The socio-economic impacts of long distance commuting (LDC) on *source* communities

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The authors

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

This research project examines the socio-economic implications of long distant commute (LDC) workforce arrangements in the resources sector for two *source* or *resident* localities and their communities in regional Australia, (as distinct from the *host* communities where mines operate). They are distant from mining operations, but now home to significant or growing LDC population cohorts. Focusing on these two Western Australian case study sites, Mandurah in the Peel region, and Busselton in the South West region, the project has employed a multi-method, iterative approach to identify and document the size and distribution of the LDC cohort in each case study area, and the associated diverse but interrelated effects and issues. Between late 2012 and early 2013 the researchers conducted desktop research, analysis of existing publically available data sets, semi-structured interviews and focus groups with service providers and LDC participants, and an on-line survey again targeting LDC workers and spouse.

To generate a broad understanding of the socio-economic costs and benefits and associated infra-structure implications for local governments, LDC participants, their families, and the wider community, the study has explored a range of aspects:

- worker mobility, occupations, levels of education, training and work history of LDC workers, family structures, life style choices, socio-economic status, expenditure and investment patterns;
- entrenched and emerging service and infrastructure needs in resident communities;
- existing linkages, distances and gaps between corporate mining operations, government and non-government service agencies and resident populations, and;
- potential scope for governance partnerships between local and state government, non-government organisations, SMEs and the mining sector for strategic and targeted planning purposes and for the provision of appropriate services and infrastructure.

Through these diverse means the study has constructed a multi-layered understanding of the complexities of the economic and social arrangements and relationships that sustain a LDC workforce within its place of residence, the linkages and disjunctions between place of work and place of residence, and the benefits and challenges for the differently positioned actors. It provides insights that can assist and enhance corporate and community obligations to maximize the economic and social benefits associated with LDC workforce arrangements.

Key findings:

- The growth of a resource sector LDC workforce is one of many impulses influencing change in both case study areas, and sits at the extreme end of other trends towards a greater physical separation between place of work and place of residence;
- The LDC workforce is diverse and is not limited to the resource industry;
- High income is the most commonly cited incentive to have entered, or to remain in the LDC workforce;
- The individual circumstances guiding these decisions are diverse and include specificity and level of experience and qualifications, time of life and family demands, the economic robustness of the local place of residence, availability and range of local employment options, and priority given to residing in a specific locality for natural and lifestyle amenity;
- A significant cohort of LDC workers are quite committed to an LDC and block roster lifestyle;
- Most individuals and families who make the choice cope well with a LDC lifestyle;
- A number who decide that it is not for them leave quickly, others opt in and out over time;
- A considerable number intensely dislike aspects of the workplace or lifestyle but are trapped by heavy financial commitments made on the basis of an ongoing LDC income, or by the lack of viable employment alternatives at their place of residence;
- Sense of wellbeing and ability to transition smoothly between home and work is influenced by length of work block, ratio and regularity of time on/time off, mix and length of shifts, opportunities to rest before flying, and length and complexity of commute arrangements;

- Flights to work sites from Busselton are highly valued, encouraging transitions of established residents in the town and surrounding areas to LDC, and attracting new, potential LDC employees to the area;
- LDC brings benefits and challenges to the case study communities, SMEs, and local governments and service providers;
- Local economic benefit via inflow of LDC incomes (which are higher than the local average) is significant;
- Superannuation, large mortgage commitments and holidays spent elsewhere account for considerable income leakage. A reasonable proportion of disposable income circulates locally, but particularly in Busselton, lack of choice, critical consumer mass and the current regionalised service provision model centred in Bunbury, challenge local capacity to maximise benefits;
- Increasing reliance on LDC as a means to stay in economically depressed areas may increase longer term socio-economic vulnerabilities;
- The research found no definitive evidence that the LDC population cohort has a lower than average level of participation in community and organisational life, although higher levels of school truancy, lack of parental involvement in children's sport are frequently cited by service providers, as issues. Self-described levels of interest, commitment and ability to participate in volunteering opportunities varied widely across the LDC cohort in both case study areas;
- Changes in the community dynamic associated with LDC appear more keenly felt in the Busselton case, finding expression in a degree of tension and resentment between 'have' and 'have-nots' and differing expectations about the ability of LDC workers and their families to spend;
- The growth of LDC has placed additional demands on services in both case studies, although this is likely a result of rapid population growth rather than a disproportionate demand from the LDC cohort;
- The consensus is that LDC arrangements do not necessarily cause problems such as drug and alcohol abuse, domestic violence, child behaviour issues, but have the propensity to exacerbate them;

- LDC workers like everyone need support at times, and governments and companies encouraging growth of LDC residents have an obligation to provide for them adequately;
- There is a particular issue of LDC workers not being able to access a range of services services at the same times as other people in the community due to the nature of LDC work arrangements.

Key recommendations:

The interest in, and growing importance of LDC to regional centres such as Busselton and Mandurah, highlights the current shallowness and vulnerability of regional economies across much of Australia. Careful policy and planning and close cooperation between companies, all levels of government and LDC *source* communities is urgently needed if LDC is to become a vehicle for building more resilient enduring communities. The systematic development of relevant data bases at all levels is vital to this task.

Although LDC provides benefits for participants, it also makes extraordinary demands. There is therefore a pressing need for companies to:

- Provide or enhance processes or programmes that better prepare individuals and their families for the demands particular to LDC employment, including basic management of personal finances;
- Better recognise, through provision of tailored orientation processes, the vital role that spouse and family play in supporting an LDC worker and the specific demands that LDC arrangements make on them;
- Provide ongoing DIRECT communication to LDC spouse concerning company workplace policies, worker, spouse and family entitlements to benefits and support services, and and the processes for obtaining direct and discrete access;
- Make greater use of face to face communication with employees and spouse, and;
- Work with service providers to pilot flexible services that match current workforce demands.

LDC workers and their families are NOT exceptional, but like all members of the community they need support and assistance at times. Local government, SMEs and communities can take steps to enhance the LDC experience and level of community engagement by families:

- Consider how services could be more effectively scheduled and delivered to workers and residents who do not have conventional work arrangements;
- Foster initiatives to welcome and integrate LDC workers and their families into the community and minimize tension around perceived disparities in economic circumstances.
- Initiatives to foster individual and community wellbeing through informal and formal support networks;
- Institute procedures to maintain an understanding of local spending patterns and sources of economic leakage that can inform strategies to strengthen the local economy and encourage local expenditure and investment.

1. BACKGROUND

The mining boom of the past decade has brought significant wealth to public and private sectors in Australia, and especially to Western Australia where the majority of the most valuable committed and operational mining projects are currently located. However numerous economic reports (Garton 2008; Reserve Bank of Australia 2009; Deloitte 2010; AEC Group 2012) and media accounts (Laurie 2008; Barrass 2012; Jopson 2012; Laurie 2012; Taylor 2013) have reported economic pressures and social disruption associated with uneven distributions of mining wealth and benefits. Aside from local disadvantages associated with the high levels of foreign ownership and strong export orientation that characterise the sector (Richardson 2009), Hajkowicz *et al,* (2011) identify spatial disjunctions between the population and workforce clustered primarily in coastal regions, and major resource extraction projects located predominantly in remote sparsely populated areas, as a further contributing factor. From the 1960s through to 1980s this challenge was primarily addressed through the development of purpose built company towns to house permanent residential workforces in proximity to particular operations. Since the 1980s the locally resident component of the workforce has increasingly been supplemented by the use of long distance commuting (LDC) workforce arrangements (Haslam McKenzie, Rolfe et al. 2013; KPMG for the Minerals Council of Australia 2013).

LDC is adopted here as the encompassing term for the range of non-residential workforce arrangements currently in use in the resource sector, including fly-in/fly-out (FIFO), drive-in/drive-out (DIDO) and bus-in/bus-out (BIBO). LDC workers regularly leave the *source* community, in which they maintain their usual place of residence, to live away from home and family at a distant place of work during extended rostered work blocks, returning home for furlough (Storey 2001, Haslam McKenzie 2011). There has been growing academic interest in the distributional effects of LDC workforce arrangements. To date, however, the majority of the academic interest has focused on identifying and addressing social and economic impacts of LDC on *host* towns or communities that are proximate to mining operations accommodating significant LDC workforces (Storey 2001; Haslam McKenzie 2011; Lawrie, Tonts et al. 2011; Haslam McKenzie, Rolfe et al. 2013), and on the individual

worker and their families (Gallegos 2005; Sibbel, Sibbel et al. 2006; Taylor and Simmonds 2009; Sibbel 2010).

Localised resistance and resentment to LDC in remote *host* towns, especially to the economic 'fly over effects' experienced as workers spend their mining incomes elsewhere is well documented (Haslam McKenzie 2011, Langton 2010). The negative effects of LDC arrangements on local and regional economic growth have undoubtedly been amplified, because to date the Australian Bureau of Statistics has not collected specific data about long-term labour force mobility. Consequently, the Commonwealth Grants Commission bases its calculation of Special Purpose Payments to Individual States and Territories for the delivery of services, on growth factors and population data that do not take into consideration the additional pressures imposed by the service and infrastructure demands of LDC workers. *Host* communities with a high proportion of LDC workers are therefore likely to lag the rest of the state or nation on a range of social and economic indicators due to inadequate infrastructure and services (Everingham 2007; Solomon, Katz et al. 2007; Hajkowicz, Heyenga et al. 2011; Lawrie, Tonts et al. 2011).

Research has also shown that small rural communities are particularly vulnerable to stresses caused by the absence of workers engaged in LDC jobs in the resources industries (Beer, Tually et al. 2011; Rolfe and Kinnear 2013). Ravensthorpe was transformed from a broad acre agricultural economy into one dominated by mining after BHP Billiton announced plans to open a large nickel mine in 2002. The co-option of young, able workers into mining meant that local farmers struggled to hire labour for shearing teams; a problem that became so acute that some farmers reduced their flocks or focused exclusively on cropping. Block shifts interfered with sport participation and local services complained that many were no longer available to volunteer for the fire brigade, ambulance services and verge clean-ups. Over time communities have readjusted, although in the case of Ravensthorpe, this was only to be transformed again when BHP Billiton abruptly put the nickel mine into care and maintenance (Haslam McKenzie 2011) and subsequently on-sold the mine to Canadian interests with a reduced workforce.

Despite the above challenges, it appears likely that LDC will remain a part of the socio-economic landscape of regional Australia for the foreseeable future. Industry bodies and individual companies continue to express a preference for flexible cost-effective LDC arrangements over infrastructure development to support residential workforces, particularly for construction phases and shorter term operations in remote or inhospitable localities (Chamber of Minerals and Energy 2005; Chamber of Minerals and Energy 2012). There is also evidence that for a considerable proportion of the industry workforce, LDC arrangements have become the preferred mode of employment. A recent survey conducted as part of a detailed case study (2010-2011) under the CSIRO Minerals Down Under Flagship (Hoath and Pavez 2013) revealed that despite preferential 'employ local' policies introduced by a large gold mining operation in the Peel hinterland, a significant portion of the company's workforce, as well as that of a nearby bauxite mine, reside in mine camp accommodation during work blocks and DIDO to Mandurah, the Perth metropolitan area and other regional centres in the South West of Western Australia.

Among surveyed workers who were currently on a DIDO arrangement, roughly 80 per cent had not taken any action or considered taking any action in the previous two years to relocate their usual place of residence to any community within the immediate vicinity of the mine (p 22, 23). These work preference trends were confirmed by research undertaken by Rolfe *et al.* (2007), Hajkowicz *et al.* (2011) and Haslam McKenzie *et al.* (2013). For those who had considered relocating closer to the mine, poor housing affordability and limited work options for spouses were primary deterrents, indicating a need for more responsive policy and planning mechanisms. However the project also revealed that personal values and emotions influence the difficult decisions families with one or more LDC worker make concerning their place of residence. While, for a number the wish to 'be together' motivated a decision to reside in mining towns, others saw a home in a *source* community elsewhere offering a higher level of long-term stability (Hoath and Pavez 2013).

To date there has been little research undertaken concerning the social and economic implications of LDC workforce arrangements for regional *source* locations and communities that now support a significant and/or growing resident population engaged in LDC work at mine and oil and gas sites located elsewhere. This research project is concerned with

bridging this gap. It focuses on two Western Australian case study sites, both located in a non-metropolitan coastal regions: the first study is centred on the City of Mandurah in the Peel region immediately south of the Perth metropolitan area; the second, on the City of Busselton in the South West region of the state, approximately 230 km from the Perth CBD. Both sites have experienced rapid population growth in recent decades, largely influenced by their attractiveness to *sea change* populations transitioning to retirement, or seeking more affordable accommodation and lifestyle amenity in aesthetically pleasing locations (Burnley and Murphy 2004; Gurran, Squires et al. 2005; Haslam McKenzie 2010). Mandurah has more than doubled in size since achieving city status in 1990, while Busselton is a smaller centre that achieved city status in January 2012.

The selection of the two study sites was influenced by several developments. The first was the evidence provided by the above-mentioned study on mining developments in the Boddington area (Hoath and Pavez 2013). A significant number of usual residents from both Mandurah and Busselton areas are employed on a DIDO basis at mining operations in the Shire of Boddington. Secondly, detailed submissions made by representatives from the relevant local government authorities and the Busselton Chambers of Commerce to the Standing Committee on Regional Australia regarding Fly-in/Fly-out Work Practices (House of Representatives Standing Committee on Regional Australia 2012), revealed a receptiveness to better understand and accommodate the needs, and maximize the economic potential benefits, of growing *resident* LDC population cohorts employed in distant mine and oil and gas sites. Especially in the case of Busselton, support for expansion as an LDC hub was underpinned by a clearly articulated concern about the locally depressed condition of existing financial drivers (Busselton Chamber of Commerce 2011).

However, authorities and community representatives have also expressed a wariness of the unintended social and economic consequences of LDC, which if not adequately dealt with, have the potential to cause considerable social and civic cost, in the manner reported for Ravensthorpe above. A number of submissions to the inquiry from across the nation, drew attention to considerable knowledge gaps hindering the capacity of local government, business and service communities to effectively plan for and respond to LDC pressures. The

City of Mandurah in particular, noted a lack of comprehensive, quality research and data that could enhance relevant decision-making in the city (Wilkinson 2011).

Such hopes and concerns are not exclusive to the selected case study sites. Thus the findings of this report have relevance for other regional and sub-regional centres including Bunbury, Albany and Manjimup in Western Australia, and the Gold Coast and Cairns in Queensland, all of which have experienced considerable economic restructuring in recent decades, and have also expressed interest in developing as LDC hubs in the future (see House of Representatives Standing Committee on Regional Australia 2012). Likewise for those regional centres reporting that sustained increases in *resident* LDC populations are already generating a range of new governance and service demands that are not well understood and have the potential to escalate if not managed properly (House of Representatives Standing Committee on Regional Australia 2013).

The research reported here was undertaken in several stages in the latter part of 2012 and the first half of 2013 which coincided with the delivery of the House of Representatives Standing Committee on Regional Australia report regarding fly-in/fly-out (House of Representatives Standing Committee on Regional Australia 2013). Its key objectives were to establish:

- the size, distributions and workplace linkages of LDC populations currently within the *source* study areas;
- the experience of LDC from within the given areas;
- the economic and administrative implications of a significant LDC population cohort for local government, government and non-government agencies, mining companies and local business communities, and;
- the effects of a significant LDC population cohort on the wider community structures, networks and arrangements vital to individual and community wellbeing and social cohesiveness.

2. METHODOLOGY

Following from research undertaken in Boddington for the CSIRO Minerals Down Under Flagship 2010-12 (Hoath and Pavez 2013), the authors have used an iterative mixed-method approach to collect and analyse comprehensive qualitative and quantitative data sets for each of the two case studies. While the survey instruments and processes applied in both cases were broadly consistent, as described below, some adaptions were necessary to respond to the particularities of each study site. The Busselton study was enhanced by an opportunity to utilize data from additional research supported by one resource company, and as a consequence yielded richer data. In both the Mandurah and Busselton cases the geographic scope of the study catchment was extended beyond the designated administrative area of each city to incorporate relevant LDC populations in outlying rural, urban and peri urban areas in adjacent local government areas. The confidentiality of participants in all components of the research project has been protected in accordance with Curtin University ethical standards.

2.1 Desktop research and ABS data analysis

The researchers reviewed extant literature, Australian Bureau of Statistics (ABS) and other quantitative data sets to develop case study area profiles and context. Several service providers had recently conducted small local published and unpublished research projects on aspects of LDC (Parkhurst 2012). Their findings also informed the design of this research.

2.1.1 Estimating LDC population size and distribution

Despite the growing significance of LDC arrangements for policy and planning decisions in urban, remote and regional Australia, definitive data on the residential distribution and mobility of the LDC workforce is difficult to obtain. To date the ABS does not collect information specific to the LDC workforce. There are also obstacles to obtaining sufficiently comprehensive workforce data from all companies sourcing labour from a given area. Several ABS data sets were therefore utilised to develop indicative estimates of LDC populations residing in the two case study areas. Differences between the ABS (2001, 2006 and 2011) census data categories, *Place of Usual Residence* (POUR), *Place of Work* (POW) and *enumerated* populations (those present on census night) recorded for specific ABS spatial units within each case study area, provide an indication of LDC workforce mobility

(understood as the number of people residing in one place and working in another), at given points in time. These were triangulated with qualitative data obtained from informal interviews and surveys described below at 2.2 and 2.3.

Data on LDC passenger flows was also obtained from the Busselton airport. Similar data could not be isolated for Mandurah FIFO workers who typically depart through the main Perth airport and reach the airport by a range of private and public transport. Because of this and a lower survey return in Mandurah, further analysis of ABS (2012) Employment by Occupation and Industry data was undertaken at the following areal scales: Statistical Area 4 [SA4], Local Government Area [LGA] and Statistical Area 2 [SA2]) to provide insight into the number and internal distribution of LDC workforce within the Mandurah study site. Anecdotal evidence of changing levels of mobility were also obtained from FIFO charter bus services operating between Mandurah and the Perth Airport.

2.1.2 Estimating local economic effects of LDC.

A range of ABS employment and income data sets were employed to gauge the direct and indirect multiplier effects from a growing LDC population cohort on the economy of each case study site. The rigour of the results has again been strengthened by triangulation where possible with data obtained from interviews and surveys described at 2.2 and 2.3 below.

2.2 Service provider interviews and focus groups

In each case study, the researchers conducted in-depth semi-structured interviews with a range of community leaders and service providers, including representatives from regional development commissions, local government authorities, state government agencies, mining companies, and non-government and not for profit organisations. Most interviewees were employed at the local level in either of the two case study areas. In the case of Busselton, interviews were also conducted with service providers in the Shire of Augusta-Margaret River, located immediately to the south, as the two local government areas have strong links. Because of the centralised nature of certain regional government and non-government services, the report authors also conducted several interviews with service

providers at more senior levels in Bunbury in the South West region, as well as in the Perth Metropolitan area.

Interviews were guided by a check list of open-ended questions allowing participants to range widely in their responses and speak from their level of expertise and interest. Three focus group meetings were also conducted, two in Busselton and one in Mandurah. The report authors also attended several community workshops and industry forums where local LDC issues were the focus.

The process provided insight into the perspectives and experiences of administrative and service personnel concerning:

- observed economic, social and emotional effects of the individual and family experience of LDC;
- potential for enhancing the LDC experience for individuals, their families and the broader community;
- development implications associated with an increase in resident LDC workers:
    - demand and utilisation of infrastructure and support services by LDC employees and LDC families;
    - gaps in support services and possibilities to better integrate local services with specific LDC needs, and;
    - challenges of service provision sympathetic to the particular rhythms of LDC lifestyles.

