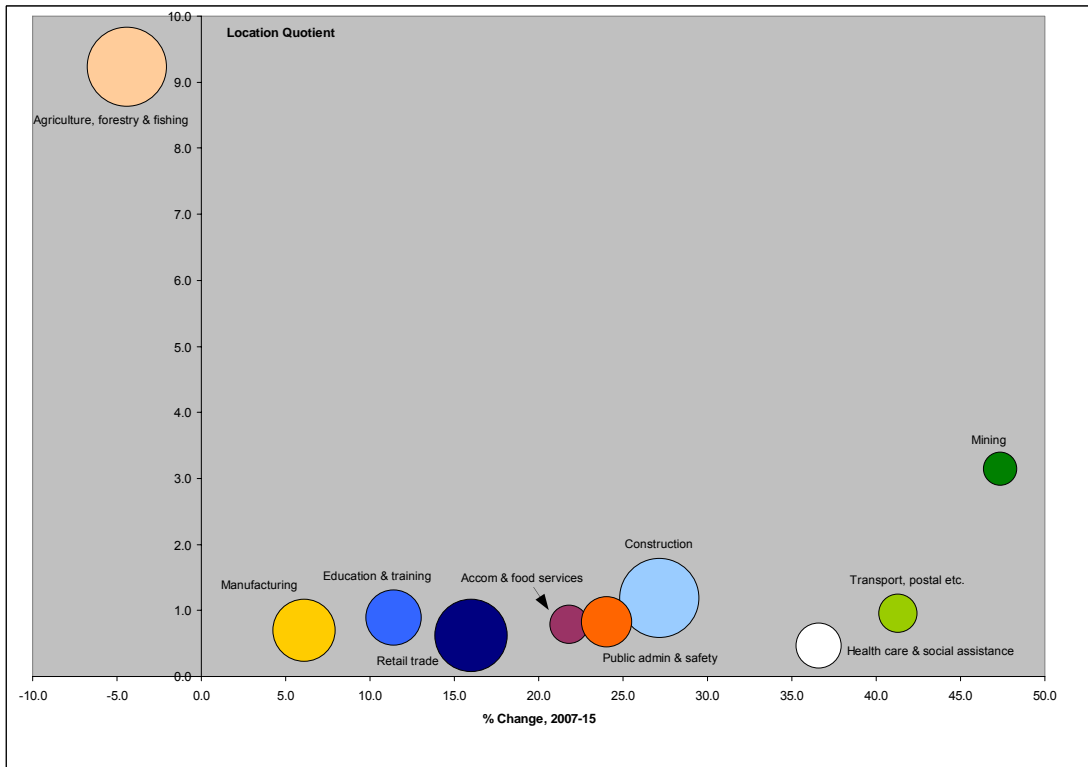


Table 4.18 shows projected demand under the base scenario for specific occupation growth. The strongest growth is projected to occur for the following occupations:

- Truck drivers
- Mobile plant operators
- Cleaners and laundry workers
- Accounting clerks and bookkeepers
- Auto electricians and mechanics
- Horticultural trades workers

