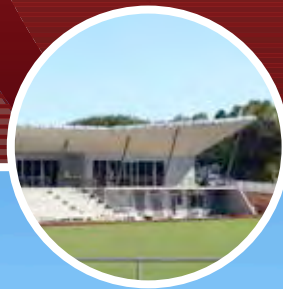


Newman & Tom Price

Regional HotSpots Land Supply Update

January 2015



Department of
Planning



Western
Australian
Planning
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Published by the
Western Australian Planning Commission
140 William Street
Perth WA 6000

Locked Bag 2506
Perth WA 6001

Published January 2015
Data current as at November 2014

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1 Executive summary

1.1 Context

Newman and Tom Price are the two largest inland towns of the Pilbara region of Western Australia. The Pilbara covers a total area of 507,900 square kilometres and is one of the world's most sparsely populated regions. Establishment of both towns was spurred by discoveries of large iron ore deposits in the region during the 1950s and 1960s, which required a locally resident workforce to develop.

In the first decade of this century, increased global demand for iron ore created a tenfold increase in its value, prompting a new wave of investment in the Pilbara as companies sought to capitalise on surging ore prices. As the main urban centres of the inland Pilbara, Newman and Tom Price have been focal points for much of this activity. Unlike the initial wave of investment and development that gave rise to the establishment of the towns, recent expansion has been achieved using a predominantly fly-in fly-out (FIFO), rather than a resident workforce.

Despite many of the new workers in the region being FIFO, the recent 'resources boom' has created enormous demand for land, housing and services. In 2009, the Western Australian Government announced its Pilbara Cities Vision to encourage urban development in the towns of the Pilbara. Pilbara Cities is underpinned by a \$1.2 billion Royalties for Regions commitment to transform the Pilbara by building modern, vibrant cities.

Under the Pilbara Cities initiative, Karratha and Port Hedland are envisioned as cities of 50,000 residents each and Newman with a population of 15,000. Other Pilbara towns including Tom Price and Onslow are also anticipated to grow, becoming more attractive and sustainable communities serving the broader region. To fulfil the Pilbara Cities vision for growth, the towns and cities of the Pilbara must have the capacity to capitalise on periods of high demand, and be resilient when conditions are less buoyant.

Levels of demand for land, housing and services can change quickly in communities with relatively singular economies such as Newman and Tom Price. As such, improving methods of monitoring demand (and demand drivers) and managing supply will assist in achieving optimum planning outcomes for the future.

At the beginning of each section of this document are a number of highlights and conclusions to assist in improving future understanding of demand dynamics and to mitigate supply-side constraints to future development.

This report rounds out the suite of Pilbara HotSpots reports that focus on areas of the State most impacted by changing economic and social conditions. They are prepared by the Department of Planning for the Western Australian Planning Commission's (WAPC) Infrastructure Coordinating Committee (ICC) with contributions from the ICC member agencies.

1.2 Key points

Newman

Population and employment

- Newman was established as a 'company' town in 1968 by the Mount Newman Mining Company – now a subsidiary of BHP Billiton Iron Ore (BHPBIO) – to house workers for the Mount Whaleback iron ore mine.
- Mount Whaleback is the largest single-pit iron ore mine in the world at more than five kilometres long and nearly two kilometres wide.
- Newman is the largest town in the Shire of East Pilbara and the largest inland town of the Pilbara, with an estimated resident population (ERP) of 6,099 as at June 2013.
- 57 per cent of the resident workforce is employed in the mining sector. Mount Whaleback mine remains the backbone of the Newman economy, employing 2,279 people in 2012/13.
- Increased demand for iron ore has triggered rapid population growth in the last 10 years as mining companies have invested heavily in operations in Newman and the surrounding area.
- Newman's population growth of 4.1 per cent per annum over the past 10 years is substantially higher than the rate for the State as a whole (2.6 per cent per annum over the same period).
- The population growth rate elsewhere in the Shire of East Pilbara was higher still. The population of the Shire as a whole increased by an average rate of 7.7 per cent per annum over the 10 years to June 2013.