2.3 LDC employee and spouse interviews

The authors also conducted semi-structured interviews in each case study area with residents who were either currently employed in the resource industry on an LDC basis or were the spouse of LDC employees. Both researchers participated in the early interviews to establish a consistent approach, with subsequent interviews being conducted by either. The snowball method of participant recruitment was utilised to maximise diversity. Details of the research were also made available through local media, local government publications, community organisations, and the Facebook pages of several FIFO support agencies and relevant community groups prompting a number of respondents to self-enlist. Interviewees

from the Shire of Augusta-Margaret River were considered eligible for inclusion in the Busselton case study. Based on anecdotal evidence that the introduction of charter flights from the Busselton airport servicing several Rio Tinto mines had also attracted residents of other surrounding shires into the LDC workforce, the researchers on several occasions made contact with workers at the airport prior to scheduled departure times. In the case of the Mandurah, interviews were also conducted with the LDC cohort resident in urban areas bordering the city boundary, but located in the local government areas of Murray or Rockingham.

Interviewees variously addressed:

- motivations for participating in LDC work;
- work history and workforce mobility;
- qualifications, and educational and career aspirations;
- advantages, constraints and challenges of LDC lifestyles;
- perceived levels of security, connectedness and wellbeing;
- individual and collective strategies and initiatives practiced to cope with either being away from home or having a partner away from home for extended periods;
- the merits of various work block rosters and travel arrangements;
- types and degrees of community engagement and support networks, and;
- family and individual spending patterns.

In total 55 interviews were conducted for Busselton, and 29 for Mandurah. Interviews were conducted face to face in locations of the interviewee's choosing, or in some instances, by telephone or email. The interviews and focus group discussions were recorded and the content analysed for key trends.

2.4 LDC employee and spouse online survey

An online survey targeted LDC employees and spouse of LDC employees who were resident in each case study area. The survey was administered separately for each case study using Survey Monkey online survey software. The survey link to each was advertised through local media, local government publications, community organisations, support agencies, several FIFO support and other support group Facebook pages and informal networks, and

the distribution of information postcards. Questions were informed by the interviews described above, with the Mandurah survey including several additional questions. Nonetheless both included questions regarding:

- Demographic information including home postcode, age, education attainment, marital status, ethnicity and number of dependents;
- Work history;
- Current work roster, travel arrangements and preferences;
- Use or need for support agencies;
- Use of local service infrastructure;
- Income expenditure patterns;
- Physical and mental wellbeing;
- Drug and alcohol use;
- Relationship management, and;
- Community engagement.

Survey data was collated and analysed using contingency tables to identify trends between variables for every question. The data was used to identify LDC family mobility, structure, spending patterns and workforce participation. The method was applied to the full set of respondents to each question. Additional analysis of meaningful subgroups is also reported below.

2.4.1 Survey sample in Busselton

The Busselton survey attracted 63 respondents, with an 85 per cent completion rate. Forty three per cent of respondents were currently employed in the oil & gas or mining industry and 50 per cent had a spouse currently employed in the industry. The remainder had a spouse who had been employed in the industry at some time in the past two years. The age of respondents ranged from 18-24 through to 65-74 years. The majority were clustered in the age bands 25-34 (32 per cent), 35- 44 (31 per cent) and 45-54 (24 per cent). Sixty three per cent of all respondents were female and 38 per cent male. However, of the respondents currently working in the industry, 81 per cent were male and 19 per cent were female,

reflecting the predominance of males in the workforce industry wide. Consistent with this result 97 per cent of the cohort comprising spouse of current LDC workers, were also female.

2.4.2 Survey sample in Mandurah

Disappointingly, the Mandurah survey attracted only 25 respondents, a significantly lower response than was the case in Busselton. Although the resulting data set is insufficient to have statistical significance, it is referred to in the analysis below where it supports or contradicts indicative trends identified in the qualitative interview data.

3. CASE STUDY SITES

3.1 Case Study 1: Greater Mandurah Area

The City of Mandurah is located on the coast 70 kilometres south of Perth. It is the most densely settled of five local government areas that comprise the Peel region and has for the past decade been one of the fastest growing local government areas in the nation. Administratively, it is increasingly recognised as part of the Perth conurbation.

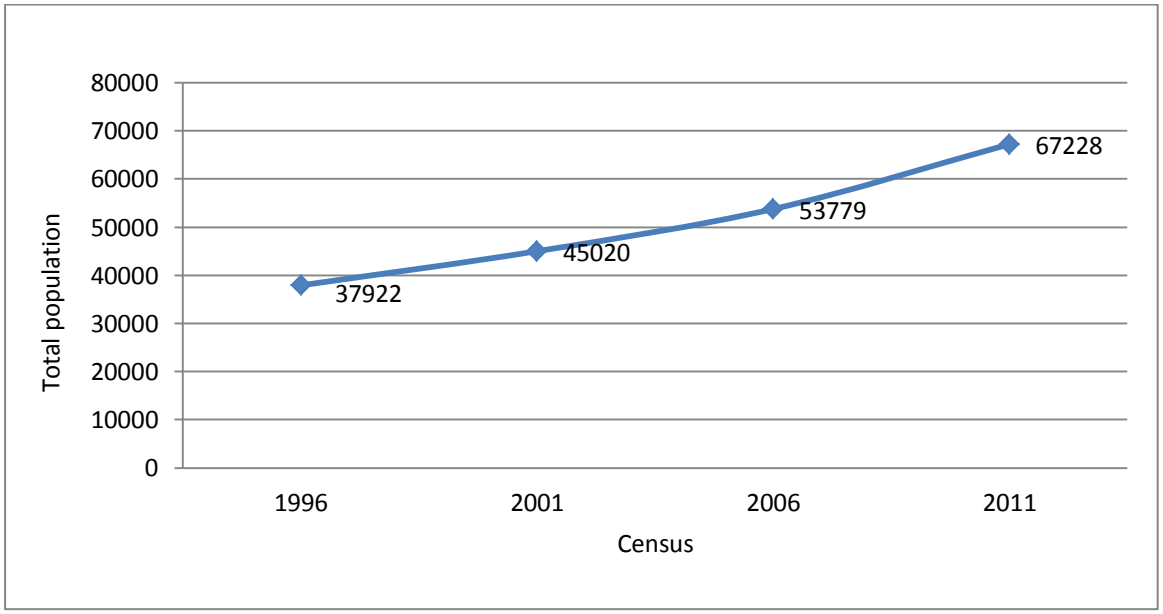
Figure 1: Peel Regional Map, including the City of Mandurah

(Modified from Western Australian Department of Regional Development and Lands)

Since 2005 the population has grown at an annual rate of 4.34% (Australian Bureau of Statistics 2012) with very high growth between 2006 and 2011 (see Figure 2). In August 2011 the usual resident population was 69,903 (ABS 2013), accounting for approximately 65% of the total regional population (Peel Development Commission 2012).

Figure 2: Mandurah LGA Population growth 1996-2011

(Source: Australian Bureau of Statistics, Census series; Based on place of enumeration)

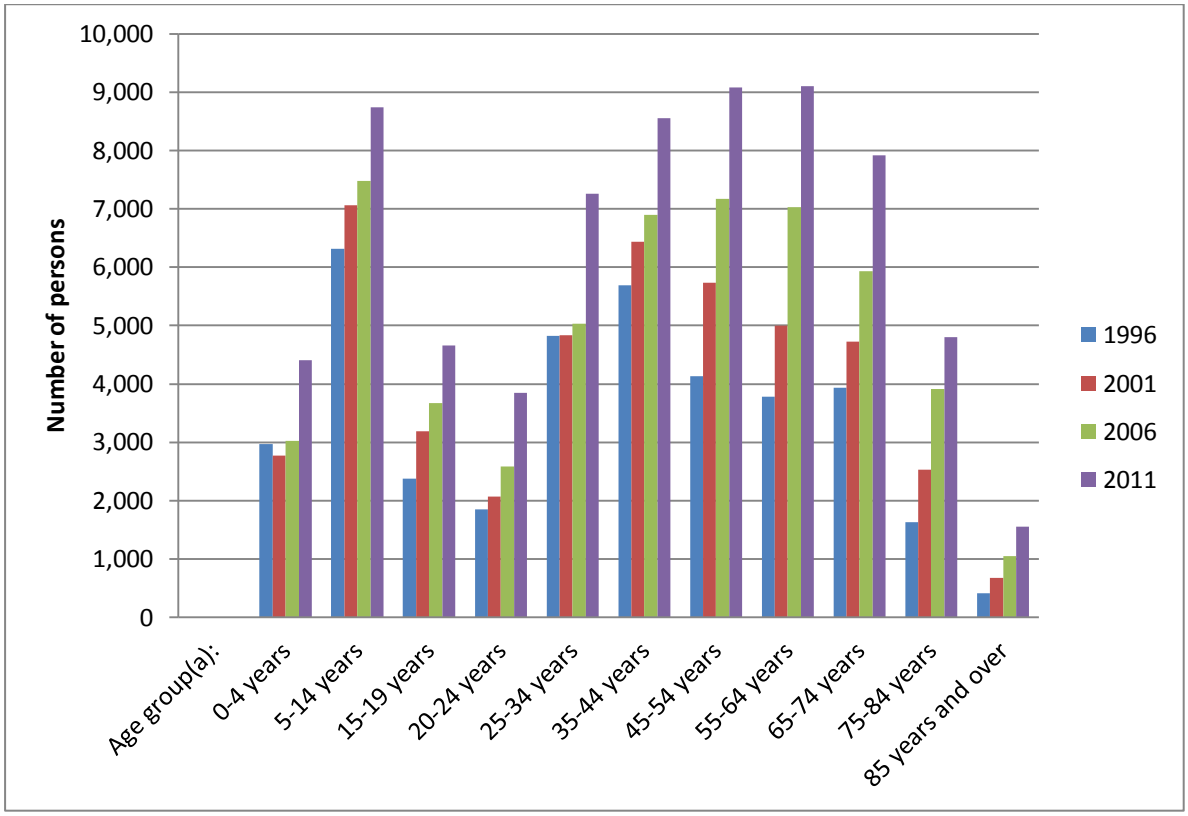


Factors contributing to the growth include proximity to the rapidly expanding city of Perth, the relative affordability of housing as a result of significant residential developments, many of which front natural and constructed water ways, and the area's appeal as a coastal fishing and leisure destination. The city's attractiveness to second home-owners and retirees in particular, has caused demographers and planners to classify it as one of Australia's major *sea change* communities, characterised by a high percentage of part-time residents, many of whom are baby boomers transitioning to retirement, and a high proportion of retirees (Hugo and Harris 2013). Between 2001 and 2006 the number of households in Mandurah increased by almost 4,000, with an increase in couple only households and a decrease in those comprising couples with children. This development is reflected in the median age of residents, which rose to 43 years in 2006, (a full nine years higher than the Western Australian average of 36 years), before falling again to 42 years in

2011. While this remains considerably higher than the median age for all Western Australians (36 years) (Australian Bureau of Statistics 2008, 2012), Figure 3 below shows that between the 2006 and 2011 census, the 25-34 year age cohort experienced the strongest growth, reflecting the area's growing appeal to first homeowners.

Figure 3: Mandurah Population by Age 1996-2011

(Source: Australian Bureau of Statistics 1997; Australian Bureau of Statistics 2001; Australian Bureau of Statistics 2007; Australian Bureau of Statistics 2012)



The emerging profile accords with a recent analysis of ABS 2011 census data for inter-city commute patterns, which established that in 2011, some 7,949 Mandurah residents commuted daily to the Perth metropolitan area for work. Interestingly another 3,680 workers commuted in the opposite direction, making the Perth/Mandurah corridor the sixth most significant in Australia in 2011 when measured by commuter flow (Salt 2013).

Uneven socio-economic development is a documented feature of *sea change* communities (Stimson, Baum et al. 2001; Stimson, Baum et al. 2003; Burnley and Murphy 2004; O'Connor 2004). With the complex demographic mix described above, it is perhaps unsurprising that the socio-economic indicators for the Mandurah LGA are highly variable. The current ABS

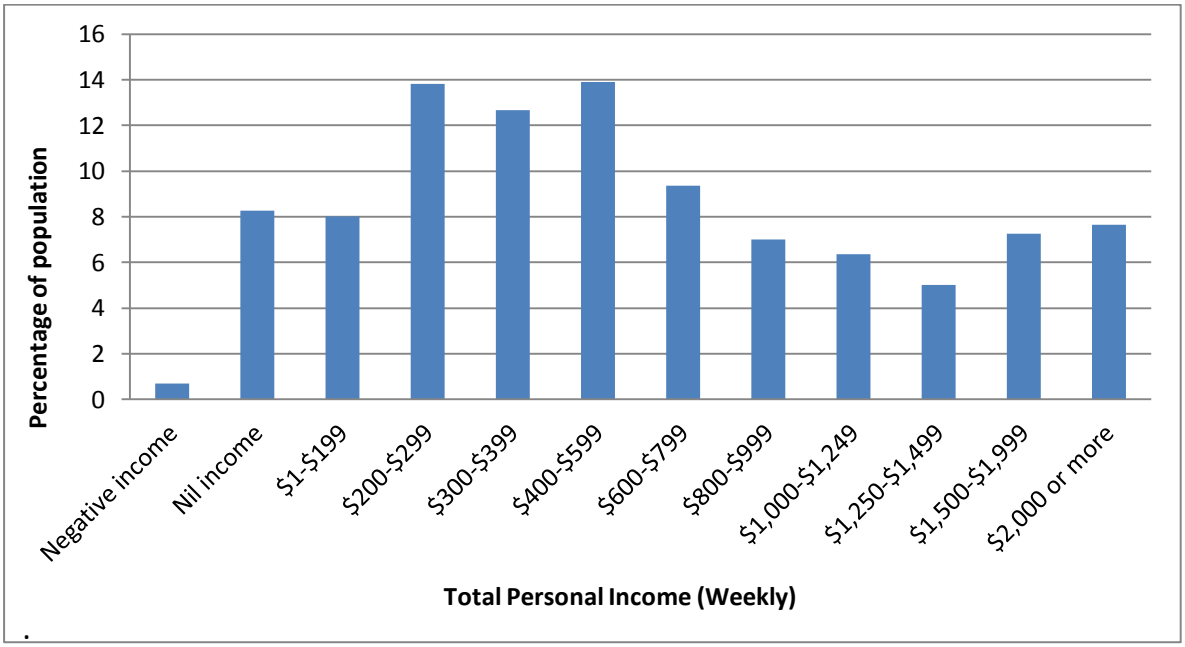
Socio-Economic Indexes for Areas (SEIFA) (Australian Bureau of Statistics 2013), based on different bundles of variables, are indicative. The LGA was in the 4th decile in the Index of Relative Socio-Economic Disadvantage (SEIFA Index of Relative Disadvantage, Australian Bureau of Statistics 2013), where a low rank indicates a high proportion of disadvantaged people in the population. It was in the 5th decile in the related Index of Relative Socio-Economic Advantage and Disadvantage, where a high score indicates a high incidence of advantage and low incidence of disadvantage. It ranked more favourably in the 7th decile of the Index of Economic Resources, but was poorly placed in the 2nd decile of the Education and Occupation Index, reflecting local skills and qualifications.

Although improving recently, the rate of unemployment has also been historically higher than the State average, measuring 6.2 per cent in 2011 against a state average of 4.1 per cent (Australian Bureau of Statistics 2012; Department of Education Employment and Workplace Relations (DEEWR) 2012). Youth and female unemployment rates are a key factor.

The average annual income in Mandurah for 2009-10 was $48,831 compared to the state average of $53,397. The 2011 data (Figure 4) reveals that 30.3 per cent of Mandurah households had an income of less than $600 per week compared to 21 per cent in the state and 23.7 per cent nationally with a disproportionately low number in the highest band.

Figure 4: Mandurah LGA personal weekly income distribution

(Australian Bureau of Statistics, Table Builder, Census 2011, based on place of usual residence)

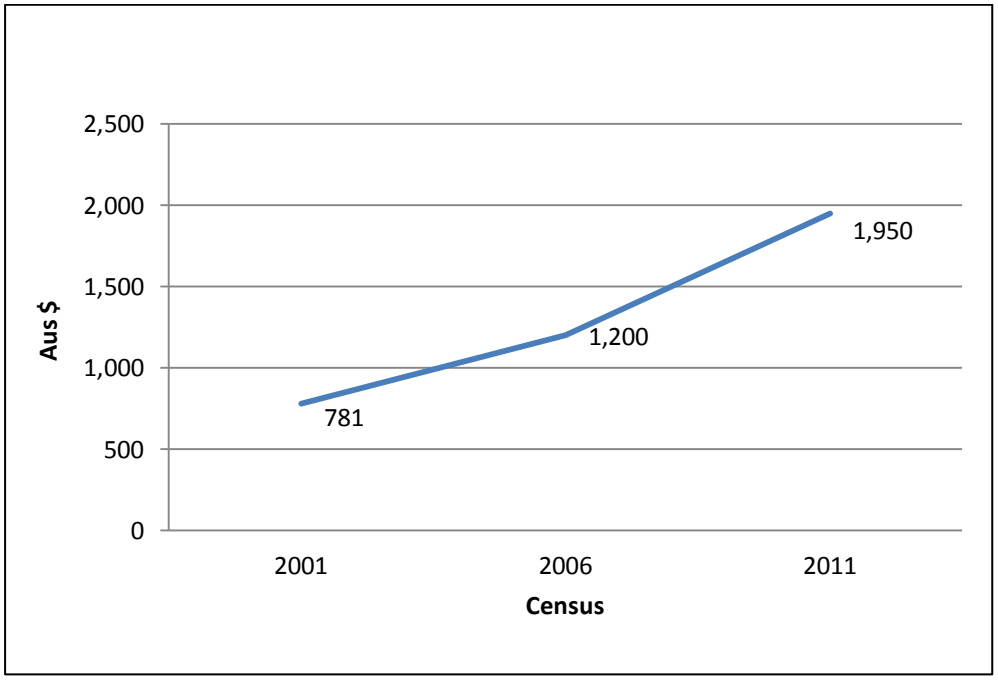


In Australia housing is the single biggest cost of living pressure. Housing stress is therefore a useful indicator of both local housing and labour markets and wider economic, environmental and social forces. Households spending more than 30 per cent of income on housing costs are officially in housing stress, having limited discretionary funds for other basis costs like food, transport, bills or emergencies (de Campo 2011). In 2008, the Annual Demographia International Affordability Survey, which uses the 'Median Multiple' (median house price divided by gross annual median household income) to rate housing affordability, ranked Mandurah the most unaffordable housing market in Australia, and the sixth most unaffordable in the world. Its relative position had improved to sixth most unaffordable in Australia, and nineteenth globally by 2013, reflecting global as well as local influences. There are weaknesses in such gross aggregations. Nevertheless, ABS data indicates a decline in the relative affordability of Mandurah. Although real estate data shows the median sale price for housing falling in 2008/9, and again in mid 2011 before plateauing, ABS data (Figures 5 and 6 below) indicates that median mortgage repayments increased significantly between 2001 and 2011. Based on ABS census data the median monthly mortgage in Mandurah climbed from 90 per cent of the WA median mortgage in

2001 to equal to the WA median mortgage in 2011. Mortgage repayment data suggests the cost of housing in Mandurah also increased relative to Busselton between 2001 and 2011. There are a number of influences. One is the blend of stock on the market. In 2011 the proportion of separate dwellings in Mandurah (81 per cent) was slightly higher than for the state (80.4 per cent), but the number with four or more bedrooms (47.4 per cent), was well above the state (42 per cent) and nation (30.3 per cent).