**Table 4.18 Projected Employment Demand (Base Scenario) for Occupations in the Moore Subdivision, 2007-2015**

	2007	2011	2015	Change, '07-'11	Change '11-'15
Farmers and Farm Managers	1,204	1,177	1,151	-27	-26
Farm, Forestry and Garden Workers	395	386	377	-9	-9
Sales Assistants and Salespersons	239	257	277	18	20
Truck Drivers	191	228	269	38	41
School Teachers	180	190	201	10	11
Mobile Plant Operators	180	216	254	36	39
Cleaners and Laundry Workers	151	178	208	27	30
Accounting Clerks and Bookkeepers	146	169	194	23	25
Retail Managers	145	156	168	11	12
Miscellaneous Labourers	120	130	146	10	16
Animal Attendants and Trainers, and Shearers	107	105	103	-2	-2
Mechanical Engineering Trades Workers	101	104	107	3	3
Construction, Distribution and Production Managers	100	108	122	8	14
General Clerks	100	111	123	11	12
Construction Labourers	98	106	120	8	13
Stationary Plant Operators (Manufacturing)	92	95	97	3	3
Food Trades Workers	91	101	111	10	10
Bricklayers, and Carpenters and Joiners	89	96	108	7	12
Automotive Electricians and Mechanics	85	101	118	15	17
Horticultural Trades Workers	85	101	118	15	17
Hospitality Workers	85	94	103	9	10
Personal Assistants and Secretaries	82	91	101	9	10
Accommodation and Hospitality Managers	81	89	98	8	9
Education Aides	78	82	87	4	5
Office and Practice Managers	73	81	90	8	9
Midwifery and Nursing Professionals	71	84	98	12	14
Fabrication Engineering Trades Workers	65	67	69	2	2
Real Estate Sales Agents	63	84	108	21	24
Food Preparation Assistants	62	69	76	7	7
Automobile, Bus and Rail Drivers	59	71	84	12	13
Defence Force Members, Fire Fighters and Police	55	61	68	6	7
Receptionists	55	61	68	6	7
Personal Carers and Assistants	55	64	75	9	11
Electricians	53	58	65	4	7
Natural and Physical Science Professionals	52	61	70	8	9
Miscellaneous Hospitality, Retail and Service Managers	51	56	62	5	6

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Table 4.18 continued

Stationary Plant Operators (Other)	49	60	72	11	12
Financial and Insurance Clerks	48	53	59	5	6
Building and Engineering Technicians	47	51	57	4	6
Electronics and Telecommunications Trades Workers	46	57	68	11	11
Glaziers, Plasterers and Tilers	44	47	53	4	6
Miscellaneous Clerical and Administrative Workers	44	49	54	5	5
Clerical and Office Support Workers	43	47	53	5	5
Mining Labourers	40	49	59	9	10
Packers and Product Assemblers	40	41	42	1	1
Chief Executives, General Managers and Legislators	39	44	49	5	5
Insurance Agents and Sales Representatives	35	45	49	10	4
Education, Health and Welfare Services Managers	34	39	46	6	7
Miscellaneous Technicians and Trades Workers	33	34	35	1	1
Business Administration Managers	33	38	43	5	5

## 4.8 Conclusion

The Wheatbelt region exhibits considerable spatial diversity in labour market dynamics and futures. While there is perhaps a popular misconception that the Wheatbelt is a 'mature' economy with little capacity for expansion, the evidence suggests otherwise. The region has an extensive peri-urban belt and coastal zone that is experiencing economic growth and rising populations. Thus, much of the Avon Valley, Chittering Valley and Wheatbelt coast are likely to experience considerable increases in labour demand over the near to medium term. While agriculture (and fishing on the coast) remain at the heart of the economy, new manufacturing, tourism and service industries are emerging in these areas.

It is also clear that growth is not likely to be restricted to these peri-urban and coastal areas. There is evidence to suggest that the inland subdivision of Hotham is gathering momentum with regard to population and economic growth. New mining activity, together with the expansion of ancillary industries, is likely to have significant impacts. The subdivision is also benefitting from increasing lifestyle migration. While the drivers of change are spatially concentrated within the subdivision, those areas not directly affected also appear unlikely to experience major decline. The rate of farmer out-migration is slower in Hotham than other parts of the Wheatbelt, and much of the evidence points to a more stable agricultural industry than elsewhere. For the inland subdivisions of Campion and Lakes, decline is a more likely scenario, though the rate of contraction is likely to be relatively slow. Of course, factors such as commodity prices and climatic conditions will affect the prosperity of agriculture in these subdivisions. Mining activity in Yilgarn and Westonia are 'hotspots' of development, and are expected to continue to experience an increased demand for labour.