- Under the Pilbara Cities initiative, Newman has an aspirational population target of 15,000 residents by 2035.
- The Pilbara Industry's Community Council (PICC) uses future and existing resource project employment requirements as a basis for population projections to 2020. These projections indicate a higher rate of growth than the current *WA Tomorrow* forecast (for the Shire of East Pilbara), with Newman projected to increase by 1,700 residents (from the population as at the 2011 Census), creating a resident population of approximately 7,400 in 2020.
- Employment-driven population growth in the region is likely to slow in the Newman area as major resource sector projects in the region transition to an operational phase.
- The service population of Newman is substantially higher than the resident population. At the 2011 Census 5,478 people stated that they lived in Newman and 6,759 people were counted there on Census night.

Economic outlook and business investment

- Billions of dollars have been invested in mining projects around Newman in the last five years. Major projects include the Hope Downs 4 expansion, BHPBIO's Jimblebar expansion and the Eastern Ridge Expansion Project.
- Most of the construction work on major resource sector expansion projects in the Newman area is now complete, which will substantially reduce overall levels of investment.
- The total value for mineral and petroleum production in the Shire of East Pilbara was more than \$30 billion in the 2012/13 financial year.
- State Government forecasts suggest that iron ore prices will decrease slightly over the next five years, contributing to a more moderate rate of development in the region as companies consolidate existing projects to concentrate on production.

- Newman is a service centre for accommodation, goods and services that support the construction and operational phases of resource projects in the area. This focus may be enhanced by the development of the proposed PortLink inland freight corridor.
- Although there has been recent progress toward economic diversification, mining remains the driving force of the economies of Newman and the broader region.
- The Pilbara Cities initiative aims to harness the economic drive of the resources boom to ensure that Newman and other towns of the Pilbara become vibrant cities of high amenity.

Land and housing demand

- During the past decade population growth in Newman has been uncharacteristically high due to the developing resource sector, driving demand for land and housing. As key resource sector projects move into operational phases, reduced workforce requirements are likely to ease demand for land and housing. This may have positive implications for housing affordability in Newman, particularly given recent supply trends.
- Residential lot prices in Newman have increased at a rate well above the rest of the State and are now comparable with prices in the Perth metropolitan area.
- Dwelling sales prices have also increased sharply. The median dwelling price in Newman is now substantially higher than the median price in the Perth metropolitan area.
- Non-subsidised rental costs are also typically substantially higher than comparable properties in the Perth metropolitan area.
- The often prohibitively high cost of housing (rental or otherwise) is a barrier to economic normalisation. Prospective residents generally must secure subsidised accommodation or highly paid employment prior to arrival.
- Population growth (and consequent demand for land and housing) in Newman is employment driven, which means demand for housing is highest during the

construction phase of mining projects. In the past two years several major expansion projects in the Newman area have transitioned to an operational phase, which requires a smaller workforce and has therefore eased demand for residential land and dwellings.

- The number of applications for residential subdivision prior to 2011 was low in Newman, although this was often due to a lack of available land, rather than limited demand. In 2011 and 2012 (after key parcels of land were made available for residential development), applications were lodged for 587 and 450 lots respectively. As demand has eased, so has subdivision activity, with applications lodged to create just four lots in the six months to March 2014.
- As well as residential accommodation, there has been very high demand for transient workforce accommodation (TWA) in the area. In recent years a shift to a FIFO model of resource sector workforce provision has created enormous demand for TWA in and around Newman which was heightened during the housing shortage.
- Demand for industrial land is strong in Newman. Industrial rental prices and sales values are generally several times higher than comparable property in the Perth metropolitan area.
- Demand for tourist accommodation is also high in Newman, although this is predominantly due to use by mining and construction workers. This has resulted in very low vacancy rates, as most tourist accommodation facilities have effectively been used as TWA during periods of high demand.