Figure 5: Median mortgage repayment in Mandurah LGA

(Source: Australian Bureau of Statistics, Census of Population 2001, 2006, 2011. Based on place of enumeration)



Despite this, in 2011, 8.4 per cent of Mandurah households had mortgage repayments greater than 30 per cent of household income indicating a lower incidence of mortgage stress than for Western Australia (10.2 per cent), and Australia (9.9 per cent). This relatively favourable incidence of stress recorded, given the high proportion of low income households is influenced by a relatively high incidence of outright home ownership (31.1 per cent) compared to 29.5 per cent state wide and 32% Australia wide (Australian Bureau of Statistics 2011). This again is typical of localities with a high proportion of retirees.

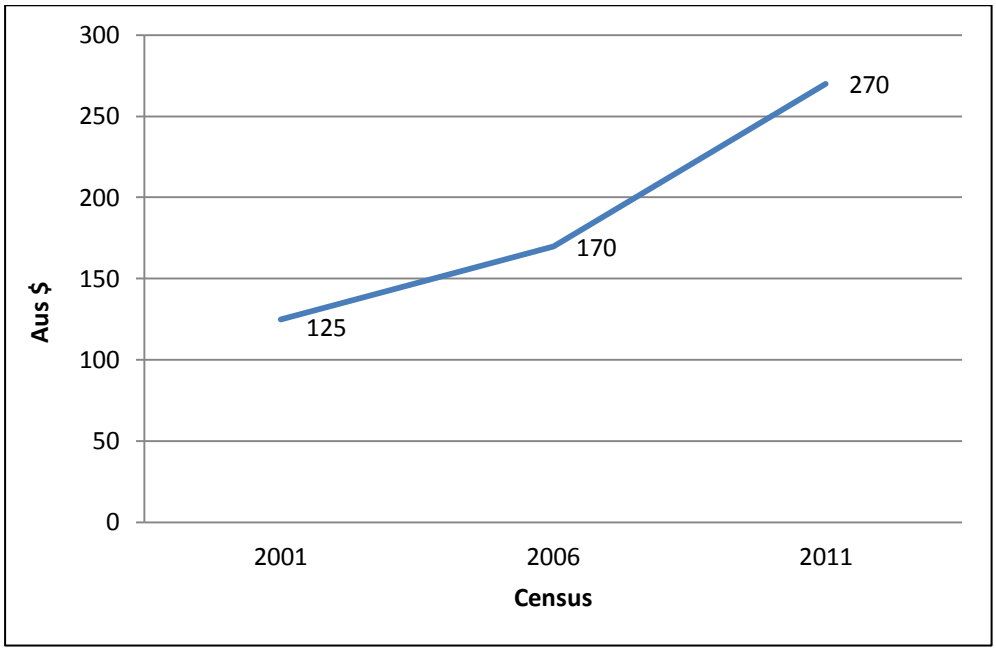
Nevertheless, high demand associated with continual population growth and the insufficient mix of new product coming through despite land releases, has created pockets of disadvantage. ABS (2012) census data reveals that in 2011 the incidence of rent stress in

Mandurah was greater than mortgage stress, when 12.2 per cent of households had rent payments greater than 30 per cent of household income compared to 10.2 per cent state wide and 9.9 per cent nationally.

The high proportion of second homes maintained as holiday homes by non-residents is a further *sea change* feature that impacts long term rental availability. In 2011 only 77 per cent of private dwellings were occupied in Mandurah compared to 87 per cent for the state, reflecting the high incidence of holiday homes. Demand for affordable housing, especially rental accommodation, for low to medium income earners is a significant issue, as the crucial presence of the community housing organisation, Access Housing, in the city attests.

Figure 6: Median rent in Mandurah LGA, 2001-2011

(Source: Australian Bureau of Statistics, Census of Population 2001, 2006, 2011. Based on place of enumeration)

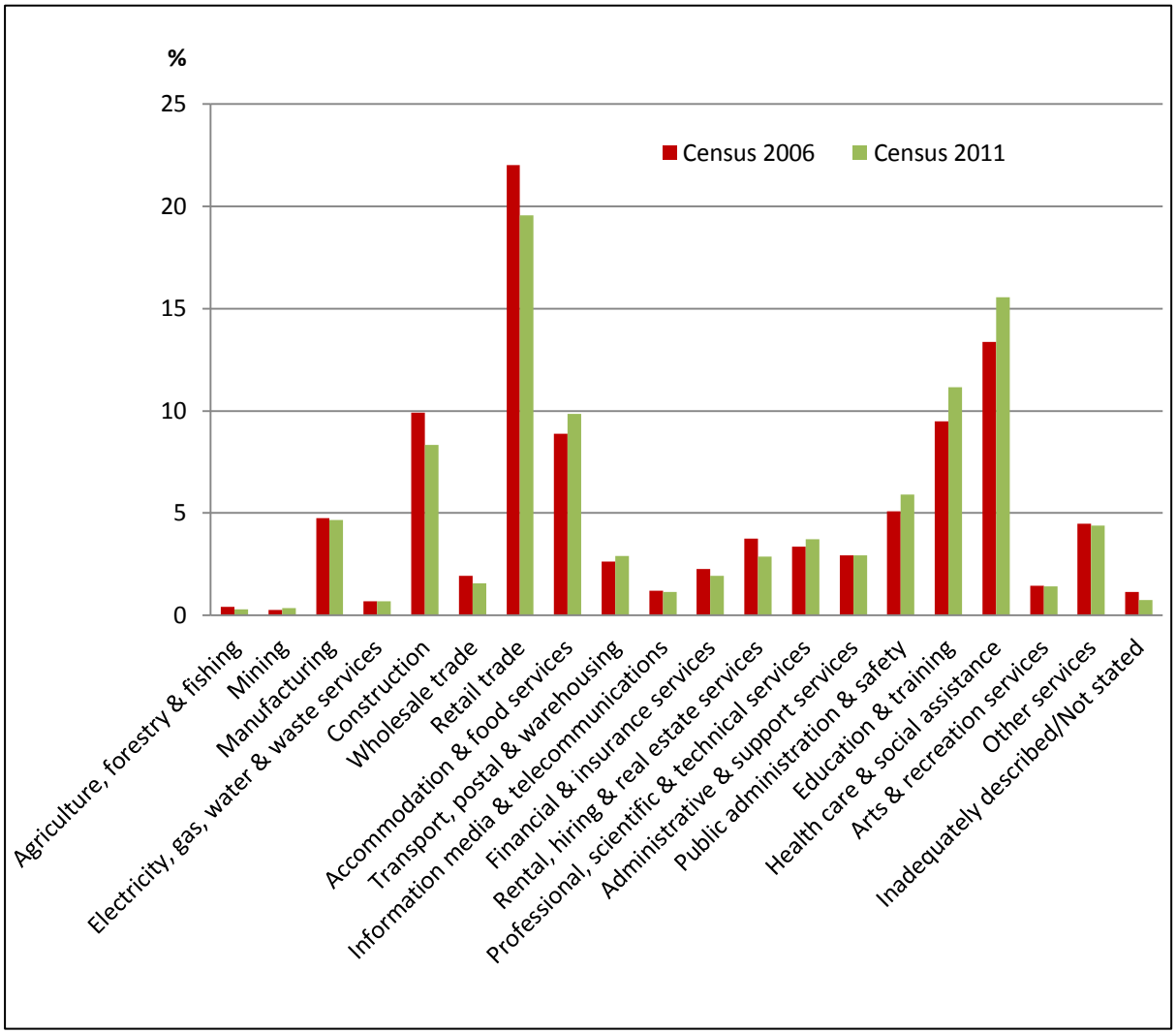


3.1.1 Employment trends: Mandurah LGA

In contrast to the wider Peel area where bauxite and more recently gold mining operations are now dominant economic activities (Hoath and Pavez 2013), Mandurah's economy and local employment, based on POW, remain heavily weighted towards retail, and health and social service provision driven predominately by local residents and the visitor/tourist markets. Despite a decline of several percentage points between 2006 and 2011, retail trading remains by far the most significant local employer as seen in Figure 7 below.

Figure 7: Industry of Employment, based on Place of Work (POW) 2006-2011

(Australian Bureau of Statistics, Census of Population: 2006, 2011, LGA, based on place of work)



3.1.2 LDC workforce estimates for Mandurah

In its submission to the House of Representatives "Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia", the City of Mandurah noted that Mandurah has one of the highest rates of FIFO workers in WA, and that anecdotal evidence pointed to an escalation in numbers since the 2006 census (Wilkinson 2011). However, as indicated in the methodology section, accurate measure of the total number of mining sector LDC workers resident in Mandurah is difficult to ascertain.

Minerals Council of Australia research in 2012/13, using ABS 2011 census Place of Work (POW) and Place of Usual Residence (POUR) data underscored by data from local government authorities in nine national mining regions (see KPMG for the Minerals Council

of Australia 2013), estimated that 1,349 usual residents of Mandurah were employed in the mining industry on a FIFO basis. Of these:

- 958 worked in the Pilbara, (a 187 per cent increase since the 2006 census);
- 316 worked in Kalgoorlie-Boulder, (a 46 per cent increase since the 2006 census), and;
- 75 worked in the Central West region (a 26 per cent decrease since the 2006 census).

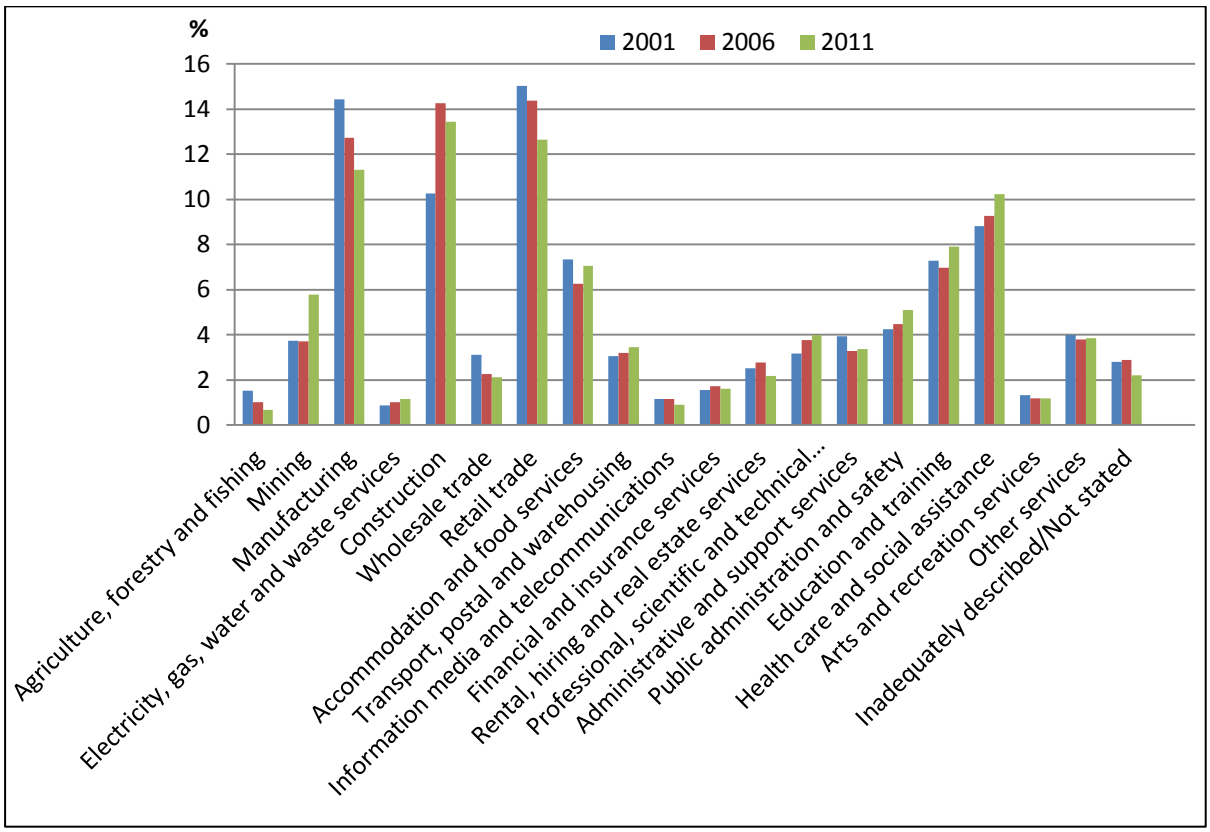
Because LDC workers who fly on private charters and DIDO workers are not recorded in this data, the figure is necessarily conservative. As indicated earlier, the desensitised 2011 employment data provided to a recent research project by one of several major resource companies in the Boddington area, revealed that it alone employed just over 155 residents from Mandurah on a DIDO basis plus a further 50 who resided in the near surrounds of the city (Hoath and Pavez 2013). Company data and anecdotal evidence collected for this and earlier research, indicates that contractors to the sector employ equally as many, if not more residents on an LDC basis at other locations in the state, nationally and overseas.

Finally, ABS census data for 2006 and 2011 indicates that no workers were employed at a mining workplace within the Mandurah LGA, (see Figure 7 above). The 4.5 per cent of the workforce enumerated in the LGA at the census count, in 2006, rising to almost 6 per cent in 2011 (Figure 8 below), is therefore indicative of the percentage of the resident workforce of the Mandurah LGA employed in mining elsewhere. Not all the enumerated cohort was necessarily employed on a LDC basis requiring regular extended absences from the home. As revealed anecdotally in interviews, some employed in the sector commute daily to their place of work, whether in the Perth CBD, at the Perth Airport, or elsewhere in the Peel region or South West region requiring occasional or shorter absences.

Differences in percentages of employees in the construction and manufacturing industries based on place of work and place of enumeration in the LGA, provide a further indication of the proportion of the residential population also engaged LDC in other, but possibly mining related sectors.

Figure 8: Mandurah (LGA) Industry of Employment, based on Place of Enumeration 2001-2011.

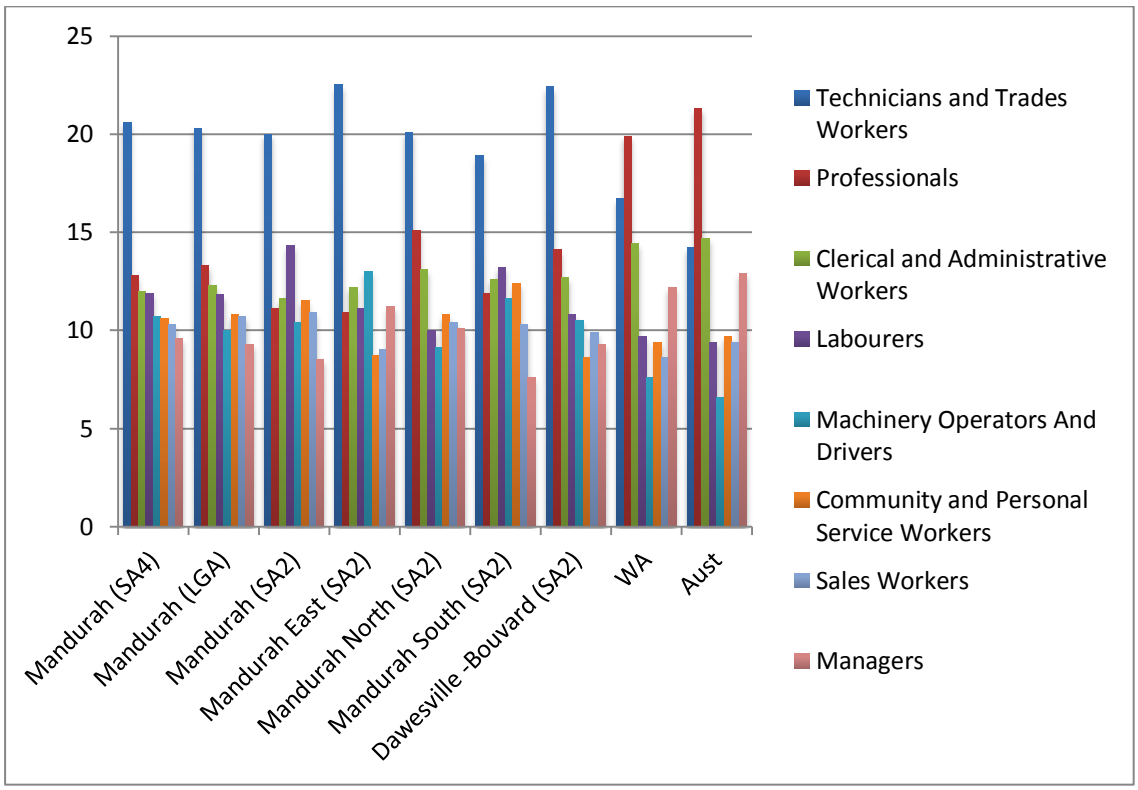
(Source: ABS Census of population: 2001, 2006, 2011 based on place of enumeration)



The above data are consistent with the very strong representation of technicians and trades workers recorded in the 2011 census (Figure 9 below) in the wider Mandurah area, and distributed across all suburbs. Again the data supports anecdotal evidence collected in this research of strong linkages between Mandurah as a residential hub and the industrial areas of Kwinana and Rockingham in the southern metropolitan area, and Mandurah's growing reputation as a 'tradesman's paradise'. The proportion of professionals and managers in the residential mix is correspondingly low compared to both Western Australian and Australian averages, with representation strongest in newer residential developments in Dawesville-Bouvard and also in Mandurah North.