In all subdivisions within the Wheatbelt, there are important issues that need to be tackled, including the competitiveness of wages and salaries, the attraction and retention of staff, and perceptions about living and working in regional areas. Of all three regions analysed in this report, securing a sustainable supply of labour is most challenging in parts of the Wheatbelt.

## 5 Key Findings

### 5.1 The Great Southern

- The population of the Great Southern has grown steadily over the past decade or so, with the strongest increases experienced in the high amenity coastal and southern parts of the region. Inland areas dependent largely on broadacre agriculture have remained relatively stable or experienced slow decline.
- The regional economy performed well between 2001 and 2006, with Gross Regional Product (GRP) increasing by 6.9 per cent per annum. GRP per capita is the lowest of all of Western Australia's non-metropolitan regions.
- The main driver of the economy remains the agriculture, forestry and fishing sector. However, other propulsive sectors within the regional economy include accommodation and food services (particularly in the south), education and training, wholesale trade, and retail trade.
- The labour force demand in the King subdivision is projected to increase steadily between 2007 and 2015, with growth concentrated in: health care and social assistance; retail trade; construction; and accommodation and food services. In terms of specific occupations, the most significant increases in demand are likely to include: sales assistants and sales persons; cleaners and laundry workers; personal carers and assistants; nursing professionals; school teachers; and mobile plant operators.
- The labour force demand in the Pallinup subdivision is expected to remain relatively stable at around 5,100 between 2007 and 2015. Decline is expected in: agriculture, forestry and fishing; manufacturing; and construction. Modest growth is expected in accommodation and food services, and retail trade. Specific occupations likely to increase include: truck drivers; general clerks; mobile plant operators; and food process workers.

### 5.2 The South West

- The total population of the South West has grown rapidly over the past decade, with much of the increase concentrated in coastal and high amenity areas. Those areas dependent on agriculture and forestry have tended to remain stable or have experienced modest decline.

- The economy of the region has performed strongly during the 2000s, with gross regional product growing more rapidly than the State average. The economy is relatively diverse: in Blackwood, the leading sector was agriculture; in Preston, mining and agriculture were the economic drivers; in Vasse a range of sectors, including agriculture, mining, accommodation and retail trade underpinned the economy, while in Bunbury mining, manufacturing and the service sector were the leading industries.
- In the Blackwood subdivision, employment demand is likely to fall in agriculture, forestry and fishing, and wholesale trade. The largest increases in demand are expected in: retail trade; accommodation and food services; and health care and social assistance. Strongest occupational growth is expected in: cleaners and laundry workers; mobile plant operators; school teachers; truck drivers; and midwifery and nursing professionals.
- The Bunbury subdivision is expected to see labour demand increase between 2007 and 2015, with strongest growth expected in: mining; construction; health care and social assistance; and retail trade. Significant increases in demand for the following occupations are expected: sales assistants and salespersons; personal carers and assistants; truck drivers; building and engineering technicians; auto electricians and mechanics; school teachers; and mobile plant operators.
- Labour force demand in the Preston subdivision is anticipated to grow between 2007 and 2015, with strongest growth in employment demand expected in the mining sector, followed by health care and social assistance, construction, and transport. Modest declines are expected in agriculture, forestry and fishing. The strongest growth in occupational demand is expected in some of the following: cleaners; sales assistants and salespersons; stationary plant operators; mobile plant operators; and midwifery and nursing professionals.
- The Vasse subdivision is projected to experience relatively strong employment growth between 2007 and 2015, with increases concentrated in the following sectors: construction; retail trade; accommodation and food services; and health care and social assistance. For occupations, growth is likely to be strongest in: sales assistants and sales persons; bricklayers, and carpenters and joiners; retail managers; school teachers; and hospitality workers.

