



Final Report

Housing market dynamics in resource boom towns

authored by

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ACRONYMS

ABS	Australian Bureau of Statistics
BMA	Billiton Mitsubishi Alliance
CHDC	Central Highlands Development Corporation
CMFEU	Construction, Manufacturing, Forestry and Electrical Union
CRA	Commonwealth Rent Assistance
CSHA	Commonwealth-State Housing Agreement
DHW	Western Australian Department of Housing and Works
DIDO	Drive-in, drive-out
EIA	Environmental impact assessment
ERA	Estimated resident population
FIFO	Fly-in, fly-out
FTE	Fulltime equivalent employee
GEDC	Goldfields Esperance Regional Development Commission
GROH	Government Regional Officers Housing (Western Australia)
GSP	Gross state product
PICC	Pilbara Industry Community Council
PDC	Pilbara Development Commission
PRC	Pilbara Regional Council
QDIP	Queensland Department of Infrastructure and Planning
QDoH	Queensland Department of Housing
REIWA	Real Estate Institute of Western Australia
SPQs	Single persons quarters
TAFE	Technical and Further Education
UDIA	Urban Development Institute of Australia
WAPC	Western Australian Planning Commission

EXECUTIVE SUMMARY

Resource boom towns in the Pilbara and Goldfield regions of Western Australia and the Bowen Basin region of Queensland have experienced recurring housing shortages and crises. The housing situation has had a negative impact upon these communities in a variety of ways, and in the case of Karratha in particular, constitutes a community crisis. This study demonstrates the important linkages between housing and the resources industry. It discusses the key issues evidenced by case studies of four resource boom towns; two in Western Australia and two in Queensland. These case studies provide a detailed picture of the wide range of issues faced by these towns and the social, economic and structural consequences of the resources boom.

An enduring issue is the inability of the public and private sectors to attract and retain staff in resource boom towns whatever their occupation, but this is especially apparent for workers in the service sector. Business and community development are stymied by the ever-decreasing locally resident workforce, a direct result of the increasing lack of available and/or affordable housing. A range of skill sets for the resources industries are in short supply. The nature and locations of mining operations, combined with the lack of available and affordable housing and associated industry cost structures, has led the resource sector to increasingly rely upon a long-distance commuting workforce. The increase of fly-in, fly-out (FIFO) and drive-in, drive-out (DIDO) workers has led to a reduction in the permanently resident workforce.

This research confirms the role of housing as an essential component of the physical infrastructure underpinning the mining industry. The links between housing and economic and social wellbeing in a regional context are clearly demonstrated. We argue that a holistic appreciation by the industry and government of the important role of housing at each stage of the mining cycle has been lacking in Australia.

The recent 'super-cycle' in the resources industry in Australia resulted in critical housing issues requiring strategic responses to enable the industry to expand to meet international demand and in order to address the most serious social and economic impacts for local and regional communities. Although the current downturn in the industry, as a result of the global financial crisis, has temporarily eased some of the pressure on housing markets in resource communities, a likely resurgence in demand for resources over the longer term means that all of the issues identified in this report remain 'on the table' and should be addressed.

Efforts to manage the housing implications of mining face considerable challenges including: the diversity in scale and nature of the industry and its impacts; the cyclical and often unpredictable nature of the resources industry; the propensity for mining to be located in regional and remote areas; changing technology and labour market practices; and differences in policy and institutional arrangements across Australian jurisdictions.

We put forward a range of proposals for immediate and longer-term strategies to better manage housing issues, particularly in areas such as resource-rich regions which are vulnerable to world market prices and consumer trends. Specifically:

- A categorical commitment from governments regarding the positive long-term future for communities in remote regions. In light of this reality, there is a case for a more co-ordinated approach, between government and industry, (but led by government), to better plan for these regions. Government and non-government organisation (NGO) decision and implementation processes can no longer lag behind growth as this will hamper co-ordinated planning. It is critically important that governments

act to ensure the adequate supply of land that has the potential to be serviced at the earliest opportunity when a resource development project is planned and then work assiduously to ensure that the land is brought to development status as soon as possible.

- The provision of realistic incentives for investment in infrastructure by business and community. The recent Western Australian election campaign 'Royalties for Regions' highlighted the importance of enhancing life in royalty-generating regions through targeted funding for key infrastructure. Government does not have to be the sole provider but meaningful incentives for partnerships between governments and industry must be established to convey mutual commitment.
- Increased government investment in social, community and affordable housing including the use of innovative financing tools such as shared-equity schemes and taxation incentives for investment in affordable housing, with particular attention to housing in regional and remote areas. It has been suggested that the rules governing LandCorp in Western Australia could be relaxed to enable more affordable housing land in the regions.
- The provision of affordable accommodation for those on low-to-middle incomes not eligible for housing assistance but who are excluded from the private market due to the shortages of available affordable accommodation for rent or purchase.
- Once demand has been met for serviced land, government agencies should consider serviced land banking for future development to avoid long development delays.
- Relaxing local government town planning policies to enable greater flexibility regarding development densities and transformation of current housing stock. Fast-tracking planning approvals for residential developments that contain an element of affordable housing should be considered.
- Affordable housing does not mean aesthetically unattractive.
- An increased supply of government housing for key workers and government service providers to meet current and future needs, commensurate with population increases. Government employee housing needs to be of a standard to ensure the attraction and retention of key human resources.
- All publicly provided housing needs to be consistently maintained and upgraded to ensure:
 - sustainable standards of population health;
 - enhanced education opportunities;
 - liveability; and
 - accessibility.
- Substance abuse underpins many of the social and economic ills of remote and regional communities, particularly those in or near to resource-dominated towns. The link between good housing and good health has been demonstrated. In order to effectively deal with the myriad issues arising from substance abuse and poor, or lack of housing, governments should adopt a relational approach which takes into account the need for complex community development. To this end, government housing

agencies need to liaise more closely with health agencies, and agencies of the Drug and Alcohol Office.

- The liveability of resource boom towns could be greatly enhanced if the design and planning of towns was undertaken with an eye to permanence and a diversification of the economic base underpinning the local economy.

Many of the necessary strategies require longer-term implementation timeframes. Successful housing strategies in mining communities require co-ordinated action by all spheres of government as well as the mining and residential property industries. This involves resolution of the diverse interests of these stakeholders and agreement about who is responsible for what. Local communities and NGOs have an important role to play in identifying community concerns and potential responses. In discussing proposed strategies we address the following key questions. What needs to be done? Why is it necessary? Who needs to take primary responsibility? What policies, partnerships and governance structures are needed for successful implementation?

A recurring theme in this report is the need to improve co-ordination within and between the different levels of government, and in turn, between mining companies and government. Better planning is critical to ensure an adequate supply and mix of housing in mining communities and in particular, to address the issue of affordability. While towns are vulnerable to the resources super-cycle, their future is tenuous. If an effort was made to plan and design towns to enhance liveability and attractiveness, there is a greater likelihood of increased private investment in businesses and the community. Broadening the demographic and economic diversity of resource boom towns is essential if these communities are to achieve some measure of sustainability. This includes government responsibility to ensure that economically disadvantaged people living in mining regions are not forced out, or kept out, due to a lack of affordable housing and/or infrastructure. The new state government in Western Australia has made a commitment to direct a much greater proportion of the royalties earned in the regions back to those regions. Many of the recommendations made here meet the guidelines for state investment in the regions outlined by the incoming government.

There are a number of obstacles to achieving effective planning, including the wide range of stakeholders that need to be involved in the process, the often limited capacity of local government and the regional offices of state agencies, and the inherent difficulty of predicting the scale and timing of future growth (particularly in a market-sensitive industry such as mining). Addressing these issues requires the establishment of new governance mechanisms at the regional level to provide a framework in which companies and the different levels of government can share information and collaborate on matters of common concern. Government's role is to lead and provide strategic guidance that will facilitate rather than hinder sustainable socio-economic and environmental development. It must also lead in the management of often complex cultural issues.

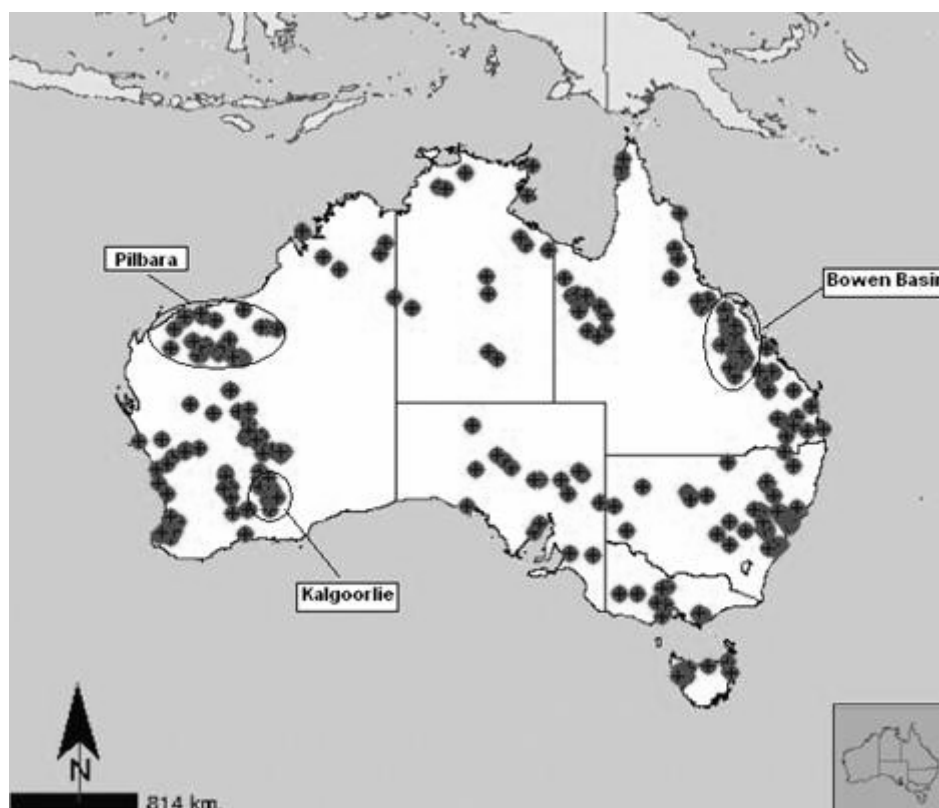
1 INTRODUCTION

1.1 Background, project aims and scope

This research project responds to a question from the 2007 Australian Housing and Urban Institute (AHURI) research agenda and examines housing market dynamics in resource boom towns in Western Australia and Queensland. This report concentrates on the impact of mining boom resource conditions on housing affordability and subsequent effects on a variety of other related social indicators in those towns. It is recognised that the situation in the industry has changed since the report was commissioned, as a result of the global economic downturn for resources resulting from the global financial crisis. However, given the likelihood of a longer-term increase in demand for Australian resources, the underlying issues addressed in this report retain their currency. Moreover, the need for improved planning and management processes is the same regardless of whether the industry is in a downturn or upswing.

This project contributes to housing and regional development policy by identifying the interrelationship between the labour market, housing affordability and the social sustainability of remote communities, in the context of the resources boom. The methodology adopts a case-study approach utilising four research sites: the towns of Kalgoorlie-Boulder and Karratha in the Pilbara region of Western Australia, and Emerald and Moranbah in the Bowen Basin of Queensland, see Figure 1. A case-study approach permits a detailed examination of each case, providing a diversity of contexts across the two key resource-boom states.

Figure 1: Australian mining activities, highlighting Bowen Basin, the Pilbara and Kalgoorlie-Boulder



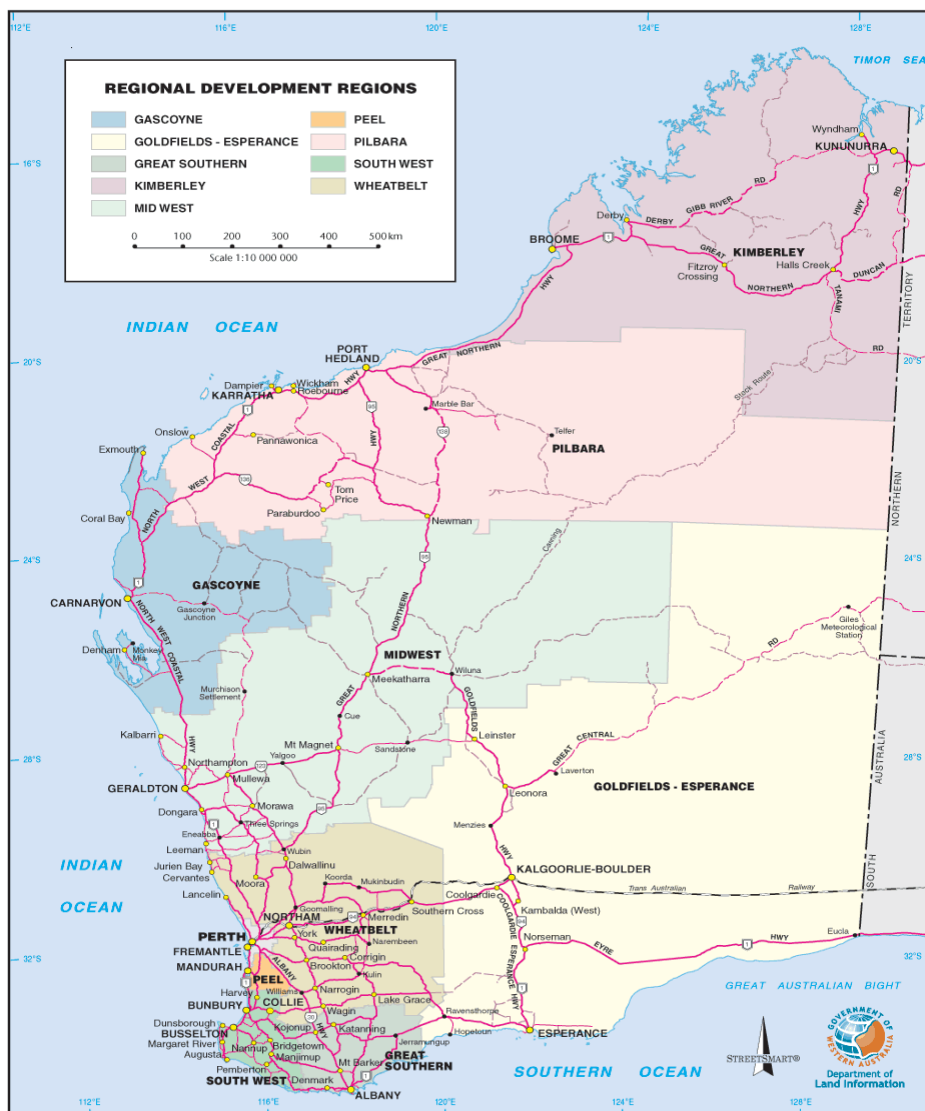
The Western Australian case studies are both located in regions that are defined as remote by the Australian Bureau of Statistics Remoteness Scale (Australian Government Publishing Service 2001) (see Figure 2). The Remoteness Scale

classifies localities by their 'remoteness', defined as the distance along road networks to service centres (a hierarchy of urban centres with a population of 5000 people or more). Generally it is assumed that 'remote' is four hours or more drive from an urban centre. 'Very remote' is usually more than four hours drive from a range of services and is generally inaccessible by ordinary car. Common features of remote places are:

- low population densities;
- high environmental variability;
- remoteness from markets and centres of power; and
- high proportion of Aboriginal people in the local populations.

Figure 2: Map showing Western Australian regions

REGIONAL DEVELOPMENT REGIONS OF WESTERN AUSTRALIA



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Numerous reports (Michael Maloney Taylor 2005; Memmott 2006; Wulff 2007; Senate Select Committee on Housing Affordability in Australia 2008: p.124) identify a need for more affordable housing for locals, resource-industry workers and ancillary workers in towns experiencing mining booms. Increased housing demand as a result of

increased mining activity exacerbates the critical issue of affordability for a wide range of residents, especially those with low incomes. In Western Australia in particular, the pressure for housing in resource boom towns has had a significant impact on the availability of housing for Aboriginal people in the Pilbara and Goldfields regions.

Many mining communities experience median house prices and rents as high or greater than metropolitan markets. Increased housing demand combined with accommodation shortages have driven up house prices and rents to levels which have contributed to a variety of social and economic dysfunctions (Piper 2005; Bureau of Transport and Regional Economics 2006; Haslam McKenzie 2007). Further, the resource market is cyclical and dependent on global economic demand. Many resource boom towns are mono-economies. State governments have been reluctant to invest in towns that are not considered to have long-term viability. This is a classic problem of social needs conflicting with economic demands.

Housing is increasingly viewed by government and resource companies as an economic supply commodity. Lack of housing results in an under-supply of resident workforce which has a direct impact on productivity. Housing can be viewed as an economic driver, impacting on the economic competitiveness of towns and regions. A lack of available labour within minerals and resource industries has a direct impact on the ability of resource companies to maximise productivity. An enduring issue is the inability to attract and retain staff in remote communities. This, combined with the nature and location of many mining operations and industry cost structures, leads to an increase in long-distance commuting.

The aims of the current research project are to:

- provide an analysis of the causal factors of housing market dynamics in resource boom towns;
- determine whether or not there are resource boom towns which do not have a housing affordability crisis, or are experiencing less severe crisis compared to other towns, and investigate why that is the case;
- identify the flow-on effects of housing affordability issues in a community and the impacts on the socio-economic functionality of the community;
- identify the flow-on effects of housing affordability and the impacts on the socio-economic functionality of the Indigenous community in resource boom towns that have a significant Indigenous population living in the towns or its environs;
- assess the potential options for government and the private sector to ameliorate the housing affordability issues in resource boom towns, based on international examples and private/public partnerships; and
- identify and evaluate how governments and resource companies have previously and are currently managing these issues.

The scope of the project is wide, researching as it does a variety of socio-economic factors in relation to housing market dynamics in resource boom towns. It involves the interrelationships between public policy, economic markets and social issues. The methodology is therefore of a multidisciplinary nature. It involves a comparative analysis of statistical data, anthropological data, interviews, relevant Australian and international literature, and field observation.

The social and economic impacts of resource booms are far-reaching and vary according to a range of local factors. These factors include the nature and size of the housing market, availability of residential land for development, proximity to alternative

housing and employment markets, and the housing policies of the public and private sectors. This project provides a framework for describing the key market dynamics in different contexts.

The study identifies actions which mining companies, the private sector and government have taken, or could take, to ameliorate housing shortages and cost pressures. This leads to a broader analysis of the respective responsibilities of government and industry and appropriate linkages for co-ordinating action between the two sectors.

1.2 The resources super-cycle

The Australian mining and energy sector has experienced sustained growth since around 2001. The prolonged rise in commodity prices and the inevitable downturn that follows it are colloquially termed as a super-cycle. At May 2007, there were approximately 104,700 full time employees employed in the mining industry sector, representing a thirty per cent increase since May 2003 (an average growth rate of just under seven per cent per annum). In 2008 the Minerals Council of Australia (March 2008) stated that the resource sector would require nine per cent per annum employment growth to meet supply expectations. The same report points to ongoing high investment, averaging around \$25 billion per annum in greenfield and brownfield expansions in recent years. At the time the report was issued, the value of projects in mining and energy projects committed or under construction was \$57.5 billion, about seventy per cent of which was in Western Australia.

The sector has a long history of boom and bust cycles, reflecting its exposure to international markets and fluctuations in demand and supply. The traditional boom/bust cycle of the minerals and energy sector influences investor confidence. The limitations imposed on business owners by state agreements in Western Australia (see Section 2.2.2) have exacerbated private sector and entrepreneurial activities in the region. However, various analysts have argued that boom conditions would last longer than in previous periods because of the strong underlying demand for key commodities from the emerging economies of China and India. For example, urbanisation and industrialisation require large quantities of steel for construction which, in turn, generates high levels of demand for coking coal (a key component for steel production) and for other commodities such as copper and aluminium. These emerging economies, in turn, are driving up demand for energy (coal, gas and oil). While the 2008/09 financial crisis may dampen expected global demand for some Australian minerals, there is still confidence that the longer-term investment outlook remains positive. Even if investment slows, there will be quite a long lag-time before this is manifested in reduced activity in the sector, because of the large number of projects already in the pipeline (Western Australian Chamber of Commerce and Industry 2008).

1.3 Policy relevance – Social and economic Issues

The cost and availability of housing in resource-intensive regions raises important policy issues for both government and the resources sector.

First, there are significant economic implications. While mining and energy companies generally have the wherewithal to accommodate their own employees, either in company-owned housing or by subsidising participation in the 'private' housing market, lack of affordable housing can make it very difficult for support industries and local contractors to attract and retain labour. Additionally, local businesses have to compete for staff with the mining sector but cannot offer comparable wages, so accommodation is even more difficult to obtain. Consequently problems of recruitment

and retention of staff are even more acute in the non-mining sectors. Several industry interviewees for this study identified this as a potentially significant constraint on economic growth.

Second, attraction and retention of employees has become a key issue for mining companies, particularly those operating in the more remote regions of Australia, because of the current tight labour market. If housing prices become so high that service workers cannot afford to live in a community, this has a potential flow-through affect on service availability, and ultimately the perceived liveability of that community. This in turn, may mean that even those who are able to afford to live in the town will decide to move out of the community and the region to areas where they have access to a wider array of essential services. As documented elsewhere in this report, some companies have now identified this as a significant risk and have begun to take steps to help increase the supply of housing to lower-income workers.

Third, particularly for the major mining companies, negative media attention around the problems being faced by resource boom towns in the Pilbara, and to a lesser extent the Bowen Basin, has the potential to cause significant reputational damage. Rightly or wrongly, companies will be held at least partly responsible for what happens in those communities where they are the dominant economic players. Moreover, in recent years, companies have raised expectations by articulating policies that emphasise social responsibility and the commitment to sustainable development. For example, all of the major Australian mining companies are now signatories to the Minerals Council of Australia framework on sustainable development, a relevant component of which is reproduced below.

Guidance on implementing ICMM Principle 9:

- Implement systems to appropriately manage issues and effects, positive and negative, of mining
- Contribute to the development of sustainable communities. Apply a development model which identifies communities' current strengths and long-term needs for economic, social and institutional security
- Strengthen and diversify the local and regional economy by supporting local businesses and products when this is feasible and consistent with sound business practices
- Undertake social and economic research and assessment in partnership with communities and appropriate organisations to support planning and development of operations with subsequent management review of social and economic effects through the whole cycle
- Recognise existing community planning processes and utilise these where feasible to achieve mutually beneficial social outcomes. Develop community partnerships and work to secure community ownership of the processes and outcomes
- Develop partnerships (including government, NGOs and other relevant organisations) where appropriate to facilitate program design and delivery
- Plan and operate in ways that support the sustainable social, economic and environmental development of the host country, region and local communities
- In conjunction with local communities, support the development and improvement of sustainable infrastructure

Source: Minerals Council of Australia 2005

In the case of governments, there are strong public expectations that growth will be managed in an orderly way and that key community services will be maintained. The strong criticism directed at the Western Australian Government to release and develop sufficient land to cope with the rapidly increasing demand for housing in communities such as Karratha, Port Hedland and many other towns in the Pilbara, is evidence of what can happen when these expectations are not met.

An additional area of policy contention which has been debated in political, regional development and communities circles is the role of tax rebates and zone allowances in remote areas. The tax rebate, commonly referred to as the zone allowance or zone rebate, is paid to taxpayers resident in prescribed areas (generally, above the 26th parallel). (There has been wide concern that the zone rebates are based on boundaries originally drawn up in 1945 with only small variations since then. The boundaries are out of date and some argue, inequitable.) The tax rebate is paid in “recognition of the disadvantages that taxpayers are subject to [in remote areas] because of the uncongenial climatic conditions, isolation and high costs of living in comparison to other areas of Australia” (Australian Taxation Office 2001). The increases over time in the base amounts of the zone rebate have not been sufficient to offset the effect of inflation. The base amount has not increased since 1993–94, although the value of the rebate to taxpayers with dependents has increased because of the linkage with dependent spouse and sole parent’s rebates which are subject to annual indexation (Haslam McKenzie 2007).

An additional disincentive is the extra tax paid on any financial incentive offered to work and live in remote locations. Money is therefore not always a suitable incentive. Importantly, from a housing market perspective, fringe benefit tax makes it difficult for employers to help with housing purchase for employees or mortgage repayments.

1.4 Research methodology

This study is essentially an empirical research project utilising a mixed-method approach. It comprised two stages with the findings of the first stage reported in a positioning paper (Haslam McKenzie et al. 2008) and the second stage detailed in this report.

The initial stage involved an Australian and international literature review, a policy document review, examination of relevant media reports and analysis of secondary statistical data reports. The findings of that stage identified the housing markets in mining towns as dynamic, diverse and contextually specific and contributed to analytical frameworks we developed to guide the second stage of the research. These frameworks focused on the nature and dynamics of housing markets, the social, economic and environmental impacts of housing stress and the potential roles and policy options available to the key stakeholders, especially those in government and the mining industry (Haslam McKenzie et al. 2008).

The research strategy for the second stage involved four case studies of mining towns in Western Australia and Queensland. The case study sites included a mix of housing conditions, mining types and locations in an effort to identify both common and context-specific causal factors and impacts. The case study design included multiple qualitative and quantitative data collection methods to allow for triangulation of findings wherever possible. The case studies approach included:

1. collection of qualitative and, to the extent possible, quantitative data regarding the nature of housing shortages and the impacts on:
 - low income groups;

- Indigenous people;
 - the capacity of the towns to attract and retain employees;
 - the level and range of services available in the community; and
 - the capacity of resource companies to attract and retain employees and their families;
2. identification of factors that may be facilitating or limiting the capacity of these towns to meet the increased demand for housing; and
 3. documentation of strategies that stakeholders have implemented to address the issues of affordability, and assessment of their likely effectiveness.

As identified in the Positioning Paper (Haslam McKenzie et al. 2008), the case studies were chosen based on their development history, the presence of mining and resource extraction activity and reported housing stress.

2 THE AUSTRALIAN HOUSING AND MINING CONTEXT

Housing policies and the activities of the public and private housing sectors, are currently operating within the context of a major resource boom in Western Australia and Queensland. Housing policy and housing market dynamics, in this setting, are closely related to the resource boom and therefore should not be viewed in isolation from each other. It is the nature of the interaction of these structural agents that impact on housing outcomes nationally, regionally and locally in resource boom towns. The historically low level of housing affordability across the nation and in particular regions and localities is, to some extent, a product of unique combinations of housing policies, housing market characteristics and resource boom conditions. Local housing markets in mining boom towns are influenced by the economic and housing policies and actions of mining companies, governments and the housing industry.

2.1 Australian housing markets

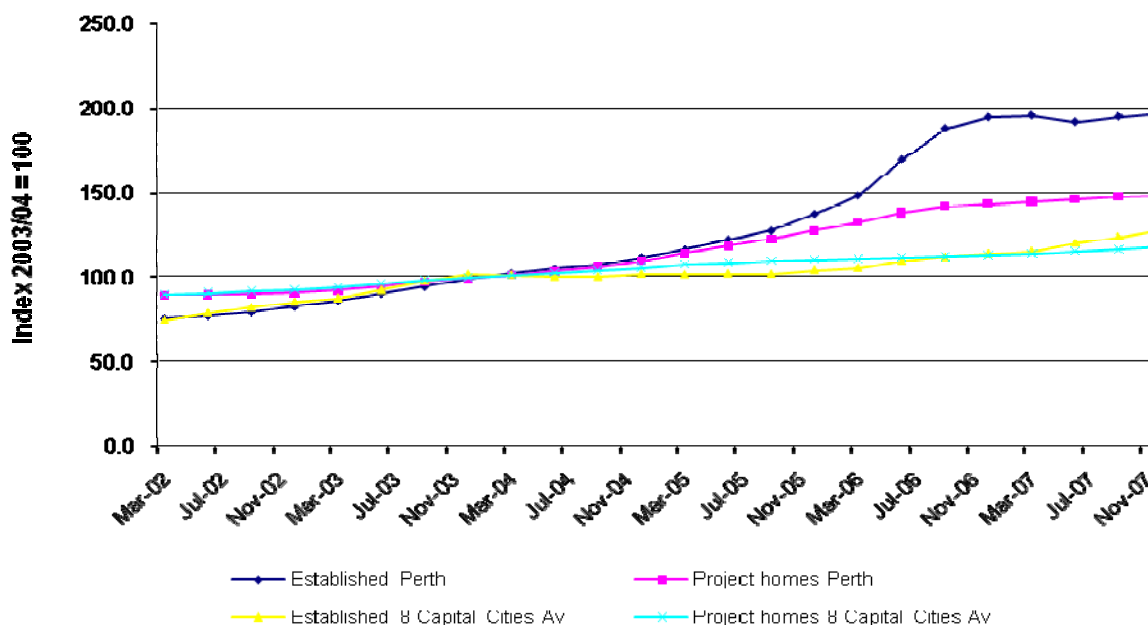
Housing market dynamics operate within specific housing policy contexts, and draw attention to the relationship between housing policy and other social, economic and regional development policies. The majority of Australians aspire to home ownership and it has been the cornerstone of wealth creation and the achievement of self-funded retirement for most Australians for over half a century (Baxter and McDonald 2004; Beer et al. 2007). Home ownership contributes to social stability, community development, and economic welfare (Badcock and Beer 2000; Walker et al. 2007). Over the last decade housing supply and affordability have become critical throughout the nation and as noted by the Senate Select Committee on Affordable Housing in Australia (2008: p.1) the average house price in the capital cities is now equivalent to over seven years of average earnings; up from three in the 1950s through to the early 1980s. Only a third of transacted dwellings would have been accessible to median income households in 2006–07, compared to a long-run average of almost a half. Not surprisingly, the number of people suffering housing stress has also increased. Almost two-thirds of households in the lowest forty per cent of the income distribution with a mortgage or renting in the private sector were spending over thirty per cent of their income on housing, (the established benchmark for housing stress) (Yates 2007).

The problem of affordability has been a function of both strong demand and limited supply. On the demand side, higher average incomes, a decrease in household size, population growth stimulated by high rates of immigration, coupled with a sustained period of low interest rates increasing borrowing capacity, all contributed to high demand for housing. Simultaneously, the supply side faltered with shortfalls in land supply in high-demand locations, increased development and planning costs and extended delays in reform processes and the provision of infrastructure (Gurran et al. 2008). The tightening of the construction labour market caused capacity constraints in the building industry in many areas and worked against meeting housing demand and infrastructure project timelines.