Figure 9: Most common occupations: Employed people aged 15 years and over (Mandurah)

(Source: ABS QuickStats 2011 Census, place of usual residence)

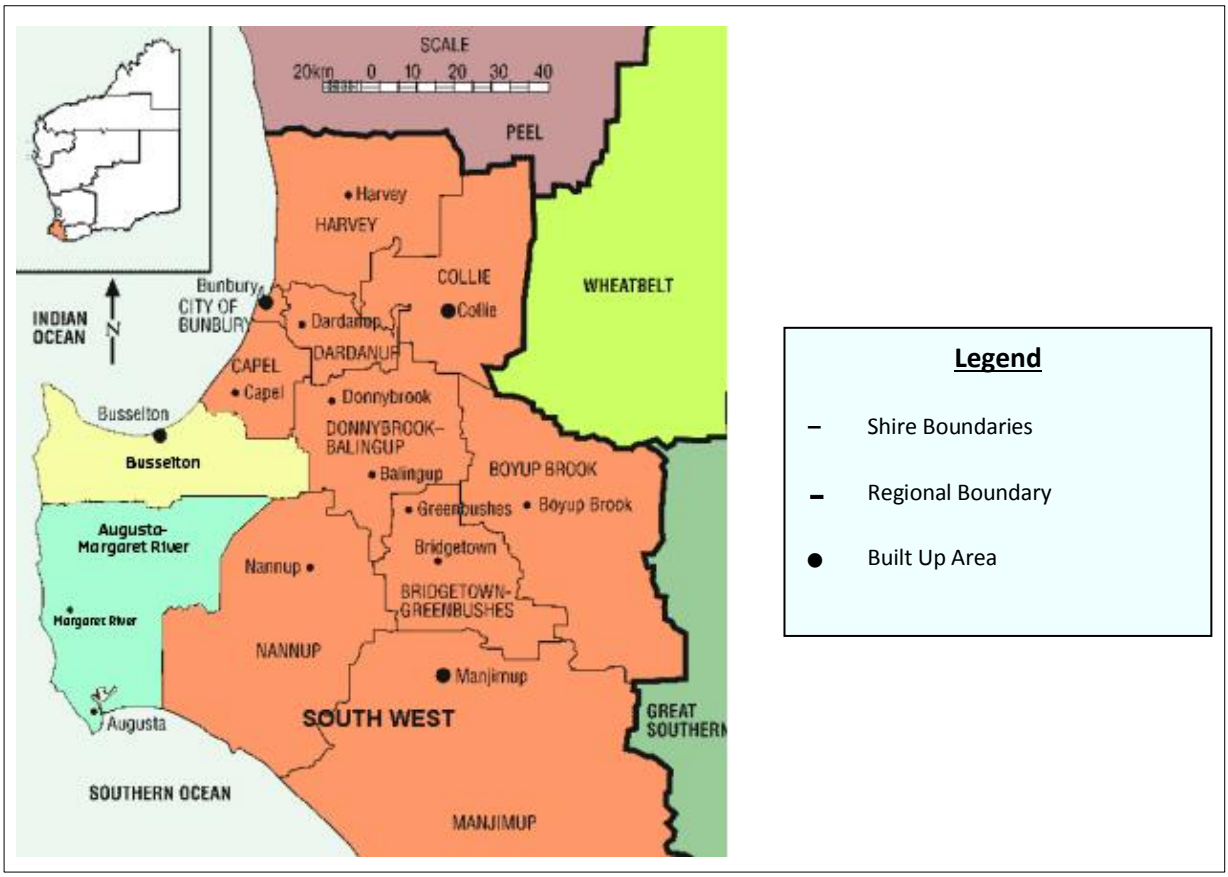


3.2 Case Study 2: Busselton, Augusta-Margaret River Area:

Busselton, 220 kilometres south of Perth on the coast, was designated a city early in 2012. It has a population of 33,000 people, accounting for approximately 14 per cent of the South West population, and has been consistently growing since the 1960s. Like Mandurah, Busselton and the surrounding area has also developed as a *sea/tree change* community resulting in diversification of the local economy. While broadacre agricultural industries underpin the local economy, new industries such as viticulture, tourism and leisure industries such as surfing are all well established. It is also a favoured retirement location.

Figure 10: The South West Region of Western Australia, including the twelve Local Government Areas and locations of major towns (built up areas).

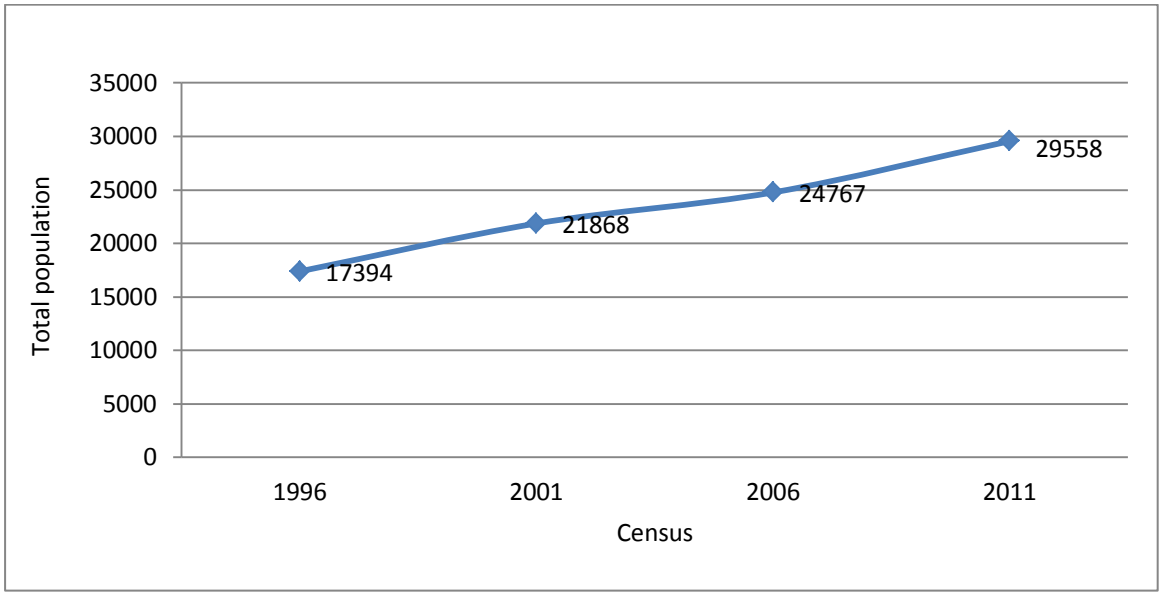
(Source: Regional Development Council of Western Australia, 1998-2001)



However along with other communities in the South West it has struggled to remain viable in the face of a weakened tourism industry due to the high Australian dollar, a glut in the wine industry, slim margins in the dairying industry and a relatively high proportion of social security recipients in many of the local government areas. Several economic audits of the local Busselton economy, supported by ABS statistics show that the assets, education and personal income descriptors for a significant proportion of the permanent population convey a picture of disadvantage, despite many residents having post-school qualifications (Haslam McKenzie and Johnston 2004; Australian Bureau of Statistics 2011; Hodby 2013).

Figure 11: Busselton Population Growth 1996-2011

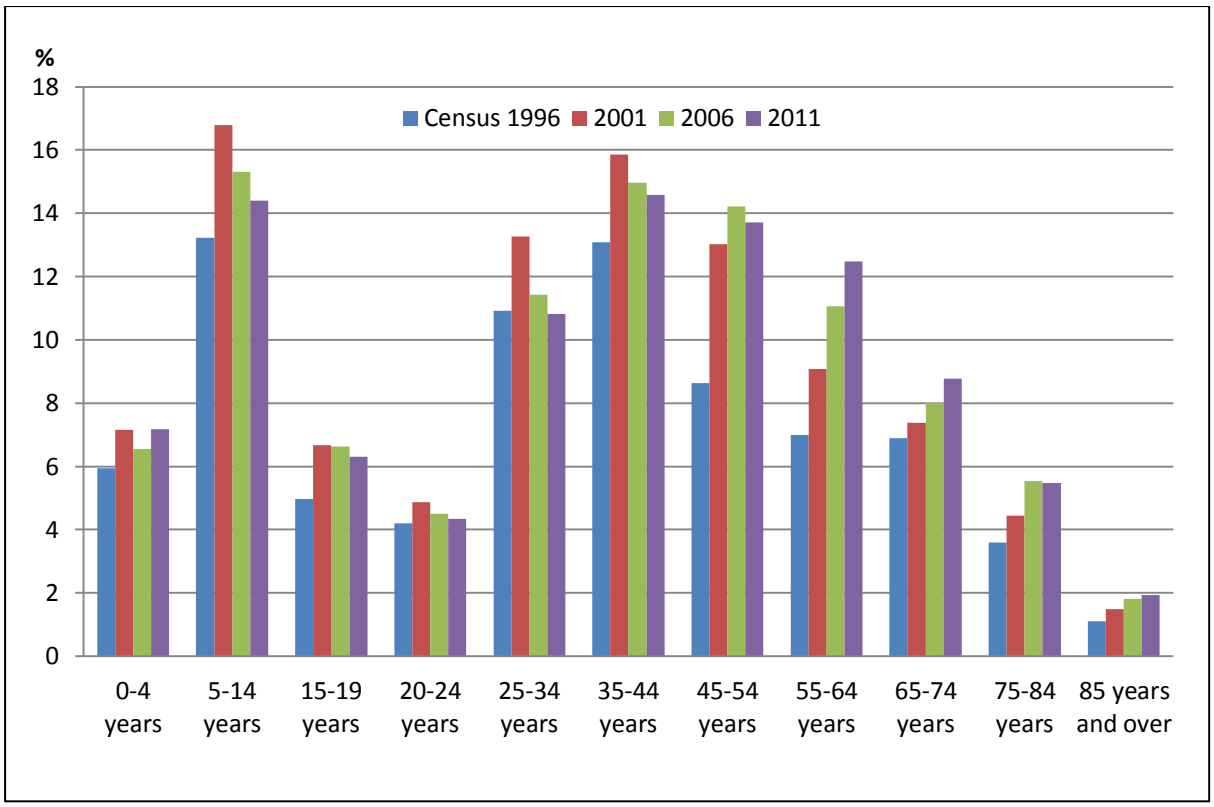
(Source: ABS, Census series. This graph is based on place of enumeration)



The several decades of strong population growth in Busselton has been characterised by population churn that continues to be a hallmark of the South West of Western Australian more generally (Figure 11). For the two intercensul periods 1996-2006, Busselton had an ageing population. In the first period, growth was recorded in all age brackets but was especially strong in the 5-14 and 45-54 years category. Between 2001 and 2006 however, the number of residents aged 65 and over increased by 30 per cent, while younger age brackets experienced an absolute decline. The median age of 38 years in the LGA in 2006 compared with the West Australian median of 36 years (Australian Bureau of Statistics 2008). The total population grew approximately 20 per cent between 2006 and 2011. The annual population growth rate of approximately 5 per cent for the year ending June 2011 was one of the highest in Australia (Australian Bureau of Statistics 2012). However the 2011 census also shows a gradual increase in the very young age cohort and a very significant increase in the older aged cohorts in the LGA population, but a decrease in the cohorts that tend to be most productive (20-55 years) (see Figure 12), perhaps unsurprising given the limited local industry to sustain this age group. At the 2011 census the median age had again increased to 39 years compared to the State median (36 years) as more young people left the area than had entered it (Australian Bureau of Statistics 2012).

Figure 12: Busselton Population by age and percentage 1996-2011

(Australian Bureau of Statistics, Census: 1996, SLA, based on place of enumeration. Australian Bureau of Statistics, Census of Population 2001, 2006, 2011, LGA, Based on place of usual residence)



The mean annual income of $43,665 in 2011 for the City of Busselton was considerably less than that of the South West region ($50,046) and all of regional Western Australia ($52,067) (Australian Bureau of Statistics 2011). The unemployment rate, at 5.3 per cent, was higher than for the South West region (4.7 per cent) and regional Western Australia (4.2 per cent).

Despite these readings, and its aging population, Busselton LGA ranks more favourable than Mandurah in current ABS SEIFA Indexes. Levels of socio-economic variability are also less pronounced. The LGA was ranked in the 7th decile of the state in both the Index of Relative Socio-Economic Disadvantage and the Index of Relative Socio Economic Advantage and Disadvantage (SEIFA Index of Relative Disadvantage, Australian Bureau of Statistics 2013), and even more favourably in the 8th decile in the Index of Economic Resources. It ranked relatively poorly in the 5th decile in the Education and Occupation Index, although again more strongly than Mandurah. However such measures can mask more localised pockets of disadvantage occurring within the LGA.

High housing and accommodation costs have been a feature of Busselton and much of the South West region for decades (Pendergast, Lambert et al. 2004; Australian Bureau of Statistics 2007). As shown in Figures 13 and 14, however the cost of accommodation in Busselton has escalated since 2001, becoming increasingly less affordable for low-income earners. Census data shows that 17 per cent and 15 per cent, respectively, of all residents in the Augusta Margaret River Shire and the City of Busselton are experiencing housing stress (Australian Bureau of Statistics 2012; Australian Bureau of Statistics 2013).

The trend again reflects the wider protracted housing and accommodation shortage in Western Australia (Beer, Tually et al. 2011; Demographia 2011; Shelter WA 2013) due to the mining boom and the unprecedented levels of state in-migration from the early to mid 2000s (Australian Bureau of Statistics 2012).

Figure 13: Busselton Median Monthly Mortgage Repayment 2001-2011
(Source: Australian Bureau of Statistics 2012)

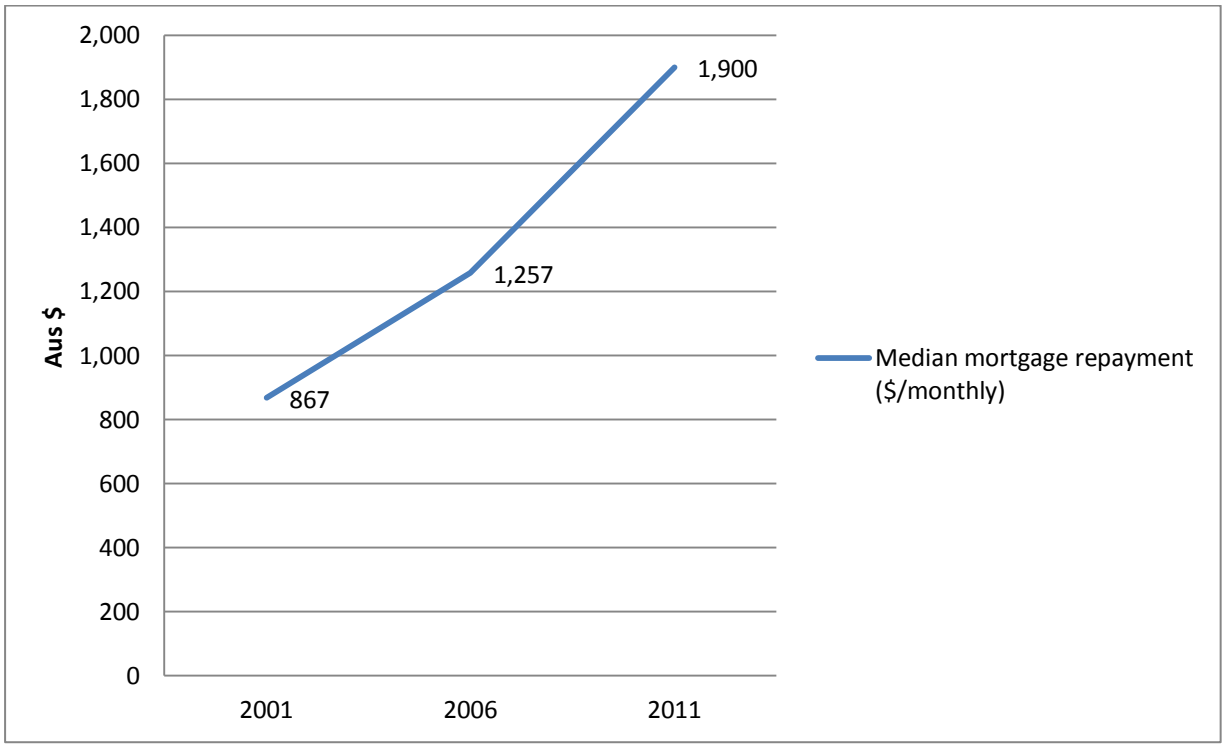
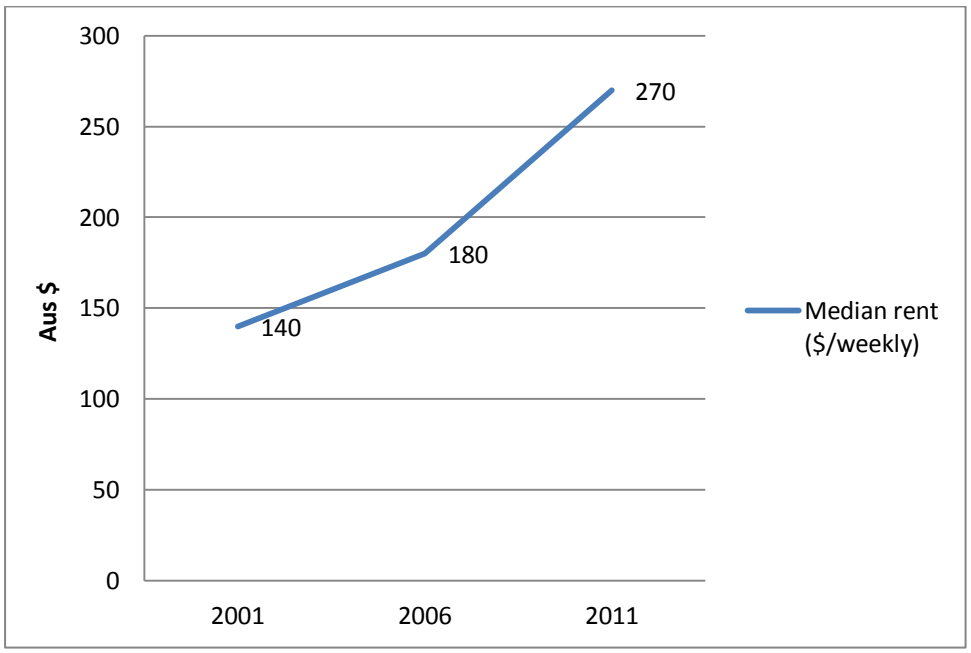


Figure 14: Busselton Median Weekly Rent 2001-2011

(Source: Australian Bureau of Statistics 2012)



It is also symptomatic of the inflationary effects of rapid population growth associated with *sea/tree change* trends in many regional localities. One aggravating aspect is the high proportion of housing in both Augusta-Margaret River and Busselton that is vacant for long periods of the year (see Table 3.1 below).

Table 1: Busselton Vacant Dwellings 2011

(Source: Australian Bureau of Statistics 2012)

LGA	Population (ERP) 2011	Occupied Dwellings	**Vacant Dwellings**
Augusta-Margaret River	**12,219**	4,210	2,089 **(33.2%)**
Busselton	**31,211**	10,999	4,253 **(27.9%)**
South West Region	158,615	55,988	13,345 **(19.25%)**

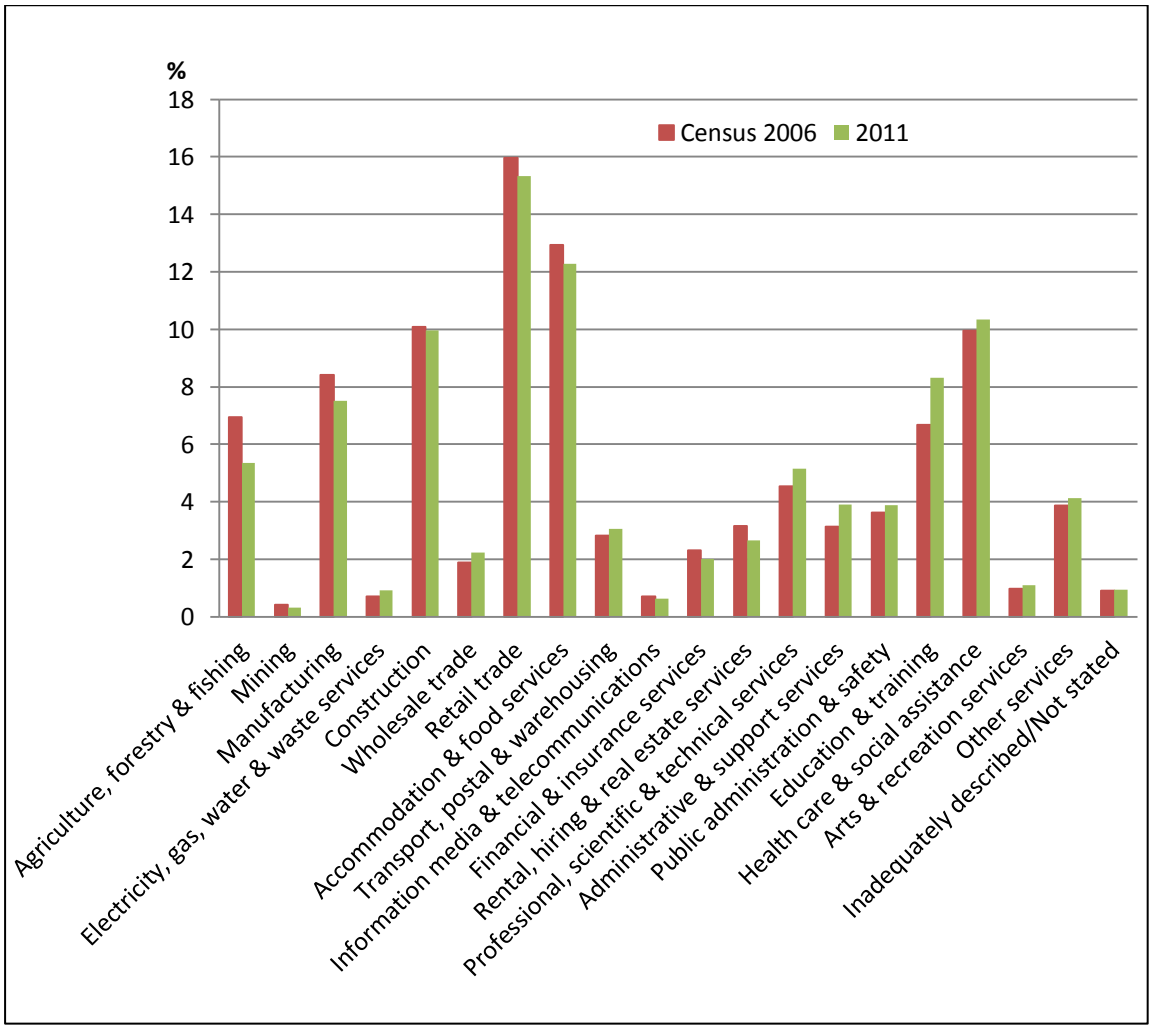
As with Mandurah, this is principally because they are second or holiday homes for mostly metropolitan-based residents. Furthermore, the City of Busselton has by-laws restricting tenancy occupation to no more than 90 days in housing which is designated for tourism.