### 5.3 The Wheatbelt

- The population dynamics of the Wheatbelt are highly geographically variable. The coastal and peri-urban areas have experienced strong recent growth, while inland areas have tended to remain stable or decline.
- The economy of the Wheatbelt is one of the strongest performing in Western Australia in per capita GRP terms. While its output is lower than the resource intensive regions, its GRP is higher per capita than all other southern regions.
- As with the population, labour force change has been spatially uneven, with growth concentrated in the coastal and peri-urban areas. Unemployment rates across the region are lower than the State average, and participation rates are generally very high.
- The labour force of the Avon subdivision is expected to increase between 2007 and 2015, although much of the growth will be concentrated in those areas adjacent to Perth. Areas further inland are expected to see a decrease in demand. Much of the decline in demand is expected in agriculture, while growth sectors are likely to include mining, retail trade, education and training, and health care and social assistance. Occupational increases are expected for: personal carers and assistants; sales assistants and sales persons; cleaners; and truck drivers.
- In the Champion and Lakes subdivisions, growth is likely to be very slow. Resources activity in the Yilgarn area is likely to be the major driver of growth. Occupational growth is anticipated to be concentrated amongst: truck drivers; mobile plant operators; stationary plant operators; and auto electricians and mechanics.
- The Hotham subdivision is projected to experience relatively strong employment growth associated with resources activity near Boddington and a degree of lifestyle based in-migration. Strongest growth is anticipated in: mining; health care and social assistance; and a range of other services. Occupational growth is projected to be relatively high amongst the following: labourers; truck drivers; construction labourers; midwifery and nursing professionals; and fabrication engineering trades workers.
- The Moore subdivision is projected to experience growth in a number of sectors, including: mining; construction; retail trade; health care and social assistance; and public administration. Occupational growth is projected to be strongest for: truck drivers; mobile plant operators; cleaners; auto electricians and mechanics.

## References

- Armstrong, H. and Taylor, J. (1993), *Regional Economics and Policy*, Harvester Wheatsheaf, Hemel Hempstead.
- Australian Bureau of Statistics (ABS)(2006), *Counts of Australian Businesses, Including Entries and Exits*, Commonwealth of Australia, Canberra.
- Australian Bureau of Statistics (ABS)(2007), *Census of Population and Housing, 2006* (various reports and tables), Commonwealth of Australia, Canberra.
- Barr, N. (2005), *The Changing Social Landscape of Rural Victoria*, Department of Primary Industries, Bendigo.
- Barff, R. and Knight, P. (1988), Dynamic shift-share analysis, *Growth and Change*, 19, 1-10.
- Beale, C. (1975), *The Revival of Population Growth in Non-metropolitan America*, United States Department of Agriculture, Washington.
- Box, G. and Jenkins, G. (1976), *Time Series Analysis: Forecasting and Control*, Holden Day, San Francisco.
- Bureau of Transport and Regional Economics (BTRE)(2006), *Skill Shortages in Australia's Regions*, Working Paper 68, Bureau of Transport and Regional Economics, Department of Transport and Regional Services, Canberra.
- Burnley, I. and Murphy, P. (2004), *Sea Change: Movement from Metropolitan to Arcadian Australia*, University of New South Wales Press, Sydney.
- Davies, A. and Tonts, M. (2007), *Population Dynamics and Locational Choices Amongst Young People: An Examination of the Western Australian Wheatbelt*, Geowest 32, School of Earth and Geographical Sciences, The University of Western Australia, Crawley.
- Department of Local Government and Regional Development (2003), *Indicators of Regional Development in Western Australia*, Department of Local Government and Regional Development, Perth.
- Department of Local Government and Regional Development (2003), *Gross Regional Product, 2005/06*, Department of Local Government and Regional Development, Perth.
- Dillman, D. (2000), *Mail and Internet Surveys: The Total Design Method*, Wiley, New York.
- Dinc, M., Haynes, K. and Qiangsheng, L. (1998), A comparative evaluation of shift-share models and their extensions, *Australasian Journal of Regional Studies*, 4, 275-302.
- Geografia (2006), *Peel Workforce Development Strategy*, Report prepared for the Peel Development Commission, Department of Education and Training, and Challenger TAFE, Geografia, Perth.
- Green, A. and Owen, D. (2003), Skills shortages: local Perspectives from England, *Regional Studies*, 37, 123-134.
- Green, A., Homenidou, K. and Wilson, R. (2004), *Working Futures: New Projections of Employment by Sector and Region*, Institute for Employment Research, University of Warwick, Coventry.