As shown in Figure 3, in comparison with the Australian Bureau of Statistics Eight Capital Cities Average (2008b), Perth prices for both established homes and project homes have increased at a much faster rate than the eight cities average. Factors such as strong population growth, increased wealth and strong demand from investors attracted by house prices which, in the first half of this decade, were relatively low in comparison to the eastern states, have all contributed to rapidly increasing prices. Similarly, the rental market tightened from mid-2004 (Shelter 2007)

and rents in Perth increased by forty-five per cent on the March quarter of 2006. Consequently, many low-income households are experiencing housing-related stress. These metropolitan trends have flowed onto the non-metropolitan areas and are exaggerated in resource-boom areas such as the Goldfields, the Pilbara and the Great Southern regions where demand has dramatically outstripped supply.

Figure 3: Index of house prices 2002–2007



Source: Australian Bureau of Statistics 2008b; Housing Industry Forecasting Group 2008

The dominant approach of Australian governments, especially over the past three decades, has been to rely on market forces to deliver housing outcomes with minimal direct government intervention (Hillier et al. 2002). Direct intervention has been in the form of the non-market provision of social housing and financial assistance to low-income renters and first-home purchasers, for example the First Home Owners Grant scheme. Governments also exert considerable indirect influence on housing outcomes through policy interventions in areas such as taxation, land-use planning, building regulations and tenancy law. Housing considerations are largely absent or peripheral to broad regional development policies and processes (Hillier et al. 2002). This is underlined by the lack of a coherent housing policy within Western Australia. This lack of housing focus at a public policy level has a direct impact on the provision of housing throughout Australia. This has implications for economic competitiveness in many remote regions of Australia with under-developed housing markets (Beer et al. 2007).

Public housing stock has undergone a significant decline in Australia over the last fifteen years. In 1994 public housing represented 6.2 per cent of the national stock, reducing to 4.9 per cent in 2003. The Commonwealth State Housing Agreement (CSHA) has been a significant primary national policy instrument for direct government involvement in housing in Australia since 1945 and has provided the institutional, financial and policy frameworks for social and other housing assistance programs. The funding for public housing through the CSHA has reduced by twenty per cent over the last decade, while funding for Commonwealth Rent Assistance (CRA) has increased by sixty-six per cent. These figures are indicative of national and state housing policies which have been historically committed to promoting

widespread homeownership rather than attempting to promote a more diverse housing system.

Anthony and Milsom's work (2006) showed that there is considerable housing stress in the non-metropolitan regions of Western Australia and public housing supply has not kept abreast of regional population growth and pressure induced by increased economic boom conditions. However, as noted by Rowley (2008) housing affordability descriptions, such as measures of housing stress and price : income ratios, only evaluate those that can or cannot afford to purchase or rent market housing. They ignore those that actually want to form a new household but are unable to do so, those that would like to form a household within their existing community but are forced to move elsewhere or those that would like to move into a specific community for family or work reasons but are unable to afford to do so. There is strong evidence to suggest there are people who would like to live in resource boom towns such as those examined in this report but are not able due to a dearth of accessible and affordable houses. As identified by Anthony and Milsom (2006) public housing demand has been inadequate for more than a decade and more recently CRA has not come close to meeting rental costs or alleviating housing stress in some regional areas. The dramatic house prices and rent increases in regional Western Australia have only exacerbated the situation.

The housing situation is particularly difficult for Indigenous people who are dependent on inadequate social housing, which is usually inappropriate and often not easily accessible in the resource activity centres. Indigenous housing conditions remain poor, extreme overcrowding is rife and access to basic infrastructure is severely lacking (Australian Institute of Health and Welfare 2005; Australian Bureau of Statistics 2007d).

2.2 The Australian resources industry and housing

Mining companies have had considerable involvement in housing, particularly in the 1970s and 1980s when entire towns were built and maintained by companies. For political, social and economic reasons, company towns have either disappeared (towns such as Goldsworthy and Mt Whaleback no longer exist in Western Australia), or 'normalised', meaning they are no longer restricted in who lives there and the local government has taken over its governance. Nonetheless, by virtue of the scale of their presence in the area, mining towns continue to have a significant impact on housing and land market dynamics.

2.2.1 Role of mining companies in housing

Arguing that they are paying substantial royalties to government, companies publicly resist calls to provide infrastructure and services that they see as being the responsibility of government or other sectors of society. However, they have shown a willingness to take a more pragmatic approach 'on the ground' and continue to be major infrastructure and service providers in some communities. In the Pilbara region for example, more than 470 dwellings were provided to government, local businesses, contractors and community groups by the major resource companies in January 2008. Such interventions have mainly been driven by the need to attract and retain workers in a tight labour and housing market, rather than by abstract notions of corporate social responsibility.

In the traditional mining town, the company was usually the main provider of infrastructure, including housing, roads and community facilities. This is still the case in some remote communities (for example, Weipa, Jabiru, Roxby Downs, some

Pilbara communities such as Pannawonica), but the traditional closed mining town is largely a thing of the past in Australia.

In purpose-built, rural and remote mining communities, companies traditionally owned and maintained the housing stock, which was then rented to employees at heavily subsidised rates. In the late 1990s/early 2000s there was a shift away from this model with some companies selling off much of their housing to employees under a 'guaranteed buy-back scheme'. In some versions of these schemes, employees were required to sell the properties back to the company when they ceased employment, with the price being determined by a formula that allowed for some capital appreciation; in other versions, employees also had the option of selling into the open market if a buyer could be found. For companies, a major attraction of buy-back schemes was that they shifted the cost of maintenance to the home-owners. There was also an expectation that employees, once they became owners, would take more pride in the condition of their properties. Employees who took advantage of these schemes got access to cheap housing, with the prospect of a capital gain, and they were able to determine the timing and form of home improvements.

With the upsurge in prices in some mining communities (such as Karratha, Port Hedland and Moranbah) and the growth of a private housing market in these communities, the focus of company support has shifted toward schemes that provide access to subsidised loans and one-off home purchase grants. These schemes have proved attractive to employees in a rising market, because of the prospect of making a significant capital gain. For resident employees who are unable or unwilling to purchase a home, rent assistance is normally made available.

While some companies have sought to withdraw from being direct providers of housing, this has not been the case uniformly. This has meant that, in those communities where the workforce is employed by more than one company, a patchwork of arrangements has sometimes evolved. For example, in the case of Moranbah, the dominant company (Billiton Mitsubishi Alliance (BMA)) sold off much of its housing, whereas Anglo Coal built – and continues to own and maintain – a subdivision within the town.

Companies are no longer willing to construct entire purpose-built towns because experience has shown that they are expensive to build and maintain and tend to become ghost towns when mines close. In addition, there are considerable costs associated with fringe benefits tax, a Commonwealth tax introduced in 1986 which is levied on non-salary-type benefits provided to employees. It is paid by the employer, not the employee. Today, new development prospects tend to be in more remote locations and have shorter mine lives, which means that it makes even less financial sense to invest in permanent infrastructure. Moreover, employees and their families are less keen to relocate to remote locations. As a consequence of these intersecting factors, there has been a dramatic growth in the number of fly-in/fly-out (FIFO) and drive-in/drive-out (DIDO) operations. Essentially, a company will now only establish a residentially based operation where there is already a pre-existing community nearby with at least basic services, and the location is considered 'liveable'.

Another important development has been the move by companies, usually with the active support of state governments, to 'normalise' previously closed mining towns by bringing them under local government jurisdiction. This has often also been associated with mines divesting themselves of most of the company-owned houses and establishing a privatised housing market (albeit one underpinned, in the early days, by guaranteed buy-back schemes for employees). Where a town has been 'normalised' (see Section 2.2.3), companies have been able to argue that the primary

responsibility for providing services and infrastructure, such as housing, should lie with the local and state governments, as in most other communities in the country.

Although the public position of the industry is that funding for community infrastructure should be the responsibility of government, rather than companies, in practice the approach has been more pragmatic. Companies recognise that, particularly in a tight labour market, it is difficult to attract and retain employees unless towns have facilities and services and an acceptable standard of housing. Consequently, where the need is apparent, companies have often been willing to fill the breach – preferably in partnership with government, but unilaterally where there seems to be no other option.

In Queensland, mining companies are still major providers of infrastructure, including housing. For example, as part of its 2007 community plan developed for Middlemount, Anglo Coal (2007) committed to investing in a range of infrastructure, including building new duplexes to accommodate company personnel and upgrading existing mine accommodation.

Another recent illustration of the extent to which companies have been prepared to invest in community infrastructure is the Ravensthorpe Nickel Project in the south-west of Western Australia, developed by BHP Billiton. This was planned as a predominantly residential operation, with the expectation that most employees would live in the small coastal community of Hopetoun. Prior to the project, Hopetoun's population was only 800 people; there was only one store, no school and few other facilities. The project had the potential to more than double Hopetoun's population and placed its limited infrastructure under very significant strain. In an attempt to manage these impacts and to make Hopetoun an attractive place to live for employees and their families, BHP Billiton has financed the construction of a new housing estate, including both family-style accommodation and duplexes for singles and couples. However, early in 2009 the world price of nickel dropped to unsustainable levels and the mine has been closed indefinitely after less than 12 months of operation. This development has had a significant impact on the local housing market and community more generally.

In some cases, mining companies perceive a direct economic advantage for the company as well as the community in housing development. An example is in the Hunter Valley where Coal and Allied has announced plans to develop a 7000-home residential estate on surplus company-owned land. This development is not limited to company employees, and will meet housing market demand already existing in the Lower Hunter region.

In other cases, mining companies play an indirect role individually or collectively in housing supply by partnering with developers to provide worker accommodation by committing to lease-back accommodation and therefore ensuring a guaranteed return for investors. An example is the MAC Services Group Limited, a recently listed public company that supplies large-scale serviced accommodation, primarily to the mining industry in the Bowen Basin and increasingly, to the Pilbara. The company has over 3000 rooms under management in four Bowen Basin locations. A core element of the business model is to secure contracts with mining companies to lease an agreed number of rooms.

Mining companies clearly have a major impact on housing availability and affordability in resource boom towns. Relevant factors include:

- how companies manage the sequencing of resource developments, and conversely, the timing of closures and restructuring exercises;

- company willingness to invest in, or underwrite, the construction of new housing; and corporate human resource policies;
- company policies on locally based or long-distance commuting workforces;
- company willingness to make housing available to non-company personnel or otherwise subsidise their housing costs; and
- company willingness to release company-controlled land for urban development.

2.2.2 *State agreements*

Franchise agreements between state and Commonwealth governments and resource companies have been used in Australia for over seventy years to facilitate major resource development projects. While Western Australia continues to use state agreements extensively, Queensland phased out the use of franchise agreements for new mining projects from the 1980s and now relies on general legislation to govern new mining projects (Fitzgerald 2002).

In Western Australia, state agreements are contracts between the state government and major resource companies that detail the various obligations of both parties in the development of a major project. These are ratified by Acts of Parliament. Their principal aim is to facilitate resource development:

Major project developments requiring long-term certainty, land tenure and complex approvals in possibly remote areas of the State, are often established under State Agreements. Ratification of the Act, and the fact that State Agreement provisions can only subsequently be changed by mutual consent, provide greater certainty with regards to the project itself, security of tenure and reduction of sovereign risk (Department of Industry and Resources n.d.)

Since the early 1960s the development of minerals and energy in the Pilbara has been carried out under state agreement acts. The government took this approach to overcome deficiencies in state legislation at that time in regard to large mining developments and their requirements for infrastructure and community services (Chamber of Minerals and Energy of Western Australia 2004).

State agreements clearly identified the rights and responsibilities of the government and companies in relation to security of tenure, provision of infrastructure, arrangements for environmental management, royalty payments and processing responsibilities. These agreements provided companies with secure bankable documents that provided a basis for project planning and financing.

Under state agreements, companies accepted an obligation to provide and operate a range of facilities and services, and subsequently undertook considerable capital investment to meet these obligations. Housing, commercial premises, recreational amenities and other facilities within the town were built on land leased from the Crown under the terms and conditions of the relevant state agreement. Small business or individuals establishing in the towns could only do so if the company was prepared to sub-lease land and provide services. Public utilities such as water, sewerage and power were built, owned and operated by the company (Department of Industry and Resources n.d.). As a consequence of state agreements, the four shires in the Pilbara are restricted in their ability to increase rate revenue because mining companies are exempt from paying full rates. The Western Australian government is phasing out clauses in state agreements that prevent local government authorities from full-rating major projects.

Several mining towns were established under state agreements throughout the Pilbara, including Dampier, now a 'twin town' with Karratha. Despite early success, a number of problems emerged in the early 1970s. These were attributed, in part, to much larger growth in these towns than was originally anticipated, and included:

- constraints on shopping centre facilities and limited competition among retailers;
- problems with land tenure and leasehold arrangements. Town site leases were granted to the mining companies under the state agreements. These lacked the security of freehold and, as a result, were a significant disincentive to private investors. Consequently, most accommodation was company-owned, while clubs and organisations had to turn to the mining company for finance;
- difficulties experienced by mining companies in balancing managing towns with managing large resource development projects; and
- industrial relations issues such as labour turnover, singles/married ratio and industrial disputes.

In addition to these problems, there was increasing pressure from third parties wanting land for regional services, contrary to the lease conditions under the state agreement. Companies contemplating other projects also sought the right to establish in the company-owned towns.

In Queensland, franchise agreements were widely used to facilitate economic development and were the predominant mechanisms used between the 1950s and 1970s to establish major resource and non-resource development. The early development coal-deposit mining in the Bowen Basin in the 1960s was regulated through negotiated agreements and some remain in operation. The towns of Blackwater, Moranbah and Dysart were established under agreements negotiated between the Queensland government and Utah during the 1960s. These negotiations involved the pre-existing local governments of Duarlinga, Belyando and Broadsound and, in contrast to the Pilbara, resulted in the establishment of 'normalised' towns. There were complex negotiations regarding the respective contributions of state government, local government and mining companies to the capital establishment costs and recurrent operation of basic town infrastructure (Galligan 1989). Many of these arrangements have been contested over time as the towns have faced fluctuations associated with the resources market, and the historical legacy of the agreements continues to influence debates about strategies and responsibility for addressing the housing market dynamics in Bowen Basin towns in the context of the current mining boom.

2.2.3 Normalisation

In the early 1970s government determined that many of the problems of mining towns could be overcome by 'opening' or 'normalising' company-owned or 'closed' mining towns. Under normalisation, the local government authority takes over the provision and operation of services and facilities previously provided and operated by mining companies under state agreements. The Western Australian government regarded normalisation as a way of achieving greater commercial and social maturity in the Pilbara region (Thomas 2006). However, for normalisation to be successful the towns need to be of sufficient size to be viable and for there to be a diversified economy in order to underwrite and maintain the appropriate level of infrastructure.

In November 1977 the state cabinet authorised commencement of negotiations for the normalisation of selected Pilbara towns, to be implemented by way of a Deed of

Normalisation between the company and the local government authority. This Deed included provisions for annual payments by the company to the local government authority for the ongoing operation and maintenance of the facilities and services being taken over. This financial contribution, sometimes referred to as the 'normalisation rate', was indexed for inflation and was additional to the general rates paid by the company:

In the early 1980s, Hamersley Iron and the State government began a process of normalisation, which resulted in the majority of State and Federal government functions in the towns being transferred to the relevant government authority. Robe began a similar process for Wickham in the 1990s. With the transfer of assets and accountabilities to State and Federal authorities largely complete, or with rights of occupancy granted to those authorities, the outstanding process of normalisation for the towns of Tom Price, Paraburdoo, Dampier and Wickham is the transfer of ownership and accountability for services and assets that would normally be provided by a Shire or Local Government (Thomas 2006: p.1).

Dampier is undergoing a process of normalisation. Consequently, the Shire of Roebourne has taken ownership of some, but not all, of Dampier's infrastructure assets, many of which were constructed about thirty-five years ago. The mining companies paid the Shire an annual normalisation payment according to an agreed schedule of payments over a number of years in recognition of the age of the infrastructure being handed over.

This aged infrastructure is now requiring extensive repair and maintenance, with some community assets such as swimming pools requiring replacement. The process of normalisation has stalled while the issue of the outstanding assets is resolved (Thomas et al. 2006).

2.2.4 Fly in/Fly out (FIFO)

Fly in/Fly out (FIFO) and Drive in/Drive out (DIDO) work arrangements have become an established practice since the 1980s, a response to the Federal government introducing fringe benefits tax. FIFO is an intensive work arrangement used throughout the resources and other industries. This shift has been driven by a variety of factors, including:

- the high cost of building and maintaining remote mining towns;
- the cost difficulty of closing these towns once mining comes to an end;
- the trend toward developing deposits which have a shorter mine life (making it more difficult to justify the capital outlays involved in building a new town);
- the increased difficulty of attracting employees and their families to live in remote areas; and
- lower air travel costs (see Storey 2001; Chamber of Minerals and Energy Western Australia 2005).

FIFO is also increasingly the preferred means of managing the construction phase of projects, because of the temporary nature of the workforce and the difficulty of sourcing skilled construction workers locally.

The industry's increasing reliance on FIFO is controversial, particularly in Western Australia, where one politician has described it as 'the cancer of the bush'. A major criticism is that FIFO results in regions missing out on the economic benefits of mining: the so-called 'fly-over' effect (Maxwell 2001; Storey 2001). There is also a

substantial body of evidence that FIFO can have a disruptive impact on personal and family arrangements (Watts 2004; Gallegos 2005).

The concentrated work schedules place considerable physical and mental strain on workers and the furlough (or scheduled time off) is important recovery time. FIFO workers have varying rosters, meaning that the time back in the home community will vary with each worker. The impact of FIFO on relationships and families is well documented (Watts 2004; Gallegos 2005). FIFO arrangements are intense; blocks of work time followed by blocks of time with family and/or friends. The family left at home continue their normal lifestyle patterns often at some disadvantage due to an adult being absent. The FIFO worker can often experience loneliness, homesickness and a sense that they are 'missing out'. The incidence of relationship and family break-ups for FIFO families is higher than for the average population, which has social and economic costs for the community and the individuals concerned (Beach 1999). The impact on children of an absent parent is also well researched (Adler 1988; Sibbel 2001; Australian Government Child Support Agency 2002) and can have considerable psychological and social costs in some cases that manifest to violence, psychological withdrawal, learning difficulties, social immaturity and behavioural difficulties, if not managed.

At the same time, FIFO has advantages which may make it a 'lesser evil' than living in remote mining communities for many individuals and their families. Often, the employment options for the 'trailing spouse' in remote communities can be very limited: an important consideration given the shift to dual-career families. The higher quality of education in the larger population centres is also a major reason why families may prefer to live in these centres. This is a particularly important consideration once children reach secondary school age. Other considerations which make living in a city more attractive include the greater diversity of employment opportunities available for young people once they finish school, more recreational and social activities, connections to other family members, and the ability to have a social life that is disconnected from the workplace.

Longer-term, some of these tensions may be lessened by a shift toward greater reliance on automation and remotely controlled operations. Rio Tinto Iron Ore, for example, is heavily investing in innovation in this area and has already established a large Perth-based operations centre to control train and port movements. However, there is a potential downside to these developments, which is the likely reduction in the longer-term in the number of jobs available to people living in the regions and, in particular, Indigenous people.

A FIFO workforce relieves both government and the private sector from the provision of a raft of housing and infrastructure responsibilities. However, the scale of FIFO work arrangements in Western Australia is impacting the housing industry in a number of ways, but accurate data is difficult to attain because the Census does not ask specific questions that relate to FIFO. A concern identified by the Australian Bureau of Statistics (2008c) is the reporting by FIFO workers in the mining industry, who report that their 'usual' address is their home address where their partner and children live, but not the actual residence where they have or intend to spend six months or more, as required on the Census form. Therefore, some of these employees may not be counted according to their usual place of residence due to the respondent not interpreting the question correctly. This has significant implications for local government and the distribution of Commonwealth grants which means that local governments with mining and high FIFO activity are providing infrastructure and services for which they are not given resources commensurate with the resident population. More accurate enumeration of resident and non-resident workers is

available for the Bowen Basin in Queensland as a result of targeted population studies undertaken by the state government (Department of Infrastructure and Planning 2007).

Inevitably, when examining the impact of FIFO, more than one community will be impacted and at least two, the community where the FIFO worker lives when he or she is not working, (the resident community), and the host community, the community where that person works (Houghton 1993). Many FIFO workers have multiple homes; a home from which they commute and another home where they spend their leisure time. This means that there is a large number of residences throughout the country which are under-utilised for significant periods in each year as shown in Table 1.

Table 1: FIFO Workers' Home Statistical Division

	<i>2001 No.</i>	<i>2006 No.</i>
Western Australia		
Perth (SD)	6 666	11 255
Pilbara (SD)	526	1 972
South Eastern (SD)	1 468	1 613
Central (SD)	840	1 068
Kimberley (SD)	289	308
Midlands (SD)	292	242
South West (SD)	144	87
Upper Great Southern (SD)	32	29
Lower Great Southern (SD)	69	8
Off-Shore Areas & Migratory	92	165
No fixed place of work	316	826
Undefined	221	428
Interstate	226	264
Not stated	362	895
Total	11 543	19 160

(a) In the main job held in the week prior to Census night. Data quality affected by Census under-enumeration, and Census form non-response and inadequate response.

* SD = Statistical Division of Humanities

Source: Australian Bureau of Statistics 2008d and 2006, 2001 Censuses of Population and Housing

2.2.5 Drive in/Drive out

Over the last decade, Drive-in/Drive-out (DIDO) has become a significant model for staffing coal-mining operations in central Queensland. According to a recently released industry survey conducted by the Queensland Resources Council, sixty-one per cent of the mining workforce in the Isaac region, which covers the northern Bowen Basin, was FIFO/DIDO in 2007. This equated to around 6500 employees. Given that there are only very limited air services into the region, it can be safely assumed that most of these were DIDO rather than FIFO.

DIDO employees usually self-drive, or are bussed, to the mine or a nearby town from the coast; mostly Mackay and surrounding communities for the northern Bowen Basin and Rockhampton/Yeppoon for the south. Commute times are typically 2–3 hours, although some employees may drive for 4+ hours. Accommodation may take the form

of an on-site village (for example, Hail Creek, Goonyella North), a single persons quarters (SPQ) located in one of the regional towns, or informal house-sharing arrangements in the towns.

DIDO has some of the same social and psychological impacts on employees and their families as does FIFO, but these may be less severe because the absences from home are typically shorter (normally in the range of 3–4 nights at a time). DIDO also does not present the same issues about lack of benefits for regions, because the commuting takes place within the wider region, rather than from a capital city (as is the case in Western Australia). However, self-drive DIDO has raised concerns about fatigue and road safety, given that workers normally drive back home at the end of their shifts.

2.2.6 Temporary housing and accommodation

Workcamps are re-locatable dwellings located in temporary sites, commonly on or close to mine sites or on the outskirts of mining towns. They are appropriate for accommodating workers or contractors employed on time-limited contracts, for example during the construction phase of new mines or expansion of existing mines. Workcamps have attracted criticism from permanent local residents because the workcamp occupants have a temporary mindset with no commitment to the place or the community. Concerns centre around drug and alcohol abuse and workcamp occupants' usage of services with no investment in the community.

SPQs are more permanent developments used to accommodate primarily FIFO and DIDO employees or contractors during their rostered work time. They may be established by mining companies or by private operators who lease rooms to one or multiple mining companies. They are generally in or on the outskirts of mining towns.

In some cases mining companies lease and allocate houses, apartments, caravans or cabins in caravan parks or motel or hotel rooms to accommodate temporary or FIFO/DIDO workers and contractors. Availability of this form of accommodation varies considerably and concerns centre on the lack of access by non-mining workers. This is of particular concern in communities where there are limited affordable accommodation options for tourists or unskilled, low-paid employees in industries such as retail and childcare.

2.3 State contextual differences and similarities

Western Australia and Queensland are the Australian states most affected by the current resources super-cycle and share a number of common characteristics, including their status as the physically largest states. However, they are also different in a number of ways that are critical to understand when analysing the interactions of housing and mining. Key differences relevant to this study include: the settlement patterns; roles of the state in land-use planning and development; and the roles of local government.

As mentioned previously, Queensland has regionalised settlement patterns with significant regional population centres along the seaboard and key inland centres such as Mt Isa, while Western Australia's population is far more centralised in Perth with small non-urban centres more dispersed. This has significant impact on mining workforce practices and hence housing issues, with the Pilbara characterised by greater reliance on a FIFO workforce from Perth to remote mining centres and Bowen Basin predominantly drawing a DIDO workforce from regional centres in closer proximity to mining operations.

The Western Australian state government, through its land development agency, Landcorp, which was established under the Western Australian Land Authority Act 1992 (Parliament of Western Australia 1992), develops state-owned property (usually with a private-sector partner) as required. One of its functions is to “identify potential centres of population, and centres of population in need of redevelopment, and use its powers to bring about the provision, or improvement, of infrastructure and facilities” (Landcorp 2008). While Landcorp is a government agency, under Section 19 of the Western Australian Land Authority Act 1992, it must “endeavour to surpass financial targets” but it is not able to undercut the private sector, and until a little over a year ago, cross-subsidise. In response to increasing public disquiet, Landcorp cannot provide land at a discount in one location and recoup foregone profits on another development, but it will develop land and sell at market prices, even if the cost of development is greater than the market price. An important, but not well understood feature of the development of Crown Land in Western Australia, is the role of the Western Australian Treasury. Landcorp must buy Crown land from Treasury at market prices. In mining areas where demand for land is so high, the market has driven prices to unprecedented levels; government is perpetuating the high prices rather than doing anything to alleviate the price cycle.

The Queensland state government does not have an equivalent of Landcorp active in mining towns. The recently established Queensland Urban Land Development Authority (ULDA) has a mandate only for the development of urban land and its initial focus is limited to sites in Brisbane and Mackay. The Department of Natural Resources has responsibility for administering Crown land leases and has a role in obtaining native title clearance, freeholding and releasing Crown land for sale, including to local governments.

In the absence of market interest in land development, especially in rural areas, local governments in Queensland tend to take on the role of driving housing planning and facilitating residential land development. The capacity of local governments in Queensland to undertake this stronger land-use planning role in mining communities has been constrained by their relatively small size, limited powers and the largely reactive nature of the planning system. They have been highly reliant in the expertise, resources and co-operation of mining companies and the state government in managing the challenges of mining industry fluctuations and meeting the expectations of their communities during times of growth and downturn. This is even more the case in Western Australia where local government in mining communities has less authority or capacity to influence the housing and land development activities of the state or mining companies. The capacity of local government to address housing issues will be enhanced considerably by the establishment of regional councils following recent amalgamations in Queensland. State government moves to strengthen regional planning and growth management capacity, as well as introduce sustainability policies for mining communities, should provide the policies and structures to support local governments in this role. However, it is too early to assess the impact of these changes.

3 THE CASE STUDIES

3.1 Introduction to case studies

The research involved undertaking a study within complex social settings involving a diverse range of participants. Housing issues are highly contentious in mining communities, with stakeholders often pursuing competing interests and divergent views about the processes for managing housing problems and the appropriate housing outcomes to be achieved. The political, administrative and spatial contexts also differ markedly between Western Australia and Queensland, providing both challenges and opportunities in comparing the study sites and interpreting the study findings.

3.2 Case study methods

The case study methodology was chosen so that the contextual and complex inter-related issues of community and industry could be captured and explored thoroughly to understand the causal factors of the housing market dynamics in resource communities. A deep understanding of each community enabled the researchers to assess significant differences between towns in housing affordability and availability and compare the strategies that stakeholders have implemented to address the issues of affordability and the effectiveness of these strategies.

A comprehensive literature review was conducted prior to site visits. Literature sources ranged from international academic journals, state government reports, regional agencies' literature, media articles and company reports, both published and unpublished. These provided insight to local housing needs, new housing developments and proposed industry projects and developments. Telephone and face-to-face interviews were conducted with government officers in relevant agencies and resource companies. In Western Australia these included agencies such as local governments, Landcorp, Pilbara Regional Development Commission, Pilbara Area Consultative Committee, Department of Planning and Infrastructure, Department of Housing and Works and Country Health in Western Australia. Information supplied by the Western Australian Chamber of Minerals and Energy was also reviewed. Representatives from Rio Tinto, Fortescue Mining, Chevron, Woodside, Chamber of Minerals and Energy and the Pilbara Industry's Community Council (PICC) were interviewed. In Queensland preliminary interviews were conducted with the Department of Housing, Department of Infrastructure and Planning, the Queensland Resources Council, BHP Billiton and the Central Queensland University. It was clear that there was broad community support for this research.

The site visits provided the opportunity to meet key stakeholders in each of the communities, including local and state government agency representatives, Aboriginal elders, charitable organisations, representatives from the local Chambers of Commerce, retailers, service providers, resource company representatives, as well as local residents and FIFO workers. In Queensland the site visits included Mackay where regional representatives of state government departments, the Housing Industry Association and regional social and economic development agencies were interviewed. The visits enabled the researchers to investigate the issues identified through the literature review process and see and understand first-hand the impact of the housing shortage in the chosen case-study localities. Site visits ranged in length, the longest being a month-long visit to Roebourne, forty-five kilometres east of Karratha, a town dominated by Indigenous and public housing.

All the interviews relating to housing market dynamics in the resource boom towns probed the issues of affordability, availability and appropriateness of housing, the effectiveness of relevant planning procedures, and the capacity of governments and the private sector to deliver an adequate supply of affordable housing. The interview questions drew on a common set of themes.

- What are the characteristics of the local housing market and extent of housing problems?
- What are the facilitators and impediments to increasing supply of housing in or near the town?
- What are the social, economic and environmental impacts of the housing situation?
- What local housing initiatives have been proposed or implemented in response to identified problems?
- What state-wide policies or program initiatives assist or constrain local initiatives to manage housing problems?
- What are the potential options to ameliorate the housing problems?