3.2.1 Employment trends: Busselton

The Busselton local economy is not robust with employment trends skewed to unskilled and casual labour opportunities. This is underscored by ABS and BTRE industry data, which show a decline in the significance in 2011 of a number of key industries that were important employers in the 2006 census.

Figure 15: Busselton Industry of Employment POW by percentage, 2006-2011

(Source: ABS, Census series, based on place of work)



The proportion of the workforce employed locally in retail, which is the single biggest industry by employment in the Shire, declined. So too did the proportion in accommodation

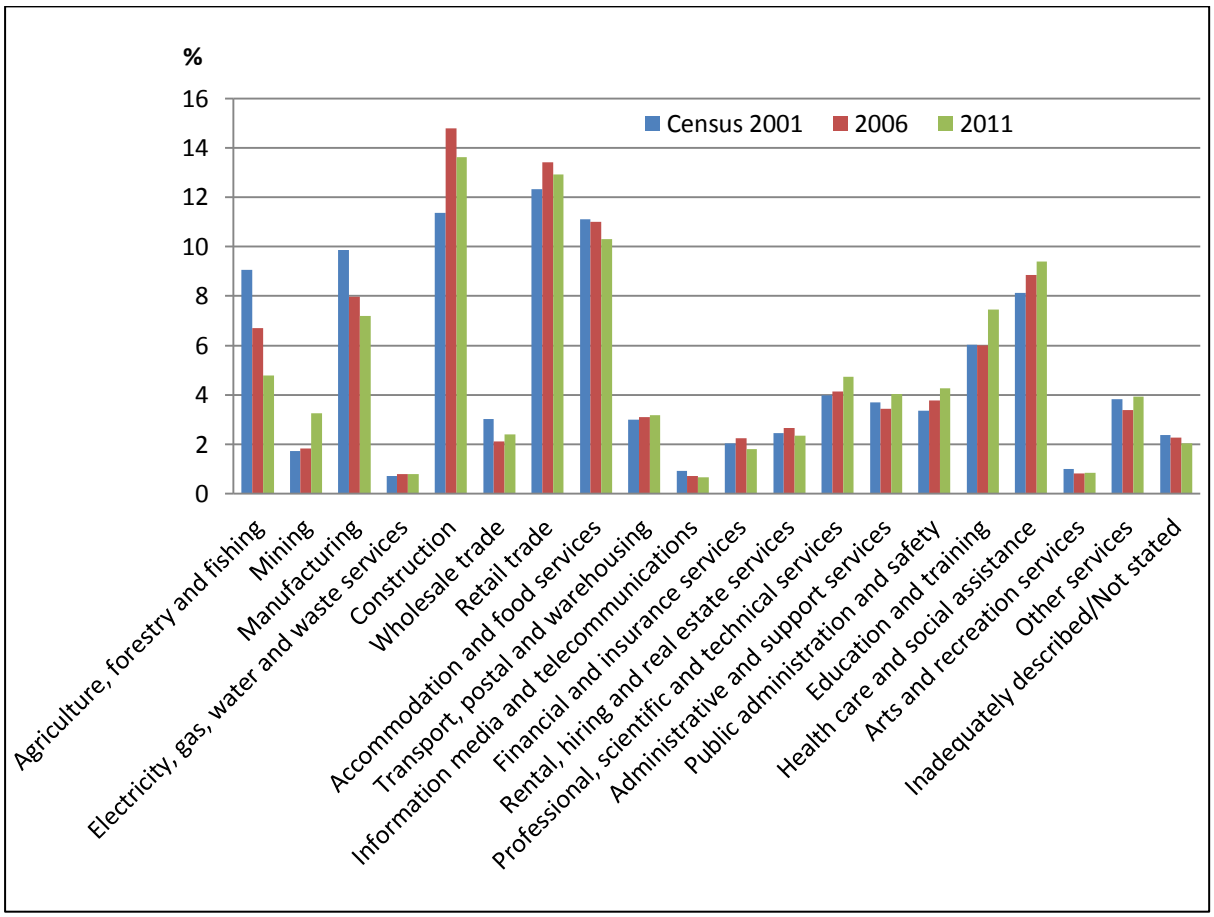
and food sectors. This is not surprising given that both sectors are oriented to tourism, which has been adversely affected by the strong Australian dollar. Importantly, retail and accommodation and food, which have been the mainstay of the Busselton economy, are low end socio economic employers and tend to be part time so there is likely to be limited investment potential at a local level. This graph shows that in the 2011 census, consistent with the need to service an ageing population, a significant number of jobs were dedicated to health care and social assistance. The 2011 census also shows that, based on place of work, the reduced capacity of agriculture, one of the enduring industries of the Busselton and South West region, to provide employment.

3.2.2 LDC workforce estimates for Busselton

The data showing industry of employment by place of enumeration (see Figure 15) shows that there was a significant increase in the number of people who live in the City of Busselton who, in the intercensul period 2001-2011, are involved in mining. As with Mandurah, given that there is negligible mining locally, most of that increase would likely be due to LDC arrangements. Notably, the numbers involved have escalated since 2006 when Rio Tinto introduced charter flights direct to their Pilbara mine sites.

During that time, the Newmont Asia Pacific goldmine at Boddington became operational and the work undertaken by Hoath and Pavez (2013) clearly shows that many employees who are Busselton and Augusta Margaret River residents work at this and the nearby bauxite mines, commute by DIDO. An audit by the Busselton Chamber of Commerce at the Busselton airport in 2006 found that 3,000 LDC workers lived within an hour's drive of the Busselton airport. Since then, Rio Tinto has targeted Busselton as a workforce source for several company mine sites, almost doubling the number of local LDC workers.

Figure 16: Busselton Industry Employment POUR, by percentage 2001-2011
(Source: ABS, Census series, based on place of usual residence)



Data provided by Busselton airport in March 2013 showed a steady increase in the number of "passengers through the doors" each month over the previous year. The data does not accurately represent the number of FIFO workers flying out of Busselton in any given month. Because any individual will pass through the airport several times in the month depending on their roster, with someone on a two week on x one week off roster for example potentially being counted three times in the one month. On a weekly average, approximately 65 – 75 passengers depart Busselton on the Tuesday flight, with approximately the same number arriving on the afternoon return flight. Wednesdays started out with about 30-35 passengers but has steadily increased over the past few months to approximately 50-55, again both out and in coming, but spread over two return flights. Thursdays are steady at approximately 35-40 passengers both in and out on the day.

Table 2 Busselton Airport Data

(Source: City of Busselton Airport, 2013)

Busselton Airport: Passenger numbers through the door April 2012-Feb 2013										
Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
568	660	200*	996	1250	1122	1187	1090	1159	1415	1023
*incomplete recording										

Rio Tinto however is not the only mine work employer. Interviews conducted for this research show that Busselton is home for many resource industry workers but to date, Rio Tinto is the only company regularly using Busselton airport. Other resource industry workers either DIDO or drive to Perth and take a flight to wherever they work. Interviews provided evidence that while the majority of workers fly to a Western Australian mine or rig destination, there are also workers who commute from Busselton, via Perth to overseas mine sites. Interviews and survey results indicate that direct flights from Busselton to Western Australian mine sites was the preference for many workers and people were willing to change companies and/or move to the South West if the opportunity arose. The 2011 census clearly shows evidence of this.

4. LDC: ECONOMIC IMPLICATIONS FOR LOCAL ECONOMIES

As a consequence of the boom from early 2000, the mining industry has maintained one of the highest wage structures of all industries in Australia. The increase in the LDC population in both case study areas has direct economic implications for both the individual employees and their families, who benefit from high salaries, as well as indirect multiplier effects on the local economy, derived from local income expenditure or wealth generation. Interviewees, reporting from direct experience and hearsay, typically indicated that the difference between working at an LDC position as opposed working in an equivalent position locally carried an annual salary premium of approximately $40,000.

The extent of the income multiplier effect on the local economy, ensuing from the presence of additional income earners in the local economy, or the movement of existing income earners onto higher wages, depends on a number of variables. The following section examines direct and indirect effects of LDC income for each case.

4.1 Economic contribution to Mandurah

Comparative analysis of ABS 2011 census data between the top five industries of employment in the greater Mandurah area (SA4), the Mandurah local government area (LGA), and the smaller nested suburban districts (ABS Statistical Areas 2), reveals that the LDC workforce, and hence its indirect economic effects, is geographically dispersed across the greater area. Metal Ore Mining was the fourth most important category of employment by industry within the greater Mandurah area. It accounted for a total of 1,440 people, comprising 4.3 per cent of the workforce were employed in the Mandurah LGA, the category also ranked fourth, accounting for 4.5 per cent of employed people. In Mandurah suburb (the city centre, ABS, SA2), it ranked third with 109 people (3.8 per cent of the workforce), in North Mandurah, fourth, with 236 people (4.2 per cent), East Mandurah, second with 91 people (4.5 per cent), South Mandurah fourth with 148 people (4.5 per cent), and Dawesville-Bouvard, second, with 113 people (4.9 per cent of the workforce).

While metal ore mining is the most significant resource sector employer in Mandurah, anecdotal evidence collected in interviews, indicates that residents are also employed by resource companies operating in other parts of the sector as well as contractors to the

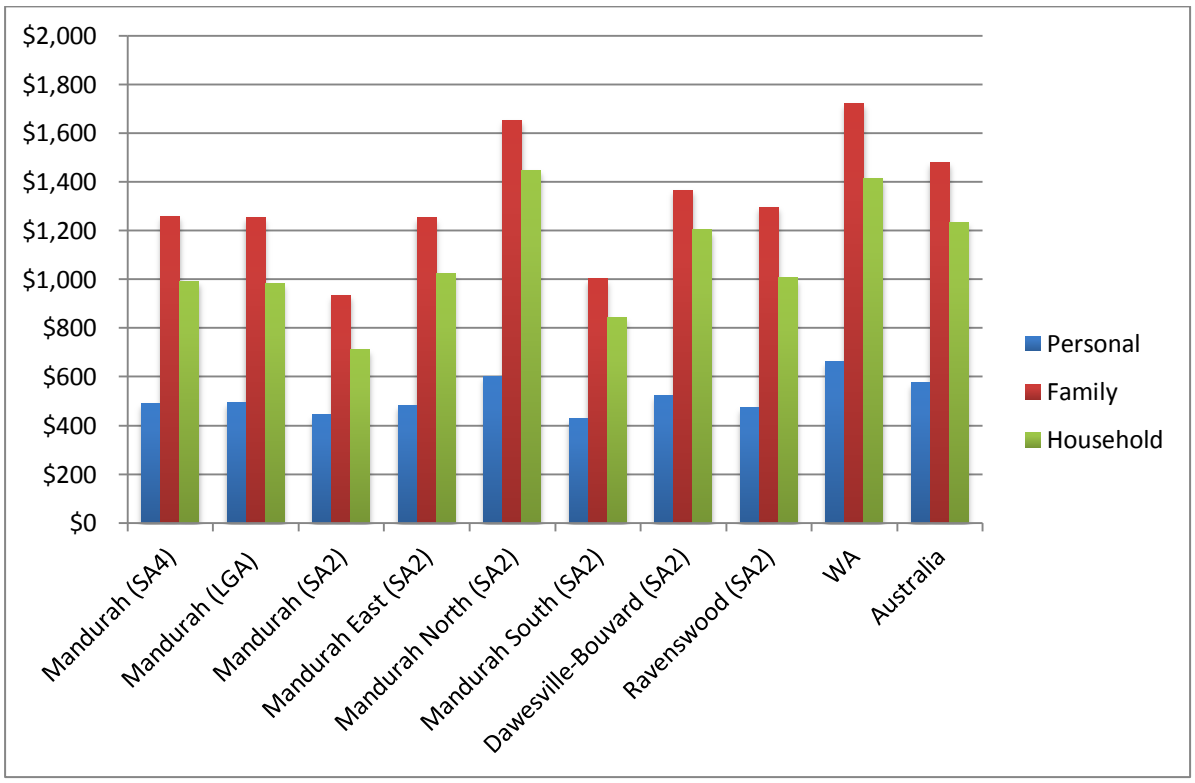
sector. Notably, the same ABS data reveals a strong representation of employees in the road freight industry in East Mandurah, with anecdotal evidence indicating that a significant component of their work is long distance haulage to mine sites in remote locations.

Despite the generally elevated salary structures within the sector, and the higher loadings for LDC work, interviewees in both case studies highlighted the hierarchical structure of the industry, and wide range in income-earning capacity within, based on professional qualification, experience, managerial responsibility and level of labour scarcity. There are further significant differences in the rewards typically derived in descending order, from employment with oil and gas off-shore operations, direct employment in the major resource companies, the smaller resource companies, and finally sub-contract or casual arrangements with contractors to mining operations. The associated social implications are referred to in Section 5 below.

Although the personal median income is lower for the greater Mandurah area than for the Western Australian median, the small area data (ABS SA2) at Figure 17 indicates the degree of internal disparity in household and family incomes, with the highest median incomes being recorded in North Mandurah and Dawesville-Bouvard. Median Household income in North Mandurah exceeds the State median, although the personal and family median is marginally lower, possibly reflecting the number of LDC shared income arrangements.

The evidence in the above section, collated from a number of sources, suggests that a significant proportion of the LDC workforce resident in Mandurah is employed in trades and semi-skilled or unskilled roles. Many are therefore remunerated at the lower end of the LDC salary scales, and do not perceive themselves to be unduly flush with funds. Nevertheless, the financial advantage of LDC work measured against comparable local employment is considerable, with obvious flow-on benefits.

Figure 17: Mandurah Median Weekly Income: People aged 15 years and over
(Source ABS QuickStats 2011)



Interviewee comments and results from the small Mandurah survey cohort indicate that residents of Mandurah spend locally for the majority of household goods and services, including vehicle maintenance, although some entertainment and clothing expenditure also tends to occur in Perth. Because of the larger size of the City and greater number of shopping areas, the effects of LDC income expenditure are more diffuse across the City. The purchase of at least some goods online is also common, with many LDC workers admitting to indulging in online shopping as a form of amusement during downtime on work blocks, with 'presents' or 'toys' to anticipate on their return home. Similarly, at-home spouses acknowledge that on-line browsing can serve as an antidote to the loneliness and boredom of being confined to home alone in the evenings. Consistent with Mandurah's attractions, boating and fishing activities are central to many LDC workers' enjoyment of the area, and preference as a place of residence. Many expend considerable amounts on water sport and recreational equipment.

The qualitative interview data also confirmed a finding from earlier work in the Peel hinterland (Hoath and Pavez 2013) that a number of people entering the LDC resource sector workforce have done so to develop, supplement or sustain small businesses especially, in the agricultural sector in the Peel region, or to recover from financial setbacks such as those incurred through divorce.

4.2 Economic contribution to Busselton

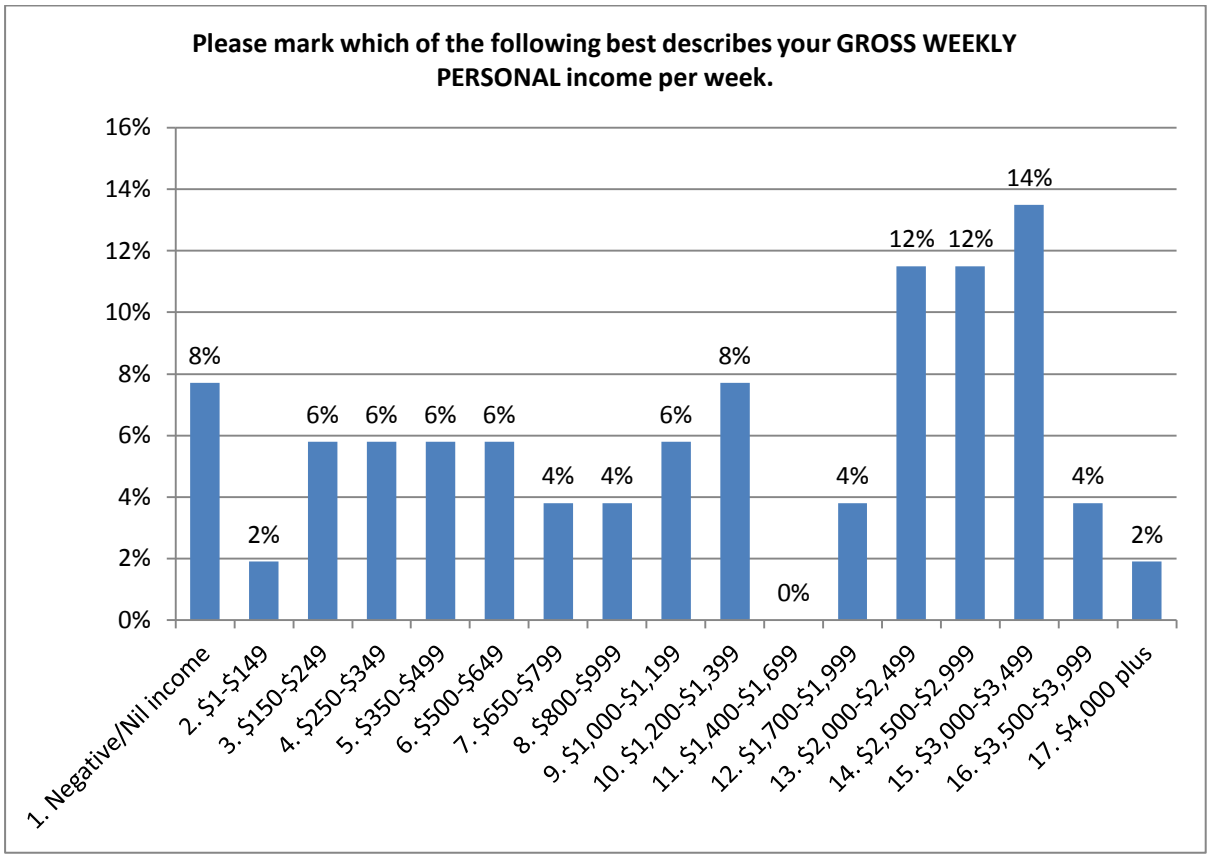
The local response to Rio Tinto's focus on Busselton from the mid 2000s as a potential mine worker *source* locality was typically positive. The City of Busselton worked with the company to facilitate regular flights from the Busselton airport, anticipating that mine incomes would increase local economic investment and expenditure.