- Haslam-McKenzie, F. (2000), 'Where do people fit in the rural equation?', in Pritchard, W. and McManus, P. (eds), *Land of Discontent: The Dynamics of Change in Rural and Regional Australia*, University of New South Wales Press.
- Herold, M., Couclelis, H. and K. C. Clarke (2005), 'The role of spatial metrics in the analysis and modeling of urban land use change', *Computers, Environment and Urban Systems*, 29, 369-339.
- Hugo, G. (2005) 'The state of rural populations', in Cocklin, C. & Dibdin, J. (eds) *Sustainability and Change in Rural Australia*, UNSW Press, Sydney, pp. 56-79.
- Lawrence, G. (2005), 'Globalisation, agricultural production systems and rural restructuring', in Cocklin, C. & Dibdin, J. (eds) *Sustainability and Change in Rural Australia*, UNSW Press, Sydney, pp. 104-120.
- Mayor, M., Lopez, A., Perez, R. (2007), 'Forecasting regional employment with shift-share and ARIMA modelling', *Regional Studies*, 41, 543-551.
- Minerals Council of Australia and Chamber of Minerals and Energy Western Australia (2006), *Staffing the Supercycle: Labour Force Outlook in the Minerals Sector, 2005-2015*, Minerals Council of Australia (Canberra) and Chamber of Minerals and Energy Western Australia, Perth.
- Salamon, S. (2003), *Newcomers to Old Towns: Suburbanization of the Heartland*, University of Chicago Press, Chicago.
- Smailes, P. (2000) 'The diverging geographies of social and business interaction patterns: a case study of rural South Australia', *Australian Geographical Studies* 38(2), pp. 158-181.
- State Training Board (2006), *Beyond the Resources Boom*, Department of Education and Training, Perth.
- Stayner, R. (2005) 'The changing economics of rural communities', in Cocklin, C. and Dibdin, J. (eds) *Sustainability and change in rural Australia*, UNSW Press, Sydney.
- Stimson, R., Stough, R. and Roberts, B. (2002), *Regional Economic Development: Analysis and Planning Strategy*, Springer, Berlin.
- Tonts, M. and Greive, S. (2002), 'Commodification and creative destruction in the Australian rural landscape', *Australian Geographical Studies*, 40, 58-70.
- Tonts, M. (2004) 'Neoliberalism and Spatially Uneven Development in Rural Australia', *Anthropological Forum*, 14(3), 237-252.
- Tonts, M. (2005), 'Government policy and sustainability in rural Australia', in Cocklin, C. and Dibden, J. (eds) *Sustainability and change in rural Australia*, UNSW Press, Sydney.
- Walmsley, D. J., Argent, N., Rolley, F. and Tonts, M. (forthcoming 2008), 'Inland Australia', in Bell, M., Hugo, G. and McDonald, P. (eds), *Australian Mobility Beyond the Millennium*, University of New South Wales Press, Sydney.

## Appendix 1 Data Sources and Techniques

### A1.1 Data Sources

#### ***Australian Bureau of Statistics' Census of Population and Housing***

Much of the analysis in this report is based on census data. This included data on:

- Total population
- Age-sex structure
- Internal migration
- Labour force participation by age and gender
- Employment by industry and occupation

Data were collected at the Statistical Subdivision level from a range of Australian Bureau of Statistics (ABS) sources, including:

- Detailed Community Profiles
- Time Series Community Profiles
- Individual Census Tables

The analysis of labour force is based on the 2006 Australian and New Zealand Standard Standard Industrial Classification (replacing the earlier 1993 edition), and the 2006 Australian and New Zealand Standard Occupational Classification (replacing the 1996 edition).