3.3 Research limitations

The Australian Bureau of Statistics (2008d) has noted that the high-growth mining towns (including the towns chosen in this study for case study sites) had an estimated resident population that was smaller than their Census-enumerated population, even though they had greater than national average population growth overall. The discrepancies can logically be explained by the high number of jobs that are FIFO and DIDO. Multiple places of residence presents some difficulties for the Australian Bureau of Statistics (2008d: p.8), “the quality of census data is adversely affected by undercounting, non-response and self-reporting”. Anecdotal information suggests that in places such as the Pilbara this was particularly rife due to a high incidence of transient populations. During submissions for the Senate Select Committee on Housing Affordability in Australia, the following was noted:

I think everyone locally in the Pilbara has big issues with the 2006 Census, particularly on the identification of Indigenous people. Everyone anecdotally agrees that the census was way out. One figure that was interesting from that census in terms of Karratha was that, if you accept the census figures are correct, 16,000 people spent that night in Karratha and only 11,000 classified Karratha as their home. There might have been a few tourists coming in, because it was winter time, but there is a bigger proportion of FIFO workers in this town. (Snell 2008: p.14)

During case study interviews it was reported that Indigenous communities in some instances were concerned that the level of overcrowding could be detected through the census and they would be penalised and therefore did not participate in the census. This will be discussed in more detail in the following Section.

In Queensland, the Planning Information and Forecasting Unit (PIFU) in the Department of Infrastructure and Planning has made considerable efforts to obtain reliable population figures for the Bowen Basin (Department of Infrastructure and Planning 2008). This has included surveying accommodation providers and mining companies to accurately estimate the number, location and accommodation types for the non-resident workers in Bowen Basin towns.

Obtaining some statistical data sources for individual towns in the Bowen Basin can be challenging because of the proximity of a number of small towns means that some statistics such as reports of building and residential land approvals are not disaggregated for individual towns. Data analysis is further complicated by the Bowen Basin being split between the Central Queensland and Mackay/Whitsundays state government planning regions. Recent amalgamations of local government in Queensland resulted in the incorporation of Emerald and Moranbah into two regional shires (Central Highland and Isaac). This creates some difficulties in comparing data over time unless it is available at a town-centre level. Other data such as Residential Tenancy Authority is only collected or reported for major regional centres and is available for Emerald and Mackay but not for Moranbah.

Local government amalgamations and elections in Queensland coincided with the case study data collection and created some complexity in identifying the most appropriate local government participants to obtain the perspectives of both previous and future policy makers and officials.

There is a variance in the way housing and other data is collected and presented across different state jurisdictions. For example, in Queensland there is an online real estate site that reports the sale of new homes in regional areas, but in Western Australia, there is no such facility. In Western Australia, the Pilbara Regional Development Commission provides comprehensive land and housing data on a quarterly basis, unlike other regional development commissions. In Western Australia, the government agency Landgate collects information regarding housing and land transactions but there are gaps when comparing this data with that collected in Queensland.

3.3.1 The Census and Estimated Resident Population

Estimated Resident Population (ERP) is the official measure of the Australian population and is based on counts of place of usual residence from the Census (Australian Bureau of Statistics 2006: p.185). In compiling the ERP for Census years, three adjustments are made to the population measured according to their place of usual residence. These adjustments are:

- the number of people temporarily living overseas who normally live in the Pilbara region;
- the difference in dates of estimation, for example, the ERP is calculated in June/July and the Census is recorded in August; and
- the number of people who fail to state their address of usual residence. This could apply to Indigenous people who may not consider themselves to have a place of usual residence, and FIFO workers who were unsure of how to answer the question of usual residence.

When estimating ERP, there are several other factors that are also important:

- persons who do not state their address of usual residence on the Census form are allocated to the Statistical Local Area (SLA) of enumeration;
- overseas visitors are excluded from these counts; and
- FIFO workers are not included in ERP estimates.

The difference between the Census count and the ERP for the Pilbara in 2006 was 3333 people¹.

¹ Note that a comparison of ERP and Census data for the Kimberley, Peel, Pilbara and South West regions reveals that the difference in estimates for the Pilbara region is very low.

There could also be errors in the counting of the population in the 2006 Census. The Australian Bureau of Statistics recognises that undercounting can occur due to a number of reasons, including:

- they mistakenly thought they were counted elsewhere; and
- the dwelling they were in was missed because it was difficult to find (e.g. in a remote or non-residential area).

In a report examining undercounting in the Indigenous population (Australian Bureau of Statistics, 2006), the ABS recognises the Pilbara region as an area of particularly high risk of undercounting. It noted that in non-private dwellings such as staff quarters, a nominated person in the institution completed a summary form that listed all residents and personal forms were distributed to individual residents. It is possible that in some cases personal forms were not returned or not completed properly for all staff listed on the summary form. It also noted that undercounting in the Pilbara region may reflect difficulties in contacting people due to distance and irregular working patterns. While these difficulties relate to counting Indigenous persons, they could also be applied to the general population of the Pilbara region.

4 THE WESTERN AUSTRALIAN CASE STUDY SITES

Western Australia is rich in mineral wealth. About 50 different minerals are mined in the state, the most profitable being iron ore from the Pilbara. Even with the current global downturn the resources sector continues to dominate the Western Australian economy. According to the Australian Bureau of Statistics (2007e) the Western Australian economy has doubled in size over the past sixteen years. The contribution of mining to gross state product (GSP) has doubled (fifteen per cent to thirty per cent), while the sectors of property, business services and construction have remained fairly steady contributors. Since the 1970s mining has consolidated its position as the major generator of export income for Western Australia, currently comprising some seventy per cent of total export revenue.

Western Australia's population has also increased substantially in recent years, creating challenges for state and local governments in the areas of planning, service delivery and infrastructure needs. Western Australia has experienced the highest population growth in the nation for every year since 2006; 2.4 per cent compared to a national growth rate of 1.6 per cent in 2007 and 3.1 per cent in 2008 compared to a national growth rate of 1.9 per cent (Australian Bureau of Statistics 2009). The high population growth is due largely to overseas immigration (Australian Bureau of Statistics 2007b) although the rate of interstate migration has the been highest it has been for more than one hundred years. The Australian Bureau of Statistics (2008d: p.2) has reported that "of all the urban centres in Australia in 2001, there were twelve that had average annual Census-enumerated population growth of at least two per cent between 2001 and 2006". The national average annual rate of population increase for the five-year period was 1.1 per cent but in the twelve high-growth mining towns, including Kalgoorlie-Boulder and Karratha, the increase ranged from between 2.2 per cent and 8.0 per cent (Australian Bureau of Statistics 2008d).

The recent strong population growth placed considerable pressure on housing and land supply peaking in 2006 with the confluence of the introduction of stamp duty relief for first-home buyers (see REIWA submission to Senate Select Committee 2008) and an escalation in demand for resources which had immediate flow-on effects in the state economy more broadly.

The following sections report the analysis of the two Western Australian case studies, the choice of which were explained in the Australian Housing and Urban Research Institute Positioning Paper No. 105 (Haslam McKenzie et al. 2008). The two locations selected were the City of Kalgoorlie-Boulder, famous as the centre of the Goldfields, and Karratha, a key regional centre in the Pilbara. The case studies involved housing and Census data analysis, site visits and face-to-face interviews with key stakeholders and decision makers, including representatives from local government, state government jurisdictions, the Pilbara Area Consultative Committee, the Karratha and Kalgoorlie-Boulder Chambers of Commerce, local Indigenous groups, sporting and leisure club members and mining company representatives.

4.1 Karratha

4.1.1 Background

Karratha is situated in the Shire of Roebourne within the Pilbara region of Western Australia. The town contains about seventy per cent of the Shire's population, and seventy per cent of its residential dwellings. The town was established in 1968 by a joint agreement between the Western Australian government and Hamersley Iron. It was a product of the 1960s mining boom. Karratha is surrounded by a number of

satellite towns, (see Figure 4) all of which are within fifty kilometres and serve as resource housing towns. The exception is Roebourne town, 40 kilometres east, which is dominated by Aboriginal and public housing. Historically, Roebourne is the oldest town in the Pilbara, founded in 1866. The other towns are Dampier (fourteen kilometres west), Wickham (twelve kilometres further east of Roebourne) and nearby Point Samson. All of the towns are constrained by mining leases or native title.

Figure 4: Pilbara, Western Australia



Source: Western Australian Government Maps

The traditional centre of the Shire of Roebourne was the town of Roebourne but by 1975, government services had shifted their main offices to Karratha. Karratha now serves as the centre of government for the Pilbara and as the main centre for mine workers and associated industries and services. The main resource sector industries in the region are iron ore, salt and liquefied natural gas.

The housing stock fluctuates depending upon the resource cycle and commodity prices. The large scale and sustained boom conditions recently experienced has meant that resource company-owned housing has been withdrawn from the private sector to meet their own housing needs. It is then left to the government to release new land in an attempt to increase the supply of private sector housing. Landcorp are responsible for releasing and preparation of public land for housing development throughout the Pilbara. However, both Landcorp and other government agencies complain that the mining companies do not provide sufficient notice of housing and land requirements to allow a suitable and measured land supply response, and are therefore a critical part of the housing problems experienced in the area.

The size and footprint of the large mining companies, particularly during boom cycles, can have a significant and damaging effect on the local community. These companies have been able to secure a monopoly over hotel accommodation and housing, shutting out others in the community and making it very difficult for local businesses to attract and retain staff. The region has become a mono-economy, dominated by mining and associated activities as other less affluent industries such as retail, service, entertainment and childcare have all been marginalised. The impact has been wide-ranging. Services normally expected in a functioning community are increasingly unavailable. For example, during the site visits, interviewees reported how they have had to drive 1000 kilometres to Geraldton to have their car serviced by an approved garage or risk losing the warranty. The paint shop, IT service, dive shop, tourist

operators, gift shop and mechanic shop have all closed, citing the inability to attract and retain staff and/or excessively expensive commercial rents.

Population

According to the 2006 Census data (Australian Bureau of Statistics 2007b) there were 11,725 permanent residents in Karratha, an increase of almost ten per cent on 2001. However, after adjustments to accommodate undercount and the discrepancies associated with multiple places of residence, the estimated resident population has increased seventeen per cent. (Section 3.3.1 reported the Census problems in areas such as the Pilbara which contain a highly mobile Indigenous population and significant numbers of FIFO workers).

Among the impacts of the current resource and energy boom, has been the increasing investment in, and consequently status of, Karratha at the direct expense of Roebourne. Whereas the population of Karratha is increasing, the opposite is true of Roebourne. According to the most recent Census, the Indigenous population of the Shire of Roebourne is 1828 of whom 741 live in Karratha (Australian Bureau of Statistics 2006). Fieldwork within the town of Roebourne undertaken for this project, while not conclusive, casts doubt on the validity of Census figures. The town of Roebourne is dominated by its Indigenous population in direct contrast to Karratha. Problems with the Census in relation to Indigenous people have been noted by the Australian Bureau of Statistics itself (Australian Bureau of Statistics 2006) and a number of researchers (Hunter 1999; Altman 2000; Neutze et al. 2000; Henry and Smith 2002; Sanders 2005).

Table 2: Karratha population

	<i>Karratha</i>		<i>Western Australia</i>
	<i>No:</i>	<i>%</i>	<i>%</i>
Population	11,725		
0-14	3094	26%	20%
15-24	1582	14%	14%
25-54	6257	53%	43%
55-64	643	5%	11%
64+	149	1%	12%
Temporary residents (count on Census night – place of usual residence)	2523		

Source: Australian Bureau of Statistics 2007b

In Karratha between 2001 and 2006 there were population increases in all age categories with the exception of those aged fifty-five and over where there was a sixty-nine per cent fall. Only 1.3 per cent of Karratha residents were aged over sixty-four compared to twelve per cent in Western Australia. There are no aged care services available in Karratha, contributing to the low level of over “sixty-four years” residents. Research interviews reported that Karratha was not considered a suitable place for retirement due to a lack of facilities considered most important to the aged. Given the high cost of living in Karratha (twenty-three per cent higher than Perth (Department of Local Government and Regional Development 2007)) and the limited activities available for older residents, it is not surprising there are few retirees.

Based on Chamber of Minerals and Energy and resource company expansion plans (Heuris Partners Ltd 2008) it is projected that total resource-related employment in the

Pilbara will double by 2015 (to 30,000 people) and of that, residential employment will increase from 10,000 to 15,000. The number of employees participating in FIFO is projected to grow from 5,000 to 17,000 people by 2015. Applying multiplier assumptions to the resident employment numbers, Pilbara's population could reach over 45,000 by 2010 and exceed 50,000 by 2015. The Heuris Partners' report suggests that the total population in the region could rise from over 60,000 in 2009 to above 75,000 by 2012.

4.1.2 Amenity and services

Karratha and the surrounding towns have basic services such as schools and police with the forty-one-bed Nickol Bay Hospital located in Karratha serving the southern Pilbara region. Health specialists regularly visit the town but due to housing pressures and high staff turnover, permanent obstetric and other services are not always available. Rio Tinto and Woodside sponsor medical services in the region and have assisted with the provision of accommodation for staff. However, patient accommodation is required to support the Regional Resource Centre model, provide for the dispersed population and support low income or financially disadvantaged residents who normally reside in remote communities and who require access to health services.

In the five years leading up to mid-2008, the price boom in iron-ore prices and the resulting increase in production placed service delivery in education, health, policing, childcare, retail and small business under considerable pressure. Resource companies offer high salaries and generous accommodation and other allowances. The difference in remuneration between the resource sector and other non-mining businesses has caused intense competition for accommodation and employees.

Both government and private employers provide incentives for teachers to work in the Pilbara region, although there is anecdotal information to suggest that the incentives are not considered adequate. For example, the Catholic Education Office provides a fortnightly rental subsidy of \$500 in Karratha, which is unlikely to bring net rental rates down to satisfactory levels for many prospective staff. The Pilbara region has regularly been reported to have unfilled teaching positions, although this is not necessarily due to insufficient teachers but rather due to no available accommodation for teaching staff. Government agencies have been known to pay over \$3000 per week to secure accommodation for staff. During interviews it was reported that childcare facilities, schools and the hospital depend on staff who own their own home or whose partner has allocated accommodation. The lack of childcare places in particular is due to two main factors: an insufficient supply of buildings that meet required building standards and a shortage of labour (Senate Select Committee on Housing Affordability in Australia 2008).

4.1.3 Infrastructure

The Pilbara ports are very important infrastructures that underpin the export of large-scale iron ore shipments. Two of the Pilbara's largest ports are within the vicinity of Karratha: Cape Lambert and Dampier. The Pilbara has an extensive rail network which transports iron ore to the ports owned and operated by the region's three major iron ore producers.

The airport, midway between Dampier and Karratha is one of the busiest in the state and was most recently upgraded in 1998. It is the major hub for West Pilbara FIFO workers and offshore oil and gas operations.

Comprehensive research undertaken by the URS Asia Pacific throughout the Pilbara (2008a) reported that most residents of the region considered the infrastructure and

services to be insufficient, poorly maintained, often inappropriate and in some cases under-utilised due to staff turnover. The most critical feedback was from residents in Dampier and Karratha regarding education, childcare, medical services, aged care and transport.

4.1.4 Planning and housing strategies

In the 1990s several assessments of planning needs for the Pilbara were undertaken (Department of Planning and Urban Development 1992; Ministry for Planning 1997). The reports identified the inability of Karratha's infrastructure to cope in the short-to-medium term with any increase in industry activity or population base. Unfortunately, there was minimal planning co-ordination across government jurisdictions and few of the recommendations were enacted by any level of government prior to the onset of the most recent resources boom.

The Ministry of Planning report (1997) recommended a land release program of 200–300 lots per annum with the potential to accelerate the land release program following native title clearance. The report anticipated a big increase in demand for housing within Karratha. It would appear the advice was ignored as the level of land supply has not approached anywhere near the level suggested in the report. Landcorp argues that there was insufficient residential demand in the Pilbara at that time to support land release on such a scale. However, the provision of a sufficient supply of undeveloped land zoned 'residential' could have facilitated rapid development when the land was needed. The lapse in preparing a consistent and timely supply of residential land in particular has had extensive ramifications for the accommodation market in Karratha.

A policy of increasing housing density has not been generally accepted by the community, although the housing crisis has forced many in the community to reconsider their position. The Shire has endeavoured to provide the necessary framework to encourage a range of lifestyles and in 2000 gazetted Town Planning Scheme No. 8 to meet the following objectives:

- enhance built form, create an identifiable central focus and provide legibility;
- develop local commercial centres to provide convenience goods and services to the local communities; and
- encourage residential development that will accommodate a greater range of lifestyles and needs to reflect the broadening population base (Shire of Roebourne 2000).

The objectives being promoted within the Town Planning Scheme have yet to be met.

With the intense demand for accommodation, different types of housing configurations, styles and materials are starting to appear on new Landcorp subdivisions. These new subdivisions have areas of higher-density housing and the associated design guidelines ensure more environmentally responsive construction.

Local government

The Shire of Roebourne is responsible for land-use zoning, demarking land according to permitted (and compatible) uses. However, with the volume of work and the demands imposed on the local authority by the resources boom, the Shire does not have sufficient resources to meet the overarching strategic planning needs of the community, or identify the extent and type of housing required, a factor freely recognised by elected and appointed officials. Like other non-resource company organisations, the Shire of Roebourne has struggled to attract and retain suitably

qualified planning expertise and the situation is exacerbated by insufficient housing for Shire staff.

Pilbara local government authorities have struggled to achieve viability because of the state agreements between the state and the resource companies. The agreements are multi-faceted but exemption from paying local government rates and charges has affected the revenue of the four shires and therefore their capacity to fulfil their planning and other civic obligations. The Pilbara Regional Council (PRC) was established under the Western Australian Local Government Act 1995, to assist local councils with the co-ordination and sharing of resources. The PRC also seeks to influence and liaise with local, state and Federal governments in the development of policies and legislation which are of benefit to the Pilbara region.

The majority of the land parcels zoned R20 within Karratha are too small for infill development or subdivision. There is some opportunity for subdivision in the areas zoned R30 although there is no great local appetite for redevelopment because:

- it does not make economic sense due to the returns available from existing properties; and
- while some lots have potential for battleaxe-configuration, minimum residential design requirements restrict development potential. For example, the outdoor living area poses issues with many residents preferring to position their outdoor areas where they can maximise privacy and/or where they can capture the summer breezes rather than where the area best fits with local government planning requirements.

Western Australian government

The State government has multiple and prominent roles in the Pilbara and Karratha in particular. Much of the surrounding land is owned by the Crown and hence, when land is required for industrial or residential purposes, the state government is heavily involved. The process of rezoning the land is time-consuming and onerous, requiring the involvement and co-ordination of multiple government departments, including Native Title, Environment and Conservation, Planning and Infrastructure, Planning Commission, Landgate, Heritage, Water Corporation and the local government authority.

There has been considerable concern that the state government, through Landcorp, has not done enough to supply sufficient or appropriate land in response to high demand. Landcorp is currently investigating a number of initiatives aimed at greater diversity in both ownership and building models, including partnerships with not-for-profit organisations to ensure affordable accommodation is available for service workers who are not housed by government or the resource companies. There are also plans to release five rental-only group housing sites in Karratha. Some sites are being evaluated for the release of englobo land to builders as house and land packages with set maximum price limits. The intention is to attract lower and moderate income earners who could access the Department of Housing and Works joint equity programs such as LandStart and KeyStart to build in Karratha.

Population projections provided by government have not been regularly updated and consequently planning data is premised on inaccurate information. The Western Australian Planning Commission (WAPC) report (2005) was based on 2003 Australian Bureau of Statistics REP, itself derived from the 2001 Census which predicted population decreases in Roebourne and negligible increases in the other towns in the Shire. Even after the boom really hit there were no follow-up reports from the WAPC to rectify the inaccurate predictions. It is likely that the various government

departments use the projections for planning and budget purposes. The population projections focus only on residents and do not consider FIFO population movements in and out of the Pilbara communities.

As in all regions, public housing stock has declined in the Pilbara while funding for the CRA has increased. With the escalating costs of rents in the Pilbara, the CRA, which is capped, does not come close to meeting rental costs or alleviating housing stress for even moderate income earners who do not receive other housing funds from their employer. As a result of their funding and policy contexts, the CSHA and CRA play a relatively minor role in responding to the sort of housing issues confronting resource boom towns.

Government employee housing (GROH) has not kept up with demand in the region and there are consistent shortfalls that have had a significant impact on the attraction and retention of government key workers. In October 2007 the Pilbara Development Commission calculated that there was a GROH shortfall of about fifty houses. This is now being addressed but high demand and construction delays mean that the problems will not be alleviated in the short-term. Demand is likely to increase if the expansion projects mooted by Chevron, Woodside, BHP Billiton and Rio Tinto come to fruition. Unless the current shortages are rectified and GROH stock increases in line with industry expansion, then there will continue to be a shortfall between demand and supply across a whole range of government services, many of which underpin community functionality.

The Pilbara Development Commission (PDC) was established as a statutory authority under the Regional Development Commissions Act in 1994 with the objective of co-ordinating and promoting the economic development of the Pilbara, and has also played a role in the Pilbara housing market by recording on a quarterly basis the cost of land and housing in each of the major towns for more than six years. This has been of particular value to individuals, small business and the resource companies who have struggled to reinforce to government the urgency of demand and the high cost of housing in the region.

In 2006 the Pilbara Industry's Community Council (PICC) was jointly established by the Chamber of Minerals and Energy with the state Department of Industry and Resources and the major resource companies active in the Pilbara region. It aims to collaborate with local governments, communities, small business and the large resource companies to develop a shared vision and strategy in relation to the sustainability of Pilbara towns. This has been an important initiative that has provided the opportunity for the resource companies to share information without compromising business confidentiality. Information such as industry expansion plans and the implications for projected workforce and infrastructure are now being shared regularly with all stakeholders to assist with planning and community development.

Generally, state governments have been reluctant to invest in resource towns and mine camps, presuming that to do so is to meet the needs of an industry sector that can, seemingly, afford to provide its own resources including housing. In addition, there has been a general assumption at local and government levels that the supply of resources in the Pilbara is finite and investment in infrastructure and housing for the short term is not a good use of government money. While it has not been publicly stated, there appears to be a presumption that Pilbara communities were not intended to be anything more than temporary, or would only last as long as the resources can be economically extracted. Hence, government investment in Pilbara towns has been at a minimum since towns were established, and governments have looked to resource companies for the provision of key infrastructure such as potable water, energy supply, waste management and roads, as well as significant investment in

housing stock, health and education facilities, local government projects and town beautification programs.

4.1.5 Mining companies

The Pilbara has been described as a hollow economy because, while there is significant economic activity (expenditure) in the region, these funds tend to flow out of the region either immediately or shortly after they are incurred due to a high proportion of FIFO workers. In addition, the 'fly over effect' means little money is spent locally. Few, if any, mining companies source large-scale supplies in the region, or have local procurement policies of any kind; all have head offices outside of the region and the skilled workforce is usually recruited elsewhere, so there is minimum investment by the large companies locally. During interviews there is clearly a 'save to leave' trend in the Pilbara where people either saved funds in order to leave the region or invested funds outside of the region in anticipation of their departure (forthcoming Haslam McKenzie 2009). Mining companies are an important part of the local economy but as boom conditions intensified with unprecedented global prices for resources, mining companies were able to outbid smaller businesses and service providers for labour and housing, creating a mono-economy and limiting competition through sheer size and domination.

The mining companies, together, own the majority of homes in Karratha and Dampier, either as homes available for rent, houses being purchased by resource industry employees or rented under resource company home ownership schemes and houses rented from the market. It is estimated that around eighty per cent of Karratha dwellings are owned by mining companies (Senate Select Committee on Housing Affordability in Australia 2008: p.124).

In addition, the resource companies provide approximately 470 homes in the Pilbara to community organisations, NGOs and government officers, to assist with housing shortages and to support the local communities function as normal towns with the usual services and retail outlets (URS 2007; Heuris Partners Ltd 2008). Mining companies have been blamed for creating the housing shortage but resource companies and the private sector generally cannot create serviced land suitable for housing without considerable state and local government co-operation and co-ordination between an array of government agencies, including the Western Australian Planning Commission, the Department of Planning and Infrastructure, Landgate, the Water Corporation and Western Power.

4.1.6 Housing dynamics

The housing market in Karratha is one of the most expensive in Western Australia (Australian Bureau of Statistics 2008d; Pilbara Development Commission 2008). With median house prices of over \$700,000 and rents reaching \$2000 for a three bedroom house, housing is out of the reach for those on low and even middle incomes. Interviews with local real estate agents described the lack of first-time buyers. The market is dominated by mining companies and mining sector employees. Those on non-mining incomes have virtually no chance to buy, the lack of variety in the housing stock being a contributory factor. Competition from investors seeking strong investment returns has further fuelled price rises. Land supply has been slow to respond to demand pressures for a variety of reasons (explored later) and it is only now that there are moves to respond to the failure of the market to meet demand. The last five years have seen a dramatic decline in housing affordability, resulting in serious issues for the labour market.

Housing stock and tenure

The housing market in Karratha reflects the situation in a number of other Pilbara towns. Demand for housing and a slow supply response have forced prices to rise by around 200 per cent in five years (Pilbara Development Commission 2004; Pilbara Industry's Community Council 2008). The median house price in Karratha is now over \$700,000, around \$250,000 above the Perth metropolitan area, and a new four-bedroom, two-bathroom house would be expected to sell for well over \$1 million (Pilbara Development Commission 2008). The rental market has come under extreme pressure due to a growing population and rising costs of owner occupation. Rents for four-bedroom houses are now in excess of \$2000 per week and rents per bedroom in shared houses are over \$500 per week (Pilbara Development Commission 2008). The limited supply and cost of housing has resulted in major problems for the labour market.

Generally, houses in Karratha have been detached single residential, Perth suburban-style structures, influenced by the domination of company-owned accommodation in the first wave of development between the 1960s and 1980s (Department of Housing and Works 2004). As such, the permanent accommodation stock tends to provide little variety other than the basic three- or four-bedroom detached dwelling (Department of Housing and Works 2004) which was typically not constructed to suit the semi-arid environment of the Pilbara (Singleton and Haslam McKenzie 2008). Consequently, there was no design consideration for cross-ventilation, shade or elevation, making houses very difficult to cool with, typically, air conditioning running 24 hours a day all year around. Immense practical, environmental, economic, and social problems/costs result from the inappropriate application of this housing model.

Table 3: Karratha housing stock and tenure

<i>Private dwellings</i>	<i>Karratha</i>	<i>Western Australia</i>
Total private dwellings	4,914	849,006
Unoccupied private dwellings	580 (12%)	91,017 (11%)
Fully owned	11%	30.%
Being purchased	20%	35%
Median housing loan repayment (weekly)	\$1,701	\$1,213
Average household size	3	2.5
Rented property		
Proportion of total stock	52%	26%
Median rent (weekly)	\$115	\$170
Landlord type		
Real estate agent	24%	41%
State or territory housing association	21.5%	15%
Other landlord type	51%	41.5%

Source: Australian Bureau of Statistics 2007e

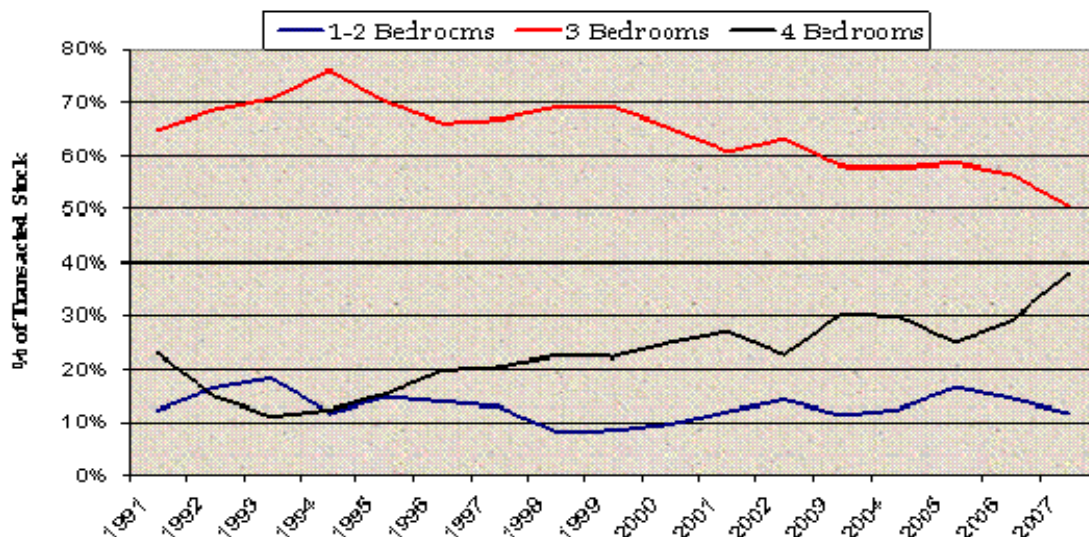
There were just over 4900 private dwellings in Karratha in 2006. The total stock of private dwellings grew by 12.4 per cent in 2001, well below the estimated population increase of seventeen per cent. The average household size is significantly higher than the Western Australian average, suggesting there is insufficient housing stock to cater for the current resident population. These factors explain why prices have risen from \$200,000 in 2001 to \$700,000 in 2008 (Pilbara Development Commission 2008).

Twelve per cent of stock was unoccupied in 2006, which is a significant proportion given the availability issues in the town.

The tenure structure of the Karratha market has major implications for market dynamics. Only 10.9 per cent of dwellings are fully owned with 19.8 per cent being purchased. These figures have fallen significantly since 2001 and are well below the Western Australian averages. Of total stock, fifty-two per cent is rental accommodation, double the Western Australian average. The ownership of the rental stock is split between the mining companies and private landlords.

Figure 5 shows the lack of variety in the housing stock. The number of one- and two-bedroom houses being sold on the open market is just over ten per cent of total sales. This rate has remained relatively constant over the last ten years. New stock entering the market is almost exclusively four- and five-bedroom dwellings. These factors combined ensure there is very little available to purchase for first-time buyers and even those on middle incomes. Consequently there is intense competition for rental accommodation.