It has been calculated that Rio Tinto alone spends about $9 million on wages, community investment, contractor and other payments in Busselton per year (Hodby 2013). This includes $343,500 on local sponsorship and grants, including an Aboriginal football carnival and other sporting events, a film festival and musical gala. About $176,000 is spent by the company on Busselton airport fees, which flows directly to the local government authority. Prior to the FIFO services, the Busselton airport, which opened in 1997, was under-utilised and operating at a financial loss.

However, because the Busselton airport does not have security clearance hardware, only charter or private flights can operate out of the airport, the majority of which are chartered by mining companies. The airport recently received a grant from the Regional Development Australia Fund to upgrade security at the airport that will facilitate the expansion of flight services enhancing potential socio-economic benefits for the South West region.

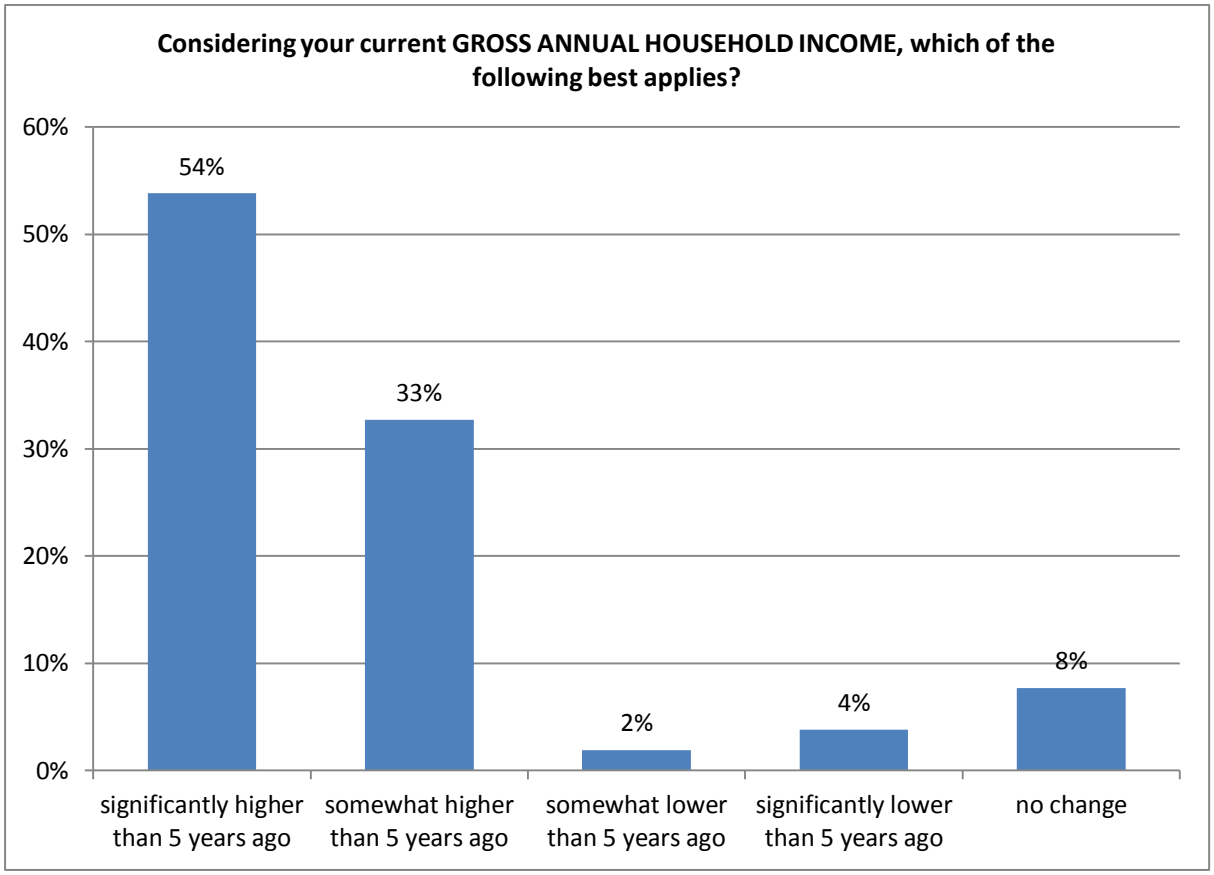
The recent high demand and associated salary structures have brought direct and immediate economic benefit to local individuals now employed in the industry as reflected in Figure 18.

Figure 18: Busselton survey respondents: Gross weekly personal income



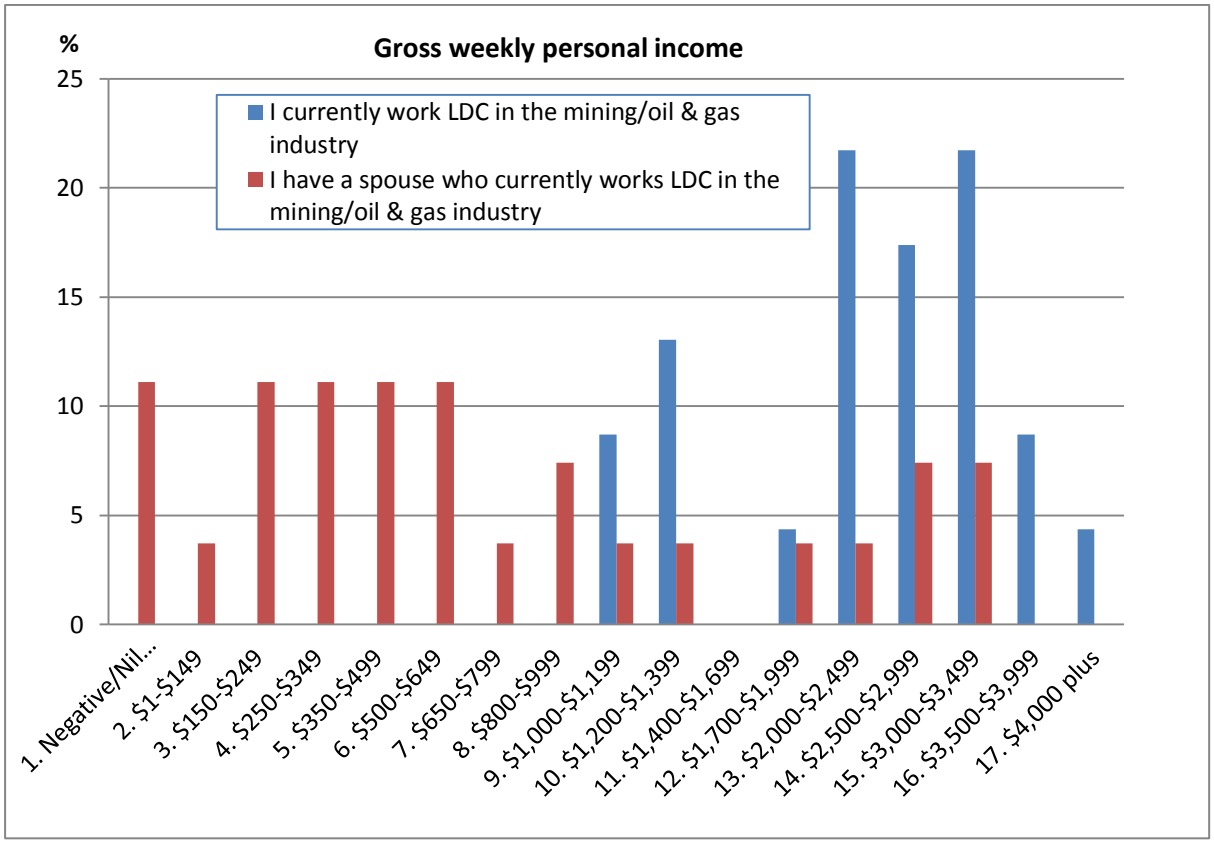
The majority of survey respondents also indicated a significant increase in household income in the past five years (Figure 19 below). This is consistent with assessments provided by a number of interviewees who as long term residents had taken up LDC employment as a means to remain in the area after struggling to survive as small business owner operators, especially in the construction trades or tourism industry, or had been employees of SMEs that were struggling, especially post GFC.

Figure 19: Busselton survey respondents: change in income



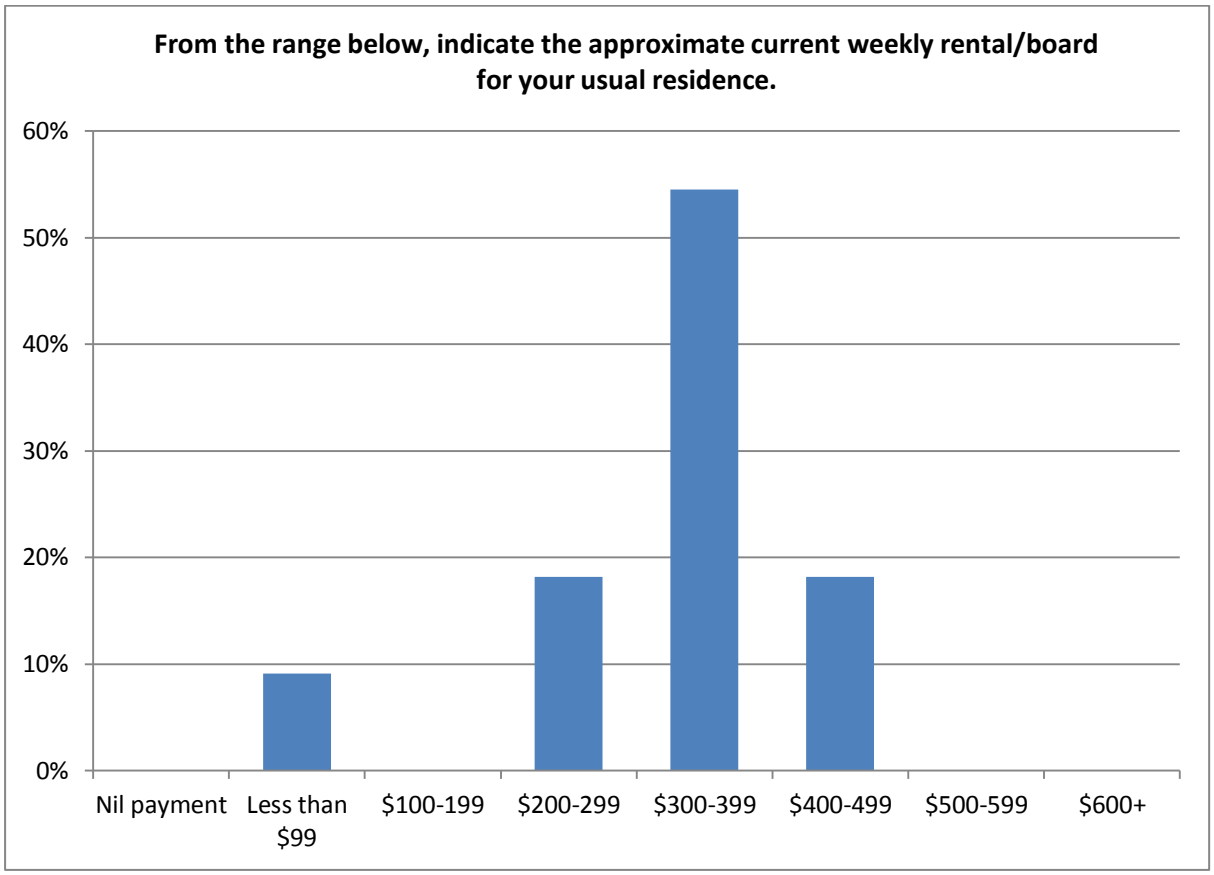
What is also notable from the survey data however, is the significantly different personal income distribution for respondents employed in LDC and those who are the spouse of an LDC worker (see Figure 20). The latter are typically engaged solely in home duties, or employed locally at lower wage levels, and often part time or in a casual work capacity. If a spouse is responsible for the care of young children, it is difficult to maintain a full time job unless regular and affordable childcare is available while the commuting spouse is away. Interviewees suggested that this is rarely available.

Figure 20: Busselton survey respondents: LDC and LDC spouse income distribution



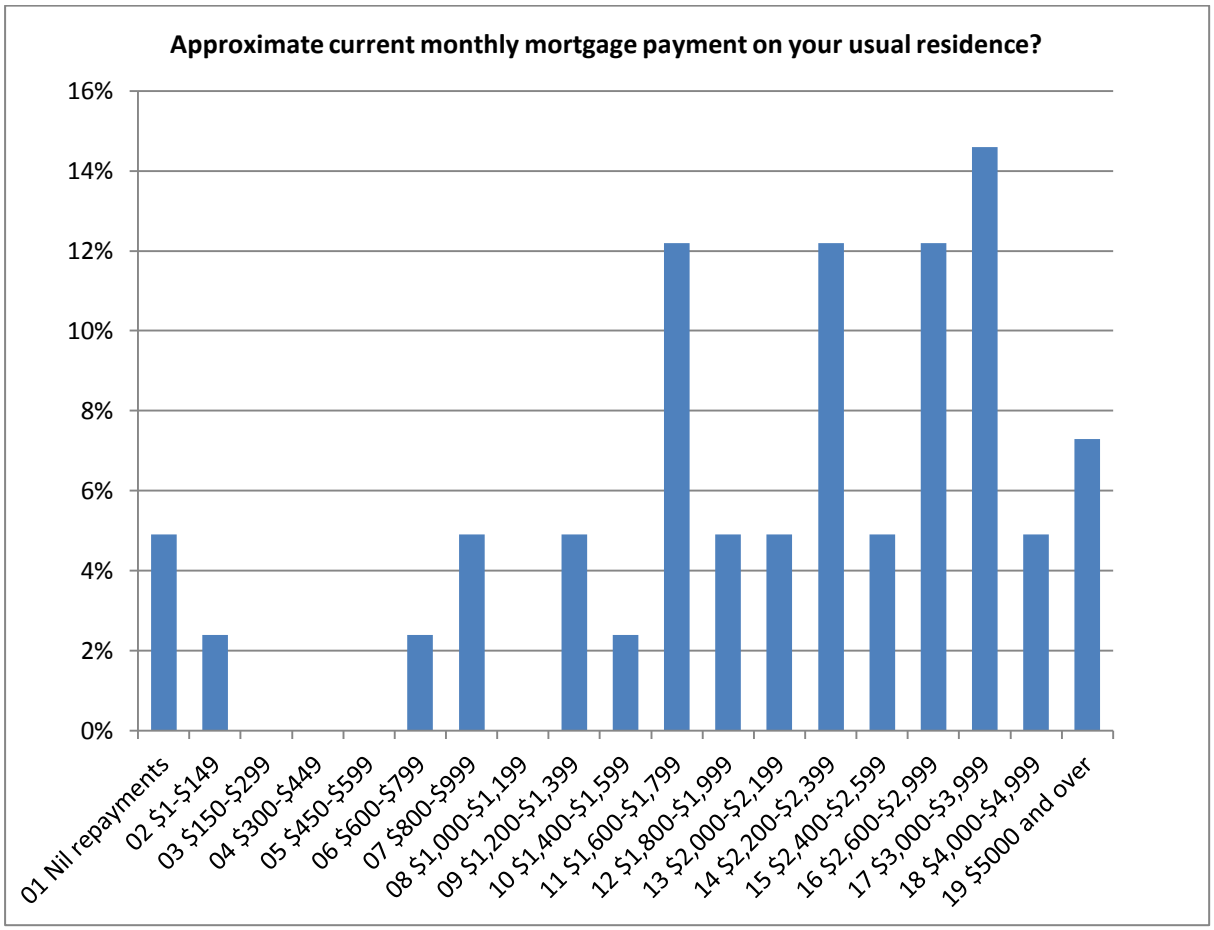
Just under 20 per cent of survey respondents rented their home. It is likely that at least a portion of rentals paid in 2013 by survey respondents circulates in the Busselton economy, given that the local government data indicates multiple home ownership by some Busselton residents. Most respondents were paying significantly higher weekly rental than the ABS median reported in the most recent census (2011). High housing costs mean that a significant proportion of weekly household income is tied up in accommodation and therefore not available to be spent on discretionary items.

Figure 21: Busselton survey respondents: rental costs



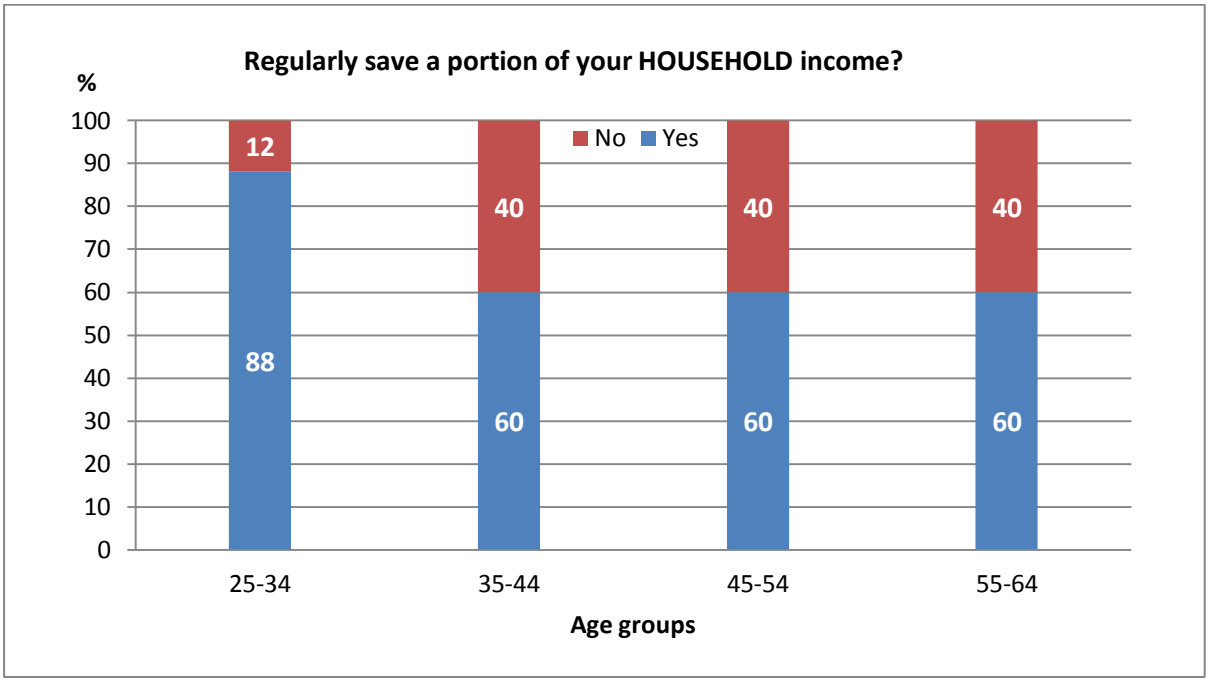
The survey data and interviews reflect the high value that many LDC workers in the area place on home ownership. Most indicated a willingness to commit to a significant level of debt in order to acquire a desirable home/location. While real estate values have dropped in the City of Busselton interviewees who owned homes were hopeful that real estate prices would return to the elevated levels of 2005-11 in order that they reap a high return on investment if they should sell. As discussed above, the level of mortgage commitment effectively reduces the local multiplier effect flowing to other local sectors from mining income.