#### ***ABS Australian Counts of Business***

This sources provides detailed counts of businesses in Australia for 2006 to the postcode level. The data are organised by postcode and the Australian and New Zealand Standard Industrial Classification (1993 edition). Data include the number of employees per business and annual turnover. These postcode level data were reassigned to Statistical Subdivisions to provide insights into the structure of enterprise in the regions.

#### ***Department of Employment and Workplace Relations (DEWR) Small Area Labour Market Data***

DEWR Small Area Labour Market data provided an overview of total employment and unemployment at the Statistical Local Area level. These data were then aggregated to the Statistical Subdivision level. Data are available on a quarterly basis, and in this project focussed on the March quarter for every year between 1996 and 2007.

### ***ABS Labour Force Survey***

The ABS' Labour Force Survey is the official source of employment estimates nationally. Data are available annually and are organised by Australian and New Zealand Standard Industrial Classification. Data were used to help determine national rates of growth for industry sectors.

### ***Australian Taxation Office (ATO) Taxation Statistics***

The ATO provide annual information on individual income and welfare payments at the postcode level. These data were used to estimate local economic growth rates, as well as the spatial distribution of earnings.

### ***Other Published Sources***

- Department of Local Government and Regional Development estimates of Gross Regional Product.
- The Australian Government's Skillsinfo Employment Outlooks, for estimates of future growth rates for individual sectors at the national level.
- Recent reports and other publications relating to labour market dynamics and future labour force needs (e.g. Minerals Council of Australia and Chamber of Minerals and Energy Western Australia, 2006; State Training Board, 2006; Geografia, 2006).

### ***Regional Workforce Survey***

In 2006, a postal questionnaire survey was used to elicit information from employers in the three regions on a range of issues, including:

- Vacancy rates
- Hard to fill vacancies
- Specific skill shortages
- Recruitment geography
- Enterprise or organisational structure and sector
- Size of the enterprise or organisation by employment
- Changes in employment and turnover/activity
- Impacts of labour shortages
- Causes of labour shortages for specific sectors

The survey was sent to 800 private and public sector organisations that were identified in the electronic Yellow Pages and, following the Dillman (2000) protocol for survey sampling, involved an initial mailout, followed by two reminders to non-respondents. A total of 279 useable returns were received and entered into the Statistical Package for the Social Sciences for analysis.

### **Other Sources**

- In November 2006, the South West Area Consultative Committee held a forum on skilled labour shortages in which members of the team were actively involved. The main participants in the forum were private and public sector employers (and related stakeholders) in the South West. The forum provided data on the nature, causes and impacts of skilled labour shortages, as well as possible local and regional solutions.
- A number of workshops were held by UWA's Institute for Regional Development in the Great Southern region to determine the local and regional causes and impacts of skilled labour shortages.
- Meetings were held across the region between late 2005 and 2007 with employers, public officials, government agency representatives, and peak industry bodies on a range of issues related to regional development, labour shortages, and staff attraction and retention issues.

### **A1.3 Analytical Techniques**

In analysing the data, a number of analytical techniques were used. These included relatively simple analyses of the rate of change, measures of central tendency, and measures of association (e.g. Chi-squared and Lambda). More specific techniques referred to in the text include location quotients and shift-share analysis.

#### **Location Quotients**

Location quotients are relatively straightforward measures of the relative importance of sectors compared to their importance in a wider reference economy (normally the national economy). Location quotients are calculated as follows:

$$LQ_{ir} = (E_{ir}/E_r)/(E_{iN}/E_N)$$

Where:

$E_{ir}$  = employment in sector  $i$  in region  $r$

$E_r$  = total employment in region  $r$

$E_{iN}$  = employment in sector  $i$  in the national economy

$E_N$  = employment in the national reference economy

A location quotient of greater than 1.0 suggests a local or regional advantage (or concentration of employment) in that sector. A location quotient of less than one suggests that the sector is not a 'propulsive' industry within the local economy. For further discussion on the calculation and use of location quotients see: Stimson *et al.*, 2002.