Figure 5: Housing availability and diversity in Karratha



Source: Real Estate Institute of Western Australia data

Surrounding locations

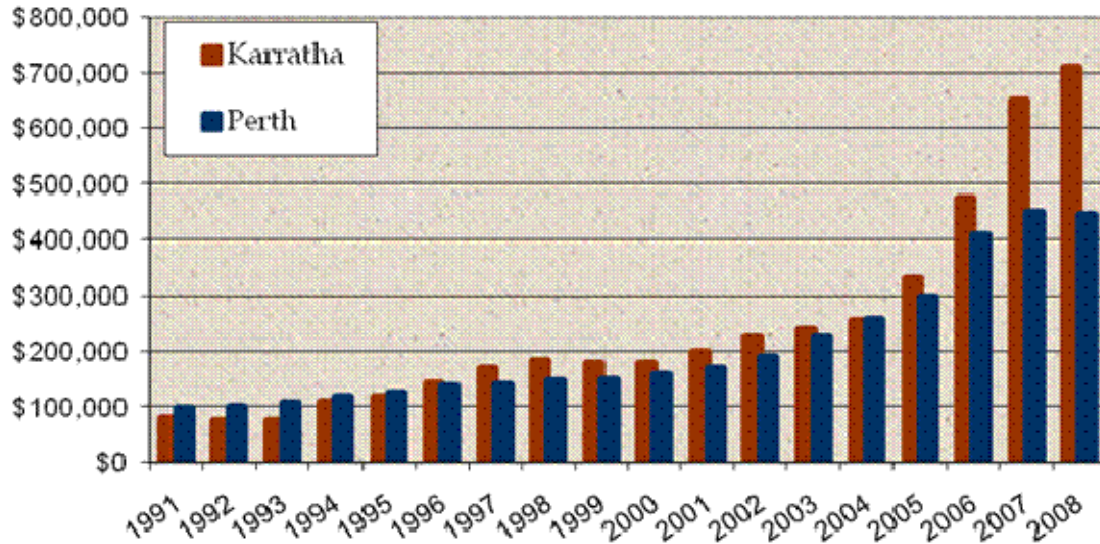
As noted earlier, the other towns in the Shire of Roebourne, Roebourne, Dampier, Wickham and to a lesser extent, Point Samson, are all potential locations for residents. However there is limited, if any, land available upon which to build houses, or in the case of Roebourne, the social dysfunctionality of the town has meant that it is socially and economically isolated from the other towns. Unless residents of all of these towns have access to private transport, there is no way of accessing work or services. Wickham, Dampier and Karratha are all dominated by company-owned housing, some of which is of poor standard, but demand is high and there is relatively limited movement in the housing market.

Roebourne does have serviced land that has some potential for development. However, currently the town is dominated by public housing and run-down private housing, and as reported in the URS study (2008b: p.4), few services remain.

House prices

Figure 6 compares the median house price of Karratha with that of the Perth metropolitan area. Prices have grown dramatically since 2004, the direct result of very strong demand and a slow supply response. The price of housing not only prevents new household formation within Karratha but also labour migration to the area.

Figure 6: Median house prices

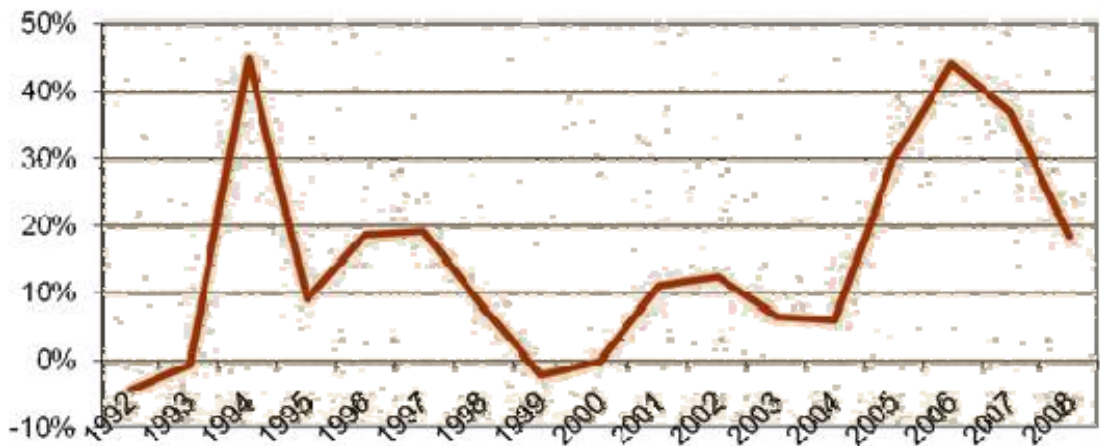


Source: Real Estate Institute of Western Australia data

It is estimated that ninety-five per cent of houses available for sale have long-term tenancies and are marketed as investment properties (Gibson submission to Senate Select Committee on Housing Affordability in Australia 2008: p.33). The supply of housing for owner-occupiers is severely restricted as a result.

Prices rose eighteen per cent in 2008 but there was a decline in prices toward the latter half of the year. The house price growth chart (Figure 7) defines Karratha as a strongly cyclical market. There was a period of strong growth between 1993 and 1998 before a quieter period leading up to the sustained, rapid growth of the current cycle.

Figure 7: Annual median house price growth in Karratha



Source: Real Estate Institute of Western Australia data

Rental market

The rental market is even more constrained than the owner-occupier market. Real estate agents described in interviews how private tenants were competing with mining companies to rent available accommodation. The mining companies are able to consistently outbid individuals in order to secure property for their employees. This mining sector demand has contributed to weekly rents rising to levels over \$1500 for three-bedroom houses and over \$2000 for four-bedroom houses. The rent for a single room in Karratha can exceed \$500 per week.

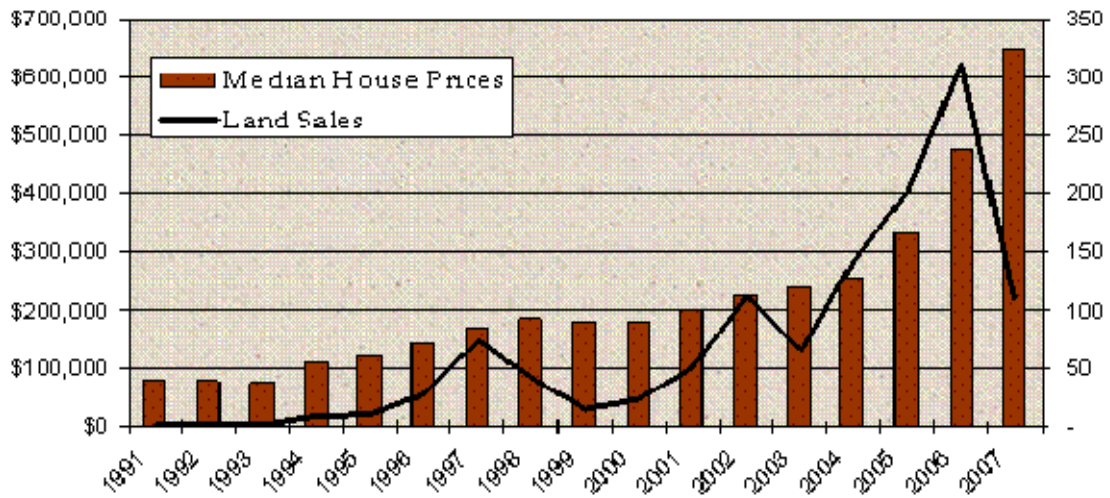
Of the total dwelling stock in Karratha, fifty-two per cent is rental property. The average for the whole of Western Australia is twenty-six per cent. Investors have been attracted by the potential for capital growth and the available income returns. A four-bedroom house purchased for \$1m and rented for \$2000 per week produces a gross income return of 10.4 per cent per annum. Add to this the double-figure capital growth of recent years and it is understandable why investors have flooded into Karratha from outside the town, region and state. The majority of properties advertised for sale include the potential weekly income if they have not already got a sitting tenant. Real estate agents are directly targeting the investment market.

Housing and land supply

Landcorp is responsible for the supply of development land in the Karratha area. A mixture of native title issues, capacity constraints and commercial pressures have severely limited the supply response to recent demand pressures (Michael Maloney, Senate Select Committee on Housing Affordability in Australia 2008: p.124). There were only 1197 new land sales between 1991 and 2007 (see Figure 8). This is only around seventy per annum.

There is little doubt that native title issues delayed the release of land in Karratha but native title was resolved in 2003 and yet there was no immediate supply response. However, it could be argued that there was little market evidence at the time that a boom was imminent. There was an increase in supply in 2005 and 2006 but nowhere near enough to satisfy demand. It took until 2008 for a large-scale increase in supply. Landcorp commented that they were taken by surprise in terms of the extent of the boom and subsequent increase in demand activity (Michael Moloney Select Committee Report: 126); however, a 1997 Ministry of Planning document (1997) predicted that the area could require up to 2500 new dwellings over a fifteen-year period to 2012.

Figure 8: Median house price growth and private land sales in Karratha



Source: Real Estate Institute of Western Australia data

Figure 8 describes the relationship between land sales and median house prices. The lack of new land released between 1991 and 2004 made price increases inevitable if there was an upward shift in the demand for housing. Landcorp has received considerable criticism from local residents and businesses who blame the organisation for the affordability crisis. Landcorp responds by noting that other key organisations operating in the region such as local, state and Federal government, the private building industry, utility providers and the mining companies have failed to act positively and should all share the responsibility for the housing market failures in Karratha.

There is encouraging progress being made toward relieving the housing pressures in Karratha. Landcorp's expenditure in the Pilbara during 2007/08 was \$47 million. Table 4 describes the significant increases in supply since 2006. The Department of Planning and Infrastructure admits there are ongoing accommodation and housing shortages in Karratha, particularly for social housing, government housing and service populations, although they believe residential supply is on track to meet forecast market demand (Western Australian Planning Commission 2008).

The Western Australian Planning Commission and the Department of Planning and Infrastructure set out in their recent document on housing hotspots (Western Australian Planning Commission 2008) the challenges for land release and housing supply in Karratha. These include the unknown requirements of accommodating resource workers, the access to builders and capacity to construct on purchased lots within the thirty-month time limit imposed for construction commencement. Native title negotiations are still progressing in some areas and there are significant Aboriginal heritage negotiations necessary to release land in the area of Mulataga which has the potential to deliver 160 ha of land. The regional road and water infrastructures also need upgrading to cater for increased user requirements.

Table 4: Land supply in Karratha

<i>Residential lots created (2001/02 to 2005/06)¹</i>	<i>Residential lots created (2006/07)¹</i>	<i>Residential lots created (2007/08)¹</i>	<i>Residential lots with current conditional approval²</i>	<i>Proposed Landcorp releases (next 2 years)³</i>
381	336	237	930	400+

Source: Karratha Regional Hotspots Land Supply Update. (Western Australian Planning Commission 2008)

1. Number of residential lots (final approvals) created as a result of subdivision (i.e. does not include survey or vacant lot stratas).
2. These are approvals for which construction or servicing has not yet commenced, or is currently underway. Calculated as at 30 September 2008.
3. Subject to demand and resolution of development issues.

There are moves to increase the diversity of the housing stock as well as the supply. A lack of diversity leads directly to affordability problems as there is nothing available at the lower end of the market to meet the needs of many housing consumers. Diversity is even more important when the median house price is unaffordable to the majority of purchasers. Landcorp has started to release group housing sites to provide higher density and rental-only dwellings for the market. Fifty lots have been set aside for the needs of small businesses, allowing such businesses to offer housing to attract and retain employees. The Department of Housing and Works also receives a land allocation in new Landcorp subdivisions. These initiatives are vital to address private market failure.

Despite the affordability issues, land is relatively cheap in Karratha when compared to established dwellings. Land costs in Perth are around fifty per cent of the median house price (Department of Planning and Infrastructure 2007: p.132). In Karratha during 2007 the median land price was only twenty-eight per cent of the median house price. This suggests that affordability problems have not been driven by the price of land but by the extent of demand for existing stock magnified by the lack of new housing supply.

Landcorp has kept land prices relatively affordable through the use of public ballots for a proportion of new lots. The price is set by the Valuer General's office based on a restricted market, that is a market open only to local residents. The use of public ballots is one way of avoiding the demand pressures emanating from external investors. However, the policy of restricting land sales to local ballots creates a problem: how to ensure that local residents do not try to profit from the restricted land price by selling completed developments to investors? A logical solution is an increased supply of suitable land for housing development.

However, there are still problems. The rate and cost of construction have hampered new housing supply. The lack of available builders is a concern for new land purchaser. Lots purchased on the Tambrey and Nikol West estates in Karratha were still awaiting development over eighteen months later (Gibson submission to Senate Select Committee on Housing Affordability in Australia 2008). There have been positive moves to accommodate construction workers to increase the rate of land release and housing construction. For example, fifty beds were set aside within mining company accommodation for construction workers. The planning authorities have introduced positive measures to ease capacity issues such as allowing the accommodation of workers on-site.

Housing affordability

Increased housing demand exacerbates the critical issue of affordability for a wide range of residents. In the Pilbara, the pressure for housing in towns such as Karratha has had a significant impact on the availability of housing for Aboriginal people and those residents, or would-be residents, for whom housing is either not provided or not subsidised by the resource companies. The lack of new land supply led directly to the dramatic price increases seen in Karratha. These price increases have had a detrimental effect on the labour market, particularly for those firms trying to attract staff from outside the mining industries. The lack of suitable, affordable housing was cited by many in research interviews as the biggest challenge facing their businesses and Karratha as a town.

New Landcorp land releases are starting to offer different land and housing products such as cottage lots, group housing as well as providing small quantities of housing for the public sector. However, these are initiatives that will have little short-term impact on the price of housing unless supply can increase significantly. A long-term, readily available supply of residential development land would ensure Karratha, through a responsive planning system, could react to demand pressures more quickly and avoid the type of rent and price escalations seen over the last five years.

4.1.7 Housing issues for Indigenous people

Indigenous people of the Pilbara have a strong cultural sense of place and the Pilbara is where they will live, come what may. Indigenous people in Roebourne found the idea of home ownership attractive for two reasons. First, because they wanted the security of having a home from which no one could evict them, and second, because they would wish to have a substantial asset to pass on to their children through inheritance. There are very few Indigenous home owners in the town, however. Lack of means because of unemployment has been the main obstacle for many over the years, and since the beginning of the current resources and energy boom, prices have increased beyond the means of low income earners. According to the 2006 Census there were 35 homes either owned or being purchased by Indigenous people in the Roebourne statistical division excluding Karratha. Some of these homeowners were participants in this research.

Many live in public housing in Roebourne which is approximately 40 kilometres from Karratha and there is no public transport. The impact of a very tight housing market puts pressure on agencies such as the Department of Housing and Works to ensure that tenants abide by the rules regulating access to public housing (McNamara, Tanton et al. 2007). Feedback during site visits indicated that Indigenous people are in constant fear of losing their public housing allocation due to overcrowding or because the lead tenant has exceeded their income allowance. Many Indigenous Roebourne households are overcrowded and some severely so. Overcrowding often involves numbers in excess of 20. During the sorry time surrounding the death and funeral of a local elder, one home was reported to be utilised by around 50-60 persons. The prevalence of overcrowding forces people into conflict-prone situations, including heightened opportunities for domestic violence, sexual abuse and physical assault.

It was also reported that the money flowing into the Pilbara towns finds its way to supporting drug habits and illegal activities associated with the supply of drugs. Community consultations indicate that there is broad agreement that drugs are sourced from mining and construction camps. At four community meetings it was reported that children, (both Indigenous and non-Indigenous) from the ages of 12 or 13 have access to, and regularly use and abuse, alcohol and drugs. The police and

Indigenous communities in Roebourne and Wickham are concerned that now the resource companies vigilantly undertake drug testing, they are inadvertently shifting local drug use to amphetamines which are not anatomically detectable after 36 hours whereas the less dangerous drug marihuana is detectable in the body for up to a month. Amphetamine use in Wickham and Roebourne has had some particularly unfavourable outcomes.

Roebourne's lack of economic connectedness with the wider Karratha and Pilbara economies and its dependence on State and Federal subsidies is revealed in part in the lack of commercial enterprise in the town. There are only a few privately owned businesses in Roebourne. These include the Victoria Hotel and the Harding River Caravan Park. The Roebourne Hotel closed in 1995 due to excessive street drinking and associated violence. Since then, no liquor has been sold in Roebourne. There is no bank, supermarket, postal service, public transport, accommodation or hospitality outlet in this town although there is a general store and newsagency. People travel to either Wickham or Karratha for take-away supplies of alcohol. This has had the effect of sending alcohol related violence into the homes. The caravan park across the Harding River from Roebourne is fully occupied by mining workers. There is also very basic motel style accommodation for mining workers within the old hotel precinct, (see Figure 9). The mine workers utilise their accommodation in these places largely on a dormitory basis, returning only to sleep, prepare for work the following day, and then they leave. They live quite separately from the town, economically and socially.

Figure 9: Motel style accommodation at Roebourne Hotel



(Source: C. Birdsall-Jones, 2008)

The standard of development in the town of Roebourne is poor. Comparison with the surrounding towns and localities of Karratha, Wickham, Dampier and Point Samson makes it apparent that the contrasting fortunes of Roebourne with the rest of the Shire

have been ongoing in the same pattern for many years. It is evident that the well established economic impoverishment of Roebourne has led to serious disadvantage of a highly complex nature. This complexity is reflective of the longevity of Roebourne's economic isolation from the rest of the Shire. It is likely that this isolation began with the establishment of a separate residential development in Karratha, but deepened when the administration of local government and the State bureaucracy was removed from Roebourne to Karratha. This pattern of separate development continued with the establishment of residential developments at the other three townships within the Shire.

Despite all these difficulties contributing to the undesirability of Roebourne as a residential location, the cost of housing in Roebourne has risen along with the rest of the housing in the Shire. During 2007 the median house price in the Roebourne township was \$150,000. Compared with Karratha's 2007 median house price of \$650,000 this seems quite modest. However, the Roebourne median house price represented a rise of 50 per cent from 2006, whereas the Karratha median house price represented a rise of 28 per cent from 2006. The major outcome of the current resource boom has been to push the price of real estate beyond the reach of low income earners largely through lack of supply across the region in general. This rise in the cost of housing is of a recent nature and appears to relate primarily to the scarcity of available land for development in the Shire of Roebourne, causing developers to look to the town of Roebourne as the most likely site of available land.

The shortage of affordable housing presents Roebourne service providers with much the same problems as in Karratha. No organisation can match the wage levels paid by the mining companies and prospective applicants for jobs demand housing or else cannot take the jobs advertised. Services which are funded through various government departmental grants are generally unable to do this, and so they remain understaffed. Turnover in these organisations tends to be high. In principle there is some Government Regional Officers Housing (GROH) available in Roebourne, however, it appears to be under or-unused and any house left vacant for a period is soon vandalised as shown in Figure 10 One Indigenous employed man had managed to persuade GROH to allow him to occupy one of the badly damaged properties. According to him, the property was nearly uninhabitable but as a single young man, he could do enough repairs to make it liveable, and besides, he had no other options. His earnings were over the Homeswest eligibility limit, and he did not earn enough to afford either private rental or purchase in the town. Roebourne residents were concerned that there is underutilised housing in the town. The longer a house lies vacant the more likely it is to be trashed until the house becomes uninhabitable. Residents reported that government employees coming in from outside the town are reticent to live in Roebourne because of the town's reputation and this was the reported reason all the GROH properties in the town were unoccupied. Roebourne people are not always certain which agency is responsible for housing and accommodation in the town, which is exacerbated by high staff turnover in both government and BGO organisations and a sense of the 'revolving government door'. Consequently, the blame for poor housing maintenance is often attributed to the wrong agency; nonetheless, poorly maintained and vandalised houses gives the town a 'bad look' and conveys a negative impression to outsiders and service providers.

Figure 10: Roebourne house, left vacant and subsequently vandalised



(Source: C. Birdsall-Jones, 2008)

Another cause of the housing shortage in the Pilbara is the difficulty obtaining tradesmen to undertake the building and renovation of homes. The method used by the larger real estate development companies operating in Karratha is to hire an entire crew of tradesmen in Perth, fly them to Karratha, provide accommodation for them, and employ them for the duration of a project to develop large sections of serviced land newly released by LandCorp. Neither private individuals nor the Department of Housing and Works can afford to do this and the shortage of local labour makes it difficult to contract local employees and businesses, which is the Department of Housing and Work's preference. Consequently, it can take nearly a year to build new Homeswest properties because Homeswest must wait until the few local tradesmen become available at each stage of the home building process (Senate Select Committee on Housing Affordability in Australia 2008: 22). Home demolition, in contrast, is a relatively quick and straightforward operation. It was a common complaint among interviewees that the number of demolished Homeswest homes that had not been replaced exceeded the few new homes Homeswest had built in recent years. The failure of Homeswest to re-establish homes on land where it has condemned and demolished houses may at least in part be due to the lack of available tradespeople. In any case, participants could demonstrate several examples of vacant housing blocks at which existing housing had been demolished years previously.

The few non-Indigenous low income earners in Roebourne were at wits end in their effort to remain housed. Rental property in Roebourne was being sold to take advantage of the rise in the market. In one case, because one woman had already lost one home in this way, the participant was seeking to persuade another home owner not to sell but to rent the property to her.

The place I'm in now, once again, the owners want to sell and by begging and pleading that I'd be in the park if they didn't let me stay a bit longer, I got a two week extension on the lease. I think I've got a place now, but it's on 'a maybe'. There are some people I know who are leaving and selling up, and I've begged them to consider renting to me. The woman gave me a relatively positive 'maybe' but then she said she had to talk to her husband. I'm just waiting to hear (Interview 25 March 08 Roebourne).

During field work for this project, local residents of Roebourne were asked how they saw the effects of the resource and energy boom on the town. Most participants could not see any advantage gained for the Aboriginal people of Roebourne. A few however, responded by asking, "Which one?" For these participants, the major effect of the minerals and energy resources industry occurred when Karratha and other towns like Dampier were normalized. Their recollection was that the mining boom of the 1970s brought a great deal of development to Roebourne. They recalled the building and construction work going on in Roebourne and that the town functioned well. School teachers and other middle class people lived and worked in town.

Now, the teachers and the other White people won't live in Roebourne. 6 o'clock comes and all the white staff are gone home to Point Samson, or Wickham, or Karratha (Interview 26 March 08, Roebourne).

There are also some Aboriginal people who don't want to live in Roebourne anymore. Some live in Homeswest housing in Karratha, but others live in small outstation communities outside of town.

We just wanted to live in a place where the people don't drink (Interview 25 March 08 Roebourne).

In focus group discussions participants were of the view that the heightened resource activity in the region had definitely had negative effects on the town. They were unanimous in pointing to the deleterious effects of the boom on housing in the town and on the town in general terms. The distance to the mine sites from Roebourne presents no obvious point of contrast with the surrounding residential localities, nor does accessibility present any apparent problem. Yet it is the case that development in the Pilbara has bypassed Roebourne almost entirely.

The economic isolation of Roebourne has led to the isolation of the Aboriginal people of the town from the economy of the Pilbara. The development of a real estate market in Roebourne is a sign of a lessening of the town's economic isolation. However, the evidence so far indicates that Aboriginal people are not benefitting from the investment in their town any more than they have benefitted from the economic boom in the Pilbara over the previous thirty-three years. At this point, there is a very real danger that in addition to being economically isolated from the rest of the Pilbara, Roebourne's Aboriginal people are in the process of being economically isolated within the town itself.

4.1.8 Housing overview

Housing in the Pilbara is inadequate; supply has not kept up with demand even though population and industry projections have consistently shown over many years that housing supply is not adequate.

Housing construction in the Pilbara is expensive as all materials are transported by road from Perth. It has been estimated that the cost of building has risen by over fifty per cent in the last two years (Ellson submission to Senate Select Committee on Housing Affordability in Australia 2008: p.16). During boom conditions skilled tradesmen are often 'head hunted' by the resource companies for their needs, leaving

the community without a reliable source of construction labour. The lack of affordable and available accommodation within Karratha makes it difficult to attract construction workers to the area.

The quality and age of the housing stock in the Pilbara were identified by many residents interviewed during the case study as 'problems' for the retention of staff. It was stated during the community consultations in Karratha that houses were built with a 20–30 year timeframe in mind, up to forty years ago. The houses have not been well maintained, and as well as being insensitive to the environmental conditions of the region, do not accommodate a diversity of family needs. For example, the houses were not designed with extended or twelve-hour shifts in mind, hence the living spaces are often adjacent to the master bedroom. There are limited outdoor living and entertainment areas.

4.1.9 Community sustainability

Scarce housing limits diversity in the economy, the ability for private and public organisations to provide services and the opportunity for the towns to develop mature, functioning housing and labour markets. This is particularly evident for key workers in Karratha causing high rates of turnover.

As highlighted earlier, the housing in Pilbara towns has generally been built with limited consideration for aesthetics, good design or climatically sensitive orientation. Consequently, most houses must be air-conditioned all of the time to be liveable. The cost of cooling homes in the Pilbara is very expensive. For those who do not receive large salaries or government employee rebates, housing and the cost of living is prohibitively expensive and it is usually for this reason that many in the private sector leave the Pilbara.

Many in business in Karratha have curtailed some of their services due to lack of staff. The local supermarket opens two of their twelve checkouts, even when the shop is full of customers, due to the inability to procure staff. Some businesses have unconventional opening hours to dovetail with a range of personal needs; for example school hours when school children can assist, lunch times and the opening hours of other businesses and/or services due to the inability to hire staff.

It was reported, during interviews, that in the last twelve months seven businesses in Karratha have closed. When businesses close, there is less retail diversity, forcing people to leave the town to shop. Fewer paid employees in town means fewer people to patronise the businesses that are still operational and so the cycle of decline continues.

Attraction and retention strategies continually fall to community and industry groups but where a community or town is already under extreme pressure, such as is the case in the Pilbara, it is unlikely that a co-ordinated strategy will be developed without significant government leadership, commitment and involvement.

The scarcity of childcare was raised as a persistent concern during the community consultation. Childcare services are important for a variety of reasons. Not only do they facilitate a potential workforce but they enable the development of social networks which help support the settlement of nuclear families within the community, building a more liveable and sustainable community. The lack of childcare is attributed to:

- employees in the industry being poorly paid, and hence being attracted to better-paying jobs (most particularly the resources sector); and
- insufficient purpose-built facilities.

Furthermore, during the community consultations, it was reported that there is a dearth of after-school care, inhibiting full-time work opportunities for at least one parent.

Improved education facilities in the region would help retain longer-term residents and would also keep a larger teenage cohort in Pilbara towns. Improvements to recreational infrastructure would also facilitate the retention of families with teenage children. This has multiple implications. For example, high-school children are a valuable labour resource, particularly in retail businesses. Importantly, they live with their families and therefore do not require additional housing. Similarly, high-school children spend locally, contributing to the local economy in a small but important way.

The Pilbara region is too expensive for most retirees and hence, as reflected in the Census, Karratha has very few people aged fifty-five years and older (six per cent of the population in the 2006 Census). This removes a large proportion of the volunteering sector and prevents the community functioning in a traditional manner. Ageing Indigenous residents often live in squalor in and around Roebourne. The house shown in Figure 11 is the original Mt. Welcome Station house on the edge of Roebourne. It is currently used by elderly Ngarluma people (men and women) who used to live and work on the station in their young days, before the equal pay pastoral laws were introduced. The house has no facilities whatsoever, and the only source of water is a tap at the mains connection on the street. There is no funding available to improve the house or to modify it in any way, including waste control facilities, to make it into suitable habitation.

Figure 11: Mt Welcome Station Roebourne



Source: C. Birdsall-Jones, 2008

4.1.10 Social and economic impacts of housing dynamics

It is commonly assumed by those who have not experienced the inflated cost of living (particularly if housing and accommodation costs are included) in the Pilbara that people living and working in the region are extraordinarily wealthy, but a Pilbara lifestyle, whether it is as a permanent resident or as a FIFO worker, comes at a cost

(Department of Local Government and Regional Development 2007). Due to long-term housing and social infrastructure shortfalls in the Pilbara region over several decades (Australian Bureau of Statistics 2004; Pilbara Regional Council 2004; Australian Bureau of Statistics 2007c; Pilbara Development Commission 2007), families tend only to stay in the region for as long as a job lasts and then move away because housing costs erode the high wages paid in the Pilbara. During interviews, residents were asked how long they planned to stay in the region. Often the response was along the lines of “as long as it takes to pay off the house, car or boat, pay the kids’ education, pay out my ex-wife or pay for my overseas trip”. Focus group participants complained people came to Karratha to make money and consequently there was little attachment or pride in the town or community.

During the community consultations several employers explained that they accommodated their employees in their homes and for one, accommodating employees meant that her own children had nowhere to sleep during school holidays and consequently the children had not been back to the Pilbara for two years. The housing crisis has led to some people flouting regulations. This research obtained evidence of people living in caravans, backyard sheds, tents, garages and even two couples living in their cars for extended periods of time. Overcrowding, sub-letting, ‘hot bedding’ and illegal occupation place a section of the population in a class of people who do not want to be ‘seen’ or counted by any authority, including the Australian Bureau of Statistics.

Many new residents are living in unsuitable accommodation in the hope of picking up work with the resource companies which would then give them access to paid accommodation and good salaries. As noted earlier, the FIFO workers represent a significant proportion of the Pilbara workforce. It was reported during interviews that local government, community organisations and permanent residents resent the magnitude of the FIFO presence (approximately fifty per cent of the entire Pilbara workforce) because this workforce spends very little money in the community, uses many of the services and often has no sense of place or community, and thus does not volunteer or contribute to community activities.

Government staff have often been housed in the limited motel accommodation which then restricts the available accommodation for tourists and other potential visitors. A range of skill sets for the resources industries and other unrelated industries (such as childcare, retail, service, health, education, etc.) are in short supply. This, combined with the nature and location of mining operations with industry cost-structures leads to an increase in long-distance commuting, labour force ‘cannibalism’ and poaching. All of these factors work against the development of resilient or sustainable communities and economies.

4.2 Kalgoorlie-Boulder

4.2.1 Background

Kalgoorlie-Boulder, approximately 600 kilometres east of Perth, was established in 1892 as a result of a gold rush. Kalgoorlie is geographically connected to the town of Boulder hence the City is known as Kalgoorlie-Boulder. It has since become the administrative town for the Goldfields region, an outback tourist destination and an important pastoral and government hub. The town’s main resource sector industries are gold and nickel mining. The different industry sectors are well established, which makes the Kalgoorlie-Boulder economy relatively resilient despite the cyclical nature of the resource sector (personal communication, Goldfields Esperance Development Commission 2008).

Population

Consistent with a buoyant local economy, unemployment has fallen since 2001 and there has been a restructuring of the labour market with more people employed full-time and less in part-time work. Labour demand not met by the local resident workforce is met by FIFO and DIDO workers. Although our research interviews revealed that FIFO is not particularly common in the region, the incidence of long-term work commuters is increasing (personal communication, Kalgoorlie-Boulder Chamber of Commerce).