Figure 22: Busselton survey respondents: approximate monthly mortgage payment on usual residence



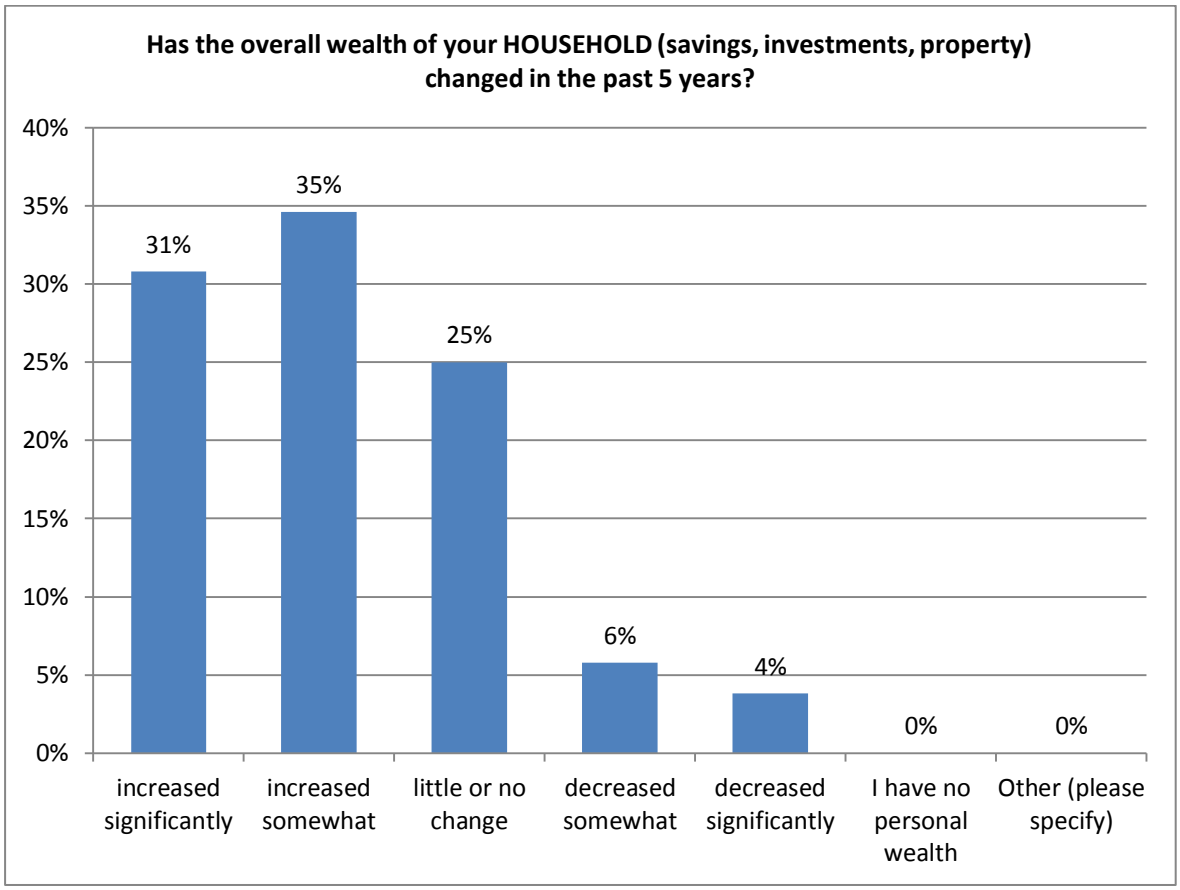
Similarly, and in contrast to popular images of reckless spending by LDC workers, the majority of survey respondents reported regularly saving a portion of their income, although it was beyond the scope of the survey to probe the detail. While this is a positive indicator that this cohort of LDC workers are maximising their current income for future wellbeing, the centralised nature of financial institutions means that such savings contribute to income leakage from the local economy.

Figure 23: Busselton survey respondents: Household savings



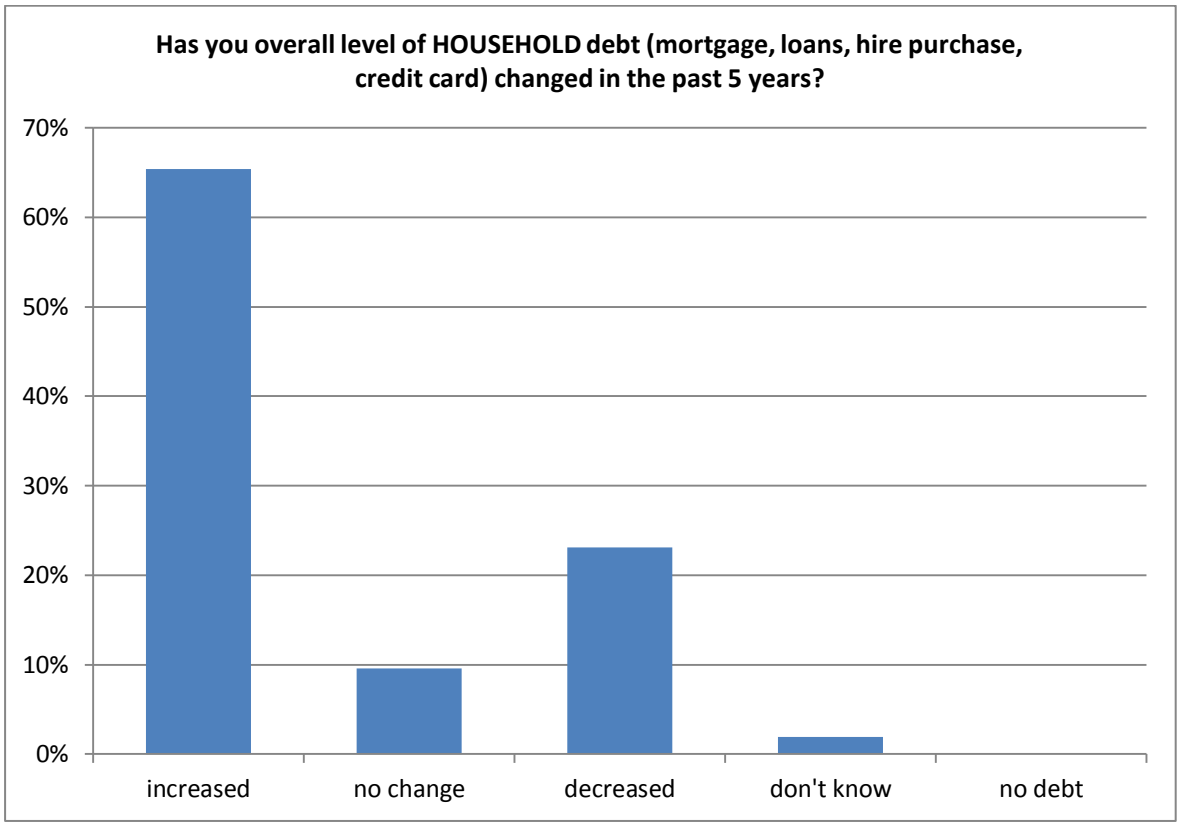
Possibly as a reflection of their home investment in a *sea change* community, over 30 per cent of respondents reported that their overall wealth had increased significantly in the past five years. Again however, it was made apparent during interviews, that contrary to the more negative press, a significant number of respondents entering the industry as early as 18 years of age immediately began saving for their first home, and some now in their thirties had accumulated multiple investment properties.

Figure 24: Busselton survey respondents: Change in wealth



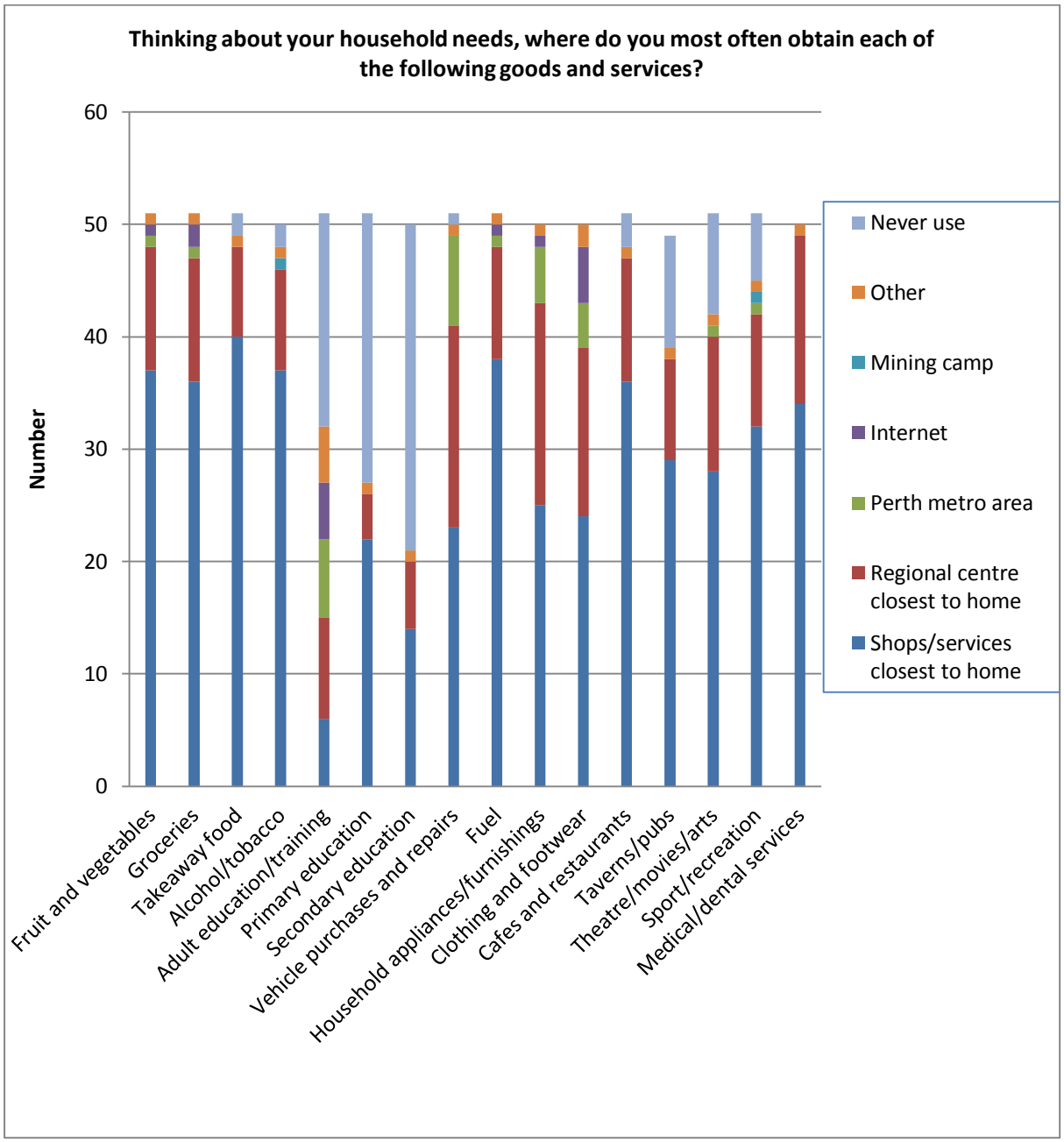
However 65 per cent of respondents reported that their debt level had increased in the past five years. Although the proportion with the same or increased debt levels is similar to the proportion reporting any sort of wealth gain, it was again beyond the scope of the survey to probe the detail. However at another point in the survey, approximately 20 per cent admitted often feeling anxious about money and finances and a further 45 per cent indicated they were 'feeling somewhat anxious'. After undertaking the face to face interviews and discussing at length the issues of financial management, debt levels, wealth creation and investment, anxiety regarding money and finances is likely related to the debt load that many individuals have committed to. Some interviewees spoke frankly about their level of debt with little prospect of servicing it from any alternative source of income but that of the level of current LDC incomes. Many LDC workers acknowledge that they were financially vulnerable should their LDC income discontinue. A number of interviewees in both case studies also commented on a strong consumer culture among their LDC peers, which fostered 'keeping up' behaviours and concern about having the 'right' goods.

Figure 25: Busselton survey respondents: Debt level



The survey also confirmed that most respondents shopped locally for everyday goods but were inclined to go further afield for larger items, mainly due to lack of choice and price. Separately in interviews, there was considerable resentment expressed at being expected to pay a premium as an LDC worker. Many interviewees reported that many in the local community viewed LDC workers as 'able to pay a premium' and suspected that quotes and even invoices were inflated when it was known they were LDC workers. While there are opportunities for the local business community to respond creatively to opportunities presented by LDC, and this has been done by small businesses such as an early morning coffee van at the airport for the LDC flights, the issue of providing choice in a small still relatively limited regional market remain challenging. Most interviewees indicated that at least a proportion of their income flows outside the Busselton area. Household furniture, clothing, entertainment and whitegoods were often reported as purchased in either Bunbury or Perth.

Figure 26: Busselton survey respondents: Income expenditure



Many interviewees also indicated spending at least some time holidaying, usually with their family, outside of their local community, often is other parts of Western Australia. The strong Australian dollar has been an inducement to holiday overseas and Bali was also cited holiday destination, but so too were other overseas destinations. Expenditure overseas represents a leakage, not only to the local economy but to the broader Australian economy.

5. SOCIAL IMPLICATIONS OF LDC

For many LDC workers and spouse, LDC is primarily an opportunity to sustain a better livelihood. The apparent advantages of higher income and benefits packages are frequently offset by associated costs measured in terms of personal and social wellbeing.

5.1 Infrastructure and service demand

Interviews with service providers in both Mandurah and Busselton highlighted the pervasive influence of LDC on the economic and social fabric of both case study sites. A number of those interviewed in their professional capacity were also able to provide personal insights as the spouse of an LDC worker, or had other family members or neighbours currently or previously engaged in LDC work.

These sets of interviews reinforced the significance of the issues, raised in the submission from the Shire of Mandurah (Wilkinson 2011) to the Senate FIFO inquiry, of the lack of quality data available concerning the social implications of LDC workforce arrangements for *source* localities. Providers, across a range of services in both case study areas, noted that an increase in demand on their services from individuals or families engaged in LDC, was contributing to a quite critical increase in service demand. However, no service provider consulted was in the practice of routinely documenting the LDC status of its presenting clientele. This means that data on the type, scale and intensity of community service demands particular to LDC related lifestyles, or to an increasing LDC population cohort, remain largely anecdotal, and possibly quite conservative. One service provider noted,

> *We only know that an individual or a family is LDC if it comes up as an issue in relation to the service they are receiving. If they present for emergency assistance for example, there is no reason for us to ask, or for them to mention they are LDC. We wouldn't know.*

Nevertheless, interviewees generally considered the apparent increased level of demand from LDC individuals and families to be indicative of the greater proportion of LDC employees and families in the catchment population than previously, rather than being indicative of the cohort having a greater per capita need for the particular service in question.

These informal assessments are broadly consistent with separate studies by Sibbel (2010) and Greer and Stokes (2011) that found no definitive evidence that LDC work arrangements are correlated with the divorce and separation rates of workers. Likewise a study investigating the incidence and prevalence of male to female intimate partner abuse in the Bowen Basin region in Central Queensland, where the mining industry has expanded rapidly since 2004, found the prevalence of reported physical and non-physical intimate partner abuse for the Bowen Basin to be broadly similar with prevalence reported in a contemporaneous nation study (Nancarrow *et al* 2006). In other words, the findings suggest that 'any direct influence of mining cultures and workforce management practices on the incidence or prevalence of intimate partner abuse is limited' (Lockie et al 2009).

While their views generally accord with these findings, relevant service providers working in the case study areas observed that the demands and rhythms of LDC intersect with existing tensions in a number of ways. Where, for example, there is a history of verbal or physical abuse in LDC households, the tensions associated with arrival home and departure from home make the likelihood of incidents greater, at such times. They also argue a need for increased services and points of delivery outside existing service centres where demand is increasing. Many have been careful to stress however, that while mining companies have an obligation as employers to support such services to meet the growing demand within communities where their employees are resident, the support should be directed towards expanding, enhancing and adapting existing services and programmes to make them more accessible to those constrained by distance and an LDC work schedule. Similarly, local government authorities and state agencies need to be cognisant of the different demands on their services by individuals and families whose work patterns do not conform with the norm.

These observations are consistent with the recommendations made by Lockie et al (2009), that although their findings did not demonstrate a causal link between mining and domestic violence, where substantial population growth stimulated by mining activity has resulted in a commensurate increase in domestic violence, 'the gravity of the consequences for women subjected to abuse' was such as to make 'a compelling case for the expansion of specialist support services'. Most interviewees acknowledged that, more broadly, the linkages

between LDC workforce arrangements and personal behaviours are complex and remain quite poorly documented and understood.

There was however a general consistency in reporting across both case study sites, and by regional and metropolitan personnel that, while not the primary cause, where there was the propensity for personal or relationship problems to manifest, the stresses particular to a LDC lifestyle tend to have a compounding effect. The issue is now being taken up by several state agencies who are conducting pilot studies to develop a clearer understanding of the scale and complexities of change occurring within their service domain (Department for Child Protection and Family Support, 2013).

Many noted the need for resource companies to offer pre employment awareness and preparedness training to facilitate informed choices concerning the take up of LDC employment, not only by the potential LDC worker but also their spouse and family. One important issue is the need for a process that discourages workers from overcommitting financially before deciding whether they and their family were suited to an LDC lifestyle, and risking the entrapment commonly referred to as 'golden handcuffs'.

One service provider also noted that the eventual transition from LDC work back into family life was perhaps even more challenging for workers and families, and as such should also be appropriately supported. Many of the situations and circumstances where LDC was identified as having an aggravating effect related to families with young children. These included:

- reproductive issues:
    - achieving conception;
    - participation in IVF programmes;
    - being supported during ante natal care;
    - having a spouse in attendance and sharing the experience of the first ultrasounds and the birth of a child;
    - breast feeding and post natal care.
- parenting issues:
    - relentless demands and exhaustion for the at-home parent;

- challenges associated with regularly switching between single and joint parenting;
- coping with illness;
- sadness of separation and feelings of 'missing out' for the LDC parent;
- initial exhaustion and difficulties for the LDC parent in 'fitting in' to the family dynamic on return;
- overly controlling, indulgent or disengaged parenting by the LDC parent;
- difficulties in maintaining routine and achieving consistency across work swings and work breaks in:
  - parenting style;
  - expectations and demands on children, and;
  - managing problematic child behaviour;
- Occasional chronic neglect of early teenage children left alone to fend for themselves when a sole or separated parent was away on work roster;
- Behavioural issues particular to boys reacting to the absence of a father and role model;
- Amplified issues of well being and support for teenage mothers with defacto partners who were engaged in LDC work and immersed in a 'work and party' culture;
- Concern that the long-term effects on children's later emotional development and attitudes to relationships are not yet tested by time.

- Intimate relationships:
  - Reported challenges for young single people in initiating, establishing and maintaining relationships;
  - Observations that the transition period between work and home is commonly one of higher stress, particularly when couples are experiencing difficulties in their relationship;
  - Resentment fanned by the fatigue levels of both parties, and their mutual inability to deliver comfort and support.