### Shift-Share Analysis

Shift-share analysis is a means of analysing regional growth and decline over time. The technique enables an assessment of a region's overall performance relative to other regions, and is a useful way of identifying a region's industry problems or advantages by attempting to isolate the extent to which growth or decline is linked to local effects, national effects or structural effects based on the particular mix of industries. For a detailed discussion of shift-share techniques see Stimson *et al.*, 2002.

For any region  $j$ , employment growth for a particular period under investigation is decomposed in the following way:

1. NS, the national share. The employment growth that region  $e$  experienced as a result of overall national trends
2. IM, the industry mix component. That part of change attributable to the industrial composition or mix of the region,
3. RS the regional shift component. That part of change attributable to regional advantage or competitiveness.

The full equations require the following elements:

$e_i$  = regional employment in industry  $i$

$E_i$  = national employment in industry  $i$

$e$  = regional total employment in all industries

$E$  = national total employment in all industries

$t-1$  = the initial period (2001) and  $t$  the end period (2006)

Thus:

$$\Delta e_i \equiv e_{i,t} - e_{i,t-1} \equiv NS_i + IM_i + RS_i \quad (1)$$

$$NS_i \equiv e_{i,t-1} (E_t / E_{t-1}) \quad (2)$$

$$IM_i \equiv e_{i,t-1} (E_{i,t} / E_{i,t-1} - E_t / E_{t-1}) \quad (3)$$

$$RS_i \equiv e_{i,t-1} (e_{i,t} / e_{i,t-1} - E_{i,t} / E_{i,t-1}) \quad (4)$$

$$e_{i,t} \equiv e_{i,t-1} + (NS_i + IM_i + RS_i) \quad (5)$$

#### A1.4 Modelling Employment Demand

This project utilised a model based on the shift-share calculations to develop labour market projections for the Great Southern, South West and Wheatbelt regions. The approach builds on the basic calculations outlined above, but makes a number of extensions based on Mayor *et al.* (2007) and Barff and Knight (1988). These involve:

- Increasing the number of periods on which forward projections are calculated to enable the incorporation of one-off changes and modifications to a local regional economy (e.g. opening or closing of a major new industry, changes in commodity

prices etc.), as well as taking into account compounding effects and multipliers within local economies (see Barff and Knight, 1988).

- Developing a three year moving average to enable the use of a supplementary autoregressive integrated moving average (ARIMA) model based on Mayor *et al.* (2007) and the earlier work of Box and Jenkins (1976).
- Linking sectoral projections to specific occupational groups.
- Utilising national growth forecasts to project the national share (NS) component.

## Appendix 2 Wheatbelt Business Data

**Table A2.1 Number of Businesses by Employment in Avon, 2006**

	No staff	1-4 staff	5-19 staff	20-49 staff	50+ staff	Total employing	Total
Agriculture, Forestry and Fishing	765	492	177	36	0	705	1479
Mining	9	3	3	0	0	6	18
Manufacturing	72	18	9	12	6	45	105
Electricity, Gas and Water	0	0	0	0	0	0	0
Construction	207	54	27	0	3	84	294
Wholesale Trade	54	27	18	0	0	45	102
Retail Trade	117	75	54	15	3	147	258
Accommodation Cafes & Rest's	30	21	36	9	0	66	90
Transport and Storage	99	39	18	3	0	60	159
Communication Services	15	9	6	0	3	18	27
Finance and Insurance	84	3	9	0	0	12	96
Property and Business Services	210	57	24	3	3	87	309
Education	3	6	0	0	0	6	9
Health and Community Services	33	18	9	0	3	30	63
Cultural and Recreational Services	24	3	0	6	0	9	30
Personal and Other Services	21	9	6	0	0	15	39
<b>Total</b>	<b>1743</b>	<b>834</b>	<b>396</b>	<b>84</b>	<b>21</b>	<b>1335</b>	<b>3078</b>