Table 5: Kalgoorlie-Boulder population

	<i>Kalgoorlie-Boulder</i>		<i>Western Australia</i>
	<i>No:</i>	<i>%</i>	<i>%</i>
Population	28,242		
0–14	7027	25%	20%
15–24	4,239	15%	14%
25–54	13,460	48%	43%
55–64	2,054	7%	11%
64+	1464	5%	12%
Temporary residents (count on Census night – place of usual residence)	782		

Source: Australian Bureau of Statistics 2007b

The demographic data shows a diverse population but one which is generally younger than the capital city and state, a pattern consistent with being an active industrial base in a remote location. During interviews in the region, it was consistently reported that the population was increasing, small businesses including retail were booming, the housing market was tight but vibrant and Kalgoorlie-Boulder was growing. However, the 2006 Census data (Australian Bureau of Statistics 2007b) indicates that the population has remained stable since 2001. Interviewees including representatives from state and local government, real estate agents, small business proprietors, builders and developers all complained that the 'Census got it wrong' and that the population has increased noticeably (see Section 3.3.1 for a review of Census data issues). In 2008 the Australian Bureau of Statistics (2008e) provided revised data, based on estimated resident population factoring in undercounts in the Census, so that the population had in fact increased by 2.5 per cent. This still seems somewhat below anecdotal evidence.

4.2.2 *Amenity and services*

The city of Kalgoorlie-Boulder has achieved a degree of economic stability which has enabled it to maintain a stable population despite the exigencies which the cycle of highs and lows necessarily places upon a local economy that is dependent on the minerals and energy sector. This is at least partly due to the diversity of businesses and services represented in the city, opportunities for jobs, training and experience in a variety of sectors including mining, tourism, agriculture, health, education and trades. The local Chamber of Commerce has been in existence for more than a century and represents 400 businesses which employ more than 6000 people. The city's economic and social stability is symbolised in its streetscapes, dominated by well-maintained colonial buildings, most of which are fully tenanted with retail outlets, offices and services such as banks, financial services, real estate, insurance,

construction, engineering, laboratory and other consultancy businesses. Despite the fact that Kalgoorlie-Boulder is a city, the general ambience conforms to the Australian ideal of the country town. This has been an important factor in Kalgoorlie-Boulder's capacity to support a long-standing reputation as a "liveable" city; that is, a city which can demonstrate its capacity to ensure the range of opportunities for employment, entertainment, and social connectedness within a cultural and climatic environment conducive to feelings of personal wellbeing.

Figure 12: Main street of Kalgoorlie-Boulder



Source: F. Haslam McKenzie, 2008

Public and private education is well supplied with nine primary schools and three secondary schools. Child care is also well serviced. Tertiary-level education is available at the Western Australian School of Mines, which is part of Curtin University. With regard to health care, the Kalgoorlie-Boulder hospital is a 131-bed inpatient facility and the largest regional public hospital in WA with a 24-hour Emergency Department and a dialysis unit. A private medical facility offers dental care, and general and specialist medical care. In summary, while Kalgoorlie-Boulder is one of Western Australia's larger regional centres, it exhibits a fairly typical profile for regional centres in this state while still being a mining town.

4.2.3 Infrastructure

The Goldfields is an arid region and until 1903 the region struggled to remain viable due to lack of water and diseases such as typhoid. In 1903 the Perth to Kalgoorlie-Boulder pipeline opened – an audacious engineering feat pushing water over 500 kilometres uphill. With the pipeline came significant and sustained population and business growth in the region. Adequate water supply underpins industry and the residential sectors in the region and in 1998 the pipeline was upgraded and storage in Kalgoorlie-Boulder significantly increased. There is concern that with current levels of population growth, new mining ventures and other industry expansion, reliable supplies of potable water could be vulnerable.

The government utility Western Power provides electricity to Kalgoorlie-Boulder through the South West Interconnected Grid System (SWIS), augmented by the privately owned TransAlta Power Station which supplies several large mining operations. Developers and housing industry sector representatives reported that the 2006 restructure of Western Power has not enhanced customer service or efficiency measures. The Distributional Headworks Scheme (Western Power 2008) which emphasises minimisation of cross-subsidisation and a user-pays scheme for the transmission and capital investment has not been popular. Compliance and connection bottlenecks are consistently reported and blamed for contributing to slow development time. Other government agencies such as the Water Corporation and Alinta Gas were reported to be under pressure from sustained development but were considered responsive to development demand.

Kalgoorlie-Boulder is an important rail and road transport hub into Western Australia from the eastern states. The city is also well-served by aviation, with several daily services provided by Qantas and Skywest from Perth and a recently introduced weekly service between Kalgoorlie-Boulder and Melbourne which is proving popular. The airport in Kalgoorlie-Boulder was redeveloped by the local government authority in the mid-1990s which released a large tract of land for new housing development within the city boundaries.

4.2.4 Planning and housing strategies

Kalgoorlie-Boulder is surrounded by unallocated Crown land, Aboriginal-managed land, pastoral leases, mining tenements and mine safety exclusionary zones and has a distinct boundary within which development can occur. The Kalgoorlie-Boulder Consolidated Gold Mines (KCGM) Super Pit borders the eastern town boundary and a safety exclusion zone has been proclaimed. This protective buffer excludes residential development and allows commercial/industrial development on the basis that the premises must be evacuated, as a risk management procedure, during the brief and infrequent times when blasting is occurring within a 400-m distance. The local government authority, the City of Kalgoorlie-Boulder, works with the state agencies and local real estate and Chamber of Commerce organisations to endeavour to meet land and housing demand.

Local government

The Kalgoorlie-Boulder Planning Strategy Steering Group, formerly the Kalgoorlie-Boulder Land Release Task Force, exists to monitor the supply and availability of appropriate domestic, commercial and industrial land. The city has a well established housing market and an easily identifiable building vernacular that favours single-storey construction and verandah protection. There is a desire at a city planning level to replace traditional ¼-acre blocks with higher-density infill housing development to meet some of the residential demand. This would provide a mix of higher-density developments with single residential housing, although there has been some local resistance. Demand for larger blocks that can accommodate horses and other lifestyle needs are more and more difficult to attain and increasingly very expensive.

Commercial development in the town has been buoyant throughout the last decade. Large retail developments have replaced houses in locations immediately adjacent to the main streets and showrooms and unit developments have also been developed. The city has encouraged residential unit development, although it has been noted that some of these have not been of quality design, using only basic materials and with limited concessions for climatic conditions and longevity.

Unlike many local government authorities with heavy resource activity, the City of Kalgoorlie-Boulder has actively encouraged mineral exploration and mining

companies to base and house workers and their families in the region. In August 2004, the City resolved not to support any mining camps that were located within a seventy-kilometre radius (when all of the road on that route is fully sealed, reducing to fifty kilometres when all of the road on that route is unsealed). However, with increased mining activity and insufficient housing to accommodate large-scale new development there has been some amendment to allow leniency. Nonetheless, while there is some FIFO activity, it is marginal and tends to be for exploration, construction and large-scale mine maintenance purposes. The Goldfields mining accommodation pattern tends to be residential with only limited single-person and mining-camp accommodation.

Western Australian government

Despite the Kalgoorlie-Boulder boundary constraints, the Kalgoorlie-Boulder structure plan identifies land for future urban use to accommodate population growth and maintain a cohesive urban form. According to the Western Australian Planning Commission (2000), the area has the capacity to house between 25,000 to 30,000 people based on the assumption of a yield of seven dwellings per gross hectare, with an occupancy of three people per dwelling. Based on these projections made when the Regional Planning Strategy was last revised (2000), Kalgoorlie-Boulder has almost reached capacity.

Landcorp is the main supplier of serviced land in the city. There have been complaints that land has been slow to come to market, prices have escalated and that government has profited excessively from the land shortage in the city. Landcorp denies these claims vehemently, insisting that they are like any other developer and must wait out time delays and deal with complex planning system compliance requirements.

A large industrial site, close to the airport, rail freight yards and the Kalgoorlie-Boulder Business Park was developed by Landcorp. There was some community disquiet that the cost of serviced land in this estate was approximately fifteen per cent more expensive than comparable land in the city and that Landcorp had an advantage over the private sector which did not have access to large parcels of developable industrial land. In their defence, Landcorp claims that the approvals process is slow and complex, including rezoning, native title, mineralisation and Aboriginal heritage clearance, and any delays increase development costs. In addition, other government agencies are not always time-efficient and competition for qualified labour such as surveyors, draftspeople and engineers is tight. Landcorp is now pursuing clearances for a further, larger industrial estate to be developed.

4.2.5 Mining companies

The mining companies active in and around Kalgoorlie-Boulder do not have a significant role per se in the city's housing market. While some companies do own and/or lease properties, most people in the resources industry buy or rent in the town independent of their company. This is in direct contrast to Karratha and is one of the key factors that explain the very different housing market dynamics in the two locations.

4.2.6 Housing dynamics

Kalgoorlie-Boulder is regarded by real estate agents operating within the city as an affordable city with a strong market for first-time buyers. Not only are median household incomes well above those in the Perth metropolitan area but median house prices are almost \$100,000 lower. The city also contains a diverse housing stock, ensuring a range of housing products not only for first-time buyers but also for those

moving up the housing ladder. The affordability of the local market enhances labour mobility and ensures a good supply of staff for local businesses.

Housing stock and tenure

In 2006 there were 11,763 private dwellings in Kalgoorlie-Boulder with an average of 2.7 persons per household, 0.2 above the average for Western Australia.

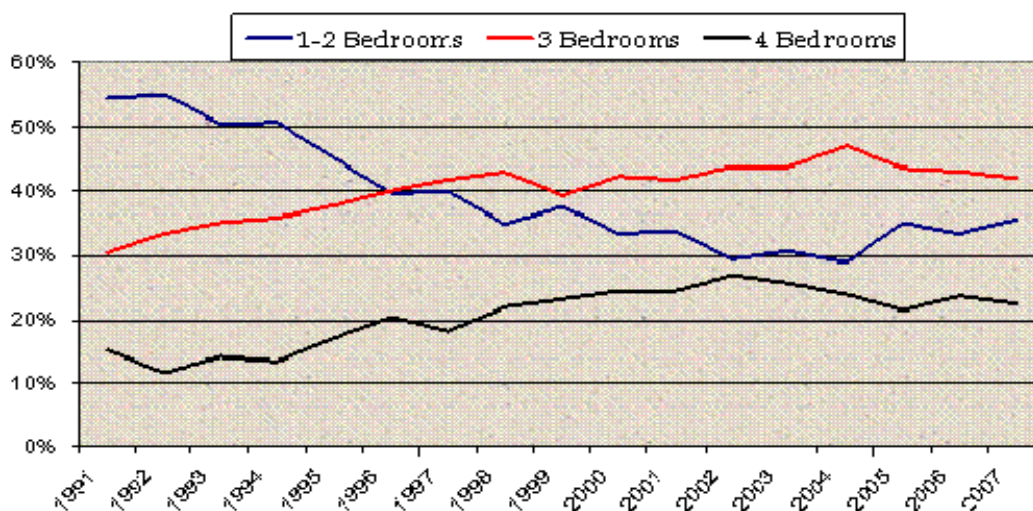
Table 6: Kalgoorlie-Boulder housing stock and tenure

<i>Private dwellings</i>	<i>Kalgoorlie-Boulder</i>	<i>Western Australia</i>
Total private dwellings	11,763	849,006
Unoccupied private dwellings	1353 (11.5%)	91,017 (11%)
Fully owned	16%	30%
Being purchased	40%	35%
Median housing loan repayment (weekly)	\$1200	\$1,213
Average household size	2.7	2.5
<i>Rented property</i>		
Proportion of total stock	31%	26%
Median rent (weekly)	\$165	\$170
<i>Landlord type</i>		
Real estate agent	42%	41%
State or territory housing association	21%	15%
Other landlord type	35%	42%

Source: Australian Bureau of Statistics 2007b

Housing sales, a good reflection of the total stock, are split quite evenly between one- and two-, three- and four-bedroom houses (see Figure 13) although the proportion of smaller dwellings has dropped considerably since the early 1990s. Although the percentage of fully owned houses is lower than the WA average there are a higher proportion of houses being purchased with a mortgage.

Figure 13: Dwelling mix in Kalgoorlie-Boulder



Source: Real Estate Institute of Western Australia data

The Kalgoorlie-Boulder market is a fairly traditional housing market with a mixed housing stock and a balance between renters, first-time buyers and existing home owners. As such, the housing market is very different in structure from the market in Karratha.

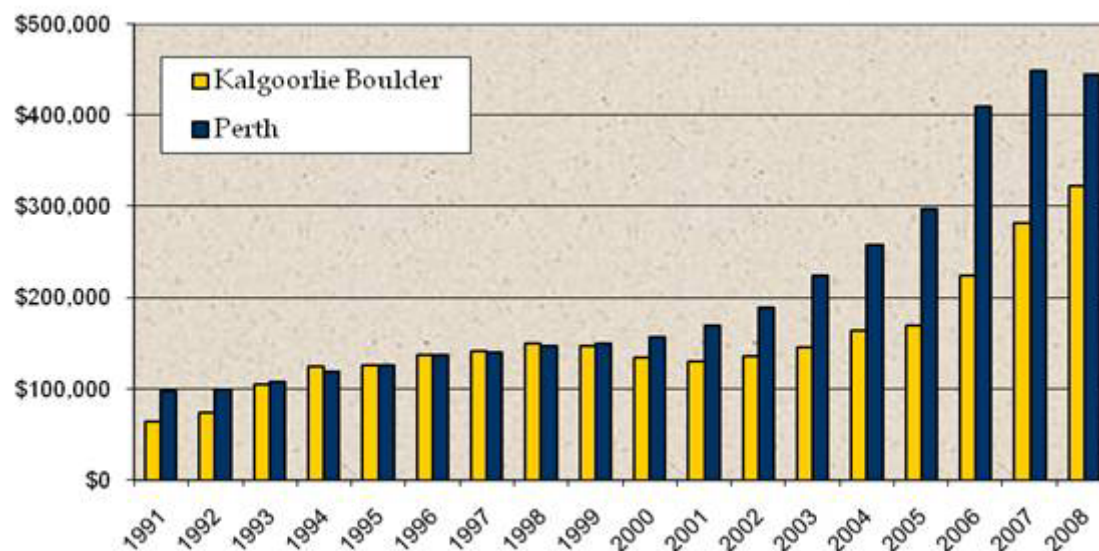
Surrounding locations

The robust resources sector has placed demand pressures on communities throughout the Goldfields region. It has been reported that even small towns like Coolgardie and Kambalda have experienced house price growth (REIWA) although median prices are still affordable. None of these towns, with perhaps the exception of Coolgardie, thirty kilometres west of Kalgoorlie-Boulder, could be regarded as a substitute housing market for Kalgoorlie-Boulder.

House prices

House prices in Kalgoorlie-Boulder exhibited modest growth in the ten-year period between 1994 and 2004 (see Figure 14). However, prices have doubled since 2004 largely as a result of strong demand from investors, first-time buyers and a lack of new supply. When questioned during interviews real estate agents did not attribute the significant price rises to direct demand for accommodation from mining companies. Although still regarded as an affordable market, continued upward pressure on prices will have a negative impact on the formation of new households and the inward migration of new workers. Although the market has a long way to rise before it approaches price levels witnessed in Karratha, there is a worrying lack of new housing supply in the city.

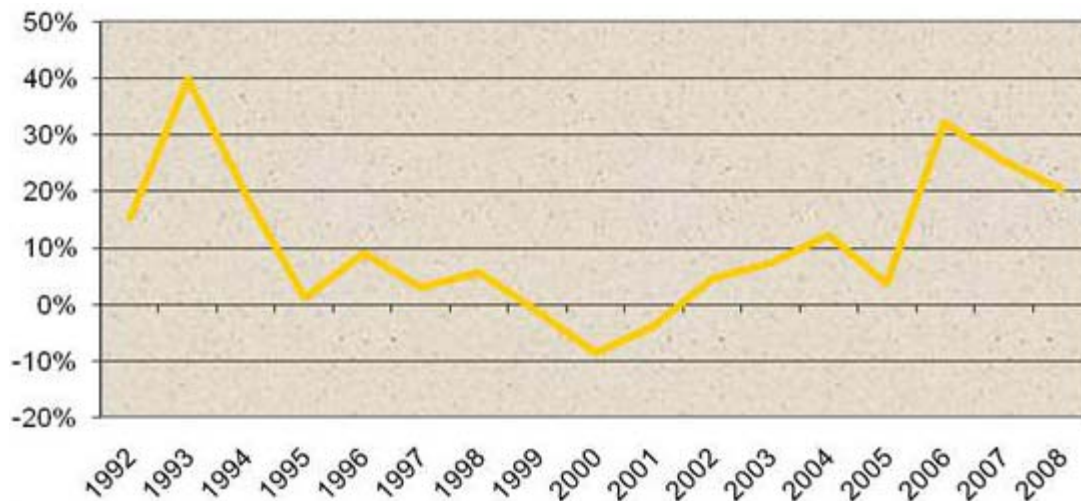
Figure 14: Median prices in Kalgoorlie-Boulder



Source: Real Estate Institute of Western Australia data

During the mid-1990s a significant supply of new land ensured housing was available to meet demand increases, holding prices relatively stable until 2004. However, land supply has been limited over the last eight years. There was a notable market downturn toward the end of 2008, the result of high interest rates and an uncertain global economic climate, affecting both investor and owner-occupier demand. However, this downturn is likely to be short-lived if employment remains strong and prices stay at levels well below those in the Perth metropolitan area.

Figure 15: Annual price growth in Kalgoorlie-Boulder



Source: Real Estate Institute of Western Australia data

Rental market

Thirty-one per cent of all property within the Kalgoorlie-Boulder housing market is rented stock. Australian Bureau of Statistics data show median rents to be below the average for Western Australia but these figures do not take into account the subsidies available for many mining employees. Average market rents for good quality three-bedroom houses are now in excess of \$350 per week. Real estate agents dominate management in the rental market, indicating the strong presence of private investors. There is a strong history of local investment in housing with many local residents owning more than one property (personal communication, Kalgoorlie-Boulder real estate agent).

Despite the relatively large proportion of the total stock within the rental market, real estate agents reported a chronic shortage of available property. This has resulted in sharp rent rises. Only around twenty-five properties containing three or more bedrooms were available to rent in the city for under \$400 (REIWA web site search Feb. 2009). Weekly rents for older-style, three/four-bedroom units are around the \$200–\$400 mark, but a new four-bedroom and two-bathroom house costs over \$550 per week. With relatively low house prices, these rents offer strong income returns to investors. Investors from both within and outside Kalgoorlie-Boulder are attracted to the market by low entry prices and the potential for income and capital growth. Gross income returns are around the six per cent level, around fifty per cent higher than a similar investment in Perth.

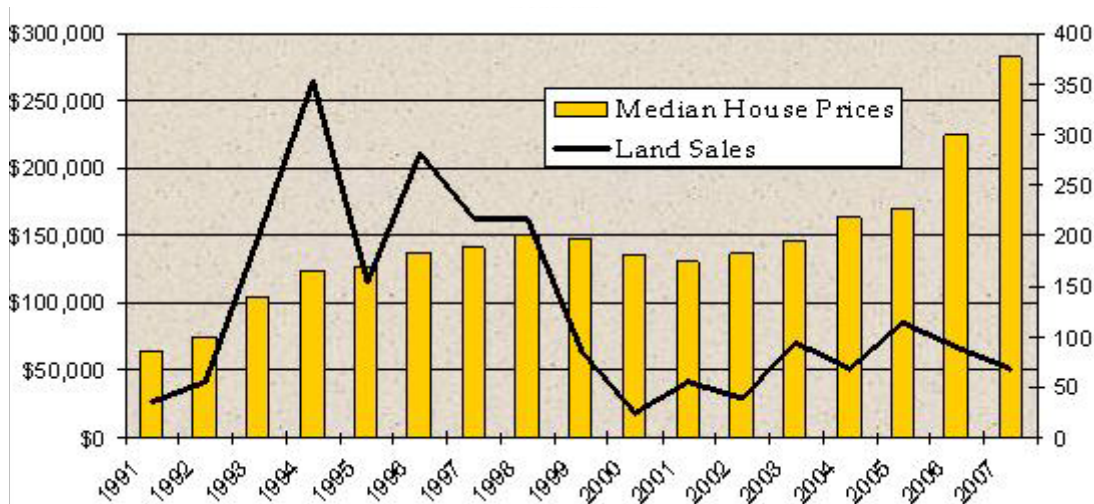
Housing and land supply

The modest price growth in Kalgoorlie-Boulder between 1994 and 2004 was, in part, due to the strong supply of new land in the 1990s (see Figure 16). Between 1991 and 1999 1600 new lots were sold, adding around twenty per cent to the existing housing stock. This increase in supply kept prices stable throughout the mid- to late 1990s through to 2004. From 2000 land supply dried up and only 553 private land sales occurred up to 2007. Strong demand and weak supply led to the sharp increases in median prices evident from 2005.

There has been new supply activity through the subdivision of older properties on large, traditional ¼-acre blocks. Infill development is becoming increasingly common with higher-density development partly substituting for the lack of new land

development activity. However, much of the higher-density stock is catering for the luxury market to accommodate the more senior employees of the mining companies who spend only a short time in Kalgoorlie-Boulder (personal communication, Kalgoorlie-Boulder real estate agent).

Figure 16: Median prices and land supply



Source: Real Estate Institute of Western Australia data

Table 7 highlights the supply of residential land in Kalgoorlie-Boulder. The supply of new land is largely controlled by Landcorp. Only 142 lots are expected to come on to the market in the next two years which will have little impact on supply in a residential market of over 11,500 existing dwellings.

Table 7: Land supply in Kalgoorlie-Boulder

<i>Residential lots created (2001/02 to 2005/06)¹</i>	<i>Residential lots created (2006/07)¹</i>	<i>Residential lots created (2007/08)¹</i>	<i>Residential lots with current conditional approval²</i>	<i>Proposed Landcorp releases (next 2 years)³</i>
250	145	13	504	142

Source: Karratha Regional Hotspots Land Supply Update. (Western Australian Planning Commission, November 2008).

1. Number of residential lots (final approvals) created as a result of subdivision (i.e. does not include survey or vacant lot stratas).
2. These are approvals for which construction or servicing has not yet commenced, or is currently underway. Calculated as at 30 September 2008.
3. Subject to demand and resolution of development issues.

The main growth area in Kalgoorlie-Boulder is the north-west sector which is constrained by a rifle range and explosives reserve. Without a new large-scale supply strategy the city could be faced with a serious supply shortage and any demand shock could have significant price effects.

Housing affordability

Diversity within the housing stock supplies a number of affordable housing products for purchase in the city. Although the proportion of one- and two-bedroom properties has declined since 1991, such property contributes a third of total available stock. Those on low incomes have the ability to access the ownership market with smaller

properties and even many three-bedroom houses falling under the price ceilings for government first-home-buyer assistance programs such as the Key Start home loan and First Start shared equity home loan schemes.

Kalgoorlie-Boulder consists of a number of suburbs of which Boulder and South Boulder are the cheapest. In these suburbs a typical three-bedroom house would cost around \$250,000. However, the lower end of the market is rising rapidly due to the demand from first-time buyers, ironically as a consequence of affordable prices.

The UDIA/Matusick affordability measures (2007) rated Kalgoorlie-Boulder as an affordable market, indeed the most affordable of all the Western Australian markets analysed in the study. The average income to median house price multiplier is 2.3 for detached houses with eighty-eight per cent of transactions rated as affordable and 1.9 for attached dwellings with ninety-six per cent of transactions affordable. The measures suggest there are no affordability or availability problems in Kalgoorlie-Boulder at present.

However, unless the supply of new homes through large-scale subdivisions increases significantly over the coming year, then sustained demand will reduce affordability. This may lead to associated problems similar to the labour shortages experienced in Karratha. Although a long way short of the Karratha situation, a supply response is necessary to ease pressure on the market.

4.2.7 Indigenous housing in Kalgoorlie-Boulder

In Kalgoorlie-Boulder, Indigenous people make up 7.5 per cent of the population. Unemployment in the Indigenous community is around four times higher than in the non-Indigenous community, hence the need for appropriate public housing. The Indigenous home-ownership rate in Kalgoorlie-Boulder is thirty-two per cent, which is slightly higher than the state rate of thirty per cent, whereas sixty-four per cent of non-Indigenous Kalgoorlie-Boulder people are engaged in home ownership (Australian Bureau of Statistics 2007d). Some participants interviewed for this research were of the view that Indigenous people suffered racial discrimination in regard to obtaining private rental housing. However, the proportion of Indigenous versus non-Indigenous people in private rental is the same, at fourteen per cent, which may indicate that racial discrimination alone probably would not account for any possible difficulty for Indigenous people seeking private rental. The statistics for public housing tenancy are more revealing of Indigenous disadvantage. Of the total number of Kalgoorlie-Boulder Indigenous households recorded in the 2006 Australian Census, thirty per cent were public housing tenants. Of the non-Indigenous population, five per cent were public housing tenants (Australian Bureau of Statistics 2007d).

During the period of field work, the average wait on the Housing Services priority listing was between four and twelve months. The category of applicant which constituted the highest demand was single adults, divided between single mothers and single men between the ages of eighteen and thirty. A significant proportion of this group was made up of newly released prisoners. However, the waiting period tended to increase according to the number of children in a family, because there are fewer homes with more than three bedrooms. Many of these larger families were Aboriginal. Because Kalgoorlie-Boulder is the regional hub city, it is the primary source of employment, social, educational, and medical services for the Goldfields. For this reason, Aboriginal people from outlying communities migrate to Kalgoorlie-Boulder, constituting a source of added pressure on the housing sector.

The largest proportion of Indigenous visitors appear to be coming from the communities at Leonora and Wiluna, many of whom are visiting relatives who are undergoing dialysis treatment or who are in the Eastern Goldfields Regional Prison in

Boulder. A number of others come into town for shopping, to visit relatives and in search of amusement. This pattern of Indigenous mobility places pressure on the public housing system and on the low-cost end of the private housing market.

Dialysis patients can be accommodated at the Trilby Cooper Aboriginal Hostel. They may also receive public housing as priority applicants, as with many of those coming into Kalgoorlie-Boulder for reasons associated with education or employment. All others must find housing with relatives or in such shelter as they can find or construct. Many of these people therefore are living in primary homelessness and are unlikely to be accurately reflected in the Census. This portion of the visiting population is associated with substance abuse, property damage and social disturbance in and around the homes of their relatives. It is unlikely that this group is accurately reflected in the Census (Australian Bureau of Statistics 2006).

The state has, in the past, responded to the pressure on the public housing system through urban renewal. The case of the Kalgoorlie-Boulder suburb of Adeline (see Walker et al. 2007) provides an illustration of the kinds of pressures put upon Kalgoorlie-Boulder public housing. It is relevant in this report because the state's response in this case was aimed at increasing the supply of housing for private ownership for the lower end of the market.

Adeline was a highly localised site of substance abuse and associated anti-social behaviour and was dominated by public housing.

Nearly half the properties in the suburb were public housing, owned by the Department of Housing and Works (DHW). The original purpose of the suburb was to cater for the needs of lower-income mines employees who were predominantly Euro-Australian. Over time, the population of the suburb came to be dominated by unemployed and Indigenous people. The objective of the New Living program was to reduce the proportion of DHW properties to twelve per cent by 2008 (Walker et al. 2007). Soon after the start of construction in 2003, the suburb was renamed Golden Grove (Australian Broadcasting Commission 2003).

There is no longer any concentration of public housing like that of the former Adeline anywhere in Kalgoorlie-Boulder. The actual number of public housing homes in Kalgoorlie-Boulder has been maintained through the ongoing building of new dwellings throughout the city.

Currently, the most visible issue for Indigenous housing is with regard to visitors from outlying communities who become itinerant homeless people. Many of the visitors achieve a high degree of social visibility by sleeping rough in the main streets. The City has in the past attempted to deal with this problem by providing a 'bush camp' equipped with an ablution block and a supply of firewood. However, after failing over a period of four years to obtain state government funding for the camp, the Council has abandoned its efforts in this regard (Australian Broadcasting Commission 2007).

4.2.8 Housing overview

The median house price in Kalgoorlie-Boulder was just over \$322,000 in 2008 compared to a median price for regional Western Australia of \$365,000 and the Perth metropolitan area of \$455,000 (Real Estate Institute of Western Australia 2008). Thus it can be argued that Kalgoorlie-Boulder has a relatively affordable 'owner-occupier' housing market taking into account the fact that household incomes are around fifty per cent higher in Kalgoorlie-Boulder than in the Perth metropolitan area. Local real estate agents described, during research interviews, the strong presence of first-time buyers in the market. This is unsurprising given the balance between incomes and house prices. These first-time buyers were regarded as the cornerstone of the

Kalgoorlie-Boulder market, purchasing houses at the lower end of the price range and allowing existing owners to 'trade up' through the housing stock.

The rental market was regarded by local real estate agents as more problematic. Rents in the market are similar to those in the Perth metropolitan area with older-style three- and four-bedroom houses commanding rents of \$200–\$400 per week and newly built properties around \$600 per week. On the surface, given the relatively high incomes in Kalgoorlie-Boulder, these rents do not seem extreme and are well below those in Karratha. However, the relative cost of renting compared to purchasing places pressure on the owner-occupied market and house prices have risen rapidly since 2004. Local real estate agents still regard the Kalgoorlie-Boulder market as affordable but expressed concerns that if prices continued to exhibit the upward trend experienced over the last four years this would affect demand from first-time buyers which would, in turn, have knock-on effects for the rest of the market.

4.2.9 Community sustainability

Kalgoorlie-Boulder's local economy is diverse and is sufficiently robust to have survived numerous downturns in the resources and property markets over the years, one reason why people have been attracted to invest in property and business in the city. The crime statistics for the region have not shown any significant change over the last decade. Petrol-sniffing, domestic violence, drug and alcohol abuse and assaults are not uncommon but serious crimes are unusual (WA Police Service 2008).

The local office of the Department of Housing and Works reports that there is consistent demand for public housing and rental assistance which has increased under recent boom conditions. Many of the services required by Aboriginal people, such as dialysis, justice and medical services are only available in Kalgoorlie-Boulder, drawing them to the regional centre, often against their preference. Kalgoorlie-Boulder has benefited from the New Living program, a government initiative undertaken in partnership with local government and private enterprise to overcome many of the social, physical, economic and environmental issues affecting public housing estates.

In Kalgoorlie-Boulder the majority of government key workers such as police and teachers are accommodated in houses leased from the private market by the Government Regional Officer's Housing (GROH).