Land and housing supply

- There are significant constraints to urban expansion that can delay the supply of land in Newman. These constraints can create a supply shortfall during periods of high demand.
- After a period of relatively constrained supply in Newman, residential developments at East Newman and Kurra Estate have enabled a substantial flow of lots and dwellings to the market over the past two years.
- As at August 2013, there was a stock of 38.9 hectares of undeveloped 'residential' zoned land, much of which is in the process of being serviced for subdivision.
- The stock of proposed residential lots and dwellings in the land supply 'pipeline' that could potentially be developed in the short-term is roughly equivalent to half of the existing dwelling stock and appears to exceed current short-term demand.
- There is provision in the local planning scheme to support urban consolidation in Newman. At present, however, most dwellings are built on newly constructed lots.
- There has been substantial investment in planning for urban growth in Newman over the past 10 years. The sites identified in the Regional HotSpots land release plan have the potential to yield a sufficient number of dwellings to accommodate a population of 15,000. Most of the proposed sites, however, are constrained and ongoing work will be required to ensure a consistent flow of residential lots and dwellings to market during periods of high demand, so as not to impede future growth.
- The Newman Light Industrial Estate has delivered 102 industrial lots since 2007. Further development of the site is likely to yield an additional 25 lots in the short-term and there is scope for further expansion at the site in the medium-term that may yield a further 100 lots.
- The Shire of East Pilbara is currently finalising a Newman Airport MasterPlan that will outline plans to develop land around the airport for light industrial/commercial purposes.
- The completion of the Newman Town Centre Revitalisation Project has the potential to accommodate much of Newman's future retail/commercial requirements. Additional commercial development is also underway along Newman Drive to the east of the town centre.
- High residential building costs and issues associated with sourcing construction workers increase dwelling prices and can delay the supply of residential, industrial and commercial property.

Infrastructure

Power

- BHP Billiton Iron Ore (BHPBIO) is responsible for the provision of electricity to the Newman townsite.
- Newman's electricity is currently generated at Alinta's gas-fired power station to the east of the town. Alinta is contracted to provide 100 per cent of its power station's generating capacity to BHPBIO under a Power Purchasing Agreement that expired May in 2014. BHPBIO has constructed a separate power station (Yarnima Power Station) that will take over Newman's power provision in late 2014.
- There is sufficient power generating capacity at Yarnima to support further urban development in Newman; however, significant upgrades to the distribution network will be required to support a population of 15,000.

Water

- There is a sufficient supply of water available to support long-term population growth in Newman; however, the treatment plant, storage tanks and distribution network will need upgrading to meet the requirements of the targeted population of 15,000.

Wastewater

- The waste water treatment plant is currently operating at capacity and an upgrade is required in the short-term to facilitate further development. The Shire of East Pilbara has planning in place to increase the capacity of the plant in stages over a three to four year period.

Transport

- Passenger numbers through Newman Airport increased seven fold between 2004/05 and 2012/13. The forecast number of passengers for 2013/14 is 540,300, which would represent a 23 per cent increase on 2012/13 numbers.

- While Newman Airport is in need of substantial upgrades, there is potential for the development of complementary and industrial land uses at the site. The Shire of East Pilbara is developing an Airport Development Masterplan detailing plans for the expansion of facilities and the development of underutilised airport land; however, various utility infrastructure constraints need to be resolved prior to development.