Families and individuals are also more vulnerable to feelings of isolation and depression when:

- new to a community and have limited support and friendship circles;
- new to long distance commuting and struggling to develop strategies to cope with the periodic separation, loneliness, boredom and workloads;
- there is limited communication opportunities between the family at home and the long distance commuter;
- there is limited understanding or knowledge about the workloads and pressure points for both partners;
- there are financial pressures;
- the commuting partner arrives at home with conflicting expectations regarding;
    - children's attention;
    - partner's attention;
    - orderliness and quietness in the home;
    - their superior role in the household.
- partner at home has conflicting expectations regarding the commuting partner's:
    - role in the household;
    - willingness to 'do jobs';
    - commitments to children's activities;
    - leisure activities.

A number of these issues were seen to have a spill over affecting levels of participation in community and institutional life. The most common concerns were:

- impacts on school attendance, with anecdotal evidence that truancy levels were higher for at least some children in LDC families especially in instances where:
    - the regular practice is for the at-home parent accompanied by children to regularly drive the LDC parent to and from a FIFO departure point a distance from the home. For people in the Mandurah area the round trip to Perth airport is several hours, for those from Busselton, five or more,

often requiring children to be removed from their beds at 4. 00 am on departure day, leaving them too tired to attend or participate in school that day.

- Children missing school during the period when the LDC parent is at home to allow for family time together.
- Children not attending school when the LDC parent (father) is away because discipline is less well enforced.

As summed up in one interview with a family resource officer below:

> *Issues arise when you have young children, and for any parent, whether flying in and out or not, those issues are always there, and they are exacerbated by not having a husband or family around. If companies want to encourage the growth of LDC workforces in these places then of course they need to provide for the necessary support.*

5.2 LDC: Worker and spouse perspectives

While service providers whose role is to provide support acknowledged that many thrive on a LDC lifestyle, or are at least adept at putting coping strategies in place, their priority is typically to understand and address the challenges and service needs of the most vulnerable LDC participants and the negative structural implications. The responses and assessments of LDC participants and spouse were considerably more diverse, and quite often, optimistic. While many service providers witnessed a growing demand for services, the use of a range of services by the cohort responding to the survey, was reportedly relatively limited. This adds weight to the impression gained from the interviews that many people find the challenges of LDC manageable. Nonetheless, all interviewees, especially those with children, reported that long distance commuting does impose particular pressures that vary over time and circumstance. Their stories resonated with, and supported the key observations made by service providers above. There are several additional points that are important to distil below.

The evidence from surveys and interviews clearly indicated that the most valued aspect of entering and remaining in a LDC lifestyle was the high income. However, this bald statement reflects many different values and aspirations. The time of life, qualifications, experience and motivations for entering into LDC work in the mining/oil and gas sectors varied widely among interviewees. Although no interviewee in either case study or the surveys was under the age of 20, and the vast majority were over 25, those who had entered the industry at a young age offered insights into the issues and experiences for that age bracket, based on recollections and more recent observations.

The anecdotal evidence is that the greater majority of long term residents in the two case study areas doing LDC are working in unskilled, semi-skilled and trade positions at levels commensurate with their educational qualifications, experience and responsibilities. Regardless of the income it provides, for many with a preference to reside in the case study area, LDC work is currently one of the few employment opportunities available. What work is available locally is typically poorly paid and often intermittent. As one experienced tradesman who had moved his family to a rural property south of Margaret River after years as a resident worker in a northern mining town, observed, "This town has always been a ten dollar an hour town. To afford to live here, you have to work somewhere else." For many like him, LDC represents an opportunity to invest in a lifestyle that would otherwise be unsustainable.

Other workers had followed professional paths or specific trades in the knowledge that it led into the mining industry and thus had embraced its challenges from the outset. Among these were also several cohorts dominated by professionals and maritime trades, who combined work in oil and gas with their passion for surfing or boating, living in both case study sites at desirable localities outside the main centre. Indeed for survey participants, the most cited reason, selected from multiple options, for living at their current postcode was for a coastal lifestyle (70 per cent), with 50 per cent also citing a rural lifestyle. Many interviewees in both case study areas expressed a strong distaste for metropolitan life, as did others who had moved more recently, often for reasons that tend to be associated with a *tree change* sensibility. Some who were interviewed in Busselton had first lived in Mandurah before moving to Busselton after Mandurah became 'too busy.'

Yet the decision to relocate to Busselton had in at least a few instances been crystalized by the new options opened up by Rio Tinto's decision to operate direct flights from Busselton to mine sites. Such decisions present interesting dilemmas for local governments and regional planners about the balances to be achieved in strengthening regional centres and communities to the extent that they are economically viable without destroying the aesthetic and cultural qualities that make them attractive places to live. On a deeper level, LDC work practices also caste a spotlight on tensions associated with the extreme physical separation of workplace and home and the disproportionate levels of emotional investment in each.

A significant number had also entered LDC late in their working life in effect to top up their superannuation or savings for retirement after a long history of self-employment or employment in a trade based SME. While long shifts and extended block rosters can have negative health and relationship implications, many such tradesmen have embraced the conditions as a welcome relief from the pressures of running a business, chasing bad debts, and generating a viable income in a small market where limited demand necessitated regional travel to short term jobs and intermittent periods away from home. To these people LDC offered a greater financial reward for less stress. Interestingly a significant 53 per cent of survey respondents strongly agreed that LDC work blocks are preferable to 9-5 work and a further 20 per cent agreed they were somewhat.

Several older couples indicated in interviews that they had both embraced LDC lifestyle, working out strategies to make the furlough at home very active, social periods and then the period when the LDC partner is away as a time to catch up on individual pursuits. While these couples admitted 'finding their way' at the beginning of the LDC experience took time and patience, it was a lifestyle that worked well and gave them personal and financial rewards they would not have otherwise achieved.

Because employees are immersed so totally in their workplace for extended periods, the quality of workplace arrangements, practices and physical conditions, and human resources and operational management, can have a significant influence on their mental wellbeing and ability to integrate working life with domestic and social life. Again while many reported

minor irritations or some level of stress and anxiety, the majority of those with a long history in the industry, highlighted the relatively recent improvement in care of the workforce by referring to the conditions of 'old mining' and 'new mining'. Despite this, a significant number noted frequent inconsistencies and scope for improvement in human resource practices, and particularly, in standards and modes of communication.

The survey responses and subsequent face to face interviews reinforced to the authors that LDC arrangements related to the resource sector are not limited to resource company employees. In the frenetic boom period of the last decade, a wide variety of industries have used LDC, offering high incomes in exchange for employee flexibility. Many companies involved in plant construction often have longer 'swings' (i.e. employees spend longer time at work and shorter periods at home) or 'swings' that change in length according to circumstance, in which case both workers and families at home bear the pressure of prolonged and uncertain absences. The particular structure of work rosters also significantly impacts the ease or otherwise with which employees can maintain involvement with family and community life. Many families expressed a preference for shorter rosters such as the eight days on six days off to maintain continuity in parent child relations. Longer rosters with unequal time off were variously described as 'cruel for families', or 'a single man's roster', but long work blocks matched by equal time off, such as is offered by oil and gas workers, were especially favoured by many who were keen surfers, and appreciated periods at home of a satisfying length.

Construction companies and support service employees do not have the luxury of direct flights from Busselton and many LDC workers would welcome the possibility of more commercial flights from regional areas which would limit the time driving to and from the airport in Perth or being on the road travelling to work. Longer term residents also expressed relief at the opportunity to switch to direct flights, and reduce the fatigue and risks associated with driving for three hours from the Perth airport by car after 12 hours of work plus flight time.

At the time of interviews, Rio Tinto's active presence with a shop front in the main street of Busselton had created high expectations for employment opportunities. Many local people

however noted with bemusement, the ongoing difficulty local people were experiencing in gaining entry to the industry. The most common path both in Mandurah and Busselton continued to be through, 'a mate' or other well connected contacts leading to an initial short term contract with a contractor, often under quite challenging working conditions, before gaining longer contracts or eventually securing a position with a major company.

Similarly, ad hoc decision-making and inconsistencies in adherence to different conditions and procedures were often raised as a source of irritation especially among the lower ranks in the hierarchy. The workplace experience, workplace satisfaction levels and the management of schedules was often notably more positive for supervisor level and above, compared to the lower level employees with an operational perspective, but most noted considerable difference in management styles between, as well as within, companies.

The noting of these differences drew attention to an apparently wide generational divergence in expectations concerning workplace and accommodation standards and conditions, with the older noting (perhaps predictably) lower tolerance levels and resourcefulness among at least some of the younger cohort and on some sites at least, regular instances inappropriate on site behaviour. They variously attributed this to wider societal trends that encourage and tolerate a long and irresponsible adolescence, a function of the current boom which overrode more rigorous screening processes, and immature reactions to the harsh physical conditions, isolation from societal and family expectations, long hours and money. It appears the much-publicised negative behaviours of a few, masks the many positive qualities of the diverse majority. Nevertheless, where workforce arrangements isolate individuals from their established structures of support and guidance for such extended periods, there is a clear corporate responsibility to ensure appropriate pastoral care.

The use of alcohol and drugs in the industry has also garnered much attention. The research suggested that although the industry as a whole has taken quite rigorous steps to limit consumption in the workplace, with many sites now being dry, and routine drug and alcohol testing being a well publicised part of working life, there are a number of simmering problems. Again these occur within the context of broader problematic societal values

concerning appropriate modes and levels of consumption. Most LDC workers and their spouse reported that problematic drug or alcohol consumption was not a personal issue. Many saw it as a younger generation's problem. Some noted occasional issues associated with particular instances of drug or alcohol induced behaviour on their site. However, a number of spouses raised concerns that tighter regulations on site, and the threat of testing on return to work, had encouraged an increase in higher consumption of alcohol at home. Most problematically binge drinking early in their break, at a time when the spouse was most anxious to enjoy their presence. Several others acknowledged that the testing had led to greater experimentation and use of amphetamines and such, which apparently would clear from the system more quickly. A number of seasoned workers admitted to an ongoing struggle to control their level of alcohol/drug use, attributing it at least partly to the stresses of their lifestyle. As one poignantly observed, 'I have sold my soul to the industry'.

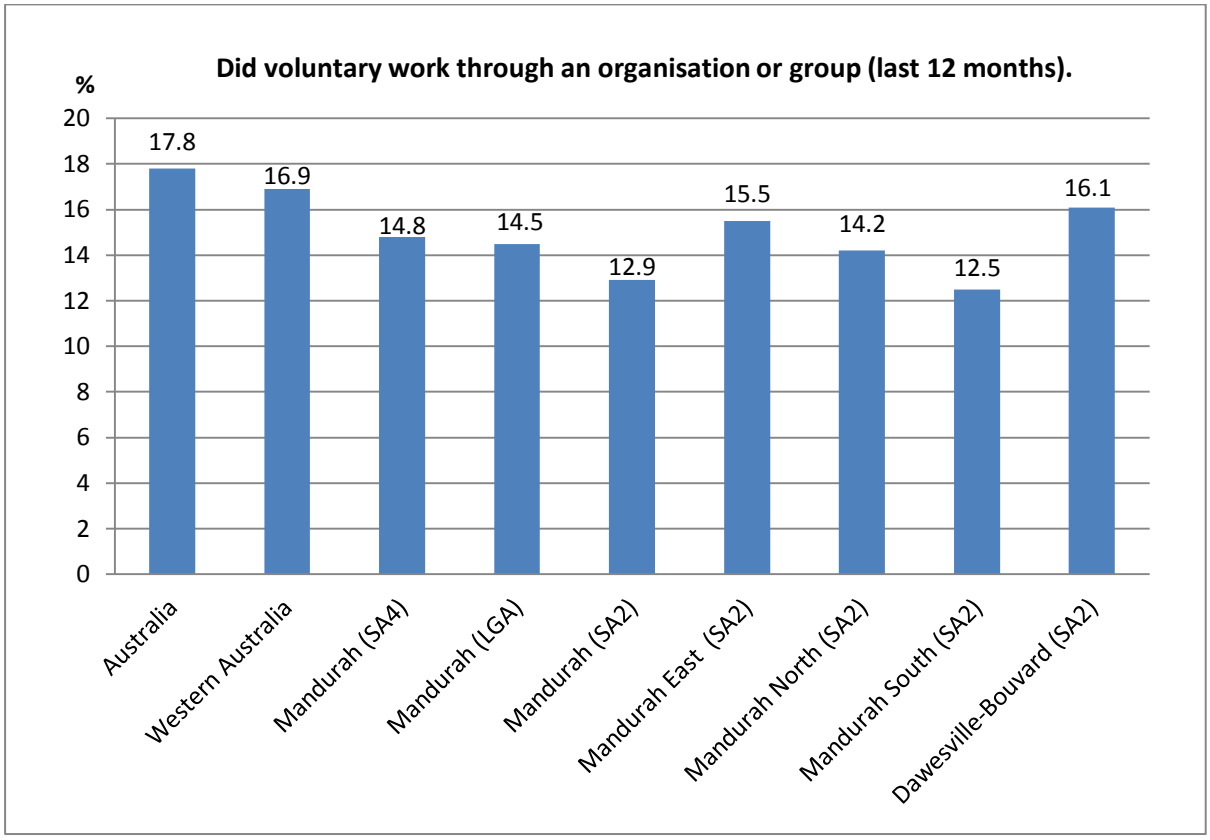
Loneliness and feelings of isolation were common for both spouse and workers, as was the sadness of periodic separation for fathers from their children. Individuals had devised numerous ways to address this issue such as having the children keep a daily journal which the father was required to read on return; or friends who both had a spouse away regularly watching the same TV shows in their own homes and discussing it via text messages. The need to care for children in the evenings contributed to feelings of isolation for some at home spouse. Several noted being unable to attend evening school meetings, even when these were intended especially for their cohort, because of babysitting issues. However women with older teenage children also suffered acute loneliness at a time of their life when they had anticipated rekindling a more exciting social life. One issue, which can be addressed at a community level, was the difficulty experienced by many newcomers in breaking into social circles in both case studies. Although there are numerous local groups, information sheets and on line sites available, clearly not all people respond to these modes, and are looking from a more personal invitation. Fostering that sort of community spirit was raised as an important role for companies and local authorities.

The research also suggests that contrary to the popular view that a LDC workers are unable to participate fully in community activities, many are actively engaged in a wide range of activities that can accommodate their intermittent presence, whether this be fire brigades

or multiple member sporting teams, children's playgroups, or cultural committees. Again there are huge variations and some have no interest in moving outside their family circle when they are at home. However many indicated a desire to volunteer and certainly a willingness to participate in the broader community. The following ABS statistics produced for Mandurah from the ABS 2011 census, are not definitive, but confirm that for in Mandurah, the suburbs with large LDC cohorts perform well in the area of volunteering.

Figure 5.2.1 Mandurah survey respondents: Voluntary work 2011

(Source: ABS 2011, graph based on pace of usual residence)



6. CONCLUSION

This research confirms that LDC commuting is one of many impulses influencing social and economic change in the regional cities and surrounds of Busselton and Mandurah. Although the resident LDC workforce as yet comprises a relatively small, although significant proportion of the total local workforce and resident populations in each case study area, it is in both cases higher than the proportion of the category represented in the state and especially the national workforces. There has been considerable media reportage in recent years highlighting the many negative effects of LDC workforce arrangements. Contrary to media reports, the LDC worker population is highly diverse, and it is not limited only to the resources industries. Our study focused predominantly on employees in the mining industry but even within that industry there is considerable variation. Only a proportion of LDC workers in the resource sector are employed in large multi-national companies. Many work for construction and mining support services with varying conditions and rostered work blocks or 'work swing' arrangements.

It is clear from this research that although LDC workers and families are not exceptional, the presence of a LDC resident populations does have disproportionate local effects at a number of levels; economically because of the high levels of remuneration it attracts, or has attracted during the past decade of boom conditions and labour shortage; personally, because of the specific demands it places on individuals through its regular disruptions to intimacy, on hand support and routine, and; socially because of its apparent dissonance with the established norms and rhythms of institutional activity, and social interaction, which have evolved over time around the ideal of a nine to five working day and five day working week.

To varying degrees, LDC workers and families attract the ire of broader society as a cause of social breakdown. However, there was a considerable degree of recognition from the service providers who contributed to this research that social norms in contemporary society are under considerable pressure from multiple sources. While the rostered work blocks of LDC workers create significant pressures, many noted comparable effects associated with the deregulation of trading hours. Shop assistants for example, on much lower incomes, can be especially challenged by the demands of providing care for their

children while they work irregular hours. As noted by one service provider, 'childhood behavioural problems associated with absent parents are little different if the parent is away at a mine, or working 14 hours a day in a bakery in the metropolitan area'.

Most also agree that it is the manner of dealing with the challenges that is important, and many workers and spouse confirm this finding through their enthusiasm and sometimes sheer delight in their life choices, and their positive approaches to managing intermittent contact, fatigue, and loneliness. These are not reasons to dismiss the considerable challenges thrown up by LDC workforce arrangements at personal, and societal levels, but rather serve as evidence of the need to give adequate attention to understanding and addressing these challenges, ensuring that the ameliorative measures are adequately resourced and supported in practical ways.

LDC has significant economic impacts on regional source communities that, can at the same time, be both positive and negative. This is the case where high paying resource companies attract valuable participants away from the local employment in SMEs to the industry. Nevertheless, in the aftermath of the GFC, and also, as noted in the submission made to the House of Representative Enquiry by the Busselton Chamber of Commerce, with the closure of the old growth timber industry, LDC proved to be a boon, allowing young families to remain in their area of preference as local work opportunities contracted. There is also evidence of people choosing LDC in order to fund their preferred lifestyle in Mandurah area.

The local technical training college has developed special training courses to assist mining industry aspirants to enable them to be "job ready". The courses are targeted at the semi-skilled level, and during interviews in Busselton it was reported that these courses were having broader regional benefits not limited to the mining sector. The indirect multiplier effects from mining income are just one local economic effect as has been reflected by Rio Tinto's significant investment into developing Busselton as a LDC hub.

There is clear evidence however that ongoing careful and collaborative management is required on the part of all parties if the many pitfalls of a narrowing economic base and resource dependency are to be avoided. LDC provides an opportunity for aesthetically appealing regional centres such as Mandurah and Busselton, that have attracted

disproportionately large *sea/tree* change populations, to build local economies and consolidate population levels. However, as evidenced by a number of submissions to the House of Representatives FIFO Work Practices Inquiry (House of Representatives Standing Committee on Regional Australia 2012), there is considerable concern about the widening gap between the 'haves' and the 'have nots', and the pressures that labour sourcing practices place on local infrastructure, which local government authorities in particular, struggle to resource. While most submissions were based on anecdotal evidence, rather than measured results, the authors indicated a keenness to understand the scale of local workforce mobility, the number of families struggling to balance the dislocation of prolonged adult absences, the extent and spatial distribution of economic benefit flowing into the region from mining through local expenditure of LDC incomes, and, conversely, the likely demands on community services from an increased local LDC cohort.

This research has responded to the identified need for comprehensive, statistically sound, grounded evidence on which to base future planning. By contributing to a greater understanding of the dynamic challenges and potentials of LDC in regional *source* communities, it has also highlighted the need for ongoing work to develop creative and flexible approaches to ameliorating a number of specific and very real challenges. Significant among these is the need for systematic documentation and analysis at all levels of the service needs of LDC workers and families, across a range of services, as the basis for equitable and accessible service provision. The provision for adequate pre-work preparation is also vital. LDC has provided individuals and communities considerable benefits and opportunities but it also brings with it challenges which need to be carefully managed at all levels if the benefits are to be enduring.

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