4.2.10 Social and economic impacts of housing dynamics

The residents of Kalgoorlie-Boulder interviewed during this research had a strong sense of the history and the richness of the region, a sentiment not shared by the residents of Karratha. Residents expressed no desire to leave the city and were committed to the long-term growth of the local economy, in stark contrast to Karratha. The Kalgoorlie-Boulder housing market remains sufficiently affordable for most young, employed people to stay. Census data shows that while there is population movement in and out of the city, a large proportion of people stay five years and longer.

The City, Chamber of Commerce and the Goldfields Esperance Regional Development Commission are all keen to limit FIFO activity to specialist construction work teams and large scale maintenance work. To date, the incidence of FIFO has been contained. The strong employment market attracts people to the city, and presently, accommodation is available and affordable. Many local people invest in local real estate.

With the lack of new housing and available residential development land there is always a danger that prices will be pushed up and affordability affected. This would have implications for the city's housing and employment markets. Kalgoorlie-Boulder currently has a functioning housing market where first-time buyers are still active.

Despite a move toward higher density and infill development, new housing supply is weak and strong demand factors are putting pressure on rents and prices, although the current economic climate has reversed this trend in the short-term. There is time to ensure an adequate supply of new housing to meet demand and avoid the damaging price escalations witnessed in Karratha.

Combined with accommodation shortages, declining affordability has been blamed for a range of social and economic dysfunctions (Piper 2005; Bureau of Transport and Regional Economics 2006; Haslam McKenzie 2007). It is vital that such shortages are addressed.

4.3 Conclusion

The rapid onset of the current resources boom, and in particular, the scale of this boom, has placed enormous pressure on infrastructure, human resources and public service provision. Housing is an important and integral factor in responding to these challenges and is arguably a critical component of social and economic infrastructure such as hospitals, schools, roads, railways, ports and essential service utilities.

The housing markets within resource-based economic regions share a number of general features with all Australian housing markets. First, housing is a major household consumer expenditure item and represents a major form of fixed capital.

The social and economic impacts of resource booms are far-reaching and vary according to a range of local factors. These factors include the nature and size of the housing market, availability of residential land for development, proximity to alternative housing and employment markets, and the housing policies of the public and private sectors.

The important economic components of housing markets comprise the inputs of land, labour, finance, materials and infrastructure. These inputs and the interaction with supply-side agents such as developers, landlords and public housing providers shape local housing markets. Home owners, investors, and to a lesser extent, renters, are also producers and consumers of housing services since they develop, purchase, maintain and upgrade housing units. The characteristics and actions of these groups are key components of housing market dynamics.

Kalgoorlie-Boulder and Karratha have experienced very different resource boom outcomes. While the market is still relatively affordable in Kalgoorlie-Boulder and contributes to a diverse and sustainable economy and community, the problems in Karratha are well documented. Land supply has been a key issue. Organisations have failed to respond to demand pressures for a variety of reasons and prices have risen dramatically in the wake of unprecedented demand. A strong supply of land in Kalgoorlie-Boulder in the 1990s and much weaker demand for housing from resource industries has kept the market affordable for first-time buyers. However, supply must keep up with demand for the market to remain affordable. In Karratha, Landcorp is now delivering land on to the market and starting to offer a more innovative product to increase housing diversity and affordability. It will take time for supply to catch demand but the housing market is moving in the right direction.

5 QUEENSLAND CASE STUDY SITES

Queensland has significant resource deposits including coal, energy and metallic metals and is the location of extensive exploration and extraction activity. Queensland is the world's largest exporter of seaborne coal with mining concentrated in the central Queensland Bowen Basin and in the south-western Surat Basin. Metallic minerals production, including the base metals copper, lead and zinc, occurs in the north and north-west. The Bowen Basin is an area of coal reserves totalling approximately 60,000 square kilometres in Central Queensland. It encompasses fifteen communities, including the case study towns of Emerald and Moranbah, and has an estimated full-time equivalent population of 89,300 in 2007. The Bowen Basin holds the largest coal reserves in Australia and one of the biggest in the world. It has nearly thirty operating mines extracting over 100 million tonnes annually and growth is expected to continue with approximately twenty coal-mining projects in development or under expansion (Department of Infrastructure and Planning 2007; Department of Mines and Energy 2007a; Department of Mines and Energy 2007b).

The Bowen Basin has experienced cyclical fluctuations in population and economic conditions associated with changes in mining activity. Following a downturn in the 1990s, it is currently experiencing significant growth. This growth is expected to continue with the recent announcement by BMA of new mines and significant expansion of mining activity in the Bowen Basin (Billiton Mitsubishi Alliance 2008a).

The Bowen Basin is situated within driving distance of seaboard regional centres of Mackay and Rockhampton and the central highlands regional centre of Emerald. Many workers live in these centres and travel to work in the mines and may reside in workcamps and in nearby towns for several days at a time while on block rosters.

The accumulated effects of rapid expansion in coal mining since 2001 include population growth and housing pressures. Housing conditions associated with the mining boom in the Bowen Basin identified in government and community reports include:

- rent increases: median rent for a three-bedroom house in the region increased by 142 per cent (\$123 to \$198) between 2001 and 2006;
- house price increases: the median cost of purchasing a three-bedroom house has risen from \$51,318 in 2001 to \$196,130 in 2006;
- limited housing options: low vacancy rates for rental accommodation and limited social housing; and
- housing conditions: significant increase in temporary and informal accommodation and extensive use of single persons' quarters for mine workers.

Source: Queensland Department of Housing 2007

Housing markets vary significantly across the region, with some communities experiencing extreme conditions, such as Moranbah where rents were nearly \$600 per week for a three-bedroom house in June 2006. The housing market conditions reflect both the impact of local mining activity as well as broader Australian and Queensland trends in housing prices and residential rents. The reported impacts of the housing conditions in the Bowen Basin include:

- households with low and fixed incomes are forced to re-locate to areas with less expensive housing markets;

- difficulties in attracting and retaining workers, particularly in essential services and support industries;
- social and health problems associated with families being separated while miners work extended rosters and live on mining sites;
- social problems associated with large numbers of single miners congregated in small mining towns; and
- health and safety issues associated with workers driving long distances to regional centres at the end of work rosters.

Source: Rolfe *et al.* 2006

The findings from case studies of two Bowen Basin towns, Moranbah and Emerald are presented herein. These case studies involved reviews of secondary sources including statistical reports, research studies, policy and other documents. Interviews were undertaken with Brisbane-based government and mining town informants. The studies also included site visits to Moranbah, Mackay and Emerald where interviews were undertaken with a wide variety of informants drawn from state and local government, business and community sectors. Liaison also occurred with researchers from the Central Queensland University Institute for Social and Regional Development who were undertaking related studies in the Bowen Basin.

5.1 Moranbah case study

5.1.1 Background

Moranbah is a purpose-built mining town, established in 1971 by the Utah Development Company Ltd. It is located centrally in the Bowen Basin and was one of two population centres in the Belyando Shire until March 2008. It was then absorbed into the new Isaac Regional Council, created through the amalgamation of the Belyando, Broadsound and Nebo Shires. Moranbah is expected to be the main centre and administrative base for the new regional council.

Under mining agreements between the state and the mining company, the land on which Moranbah is situated was purchased from a local land owner and converted to Crown land with Utah Development Company Ltd being given special priority lease on the land. The planning for the new town of Moranbah was negotiated with the pre-existing Belyando Shire Council and from the beginning was an 'open' town with all regular local government functions and responsibilities vested in the Belyando Shire Council. Community facilities and houses for the mine workers and their families were constructed by Utah and the Queensland government and the town grew rapidly throughout the 1970s and into the 1980s (Galligan 1989).

As one of the key mining towns in the Bowen Basin, Moranbah has experienced fluctuations in growth and economic prosperity as a result of changing mining conditions. From the mid-1990s Moranbah saw a decline in population and housing demand until 2002 when it commenced the current growth trend.

5.1.2 Population

Moranbah is the second-largest population centre in the Bowen Basin (after Emerald) and is considerably larger than any of the other mining towns in the northern area of the Bowen Basin (Department of Infrastructure and Planning 2007). Australian Bureau of Statistics Census data shows 7133 usual residents counted on census night in 2006, an increase of sixteen per cent from 2001 when the population was 6133. The Australian Bureau of Statistics estimate of 1127 temporary residents (13.6 per cent of total persons counted) at the time of the 2006 Census is generally considered an

underestimation. The Queensland Government has undertaken significant population studies in the Bowen Basin since 2006 and estimates Moranbah's usual population on 31 July 2007 at 7822 and non-resident workers at 1717, making a full-time equivalent (FTE) population of 9539. Moranbah has more non-resident workers in numerical terms than any other town in the Bowen Basin. As a proportion of population, the rate in Moranbah at eighteen per cent is higher than the Bowen Basin average of 12.4 per cent but significantly lower than towns such as Coppabella, Glendon and Nebo where non-resident workers outnumber usual residents (Department of Infrastructure and Planning 2007). The population of Moranbah is projected to continue to grow strongly over the next five years to nearly 15,000 and then plateau (Moranbah Growth Management Group 2007).

The population of Moranbah can therefore be characterised as growing vigorously and comprising a significant proportion of non-resident workers (Australian Bureau of Statistics 2008a). Other key characteristics of the Moranbah population include:

- a relatively small, stable Indigenous population of 136 (two per cent) of population which is less than the Queensland average of 3.3 per cent;
- a high proportion of young families. Children under fifteen years comprise twenty-seven per cent of the population compared to 20.7 per cent for Queensland;
- a very small proportion of older people. Only 1.1 per cent of Moranbah's population is aged over sixty-five compared with 12.4 per cent for Queensland; and
- a mobile population with 56.4 per cent of the population residing at a different address five years ago compared to 47.6 per cent for Queensland (Australian Bureau of Statistics 2007c; Australian Bureau of Statistics 2008a).

Table 8: Moranbah population

	<i>Moranbah</i>		<i>Queensland</i>
	<i>No:</i>	<i>%</i>	<i>%</i>
<i>Population</i>	7133	100	
0–14	1925	27.0	20.7
15–24	1015	14.2	13.8
25–54	3679	51.6	42.0
55–64	432	6.1	11.2
64+	82	1.1	12.4

Source: Australian Bureau of Statistics 2007c

5.1.3 *Amenity and services*

Moranbah is an attractive and well-serviced community that caters for the basic needs of residents and also services surrounding areas. A wide range of retail, recreational, sporting, community, educational and health facilities and services operate in Moranbah. The original town design included a town square comprising retail and community facilities positioned around open public space. Additional municipal facilities including modern council offices, library and pool are situated in the town square and a shopping plaza is located nearby.

Figure 17: Moranbah town entrance



Source: R. Phillips

Government-provided education services include two primary schools, a secondary school, TAFE annex and Open Learning facilities. There are no private schools and no university campus. There is a public hospital and mental health service as well as police, fire and ambulance services. Private health professionals are available including dentists, optometrists, general practitioners, physiotherapists and alternative practitioners, but there is limited access to specialist private medical services.

Figure 18: Moranbah town centre



Source: R. Phillips

Moranbah is well-served with municipal services including a library, swimming pool and community facility. Recreation facilities are extensive and numerous. They include a golf course, racecourse, pony club, two recreation reserves catering for a wide range of sports and a cinema. Community services include a neighbourhood centre, emergency housing service, community radio station, service clubs and churches. Moranbah has a range of shopping, accommodation, food and entertainment options catering for residents and visitors. However, some small business retail services have closed and others report struggling to continue

operating. For example the butcher shop has closed and the Coles supermarket now has the only operating butcher. Anecdotal information supplied by study informants suggests that small businesses, such as butchers, face difficulties in attracting and retaining skilled staff such as butchers because of the high cost of housing.

5.1.4 Land and infrastructure

Moranbah is an intentionally designed town that, until recently, has provided adequate land and infrastructure to meet the needs of the population. However, with the population growth associated with increased mining activity over the past five years, expansion of the town has been constrained by both the availability of land and the capacity of existing infrastructure. The main issues are that Moranbah is bounded on all sides by mining leases and dependent on a mining company-owned water supply pipeline. This situation has underpinned considerable tension in recent years between the Belyando Shire Council and mining companies about the preferred patterns of growth for Moranbah. The surrounding mining leases and potential value of coal under the Moranbah township results in recurring speculation, reported by study informants, about the possibility of re-locating the town if coal prices make that economically viable. Such speculation contributes to a lack of confidence in long-term future of the town.

Lack of consensus about preferred approaches to the town's development is evident through analysis of planning disputes between Belyando Council, mining companies and the state government in recent years. This has contributed to difficulties in co-ordination of land development and infrastructure funding and provision between local and state governments and the private sector (personal communications). In the absence of agreement about the scale of projected growth and preferred footprint and sequencing strategies, planning and co-ordination of water, sewerage, roads, power and telecommunications infrastructures have been inhibited. The extent of conflict over land use during the recent mining boom is illustrated by two significant examples. The first was the use of state government 'call in' powers in 2005 to overturn a shire council land development project in response to mining company objections to building on a mining lease. The second was a decision by the Planning and Environment Court in December 2007 to dismiss an appeal against the Council's refusal of a town planning application for a 2000-person workcamp on rural property twenty kilometres from Moranbah (Belyando Shire Council 2007).

In an effort to bring all parties to the table to resolve these conflicts, the state government convened a Moranbah Growth Management Group in 2006, under the leadership of the local member of parliament, to identify development options and agree a strategy for the growth of Moranbah. The group brought together major stakeholders including infrastructure providers to agree to the location, timing and sequencing of infrastructure provision and land development. The growth management plan identified and reached agreement about an area of 1000 hectares to the west of Moranbah for future development and agreement was also reached about a new pipeline to service the future water requirements of the town (Moranbah Growth Management Group 2007). This outcome was reported during interview by one government officer as "quite a significant compromise".

5.1.5 Planning and housing strategies

The following overview of the planning and housing strategies of the key stakeholders provides an insight into the complexity and uncertainty associated with planning for the impact on Moranbah of the growth associated with the increased mining activity since 2002. All key stakeholders interviewed for this study reported that the timing and extent of the international demand for coal and the implications for the Bowen Basin

were unanticipated. The sale until 2001 by BMA of housing to workers in Moranbah at very low prices was repeatedly quoted by study informants as evidence that even the mining industry was taken by surprise by the scale of the emerging demand for coal production.

Local government

Moranbah's land use planning and housing strategies have been matters of considerable contention. The previous Belyando Shire Council adopted policies aimed at attracting families as permanent residents and achieving high standards of housing. Belyando Council strongly resisted housing options that implied impermanence of dwellings or of the town. Key elements of this approach included:

- promoting and developing traditional (usually 800 square metre) residential lots and limiting small-lot and medium-density development;
- favouring local resident owner-occupiers in sales of council developed land;
- imposing caveats on newly developed land specifying design standards, construction methods and materials perceived to result in 'permanent' housing; and
- limiting developments of single persons quarters and setting conditions on their location and standard, including requiring en-suites to each room and covered common areas.

Belyando Shire Council has been the primary residential land developer in Moranbah and capitalised on this role to influence estate design, establish caveats on the size and standard of housing and target sales to owner occupiers. Council also had a policy of allocating profits from land sales to fund affordable housing and is in negotiation with the state government to contribute funds to the construction of additional affordable housing supply.

The positive outcome of these policies include that the resident population of Moranbah is growing, housing is of a high standard and there is a sense of being a permanent and 'normalised' community. This stands in stark contrast to surrounding mining towns such as Nebo and Coppabella where free-standing, temporary single persons units and non-resident workers accommodation predominate. The less positive impacts of Belyando's policies include a limited supply and mix of housing with very little small-lot or medium-density accommodation, which contributes to a supply shortage and a lack of affordable housing for rent or for purchase. Moranbah's housing therefore tends to fall into two extremes, large detached houses on large suburban lots or temporary SPQs and caravans, with little in-between.

One mining company manager described the previous council's housing policy stance as " ...unique and unusual. It is a key centre in the Bowen Basin but the difficulties with Council inflexibility are unusual". The Queensland government has been considering the Council's planning scheme for some time and there are indications that the previous Council's policies may be reviewed and moderated following the recent council amalgamation and local government elections in early 2008. A significant challenge for the new regional council will be the need to reconcile to the disparate housing policy approaches previously adopted by the three constituent shires, Belyando, Broadsound and Nebo.

Figure 19: New Moranbah residential estate



Source: R. Phillips

Queensland government

The Queensland government generally takes an indirect role in local planning and housing strategies and expects local governments to take on this responsibility. Through its planning agency and under the auspice of the Integrated Planning Act 1997, the state government establishes the policy frameworks and processes for the development of local government planning schemes and facilitates regional growth management planning processes. The state natural resources agency is responsible for freeholding and releasing crown land for development; the Department of Planning and Infrastructure facilitates regional planning; the Department of State Development is responsible for regional development; and the Department of Housing is responsible for the provision of social housing. Queensland does not have a government agency with overall policy and co-ordination responsibility for housing supply/affordability and mining development.

The state government was criticised by a range of study participants, including some from within state government agencies, as failing to understand and respond in a timely and co-ordinated manner to the implications of the coal mining expansion in the Bowen Basin. Housing is one of the issues of most concern. In response to pressure exerted by local mayors, the area was visited twice by a number of Directors General of key state government agencies in October 2006 and April 2007. One outcome of this process was establishment by the government of a Coal Infrastructure Taskforce and action plan. Related initiatives have been implemented as part of the response, including:

- a review of way the environmental impact assessment process deals with social impacts such as housing and the accumulated impacts of multiple new mines and expansions;
- enhanced local and regional growth management planning;
- the establishment of the Moranbah Growth Management Group;
- development of a 'Sustainable Futures Framework for Queensland Mining Towns' and assistance for local government to plan for growth and manage the social impacts on resources communities;
- development of building standards for temporary workers accommodation;

- development of planning guidelines for single persons villages; and
- review by the Department of Housing of social housing responses and asset utilisation (Department of Infrastructure and Planning 2008a).

In the context of regional planning and the Moranbah Growth Management strategy, Moranbah has recently been identified by the Queensland government as the key secondary regional centre (after Emerald and Mackay) and the preferred growth centre for the Bowen Basin (Moranbah Growth Management Group 2007). The implications of this status are not clear but this public recognition of the strategic significance of Moranbah indicates that it will remain a primary centre in the Bowen Basin for investment in government services and infrastructure.

5.1.6 Mining companies

The housing strategies and policies of mining companies in the Bowen Basin differ considerably between companies and the approaches of individual mining companies vary across locations and towns (Wilson 2008). The companies with the most significant relationship with Moranbah are BMA and Anglo Coal. BMA has a long history in Moranbah and its housing policies are used here to illustrate the range and changes over time in mining company housing policies and initiatives. BMA managers advised that their preference is to limit direct involvement in housing provision and rely on the market wherever possible to meet the housing needs of workers. The decision to sell their housing in Moranbah between the late 1990s and 2002 is an example of this policy at work. However, there is recognition by the company that failure to address housing issues where the market does not respond adequately may impede the company's operations. BMA remains involved in Moranbah's housing market in a number of ways, including:

- provision of housing for senior managers and professional staff;
- incentives of grants and interest subsidies for workers to purchase homes;
- ownership or head-leasing of housing for subsidised rental to local workers either on a transitional or longer term basis; and
- provision of accommodation for DIDO workers while on roster. This is primarily leased SPQs but may include the option of caravan park cabins, hotel rooms, apartments or houses.

After protracted negotiations, BMA negotiated an agreement in early 2008 with the unions relating to improved access for employees to accommodation in Moranbah. Under the agreement BMA agreed to work with government and the housing industry to increase the supply and availability of housing and if necessary to take a direct role in ensuring that rental accommodation is constructed (Billiton Mitsubishi Alliance 2008a; Billiton Mitsubishi Alliance 2008b). This agreement was seen as a significant achievement by the union which strongly advocated for workers to be able to freely choose between living locally and driving or flying in and out.

Figure 20: SPQ Village Moranbah



Source: R. Phillips

5.1.7 Housing dynamics

Moranbah is one of the Bowen Basin towns experiencing the most severe housing stress as a result of the mining boom. Housing prices and rents have increased dramatically with median market rent of \$600 for a three-bedroom house, the highest in the Bowen Basin, and vacancy rates for all types of accommodation are extremely low. The housing market conditions are forcing lower-income earners out of the market and creating a severe shortage of accommodation (Department of Housing 2007a).

Housing stock and tenure

Moranbah has approximately 2000 private dwellings with an average occupancy rate of three persons per dwelling, which is higher than the Queensland average of 2.6. The private dwellings are predominantly three- and four-bedroom detached houses (eighty-seven per cent) with a limited supply of multi-unit or medium-density housing options (Australian Bureau of Statistics 2007c). They are of a relatively high standard for a mining town, comprising Hardyplank houses constructed in the 1970s and 1980s in the older parts of town and modern brick veneers in the newer estates.

Figure 21: Older-style housing Moranbah



Source: R. Phillips

The other main type of accommodation in Moranbah is relocatable SPQs. Approximately 900 of these are located in a large privately owned and managed village on the edge of town, others in the caravan park located near the centre of town. SPQs cater primarily for non-resident employees of mining companies and labour contract firms. The caravan park, at the time of the study, provided one of the few accommodation options for people unable to access or to afford the private rental market.

Table 9: Dwelling structure: Moranbah 2006

	<i>No:</i>	<i>%</i>
Separate house	2029	87
Semi-detached, row or terrace house,	71	3
Flat, unit or apartment:	100	4
Other dwelling: (eg. caravan, cabin, tent, improvised home)	139	6
Total	2339	

Source: Australian Bureau of Statistics (2007)

Moranbah's home-ownership rates are very low at forty-two per cent compared to sixty-one per cent for Queensland, reflecting expensive house prices, high levels of transience among the mining workforce and a general lack of confidence in the long-term housing prospects for the local housing market. Owner-occupation decreased between 2001 and 2006 from thirty-two per cent to twenty-two per cent, primarily due to a significant reduction in the levels of full ownership. One explanation for the decrease in fully owned and occupied housing, according to anecdotal reports from a number of study informants, is that miners who bought houses cheaply from BHP prior to 2002 have subsequently sold to investors or have moved to the coast and are now renting their houses. In part this is related to a high rate of re-location by Moranbah residents when they retire, which is evidenced by the very low numbers of people aged over sixty-five years.

Moranbah exhibits unusual rental market characteristics with nearly half of all housing rented, compared with thirty per cent for Queensland. There are low levels of renting

through real estate agents, low levels of public and community housing and high levels of renting from 'other' landlords (Australian Bureau of Statistics 2007). This indicates high levels of housing rented from employers, primarily mining companies but also labour contracting companies, other businesses and governments who provide subsidised housing in efforts to attract employees. Based on census data for renting from 'other' landlords, the levels of employee housing in Moranbah appear high even when compared with remote mining towns such as Karratha (see Table 17). This housing generally has low rents and is often head-leased by mining companies from private owners rather than being owned by the companies.

Table 10: Moranbah housing stock and tenure

<i>Private dwellings</i>	<i>Moranbah</i>		<i>Queensland 2006</i>
	<i>2001</i>	<i>2006</i>	
Total private dwellings	2407	2,668	1,660,750
Unoccupied private dwellings	330 (14%)	329 (12%)	152,228 (9%)
Fully owned	32%	22%	30%
Being purchased	20%	20%	31%
Median housing loan repayment (weekly)	\$200–399	\$1300	\$1300
Average household size	3.6	3.0	2.6
<i>Rented property</i>			
Proportion of total stock	37%	49%	30%
Median rent (weekly)	\$50–99	\$70	\$200
<i>Landlord type</i>			
Real estate agent	10%	15%	50%
State or territory Housing Association	11%	8%	11%
Other landlord type	78%	74%	36%

Source: Australian Bureau of Statistics 2007b

Surrounding locations

Moranbah is the best-served community with the most active housing market in the northern Bowen Basin area. The closest regional centres with relatively mature housing markets, Mackay and Emerald, are a two-hour drive from Moranbah. The fifteen communities in Bowen Basin have limited private housing options, comprising smaller centres such as Clermont with limited rental markets or towns such as Nebo and Glendon with significant mining company-owned or contracted SPQ villages.

House prices

House and land prices are relatively high and have increased significantly in Moranbah since 2001 from a very low base. As discussed previously, a housing market slump during the mining downturn from the mid-1990s to 2002 resulted in houses owned by mining companies being sold at prices as low as \$25,000. Since then house prices have increased steadily to a median price of \$350,000 for three-bedroom detached houses in 2007 (Department of Housing 2007b; RP Data 2008). A search of the realestate.com.au website on 11 March 2008 identified 107 homes for sale in Moranbah ranging from \$285,000 to \$675,000.

Land value increases mirror this trend by increasing from \$53,600 in 2004 to \$145,900 in 2007 (Department of Infrastructure and Planning 2008b). Correspondingly median housing loan repayments increased from between \$200–\$399 per month in 1996 to \$1300 per month in 2006 (Australian Bureau of Statistics 2007c). The median house price data mask the lack of diversity in the housing market, including the absence of affordable housing options such as apartments or units. They also mask the high cost of newly constructed housing which tends to be impacted by the need to meet Council's high building standard requirements.

Median house prices are now similar to those in the Queensland capital city and major regional centres and are higher than similar-sized rural towns including Roma (\$306,000), Kingaroy (\$266,000) and Emerald (\$328,000) (rpdata 2008). Prices in Moranbah are in large part driven by high rental returns, the high cost of building new houses and limited new supply. Moderating factors include uncertainty about the long-term future for the town and the risk of capital losses over the medium- to long-term.

Figure 22: New housing in Moranbah



Source: R. Phillips

Rental market

Rents are extremely high in Moranbah with median rents for three-bedroom houses increasing from \$160 to \$600 during the five years between 2001 and 2006 (Department of Housing 2007a). The supply of rental housing is also severely limited, with available housing largely taken up for use as employer-provided and subsidised housing by mining companies, contracting firms and other significant businesses. This creates barriers of affordability and availability for those who are not able to access employer housing schemes. In spite of high market rents, the median rent paid by residents is low (\$70 per week in 2006) and has not increased significantly since 2001 (Australian Bureau of Statistics 2007). This reflects the high proportion of renters receiving subsidised employee housing and represents huge discrepancies between rent paid by these workers and the rent paid by tenants competing on the open market.

Mining companies contribute to high rents through the demand they create but do have a moderating influence by exerting market power and setting ceilings on what they are prepared to pay. Informants, including a real estate agent, mining company managers and community members, reported \$200 per week per bedroom as an accepted benchmark rate for market rents in Moranbah. Interviews with local people, including from the real estate industry, provided anecdotal evidence that private rental investors are either previous owner-occupiers who have moved from Moranbah and

rent their properties or are external investors. The latter are reported to include interstate and overseas investors looking for high rental returns.

The only alternatives to private rental in Moranbah are public housing, the two caravan parks or privately operated SPQs. Public housing is very limited with fewer than 100 units. The MAC Group operates a larger facility that is generally booked in bulk by mining companies or contractors, leaving limited vacancies for private individuals (personal communication). The caravan parks also cater for company-leased employee accommodation and have, over time, reduced the onsite accommodation available to the public. Rents are high with re-locatable studio units renting for \$375 per week. Reports have been received since the study fieldwork that the caravan parks have been sold for re-development and private residents are being evicted. This effectively leaves no affordable or accessible accommodation options for lower-income earners in Moranbah.

Figure 23: Caravan park Moranbah



Source: R. Phillips

Housing and land supply

As discussed previously, housing supply in Moranbah has been constrained in part by limited available land for development. Nevertheless, dwelling approvals increased from two in 2001 to 151 in 2005 and declined to seventy-six by 2007 (Department of Infrastructure and Planning 2008b).

There are indications that housing supply may increase as a result of a number of recent planning and housing policy initiatives. The Moranbah growth management strategy estimated a need for 1700 additional dwellings by 2016. It identified a shortfall of 384 house lots in 2007 with potential future annual demand of between 260 and 300 lots per year between 2006 and 2011. The growth rate is then expected to level out to a demand for 287 lots in total between 2001 and 2016. While some of these lots will be achieved through infill, the main strategy is to develop Greenfield sites to the south-west of the existing town (Moranbah Growth Management Group 2007). The BMA agreement with the unions commits the mining company to work actively with developers to construct additional housing and revised Environment Impact Statement (EIS) processes put greater emphasis on addressing the housing impacts of mining expansion (Department of Local Government 2006; Billiton Mitsubishi Alliance 2008b).

Housing affordability

Although expensive, housing in Moranbah is affordable for the vast majority of residents because purchasers and renters are generally on high incomes and/or are in receipt of housing subsidies from employers. Individual and household incomes for

Moranbah residents are generally high by Queensland standards with very few low-income households. This hides the housing affordability problems experienced by those with low and moderate incomes.

Centrelink data shows few households in receipt of rent assistance payments and only thirty-five low income households in Moranbah are paying more than thirty per cent of income in rent. In 2005 only eleven per cent of people in Moranbah were in receipt of pensions or benefits, which is lower than for Bowen Basin overall (eighteen per cent) and a reduction from 2004 levels of seventeen per cent. It is significantly lower than Mackay (twenty-five per cent); Rockhampton (thirty-two per cent) and Queensland (twenty-seven per cent) (Department of Housing 2007a). This reflects high levels of workforce participation and low levels of unemployment, with approximately two per cent of residents looking for work at the time of the 2006 Census and a very small population of over sixty-five-year-olds (Australian Bureau of Statistics 2007a).

This data supports anecdotal evidence provided by community service workers that households such as older retired people, young people leaving home, women and children escaping domestic violence or people forced to leave work due to illness, injury or disability choose or are forced to leave Moranbah and seek affordable housing elsewhere. Other household members are also forced to leave town when a mining worker loses their housing entitlement by resigning. We interviewed one young man in this situation who was visiting Moranbah during the school holidays. He had lived in the town most of his life and re-located when his father moved to Mackay (a nearby coastal city). He considered Moranbah as his home town and wanted to move back to take on an apprenticeship but was unable to do so because he had no affordable accommodation. The other group identified as impacted by housing costs are new employees who are usually expected to find their own accommodation for at least the first three months of their employment, at which time they may become eligible for housing assistance.

Poor affordability for first-home owners is reflected in the low rates of home purchase, although this is also associated with a lack of confidence in the housing market and the transient nature of the population. A small increase in purchasers between 2001 and 2006 may be associated with mining company incentives for home purchase or the availability of more affordable land developed and released by the council.