(Source: ABS, 2006)

**Table A2.2 Number of Businesses by Employment in Campion/Lakes, 2006**

	No staff	1-4 staff	5-19 staff	20-49 staff	50+ staff	Total employing	Total
Agriculture, Forestry and Fishing	741	549	177	15	0	741	1485
Mining	21	0	0	0	3	3	21
Manufacturing	21	6	15	6	0	27	45
Electricity, Gas and Water	0	0	0	0	0	0	0
Construction	78	48	6	0	0	54	132
Wholesale Trade	30	21	12	3	6	42	72
Retail Trade	66	75	33	6	3	117	186
Accommodation Cafes & Rest's	12	3	24	6	3	36	42
Transport and Storage	42	33	12	3	0	48	93
Communication Services	12	12	0	0	0	12	27
Finance and Insurance	57	6	0	0	0	6	69
Property and Business Services	150	21	18	3	0	42	186
Education	0	0	3	0	0	3	0
Health and Community Services	9	6	12	0	0	18	30
Cultural and Recreational Services	0	0	0	3	0	3	3
Personal and Other Services	9	9	3	0	0	12	21
<b>Total</b>	<b>1248</b>	<b>789</b>	<b>315</b>	<b>45</b>	<b>15</b>	<b>1164</b>	<b>2412</b>

(Source: ABS, 2006)

**Table A2.3 Number of Businesses by Employment in Hotham, 2006**

	No staff	1-4 staff	5-19 staff	20-49 staff	50+ staff	Total employing	Total
Agriculture, Forestry and Fishing	510	327	246	48	24	645	1155
Mining	5	4	0	0	0	0	9
Manufacturing	21	15	12	0	0	27	54
Electricity, Gas and Water	3	0	0	0	0	0	3
Construction	84	45	9	3	0	57	144
Wholesale Trade	39	15	12	3	0	30	69
Retail Trade	78	54	42	9	0	105	171
Accommodation Cafes & Rest's	6	12	12	6	0	30	39
Transport and Storage	30	33	12	0	0	45	75
Communication Services	3	3	0	0	0	3	6
Finance and Insurance	45	6	3	0	0	9	57
Property and Business Services	126	33	15	0	0	48	171
Education	6	3	0	0	0	3	9
Health and Community Services	24	6	3	0	0	9	27
Cultural and Recreational Services	12	0	0	0	0	0	15
Personal and Other Services	24	9	3	0	0	12	36
<b>Total</b>	<b>1016</b>	<b>565</b>	<b>369</b>	<b>69</b>	<b>24</b>	<b>1023</b>	<b>2040</b>

(Source: ABS, 2006)

**Table A2.4 Number of Businesses by Employment in Moore, 2006**

	No staff	1-4 staff	5-19 staff	20-49 staff	50+ staff	Total employing	Total
Agriculture, Forestry and Fishing	690	243	105	12	9	369	1065
Mining	9	0	0	0	0	0	9
Manufacturing	39	12	12	0	0	24	63
Electricity, Gas and Water	3	0	0	0	0	0	3
Construction	153	60	6	3	0	69	225
Wholesale Trade	27	3	3	0	0	6	36
Retail Trade	75	42	36	6	0	84	159
Accommodation Cafes & Rest's	24	9	15	9	3	36	54
Transport and Storage	54	21	15	3	0	39	93
Communication Services	0	6	0	0	0	6	6
Finance and Insurance	48	6	3	0	0	9	54
Property and Business Services	129	27	9	0	3	39	177
Education	0	0	3	0	0	3	0
Health and Community Services	6	9	6	3	0	18	21
Cultural and Recreational Services	21	0	0	6	0	6	18
Personal and Other Services	27	3	0	0	0	3	30
<b>Total</b>	<b>1305</b>	<b>441</b>	<b>213</b>	<b>42</b>	<b>15</b>	<b>711</b>	<b>2013</b>

(Source: ABS, 2006)



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