The housing affordability burden in Moranbah is carried mainly by employers and lower-income households who are not able to access employer housing benefits. This particularly impacts on smaller and less profitable businesses. It also limits the opportunities for people to move into town unless they have already secured well-paid work and accommodation and impacts on the ability for people on low incomes to remain in Moranbah.

Housing overview

Housing costs and the limited availability and diversity of housing are critical and contentious issues in the Moranbah community for all stakeholders. The town has a low level of homeownership and correspondingly high proportion of renters, mostly renting from employers. Detached housing is overwhelmingly the primary type of private housing and is generally of a high standard. There is also a considerable supply of single person accommodation for non-resident workers. Housing prices are relatively high and there is insufficient supply to meet the needs of the growing population. Residential land supply has been constrained by the surrounding mining leases but agreement has recently been reached about areas for future development. Rents are extremely expensive and rental properties in high demand.

In spite of high house prices and rents, housing is relatively affordable for most Moranbah residents, either because their incomes are high or they have access to employer housing assistance. The town is home to very few low-income households and provides extremely limited affordable housing options for low-income earners apart from a small stock of public housing, temporary caravan park or emergency housing.

The population growth associated with mining and associated activity is clearly the major contributor to housing demand in Moranbah. High wages and the subsidies provided by mining companies to purchase housing allow workers to afford high standards of housing and add pressure to housing prices. Rental subsidies and competition for the limited housing supply have a similar effect on rents. However, the bargaining power of mining companies in the market may also have a moderating impact on price excesses.

At the same time a number of supply side factors, including land supply, infrastructure provision and market confidence, contribute to the limited availability and high cost of housing. Volatility in the mining industry and the associated market uncertainty combined with cumbersome and unco-ordinated planning processes also play a significant role.

Figure 24: On-site cabins at Moranbah Caravan Park



Source: R. Phillips

5.1.8 Community sustainability

As a mining town Moranbah's growth, prosperity and housing market is inextricably linked to fluctuations in mining activity. In spite of being established as a mining town and continuing to be economically dependent on the mining industry, Moranbah is considered by most key stakeholders to have achieved a size, amenity and strategic significance that indicate potential for social sustainability and economic viability. The factors likely to contribute to the short-, medium- and long-term sustainability of Moranbah include the following.

- It operates as a service centre for multiple mining companies and mines which are expected to maintain production over an extended lifespan.
- It is the business centre for a new regional council and is recognised by the state government as a secondary regional centre.
- It has a significant permanent population and strong sense of community.
- It has established business, community and government services to meet the needs of the resident population and to service surrounding areas.

- There is a supply of quality permanent housing and the township is attractive, well-planned and has a high standard of physical infrastructure.
- It is located centrally in the northern Bowen Basin and within driving distance of the major coastal regional centre of Mackay.

The risk factors that may limit the longer-term economic viability and social sustainability of the town include:

- its high dependence on mining industry and limited alternative economic activity; and
- the transience of the population and limited social mix associated with a mobile workforce, tendency for older workers and retirees to re-locate and inability of those on low incomes to afford to live in the town.

5.1.9 Social impacts of housing dynamics

The housing conditions in Moranbah have positive and negative social impacts at the community level and for residents and non-resident workers. These encompass issues of social inclusion and sustainability as well as family and individual wellbeing.

Participants interviewed for this study describe the Moranbah community in generally positive terms and longer-term residents reported a strong sense of community connection. There is a high level of civic pride and good ambience, amenity, facilities and services. The availability of high-quality housing with good access to services is one factor in attracting and retaining longer-term Moranbah residents.

However, the limited availability and the high cost of housing are seen as major barriers to attracting and retaining a more diverse range of people to the community. As discussed previously, accommodation in Moranbah is highly dependent on being employed, or being part of a family household where one member is employed in the mining industry. Spouses of mining workers are therefore generally unable to remain in town if they leave the family home in the event of marriage break-up or domestic violence. Similarly teenage or young adult children have limited options to move out of the family home to set up independently or to remain in Moranbah if their families re-locate.

Housing available to the public for lease directly from a landlord or through real estate agents is in limited supply and is expensive. It is therefore inaccessible to those employees without access to employer housing benefits, including apprentices, new mining workers and workers in service and support industries, as well as anyone who is not in the workforce or searching of employment. Those seeking employment or who are forced out of the workforce through injury, illness or disability are similarly unable to move into or remain in Moranbah unless they have the financial resources to afford the rents or purchase a home.

Social issues identified in previous studies of mining impacts on Moranbah and the Bowen Basin generally relate to the high reliance on DI/DO workers. Issues of concern include: the risks of driving fatigue for workers; the impact of the absence of mine workers on families and communities; the health impacts of workers living for extended periods in SPQs; and the impact on mining towns of concentrations of non-resident single males. Vehicle accidents, family breakdown, domestic violence, alcohol and drug misuse, excessive gambling, a shortage of volunteers participating in community and sporting organisations have all been cited (Rolfe *et al.* 2006; Construction Mining Forestry and Electrical Union 2007; Department of Housing 2007b).

Informants in this study provided anecdotal evidence supporting previous reports. They reported a high level of alcohol consumption and gambling by workers residing in single-person accommodation. Examples were also provided of safety concerns by families in response to hot-bedding in share households in residential areas resulting in large numbers of single male workers rotated through the neighbourhood. Other issues identified through interviews include opportunistic prostitution by high-school students in single-person villages, high levels of consumer spending and debt by workers with high disposable incomes and the impact of income disparities on social cohesion and differentiation between children from mining and non-mining families with lower incomes (personal communications).

Some of these issues are a result of the employment policies of mining companies and the nature of mining work and are only indirectly related to the housing conditions. Other contributing factors are: first, to the extent that employer and worker decisions to DIDO are influenced by the availability, cost and standard of accommodation in close proximity to mines; and second, the location, type and concentration of non-resident worker accommodation.

This case study demonstrated that the relationship between housing and social conditions in mining towns are complex, multifaceted and may be indirect and mediated by other contextual factors.

5.1.10 Economic impacts of housing dynamics

Housing conditions in Moranbah impact on the economy in two main ways: by affecting the cost and availability of labour and whether workers patronise local businesses.

The workforce impact is felt differentially across the economy with some businesses more able than others to absorb the costs and adopt alternative labour strategies. Mining and related industries have greater capacity to provide or subsidise worker accommodation and to utilise DIDO and labour contracting strategies. Small and medium business and those unable to pass costs on to customers are hardest hit.

The limited supply and high cost of housing for purchase and rent creates problems for small and medium businesses, community service organisations and Council in attracting and retaining staff. They report being under pressure to provide or subsidise housing which in turn feeds into higher costs which they can't afford or that undermine their competitiveness. Access to accommodation for construction workers is a key factor constraining housing supply and driving up costs in Moranbah. A common response by local employers to staff shortages has been to employ, where possible, the spouses and children of miners who already have accommodation in town. This results in high workforce participation rates but does not necessarily provide all the skills that are required. It also leaves employers at risk of high turnover as mining families tend to be fairly transient and when a mine worker leaves town, other employers lose the family members as workers. In an effort to address the loss of staff in key local government roles to mining, local mining companies are reported to have at times topped up wages in Moranbah for water and sewerage workers to be equivalent with mining wages.

A major concern within the Moranbah community is that DIDO practices, mining company workcamps and single-person villages siphon expenditure and economic benefit away from the town. Workcamps and single-person villages provide for all the basic needs of workers and source the vast majority of supplies and services from larger centres. For example the MAC village in Moranbah only purchases fresh bread from the local bakery. All other food supplies as well as laundry, maintenance and construction services are supplied to all five MAC Bowen Basin facilities by related

companies based in Mackay. Expenditure by residents in local businesses is largely confined to alcohol purchases, entertainment and gambling in local hotels and occasional purchases of personal items from the supermarket or other local retail stores.

By contrast the high incomes of permanent Moranbah residents support local businesses supplying staples as well as those such as the toy shop and jewellery stores selling discretionary consumer items.

5.2 Emerald case study

Background

The town of Emerald is the main population centre of the Central Highland Region (formerly the Shire of Emerald) which is the significant inland regional centre in the Bowen Basin. Emerald has a diverse industry base including coal mining, grazing, agriculture (grain and cotton), horticulture (grapes and citrus) and gem fossicking. Although Emerald services the mining industry in the surrounding area, there is limited mining in close proximity to Emerald.

Population

Emerald is the largest town in the Bowen Basin with a population in 2006 of 9900 and has steadily grown by about 3.5 per cent per annum over the past five years (Australian Bureau of Statistics 2008d). Emerald has a relatively small non-resident population (626) compared to other towns in the Bowen Basin, comprising twenty per cent of the Bowen Basin resident population and only six per cent of its non-resident population (Department of Infrastructure and Planning 2007; Department of Infrastructure and Planning 2008c). Emerald's population is expected to continue to grow over the next fifteen years, although at a lower rate than in recent years (Department of Infrastructure and Planning 2008c).

Other notable characteristics of Emerald's population include:

- a relatively small Indigenous population of 366 (3.3 per cent) in 2006 which is the same as the Queensland rate of 3.3 per cent;
- high proportion of young people, with 42.7 per cent of the population under twenty-five years compared to 34.5 per cent for Queensland;
- low level of older people comprising 4.2 per cent of the population over sixty-five years compared to 12.4 per cent for Queensland; and
- very high levels of transience, with 63.5 per cent of the population living at a different address five years ago compared to 47.6 per cent for Queensland (Australian Bureau of Statistics 2007).

Table 11: Emerald population: 2006

	<i>Emerald</i>		<i>Queensland</i>
	<i>No</i>	<i>%</i>	<i>%</i>
<i>Population</i>	10999		
<i>0–14</i>	2891	26.3	20.7
<i>15–24</i>	1807	16.4	13.8
<i>25–54</i>	5193	47.2	42.0
<i>55–64</i>	646	5.9	11.2
<i>64+</i>	461	4.2	12.4

Australian Bureau of Statistics 2007

5.2.1 Amenity and services

Emerald is a well-established town with well-developed community, business and government services that cater for local residents as well as providing a service centre for the surrounding Central Highlands region. The town is located 2.5 hours drive west of Rockhampton and sits at the intersection of two major transport and tourist routes, the Capricorn and Gregory Highways. It is well-serviced with train and bus services and has a modern, commercial airport.

A wide range of shopping, accommodation, food and entertainment options cater for residents and visitors. Emerald is also well-serviced with recreational, sporting, community, cultural, educational and health facilities and services. The town centre has been subject to a re-development plan aimed at revitalising it with mixed-use developments. There also two major shopping centres.

Government-provided education services include kindergartens, primary schools and secondary schools. There is a TAFE college, agricultural college and a campus of the Central Queensland University. There is also a public hospital and mental health service as well as police, fire and ambulance services. A full range of health professionals are available including dentists, optometrists, general practitioners, physiotherapists and alternative practitioners.

Emerald has good municipal services including a library, art gallery, swimming pool and community facility. Recreation facilities include a golf course, racecourse, pony club, two recreation reserves catering for a wide range of sports and two cinemas. Community services include a neighbourhood centre, church welfare and emergency housing centres, service clubs and churches.

5.2.2 Infrastructure

Emerald Shire Council has taken a proactive approach to planning for land and infrastructure to meet the demand generated by its growing population. As a result the town has a reliable water supply and infrastructure with the capacity to cope with, or be easily upgraded to meet, future expansion.

5.2.3 Planning and housing strategies

As to be expected of a regional centre with a diversified economy, housing planning in Emerald is influenced by more than planning for fluctuations in mining activity. In recent years both agriculture and tourism have impacted on growth, with the negative impact of the drought and disease in the citrus industry going some way to balancing the boom in mining.

Local government

Emerald has benefited from a strong and proactive local government that has taken a strategic approach to planning for population growth. It has a sophisticated town planning scheme that provides for future growth area and identifies preferred sequencing patterns for residential development. The Council has benefited from the planning support it has received from the Central Highlands Development Corporation (CHDC).

The main features of the Emerald Shire Council's approach to planning for housing include:

- providing for a diversity of housing densities, including a mix of detached, medium-density and community-title developments;

- allowing a diversity of housing forms, including relocatable houses on smaller lots which sell new for \$280,000 compared to up-market housing prices of \$500,000;
- encouraging mixed-use retail and residential development for the CBD;
- the inclusion of temporary and special accommodation into the fabric of community by encouraging small to medium developments in well-serviced areas. Large single person accommodation developments are discouraged;
- ensuring that Council is well-informed about what is happening in the land and housing market; and
- undertaking residential land development to ensure an adequate supply and a competitive market.

Although pro-active in the planning arena, the Emerald Shire Council has been reluctant to take on what they believe to be the state's role in direct housing provision. The exceptions are their land development role and a small role in providing community housing for young people and aged pensioners.

The Emerald Shire mayor was active in the regional group pressuring the Queensland government during 2006 and 2007 to address the regional impacts of mining that led to establishment by the government of a Coal Infrastructure Taskforce and action plan. While housing issues were less prominent in Emerald, other issues such as skills shortages were of significant local concern.

Queensland government

As discussed previously in relation to the Moranbah case study, the Queensland government generally takes an indirect role in local planning and housing strategies and expects local governments to take on this responsibility within the parameters of the Integrated Planning Act 1997. The state government responsibilities for regional growth management planning, free-holding and releasing Crown land, regional development, and social housing are distributed among several agencies. Details of Queensland government regional initiatives are provided in the Moranbah case study section.

Mining companies

The housing strategies and policies of mining companies in the Bowen Basin differ considerably between companies and the approaches of individual mining companies vary across locations and towns (Wilson 2008). Mining company informants reported less need to provide housing for employees in Emerald compared to other Bowen Basin towns because market rentals are more readily available to employees who wish to reside locally. This is true for both families and singles because of the diversity of housing discussed below. Mining companies do provide temporary singles accommodation for non-resident workers in the area, but this accommodation tends to be sited in smaller towns that are in closer proximity to mines.

Housing dynamics

While Emerald has not been immune to housing supply and price pressures, it is experiencing less housing stress than other towns in the Bowen Basin. House and land prices are relatively high in Emerald, new dwelling approvals are increasing and, although rents have doubled in five years, they are considerably lower than in towns such as Moranbah. It appears Emerald's more diverse economic base translates into housing conditions that are driven by different supply and demand factors than other Bowen Basin towns.

Housing stock and tenure

Emerald had 4283 private dwellings in 2006 with an average occupancy rate of 2.9 persons per dwelling which is higher than the Queensland average of 2.6. The private dwellings are of mixed types with 77.9 per cent detached houses and styles ranging from historical cottages to modern apartments and houses. Housing is generally of a high standard and in good condition. Caravan parks and improvised housing feature significantly as private dwellings. Accommodation for visitors and temporary or non-resident workers is less noticeable than in other Bowen Basin towns and tends to be lower-density and integrated into the fabric of the town. There is an absence of large-scale SPQ villages and a comparatively high usage of hotels, apartments and caravan parks to accommodate non-resident and temporary workers.

Table 12: Dwelling structure: Emerald 2006

	<i>No:</i>	<i>%</i>
Separate house	2978	78.0
Semi-detached, row or terrace house	101	2.6
Flat, unit or apartment	496	13.0
Other dwelling: (eg. caravan, cabin, tent, improvised home)	246	6.4
<i>Total occupied dwellings</i>	<i>3821</i>	<i>100</i>
Unoccupied	462	
Total private dwellings	4283	

Source: Australian Bureau of Statistics 2007

Emerald's overall level of homeownership at 53.5 per cent is lower than the Queensland average of sixty-two per cent but is significantly higher than Moranbah at forty-three per cent. Inexplicably the outright ownership rate is very low (16.6 per cent) and has reduced since 2001 (19.7 per cent) while purchasers are at a high level (thirty-seven per cent) and have increased substantially since 2001 (28.5 per cent). The net result, however, is a 5.5 per cent increase in homeownership over the 2001 rate of forty-eight per cent. These trends indicate reasonable affordability for home purchasers and relative confidence in the housing market.

Emerald has a relatively mature rental market, with relatively high rate of renting (forty per cent) compared to the Queensland average (thirty per cent). While the proportion of housing rented through real estate agents (forty-three per cent) is low compared with the state average (fifty per cent), it is high in comparison to other mining towns such as Moranbah (fifteen per cent, see Table 10: Moranbah housing stock and tenure).

Table 13: Emerald housing stock and tenure

<i>Private dwellings</i>	<i>Emerald</i>	<i>Queensland</i>
Total private dwellings	4284	1,660,750
Unoccupied private dwellings	463 (11%)	152,228 (9%)
Fully owned	17%	30%
Being purchased	37%	31%
Median housing loan repayment (weekly)	\$1,500	\$1,300
Average household size	2.9	2.6
<i>Rented property</i>		
Proportion of total stock	40%	30%

Median rent (weekly)	\$180	\$200
<i>Landlord type</i>		
Real estate agent	43%	50%
State or territory Housing Association	12%	11%
Other landlord type	44%	36%

Source: Australian Bureau of Statistics 2007b

Levels of 'other rented' housing which includes employer-provided housing are forty-four per cent; this is higher than for Queensland (thirty-six per cent) but considerably lower than Moranbah (seventy-two per cent). Levels of public housing at 11.3 per cent of rentals are slightly higher than the average for Queensland of 10.7 per cent but number only 172 (Australian Bureau of Statistics 2007).

Surrounding locations

Emerald is a service centre for the surrounding population centres which are of three distinct types: smaller mining towns; non-mining rural towns; and the gemfields. To the north and east are the mining towns of Tieri, Capella, Middlemount, Dysart and Blackwater. To the south and west are the agricultural towns of Springsure and Alpha and in close north-west are the gemfield towns of Rubyvale, Sapphire and Anakie. The mining towns tend to have a high population of non-resident workers accommodated in SPQs and reduce the pressure in Emerald for this type of accommodation. The gemfield towns have historically provided low-cost temporary and permanent housing including informal accommodation in shacks and caravans for prospectors. The previous Emerald Shire Council's planning scheme has supported their development as alternative, more affordable housing dormitory towns by enabling residential development and improving social and physical infrastructure.

House prices

House and land prices in Emerald tripled over the five years from 2002 to 2007. Land values increased nearly 300 per cent from \$53,600 in 2004 to \$145,900 in 2007 (QDIP 2008). This compares with average increases of 159 per cent during a similar period for Bowen Basin (Department of Housing 2007b). Median house prices increased from approximately \$100,000 to nearly \$350,000 over the same time period (rpdata 2008). As a result median housing loan repayments increased from \$802 per month in 1996 to \$1456 per month in 2006 (Australian Bureau of Statistics 2007).

A search of realestate.com.au on 11 March 2008 identified over 200 homes for sale in Emerald ranging from \$65,000 for a studio unit to \$345,000. This indicates a reasonable supply of homes for purchase across a range of prices.

Rental market

Residential rents are high compared to regional towns with comparable populations. They are similar to major seaboard centres such as Mackay but significantly lower than mining towns such as Moranbah. Median rent for a three-bedroom house in 2008 was \$360 per week compared with \$160 per week in 2001. However, median rents for a three-bedroom house have only increased by \$20 over two years from \$340 per week in 2006, while rents in other parts of Queensland have seen more significant increases. This indicates some stabilising of rents in Emerald (Residential Tenancies Authority 2008).

A diversity of rental housing types is available in Emerald at different price ranges. This includes an increasing supply of units and apartments. In the June quarter 2008

new tenants in two-bedroom units were paying a median rent of \$250 per week and forty-two bonds were lodged (Residential Tenancies Authority 2008).

Housing and land supply

Emerald has an active housing and land market. In recent years the Emerald Shire Council has deliberately applied their planning system and land development activities to ensuring a ready supply of residential lots and dwellings. In 2007, 526 new lots were approved and 295 were under production. Council and other study participants expressed concern about some delays in privately owned land coming to market. However, because land is available, housing can be built quite quickly when demand increases, for instance when new mines or expansion of mines are announced. In an effort to 'saturate' the market and keep prices down, Council is involved as a land developer and sells lots by tender or auction.

Housing construction activity is growing with annual dwelling approvals increasing from forty-one in 2001 to 289 in 2007 (Department of Infrastructure and Planning 2008c). There is an active local building industry but the pace of development also means competing with other growth areas such as south-east Queensland to attract builders from other areas. Transport costs and the costs of accommodating out-of-town tradesmen add to the price of new housing construction.

Housing affordability

Housing prices and rents as well as incomes are relatively high in Emerald, indicating that the housing is relatively affordable for much of the population. Median household income (\$1688 per week) is sufficient to afford median rent for a three-bedroom house (\$360 per week) and to pay a median mortgage payment of \$1456 per month (Australian Bureau of Statistics).

Emerald is overall a well-off community with a small proportion of low-income households. Emerald has a high workforce participation rate (eighty-two per cent compared with sixty-five per cent for Australia), less than two per cent unemployment and a small proportion of the population over sixty-five years. It has relatively low levels of households receiving Centrelink pensions and benefits, eighteen per cent in 2005 which is the same as for Bowen Basin overall and significantly lower than Mackay (twenty-five per cent); Rockhampton (thirty-two per cent) and Queensland (twenty-seven per cent) (Department of Housing 2007a). Queensland Department of Housing estimates based on Centrelink data report that twenty-three per cent of low-income households were paying more than thirty per cent of income to rent in 2005 compared with thirty-five per cent for Queensland. The affordable housing options for these residents are very limited.

5.2.4 Housing overview

Emerald has a diverse supply of good-quality housing, growing levels of homeownership and an active rental market. However, high demand, high local incomes and the impact of transport and living away from home expenses on construction costs do contribute to relatively expensive housing in Emerald. House prices and high demand in turn feed into high rents. House and rent prices are somewhat moderated by the ready supply of land and the availability of a range of housing options.

As a regional centre servicing the Bowen Basin and Central Highlands, Emerald's housing market is clearly affected by the demand associated with mining activity. This is reflected in the high housing prices and rents discussed above. However, a number of factors moderate the severity of the impact. The first is that Emerald is a relatively large centre and has a diverse economic base with only eighteen per cent of the

town's workforce employed in coal mining compared to forty-seven per cent in Moranbah. The second factor is that surrounding mines tend to be located at a distance from Emerald. This means that Emerald is less affected than other towns by the impact of non-resident workers. These workers tend to be accommodated in SPQs located in smaller population centres that are in closer proximity to the mines. Mining companies tend to prefer these towns as accommodation bases because they reduce transportation time and cost and also because their local government planning and building requirements for workcamps and SPQs may not be as stringent as in Emerald. The third factor ameliorating housing stress is that Emerald's residential land and housing market is strong, diverse and flexible enough to accommodate and respond to the housing demand in a timely manner. This is largely a result of the proactive efforts of the local council in planning, infrastructure provision and land development.

5.2.5 Community sustainability

Emerald demonstrates high levels of social and economic sustainability. The town has a long history that pre-dates mining and has a broad and diverse economic base which is not solely dependent on mining. It has seen five growth stages, beginning as a cattle and sheep area in the 1860s. The expansion of the railway to the west and north of Emerald in the early 1900s established the town as a key transport hub. This continues today with extensive usage of rail by coal mines and primary producers. In addition, the rail line is popular with tourists using the 'Spirit of the Outback' service.

The establishment of the Queensland British Food Corporation after World War II resulted in the first intensive farming operations in the shire. This has led to the development of extensive modern agricultural industries. The Fairbairn Dam, completed in 1972, is situated 11 km from Emerald and supplies 200,000 megalitres of water annually for irrigation, industrial and urban needs. A reliable water supply heralded the development of a variety of irrigated crops and the area now produces a wide range of food and fibre crops including cotton, citrus, grains, sunflower and soya beans. It also opened the way for development of the coal mining industry. The development of BMA's Gregory mine in 1979 brought Emerald's first experience as a dormitory facility for the mining industry. Other mines established in the vicinity include Gregory (1979), Crinum (1994), Ensham (1994) and Kestrel (1999).

Emerald is well-established as an important regional business and government service centre and is the administrative centre for the newly formed Central Highland Regional Council. The town is well provided with land, infrastructure and community services to support its existing population and to support future growth. Emerald is situated on major road and rails lines and has a well-equipped airport. There is little doubt about the medium- or longer-term social sustainability or economic viability of Emerald as a significant regional population centre.

5.2.6 Social and economic impacts

The significant housing-related social issues resulting from the mining boom in Emerald are the impact of housing affordability on lower-income earners. In spite of its high-income levels, Emerald has a higher proportion of low-income households than, for example, Moranbah. They face considerable barriers accessing private rental housing when competing with high-income earners and mining companies and have very limited access to the small supply of social housing. It is also the first port of call for people transiting from smaller western towns in search of employment. One study participant reported that unemployed Centrelink recipients from these towns are being forced to move to centres, such as Emerald with better employment prospects. The lack of affordable housing for these newcomers is reported to put considerable

pressure on the limited emergency housing services and often the only option is to camp out under the local bridge and move on to coastal towns. Evidence of people sleeping in cars and camping out under the bridge was observed during field work for the study.

The main economic impact of the housing situation is the difficulty that high rents have on attracting workers to less-well-paid positions. Council officers identified housing costs as a major impediment to attracting skilled employees. This is also a recurring theme in the findings of surveys of local businesses undertaken by the Central Highlands Regional Economic Development Corporation (CHREDC).

5.3 Conclusions

The Moranbah and Emerald case studies illustrate some of the different ways in which the resources boom has impacted on housing markets in the Bowen Basin. A range of local factors affect the specific nature of the housing impacts of mining in specific contexts. The most significant factors associated with the differences in housing outcomes between Moranbah and Emerald include: the extent of diversity in their economic base; proximity of mining activity; residential land supply; and local government housing and planning policies and capacity.

Moranbah, situated at the centre of the Bowen Basin mining industry expansion, has experienced an extreme housing supply and affordability problem exacerbated by an inability to address a severe shortage in land supply. Emerald, as a thriving regional centre with a diversified economy, was in a better position to respond to increased housing demand associated with the uplift in regional mining activity. It did not have the constraints faced by Moranbah of being land-locked by mining leases and had a growth-orientated planning scheme in place prior to the mining boom impacting on the local housing market.

The study illuminates the inability of the key Bowen Basin stakeholders (state and local governments and the mining industry) to anticipate and make a timely response to the growth management issues arising from the resources boom. There was an absence of the sorts of inter-sectoral relationships and governance arrangements required to enable government, community and industry to work together to ensure an adequate housing response. As a direct response to concerns about social and economic impacts, including housing impacts, of mining on regional communities, a number of policies, systems and structures have been announced or implemented by the Queensland government to strengthen planning and governance arrangements. These enhancements to growth management and impact assessment processes are designed, in large part, to avoid or better manage the sorts of housing impacts faced over the past five years by towns such as Moranbah and to a lesser extent Emerald.

6 DISCUSSION AND IMPLICATIONS

The aim of this Chapter is to synthesise the study findings and reflect on their policy implications. The policy context and literature review findings detailed in the Positioning Paper (Haslam-MacKenzie et al 2008) and Chapter Three of this report along with the case studies reported in Chapter four and five provide the basis for the Chapter.

The Positioning Paper provides a framework for analysing housing market dynamics in mining towns during boom-time conditions. That analytical framework comprises three key aspects:

- the causal factors impacting on housing markets;
- the social and economic impacts of housing stress; and
- policy options for better managing housing issues.

The case studies provide four diverse sites for empirical examination of the characteristics and dynamics of housing markets, the resulting socio-economic conditions and the nature of housing policy responses by governments and mining companies in specific Western Australian and Queensland contexts.

This Chapter provides a comparative analysis of the key issues emerging from the case studies as well as discussion of the overall findings and their policy and research implications.

6.1 Case study analysis and comparison

The study confirms housing as a significant concern for mining communities, especially in the context of rapid expansion in mining activity. However, the case studies demonstrate how the nature and magnitude of housing stress differs among mining communities. These similarities and differences in the housing experience of the case studies are explored in this section.

The common housing concerns identified by the study include the under-supply, high cost and variable standard of housing as well as the mismatch between local needs and housing types and inequities in the social distribution of housing benefits. Housing is a basic need of individual households as well as a critical component of both social and economic infrastructure. Housing conditions are therefore integrally linked to a range of social and economic outcomes. The housing problems associated with the recent mining boom have been highly contentious and the subject of significant public debate. Two of the case studies, Moranbah and Karratha, have been particularly prominent in media attention given to housing issues in mining communities.

A range of housing-related policy initiatives by state governments and mining companies have occurred in response to these community concerns. Acceptance of housing problems as legitimate public policy concerns has been slow to emerge in both Queensland and Western Australia. This reflects reluctance by both governments and mining companies to accept responsibility for housing issues and a lack of consensus about their respective roles in facilitating housing market responses and addressing housing market failure. This situation must be seen in the context of Australia's heavy reliance on the market for housing provision and, consequently, the limited range of policy levers available to address housing issues. The choice of policy interventions in a given case is therefore influenced by socio-economic and politico-institutional factors. The historical and legal context for relationships between state governments and mining companies, as discussed in Chapter two, is one of these factors specific to mining communities.

The following section analyses and compares the case study findings to answer the research questions relating to:

- the extent and reasons for differences between mining towns in the nature of housing dynamics;
- the socio-economic impacts of housing affordability issues; and
- policy options for managing housing issues and their effectiveness.

This is achieved by examining the distinctive characteristics of the towns, including their housing market and mining industry conditions as well as the planning and governance context for each community.

6.1.1 Settlement types and locations

The case studies represent four distinct settlement types with regard to their population, location, function and economy. Karratha is a medium-sized regional town (pop. 10,730) that functions as an administrative and service centre for the surrounding towns of the remote Pilbara region. Approximately one-third (thirty-three per cent) of the workforce is employed in mining. Kalgoorlie is a significantly larger regional centre (pop. 28,242) located in the Goldfields region and has slightly higher levels of mining employment (thirty-eight per cent). Moranbah has the smallest population of the study sites (7133). It functions as a sub-regional service centre for surrounding Bowen Basin towns and has the highest level of mining employment (forty-seven per cent). Emerald has a similar population to Karratha (10,999) and is also a regional centre servicing the surrounding Central Highlands communities. It has the smallest proportion of mining employment (eighteen per cent) of the study sites.

Table 14: Mining town settlement types

<i>Characteristic</i>	<i>Karratha</i>	<i>Kalgoorlie</i>	<i>Moranbah</i>	<i>Emerald</i>
<i>Type of town</i>	Remote regional service centre: medium	Regional service centre: large	Rural sub-regional town: small	Regional service centre: medium
<i>Population*</i>	10,730	28,242	7133	10,999
<i>Approx. distance from capital city</i>	1500 km	600 km	1100 km	830 km
<i>% workforce employed in mining*</i>	33%	38%	47%	18%

*Source: Australian Bureau of Statistics Census data: 2006 Basic Community Profiles and QuickStats

Emerald and Kalgoorlie are both well-established regional centres dating back to the nineteenth century and have diversified economies. They both function as transport hubs with good accessibility to capital cities and other regional centres and have strong public administration infrastructure. By contrast Moranbah and Karratha, where housing is least affordable, were established in the 1960s as purpose-built mining towns. Their economies remain highly dependent on mining and are dominated by a small number of large mining companies. Both towns are greater distances from capital cities and less accessible, due to remoteness in the case of Karratha and distance from major airports in the case of Moranbah.

6.1.2 Housing market conditions

At a general level it is possible to understand housing markets in resource towns as examples of economic 'supply and demand' theories in action. During boom times for

the mining industry, house prices rise as demand outstrips supply and this stimulates housing investment in additional supply. Conversely, when demand declines during mining downturns house prices will fall. According to this analysis, markets will self-correct, albeit with some lag-time. However, housing markets in mining towns in this study face particular constraints, pointing to a need for more nuanced analysis to understand the different ways housing markets actually operate in specific mining town contexts.

Tenure

Mining communities exhibit housing tenure characteristics significantly different from the Australian average. As reported in Table 17, all of the case studies have significantly lower levels of full home-ownership than the Australian average and higher levels of rented properties. This is consistent with the more transient and temporary nature of the population in mining towns. Further, towns such as Roebourne with a high percentage of indigenous residents have a high proportion of houses that are rented rather than owned.

Differences between the case studies show a distinction between the more 'normal' housing markets of Kalgoorlie and Emerald compared to Karratha and Moranbah. Kalgoorlie and Emerald have high levels of home-ownership, nearly double the levels of home purchasers and lower rates of rented properties and higher rates of renting through real estate agents than Karratha and Moranbah.

Karratha and Moranbah have significantly higher levels of renting from 'other landlord types' indicating high rates of renting from employers in comparison with Kalgoorlie and Emerald. This category is particularly high in Moranbah (seventy-four per cent). The one interstate difference in housing tenure is levels of renting from state housing authorities, with levels in the Queensland towns approximately half that for the Western Australian towns and the Australian average.

Table 15: Housing tenure: case study sites and Australia

	<i>Karratha</i>	<i>Kalgoorlie</i>	<i>Moranbah</i>	<i>Emerald</i>	<i>Aust</i>
<i>Housing occupied private dwellings</i>	4,334	10,410	2,339	3,821	
Fully owned	12%	16%	22%	17%	40%
Being purchased	20%	40%	21%	37%	26%
Rented property	52%	31%	49%	40%	26%
<i>Landlord type</i>					
Real estate agent	24%	42%	15%	42%	44%
State Housing Authority	21%	21%	8%	11%	17%
Other landlord type	51%	35%	74%	44%	38%

Source: Australian Bureau of Statistics Census data: 2006 Basic Community Profiles and QuickStats

This tenure analysis clearly demonstrates the distinctive characteristics of housing markets in mining towns compared to Australian averages. In particular, the mining towns have lower levels of full home-ownership and the higher levels of non-market rental housing associated with transient populations and high rates of public and private-sector employee housing provision. Housing tenure also differs markedly between the case studies, with Kalgoorlie and Emerald experiencing less extreme variation from the national average than is evident for Karratha and Moranbah.

Housing costs

All the case study sites, in common with most Australian housing markets, have experienced increases in rents and the purchase price of housing since the early 2000s. Table 17 presents housing data for the four case studies and demonstrates the significant differences in key housing characteristics. It shows that with the exception of Karratha, median house prices are relatively consistent across the sites. While house prices in all centres increased significantly from 2001, Karratha is the only site to achieve significantly higher median housing prices than capital and major non-mining regional cities. Privately owned homes in Roebourne have also been affected by the high house prices in Karratha, fifty kilometres distant. Rents in Kalgoorlie (\$350 per week) and Emerald (\$360 per week) are high comparative to non-mining communities but significantly lower than the other sites. Karratha's median rent (\$1500 per week) is four times higher than these two towns and more than twice that of Moranbah (\$600 per week). Household sizes in all the study sites are higher than the national average of 2.6 per cent, indicating relatively high occupancy rates.

Table 16: Housing conditions: 2007

<i>Characteristic</i>	<i>Karratha</i>	<i>Kalgoorlie</i>	<i>Moranbah</i>	<i>Emerald</i>
<i>Median house prices: three-bedroom</i>	\$700,000	\$280,000	\$350,000	\$350,000
<i>Weekly rents: three-bedroom house</i>	\$1500	\$350	\$600	\$360
<i>Average household size</i>	2.8	3	3	2.9

Sources: Real estate Institute WA; RPData; Qld Department of Housing; interviews; ABS Census data

Labour and material shortages, transport costs and lack of accommodation for construction workers are common challenges to be overcome in expanding housing supply in mining towns. In some circumstances, the reluctance of financiers to lend on homes in mining towns or their requirements for significant deposits before approving mortgages provides a further barrier to investment for home ownership and rental accommodation.

Some of the extremes in the cost of housing in Karratha may be explained by its remoteness and therefore higher costs of construction. The time and cost involved in FIFO also increase demand for local housing compared to other towns, especially those in Queensland where DIDO to nearby seaboard regional centres such as Mackay is common. The high rent to house price ratios in Karratha and Moranbah indicate that investors require higher returns in more remote towns that are highly reliant in mining because they are more risky investments and have less predictable capital appreciation over the long-term. These high rents are sustained by a lack of alternatives due to the remote location and the capacity for mining companies and high-income employees to pay premium rents. By contrast Emerald, with the lowest rent-to-house price ratio, has the most diversified economy with least reliance on mining employment.

Non-private dwellings

One of the key characteristics of housing markets in mining towns is the heavy reliance on non-private accommodation and temporary accommodation, such as:

- workcamps;

- single persons quarters;
- caravans; and
- motels and hotels.

The type, scale, location, standard and cost of temporary accommodation emerged from the study as significant issues that were the subject of considerable community concern. Access by non-mine workers to temporary accommodation was also an issue, particularly in Moranbah where temporary accommodation for newly arrived residents, short-term construction or service workers and access to the caravan park for low-income locals was severely constrained. The same may be said for Karratha, where accommodation can be so scarce that newly arrived mine workers are reported to engage in “hot-bedding” and retail staff find housing in vacant warehouses, or rent rooms from strangers.

6.1.3 Mining industry characteristics

Patterns of boom and bust in the resources industry are irregular and difficult to predict. This study provides evidence that both the speed and scale of the boom since 2001 and the recent slowdown resulting from the economic crisis were not anticipated by the mining companies, local and state governments or housing and land developers. When combined with the rural and remote locations of most mine sites and the lead-time required for housing development it is unsurprising that residential land and housing supply markets were slow to respond in Moranbah to the requirements of increased demand. However, in Karratha reports since the 1980s identified the inadequate housing in the Pilbara region and that more should be done prior to the next boom cycle.

The case studies highlight a diversity of workforce and housing policies across the industry and even across the different sites of individual companies. This diversity and the willingness of mining companies to divert from their preferred policy positions on housing issues demonstrates a preparedness of mining companies to respond pragmatically to pressure from workers, local communities and government.

It must be emphasised that difficulties in aligning housing supply with production demands is just one of the factors contributing to the increasing reliance of mining companies and contracting firms on FIFO and DIDO employment practices. Other significant factors include the preference of workers and their families to be based in capital cities or seaboard centres and the need to consider the sustainability of housing investments in locations with volatile mining activity.

These employment practices in turn impact on housing markets both in the mining towns where temporary accommodation is at a premium and workers’ locations of origin. In Western Australia, the primary FIFO base of Perth and in Queensland the Bowen Basin DIDO base of Mackay experienced significant housing market impacts as a result of increasing housing demand and the high incomes associated with the mining boom.

The cyclical nature and employment practices of the mining industry therefore mean that analysis of housing issues is extremely complex, requiring both temporal and spatial considerations. Temporal considerations include the housing implications of establishment, operational, expansion, wind down and closure phases in mining. Spatial considerations include housing impacts at a local and regional level as well as for the key base locations for non-resident workers.

6.1.4 Social and economic impacts

The study highlights the interdependencies between housing, mining and the social and economic sustainability of mining communities and the different ways they function at key phases in the life of a mine. The study focused primarily on housing dynamics during a period of unprecedented boom in the mining industry. In this phase the economic impact of severe shortages and high costs of housing is most obvious in the difficulties faced by mining companies, government services and non-mining service industries in recruiting and retaining staff. Specific examples from the case studies include impacts such as closure or constraints in provision of retail and service industries in Moranbah and Karratha and difficulties faced by local governments such as Emerald in recruiting staff for essential municipal services.

The immediate, most noticeable social impacts are the difficulties faced by low- and moderate-income households in accessing affordable housing. In the absence of social housing supply or subsidies, this leads inevitably to overcrowding, homelessness or forced relocation to more affordable markets. Lack of housing supply and high rents force women and young adult children to leave town if they move out of the employer-provided family home. These impacts were experienced in all the case study sites, although more severely in Karratha and Moranbah than in the other two towns. In Karratha, particularly, the housing situation increases pressure on the already inadequate housing circumstances within the Indigenous community. The high demand for public housing and the high cost of private housing in Karratha has effectively squeezed out the Indigenous community. The lack of public transport limits those who cannot afford to live in Karratha from accessing jobs, particularly those of the high-paying resources industry. The cycle of poverty continues despite the affluence of many in mining communities.

Table 17: Case study characteristics

	<i>Karratha</i>		<i>Kalgoorlie</i>		<i>Moranbah</i>		<i>Emerald</i>		<i>Australia</i>
Population	11,725		28,242		7133		10,999		
65+	149	1%	1464	5%	82	1%	461	4%	13%
Gender mix									
Males	6276	53.5%	14,713	52%	3940	55%	5711	52%	49%
Females	5449	46.5%	13,529	48%	3193	45%	5288	48%	5%
Temporary residents									
Persons counted at place of usual residence	10,730		28,242		7133		10,999		
Persons counted on census night	13,253		29,024		8260		11,467		
Temporary residents	2523	19%	782	3%	1127	14%	468	4%	
Indigenous									
Total Indigenous persons	744	6%	2059	7%	136	2%	366	3%	2%

Source: Australian Bureau of Statistics Census data: 2006 Basic Community Profiles and QuickStats

At another level housing shortages are blamed for an increasing reliance on FIFO and DIDO workforce practices and it is argued by local stakeholders that these practices impact negatively on local and regional economic and social development. While it is reasonable to expect that mining will contribute to the development of host communities, this line of argument tends to overstate the causal link between housing shortages and mining company non-resident employment practices. As argued previously, this analysis fails to adequately account for the importance of worker

preferences to live in capital cities or coastal locations or to take into account the feasibility and sustainability of expanding mining towns to accommodate a fluctuating number of employees.

Nevertheless, community aspirations in the study towns to maximise the economic contribution of mining to local and regional communities and concerns about the negative social implications of FIFO and DIDO practices are understandable. Workcamps and SPQs provide minimal contribution to the local economy because they isolate workers from local communities and limit their expenditure on local goods and services. From a social perspective, there is some evidence that high levels of population transience and temporary residents, a concentration of single, predominantly male non-resident workers, extended periods of separation from families and commuting when fatigued, are associated with a range of problems experienced by mining towns and communities of origin. Social problems reported in other studies and raised by respondents in this study include substance abuse, relationship breakdown, vehicle accidents and a loss of social capital reflected in reduced participation in community, sport and recreational activities.

The distinct social characteristics of mining communities are illustrated by the case studies. Table 17 reflects the high representation of Indigenous people in the Western Australian sites and the transient nature of mining town populations. All towns have high proportions of male residents and low levels of older people compared to the national average. The lack of older people reflects a tendency for retirees to leave mining towns. Karratha (1.3 per cent) and Moranbah (1.1 per cent) have particularly small populations of over sixty-five-year-olds compared to Australia (12.6 per cent).

Housing and land supply strategies

The case studies confirm the importance, as well as the considerable constraints, for mining towns in achieving effective and co-ordinated growth management during periods of boom in the resources sector.

Both Emerald and Kalgoorlie have well-established housing markets and both local authorities have pro-actively pursued residential land release and promoted higher density and diversity in housing provision, with mixed success. In spite of some community resistance to medium-density housing, these factors appear to have contributed to less severe housing stress than experienced by the other two towns.

By contrast Karratha and Moranbah have more volatile housing markets and greater constraints on residential land release. Their local authorities² have more limited capacity and conservative approaches to urban planning, as exemplified by the predominance of larger residential lots with 3–4-bedroom detached housing and resistance to higher densities and diversity in housing form.

The study found an increasing acceptance, particularly in Queensland, that impact assessment and mitigation processes have been inadequate in relation to housing issues. The effect of mining on housing has not been a prominent consideration in impact assessment processes and this is exacerbated by the inability of impact assessments to address accumulative impacts where multiple mines are developed or expanded in a location. In Queensland, the Bowen Basin local governments have, until recently, not had an active role in the assessment processes and therefore had limited information about proposed new mining activity or anticipated impacts on nearby towns. Local government is treated as an integral stakeholder in Western Australia and consulted during assessment processes. However, the limited attention

² Following the amalgamation of local authorities in Queensland the Belyando Shire has been absorbed into the new, larger Isaacs Regional Council.

historically given to housing in mining impact assessment processes is consistent with underlying assumptions that housing markets will respond to increased demand and reluctance by state governments and mining companies to accept an active role in managing housing impacts of development.

Conflicting land uses, including native title and mining leases, constrained or delayed land release in both the Western Australian and Queensland case studies. The difficulties are of two distinct types: first, the time delays resulting from highly complex legal and administrative processes, whether or not there are fundamental disputes over land uses; and second, genuine conflicts between parties about competing or incompatible land uses.

Release of land for residential purposes is a necessary but not sufficient factor in resolving land and housing supply problems. The land then needs to be developed, serviced with infrastructure and housing constructed. In Queensland land and infrastructure development responsibility is dispersed between local and state governments and the private sector, making co-ordination difficult, especially in more remote areas requiring infrastructure investment. In Western Australia, the state government entity Landcorp develops state-owned property, (usually with a private sector partner) and liaises with other state agencies and utilities to bring land and development projects to market.

The Western Australian government takes a significantly interventionist approach to both land development and housing supply in mining communities. The Land Development Authority is a major land-holder and developer, while public housing provision is undertaken by the Department of Housing. Queensland government plays a more indirect role in land development through its land management and regional planning processes and provides very little public housing in mining communities. The state is therefore highly reliant on local authorities and the private sector for land and housing development.

6.1.5 Policy and governance

The housing stresses found in all the case study towns point to a lack of robust policy frameworks or governance arrangements capable of managing the housing implications of the resources boom. Indicators of shortcomings in policy and governance include: lack of accurate information to inform planning; fragmentation in responsibility; confusion of roles; and lack of forums capable of mediating between conflicting interests or co-ordinating responses.

The capacity and authority of local government emerges as one important success factor in managing housing impacts. Emerald provides a successful example of proactive planning and land development strategies that achieved increases and diversity in housing supply. Another example of a successful strategy is the Growth Management Group established in Moranbah by the Queensland government to resolve conflicts over the location, timing and sequencing of land and infrastructure. The Growth Management Group was chaired by a local state member and provided a structured forum for the mining companies, local and state governments and infrastructure providers in which to negotiate.

In Western Australia, the formation of the Pilbara Industry's Community Council (PICC) provides a forum to involve the key stakeholders in setting strategic directions for the region. This is a multi-company initiative that has as its priorities:

- development of a shared vision and strategy to increase Indigenous participation in employment in the Pilbara, including strategies to reduce gaps in education and training, health, and housing; and

- development of a shared vision and strategy in relation to the sustainability of Pilbara towns.

The Council funds an executive officer/industry co-ordinator based in the Chamber of Mines and Energy, and the state government provides a co-ordinator to manage input from the government side. There is an overseeing body comprising state ministers, industry representatives, and community and local government representatives and sitting under this is a multi-sector steering group and various working groups. One of these groups has responsibility for developing a land and accommodation strategy for the Pilbara (although at the time of writing it is unclear what progress has been made in developing and implementing this strategy).

An ambitious policy and governance initiative, the Queensland government's Sustainable Resource Communities Policy, was announced in September 2008. This policy, which was developed in conjunction with the Queensland Resources Council, is designed to enhance the management of cumulative and regional impacts associated with the continuing growth of the resources sector. The policy proposes the creation of multi-sectoral Local Leadership Groups focused on regional planning issues and also foreshadows the intention of government to require proponents of significant resource projects to prepare Social Impact Plans outlining the forecast changes to communities in terms of local and cumulative effects and indicating agreed strategies for mitigation.

It is too early to assess the success of these new approaches to policy and governance. However, they represent acknowledgement of the inadequacy of the pre-existing policies and governance arrangements to meet the growth challenges inherent in the complexity, scale and speed of the resources boom. While these initiatives have a very wide scope, they give a prominence to housing issues in a way that has not been seen in resource industry policy for decades. The recent downturn in mining activity associated with the global economic crisis is a salutary reminder that planning for the resource communities, including planning for housing, must accommodate both growth and decline scenarios.

6.1.6 Summary

In summary, the case studies illustrate the pervasiveness of housing stress in resource boom towns including problems of shortfalls in supply and high house prices and rents. They also highlight the significant differences between towns with specific housing dynamics. Some of these differences result from locational, economic, land use and historical factors related to remoteness, economic diversification, native title and mining leases and pre-existing housing provision and mining industry regulation. Other differences can be linked to the type and intensity of mining activity, mining company employment and housing policies and local and state government policies and institutional capacities.

The four case studies provide some valuable insights into the multiple factors acting to promote and constrain housing supply and affordability and the interaction between housing and the socio-economic wellbeing of communities. They also provide an examination of the changing policy and governance context during the resources boom. While care should be taken in generalising from these four case studies, they provide evidence that is valuable in understanding the interplay of factors at work in different contexts.

Key themes emerging from the study include:

- the importance of cumulative, regional planning that acknowledges the temporal and spatial characteristics of the resources industry;

- the criticality of land supply and infrastructure co-ordination in timely provision of housing;
- the need for flexible approaches to housing density, diversity and adaptability in order to respond to changing housing needs over time;
- the specific context of mining towns and the implications for how social and economic sustainability is understood and pursued; and
- the importance of governance structures that actively engage all the key stakeholders in determining appropriate local and regional housing solutions.

6.2 Conclusions and policy implications

The nature of the recent boom in the resources industry in Australia resulted in critical housing issues in some towns that have social and economic implications for local and regional communities. This study highlights the challenges inherent in managing the housing issues of mining towns during boom periods. These challenges include: the diversity in scale and nature of the industry and its impacts; the cyclical and often unpredictable nature of the resources industry; the propensity for mining to be located in regional and remote areas; changing technology and labour market practices; and differences in policy and institutional arrangements across Australian jurisdictions. In the following section we propose a range of proposals for immediate and longer-term strategies to better manage housing issues through more agile responses to changing circumstances.

Successful housing strategies in mining communities depend on co-ordinated action involving a range of government, market and community stakeholders. This involves resolution of the diverse and conflicting interests of these stakeholders and agreement about who is responsible for what. Even if this active engagement and co-ordination can be achieved, mining towns face intractable problems associated with lags in housing supply and the need to plan for and manage decline and exit phases of mining activity. This requires agile responses to both expanding and declining resident populations and a fluctuating non-resident workforce, suggesting a need for flexible housing responses.

The housing challenges and opportunities will be different in each context and appropriate responses and implementation mechanisms need to be designed that take account of local housing markets, mining activity and the specifics of local contexts. It would therefore be naive to presume that there is a one-size-fits-all solution or package of policy responses that will be applicable across mining communities. This section considers the policy implications of the study and proposes responses to some of the key issues identified through the study.

6.2.1 Non-resident workforce and temporary accommodation

FIFO and DIDO are now accepted practice in the mining industry in Australia and clearly have an ongoing role to play. FIFO and DIDO strategies have an important and legitimate role in meeting the workforce needs of the mining industry and are the preferred option for many workers. They are particularly suitable where the labour force requirements are time-limited. For example where:

- workers are employed during the construction phase of new mines or major expansion of existing mines;
- the life of the mine is expected to be relatively short; or

- workers are required for a specific project or temporary increase in production.

FIFO and DIDO may also be appropriate where the housing and other local infrastructure is temporarily unable to accommodate the required labour force, for example, where there is a time delay in providing housing, when the mine life is expected to be short or the location of the mine is remote from an established town with at least basic services. FIFO is the preferred means of managing the construction phase of projects because of the scale and temporary nature of the workforce. Application of FIFO and DIDO employment practices do not avoid the need to address housing issues. Rather, they necessitate provision of accommodation for the workforce while on roster. This in turn raises questions about appropriate location and accommodation standards that are compatible with the interests of workers, the local community and mining companies.

Inappropriate management and over-reliance on FIFO and DIDO approaches has negative social and economic implications for mining towns and regions. We propose a balanced approach to employment practices and suggest some principles to be applied in determining the most appropriate response in a particular set of circumstances.

The first principle is that all efforts are made in regional and remote areas to provide skills development and employment opportunities for local residents, especially those, such as Indigenous people and young people, who face employment barriers. Such an approach is premised on equity considerations as well as promoting regional social and economic development.

Second, employment practices should support social and economic development in local towns that contribute to functional communities. This requires resident populations of a scale to support the delivery of a reasonable standard and proximity of business, government and community services that allow residents to live, work and recreate locally.

Third, there is an important role for temporary accommodation strategies to support mining activities. However, it is important to differentiate between the forms of temporary accommodation commonly associated with mining. Consistency in definitions and acceptable uses for different accommodation types and an appreciation of the implications of inappropriate uses are important in planning for the best mix of accommodation supply. Standards and location/proximity of temporary accommodation to town or mine sites are key issues. Quarantining accommodation in caravan parks and motels for resident and visiting non-mine workers are also important considerations.

Finally, it is important for mining companies, government agencies and community members to have access to the appropriate information and tools to accurately measure and transparently assess the social and economic impacts and contributions to local communities of different workforce practices and accommodation patterns. Many of the necessary strategies require longer-term implementation timeframes. Successful housing strategies in mining communities require co-ordinated action by all spheres of government as well as the mining and residential property industries.

6.2.2 Residential land supply

It is evident that an adequate supply and timely land release is critical to meeting demand for housing in times of rapid expansion in the resources industry. It takes time if all the competing uses for land are to be reconciled, especially around regional centres. Initiatives such as the development of potential land banks should be

entertained. Decisions regarding whose responsibility it is for the provision of infrastructure, ongoing maintenance and upgrading of current infrastructure are all important in ensuring supply for future demand for land suitable for housing. Governance structures that enable stakeholders to resolve land supply issues in a timely and collaborative manner should be in place before, rather than during or after, the boom conditions hit. Local government is an important stakeholder and it is critical that strategic planners are well-informed and supported in their work by state government planning, land development and infrastructure agencies. Local government needs to be sufficiently resourced and supported in the development of processes and structures that facilitate timely land release and the resolution of land use conflicts. As discussed below, well-informed and co-ordinated growth management planning is an essential tool for agile and responsive land supply strategies.

6.2.3 Housing supply, diversity and subsidy

There is no one-size-fits-all approach to addressing supply issues in mining towns. Rather a range of different approaches are required to suit different local contexts. An appropriate mix of tenure, dwelling types, housing densities, construction methods and standards are needed to meet the diversity of local requirements, complement existing housing stock and respond to local constraints and opportunities. Housing mix should aim to promote mixed and inclusive communities by providing housing for a range of household compositions and incomes as well as contributing to the built environment, climate and lifestyle.

There is a strong case on social and economic grounds for state governments to play a more active role in responding to market failure in the supply of housing in mining communities. This should comprise a full range of responses tailored to local contexts including: direct provision of public housing; facilitating and investing in not-for-profit affordable housing; overcoming barriers to private sector development and financing of affordable rental and home-ownership options; negotiating with mining companies to address housing impacts on developments; and leadership in growth management and planning. It is essential that government ensure that housing and appropriate accommodation is a priority consideration when a resource project is announced. Government must demonstrate leadership and provide strategic guidance and incentives for the public and private sectors to adequately respond to housing needs within reasonable timeframes.

The social and economic impacts of the high costs and limited supply of housing in mining boom towns support an argument for housing subsidies for low- and moderate-income households, including those in key service industries. This is especially true in Queensland where public housing provision in the case study towns is very low. Subsidies can be provided in a number of forms including cash or capital subsidies. The case studies identified some attempts by local authorities to bring affordable and subsidised land to the market and to investigate financing models for affordable housing provided in collaboration with market and not-for-profit housing sectors. The advantage of not-for-profit affordable housing models is the capacity to retain affordable housing for social purposes over the longer-term. These initiatives are in their early stages and require facilitation, capacity-building assistance and financial support (Milligan 2004). Commonwealth schemes such as the National Rental Affordability Scheme (NRAS) have a role to play here but may need to be supplemented with local or state investment of land or capital to ensure they are financially viable in high-cost mining town markets.

6.2.4 *Planning for community sustainability*

The concept of community sustainability as it applies to mining towns is highly contentious. The cyclical nature of mining and the pervasiveness of its economic, environmental and social impacts inevitably raise issues about the implications for sustainable development of communities and regions (Brereton and Pattenden 2007).

This study highlights the important role of inclusive land use and regional planning in addressing housing issues for mining communities. The key planning themes that emerge from the case studies are the importance of reliable population projections, proactive local land supply strategies and a regional planning focus.

Appropriate housing strategies for mining towns need to take account of the immediate housing needs of a community as well as the longer-term scenarios for the town and the region. For instance, temporary and relocatable housing may be appropriate for a remote town that is likely to face a short-term boom and lose population as the mining downscales. More emphasis on permanent accommodation may be more appropriate in a regional centre that has a diverse economic base and is designated as a growth centre. Regional planning processes have a significant role to play in establishing an informed consensus between government, industry and community interests about the preferred long-term status of mining towns. Such status should be promoted actively to encourage housing development and public and private investment in towns that have a long-term future.

The factors that emerged as likely to contribute to the longer term sustainability of mining towns in this study include:

- whether the town existed prior to mining. Did it have a pre-existing purpose, such as being a regional hub?
- the nature of the town's economic base. Is it a one-industry or one-mine town that will only exist for the life of the mine?
- the strategic significance of the town. Is it a regional support centre for other industries or a government service centre?
- the town's attractiveness and natural attributes. Is it likely to remain an attractive 'lifestyle' location?
- whether it is on a major transport route; and
- proximity to coast, other major centres, tourist routes or attractions.

Factors including access to health and education services, the natural and built environment and social connectedness, all have important bearings on people's quality of life, the social functioning of communities and retaining residents. Local and state governments have a key role in providing leadership on these issues. Just as it is unreasonable to expect the private sector to take the lead on social development, government should not be expected to underwrite all regional economic development, including housing. Timely, responsive leadership and co-ordination of all stakeholders and shared goals is critical in the planning process.

Mining companies and communities need to be clear whether there will be government commitment to developing and sustaining mining towns as regional centres and if not, what the preferred workforce and accommodation options are for mine expansion. Partnerships, community engagement and housing investment are all important but without clear goals and mutually agreed commitments, economic, social and environmental sustainability is an unlikely outcome. This study has shown that without careful, committed strategic planning and understanding of the economic and social role of housing, the market dynamics create a situation that is vulnerable to

market failure. High housing and accommodation costs exclude a potentially productive workforce, cause the development of vulnerable local economies and artificial and unstable communities.

6.2.5 Governance

The final recurring theme in this report has been the need to improve co-ordination within and between the different levels of government, and in turn, between mining companies and government. Better planning is critical to ensuring an adequate supply and mix of housing in mining communities, and in particular, to address the issue of affordability. However, there are a number of obstacles to achieving effective planning, including the large number of players that need to be involved in the process, the often limited capacity of local government and the regional offices of state agencies, and the inherent difficulty of predicting the scale and timing of future growth (particularly in a market-sensitive industry such as mining).

Mining companies are the key decision makers in determining workforce strategies and should consider the social and economic implications of their practices. Local and state governments also have a role in setting local and regional development policy objectives and planning regimes. The challenge is to provide an integrated policy environment that is responsive to industry needs, while at the same time ensuring the environmental and social sustainability needs of the broader community are being met. It is important for government agencies and community decision makers to have access to the appropriate tools to accurately measure and assess the impacts and contributions of different workforce patterns to local economies.

Addressing these issues requires the establishment of new governance mechanisms at the state, regional and local levels to provide a framework in which companies and the different levels of government can share information and collaborate on matters of common concern. Innovations in governance approaches to managing the impacts of unprecedented growth in the mining industry have recently been implemented in both Western Australia and Queensland. It is too early to tell whether these initiatives will be effective, but they undoubtedly represent a move in the right direction. At the same time, it is clear that if such entities are to have a reasonable chance of success, they will need to be properly resourced (including with a standing secretariat), be comprised of people who have decision-making authority within their organisations, have clearly defined terms of reference, and create a sufficient level of trust that participants are prepared to share potentially sensitive information. Failure to build these features into the design of collaborative mechanisms will make it highly likely that they will become just another 'talk shop' and fall into misuse over time.

6.3 Conclusion

This study emphasises the important linkages between housing and the resources industry. Housing is an essential component of the physical infrastructure underpinning the mining industry and also has significant social and economic impacts for local towns and regional centres. We argue that a holistic appreciation by the industry and government of the important role of housing at each stage of the mining cycle and across locations has been lacking in Australia. This is evident, for example in the limited attention paid to housing issues in planning and impact assessment processes, a concern acknowledged by the Queensland government in its recently released Sustainable Resource Communities Policy (Queensland Government 2008).

Mining towns share common housing market characteristics when viewed at a general and superficial level. However, this study demonstrates that there is considerable

differentiation between mining towns in the specific dynamics of housing markets, their socio-economic impacts and the appropriate industry and public policy responses. It also provides a framework for analysing the dynamics at play in specific contexts and assessing the options for better managing housing issues. The current downturn will inevitably provide some respite from housing pressures for many mining communities. Hopefully the lessons learned from the last resources boom will assist in being better prepared for the next one.

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