Tom Price

Population and employment

- Tom Price was founded as a 'company town' to house Hamersley Iron (now a subsidiary of Rio Tinto) employees and their families.
- With a population of approximately 3,400, Tom Price is the largest town in the Shire of Ashburton which covers approximately 100,000 square kilometres.
- Mount Tom Price mine is the most significant place of employment in and around Tom Price, with 1,511 people employed at the mine in 2014. As at the 2011 Census, 53 per cent of the resident workforce in Tom Price was employed in the mining sector.
- Increased demand for iron ore has triggered rapid employment-driven population growth in the Shire of Ashburton; however little of this growth has occurred in Tom Price.
- Although the ABS does not report on the population of Tom Price annually, in the five years to 2011 the estimated resident population of Tom Price increased by 3.1 per cent per annum. Population growth for the Shire of Ashburton as a whole has been much higher, growing at 5.4 per cent per annum over the 10 years to 2013, a substantially higher rate than Western Australia as a whole (2.6 per cent per annum).
- The Pilbara Cities initiative aims to encourage growth in Tom Price through improving the liveability and economic diversity of the town. There is, however, no aspirational growth target for Tom Price under the initiative.

- Pilbara Industry's Community Council forecasts indicate that Tom Price will experience increased population growth, reaching a resident population of approximately 4,750 in 2020.
- The service population of Tom Price is marginally higher than the resident population. At the 2011 Census, 3,134 people stated that they lived in Tom Price and 3,271 people were counted there on Census night.
- Across the Shire of Ashburton the divergence was substantially larger - 10,001 people stated that they lived in the local government area and 15,057 people were counted there on Census night.
- Tom Price has a higher population turnover, or churn factor, than Western Australia although it is at a lower rate than the Pilbara region as whole.
- The Shire of Ashburton has a very high proportion of males compared to females. In Tom Price there is a greater degree of gender balance. There is; however, a particularly low proportion of high school/tertiary education age residents in the town.
- Incomes in Tom Price are typically substantially higher than the Western Australian average.
- Tom Price acts as an important service hub for the mines of the area. The Shire of Ashburton estimates that the town is the main service centre for approximately 10,000 people.
- Tom Price is the closest town to Karijini National Park and is also close to the Chichester Millstream National Park. The tourism industry in Tom Price provides promising opportunities for economic diversification in the Tom Price area.

Land and housing demand

Economic and business investment

- The total value for mineral and petroleum production in the Shire of Ashburton was more than \$24 billion in the 2012/13 financial year.
- Several major projects in the vicinity of Tom Price have driven investment in the area in recent years. Major projects include the Marandoo mine expansion, the Solomon project and the Brockman 4 expansion.
- Most of the major new and expansion projects in the Tom Price area have now transitioned to an operational phase which generally requires a much smaller workforce.
- None of the recent major resource sector developments in the Tom Price area have a large residential workforce component.
- Population growth is the fundamental driver of underlying demand for residential land and housing. Growth in Tom Price has not been as pronounced as in other major centres of the Pilbara.
- Although population growth has been modest, the price of residential land, housing and rental accommodation has increased sharply, indicating high levels of demand for the stock of available property.
- Given the completion of various resource sector expansion projects in the Tom Price area and resultant decreased workforce requirements, the demand for land and housing in the town may ease in the short-term.
- Access to staff housing is a barrier to small business development and a substantial expense to Government and larger commercial organisations.
- Applications were lodged to create 136 residential lots from the beginning of 2007 to the end of the June quarter 2013 suggesting either limited demand or an undersupply of suitable land.
- Residential lot prices in Tom Price have increased at a rate well above the rest of the State and are now comparable with the Perth metropolitan area.
- Dwelling sales prices have also increased sharply and the median dwelling price in Tom Price is now substantially higher than the median price in the Perth metropolitan area.
- Data for dwelling approvals in Tom Price is indicative of the limited urban expansion in the town. Only 47 dwellings were approved for development in the town in the four years to March 2014.

- The shift to a FIFO model of resource sector workforce provision has created substantial demand for TWA in and around Tom Price.
- Demand for tourist accommodation is high in Tom Price, largely from FIFO workers; however, the Tom Price caravan park is reserved specifically for non-FIFO accommodation.

Land and housing supply

- Despite its remote location, there are significant constraints to urban expansion in Tom Price, which restrict the supply of residential land, particularly in the short-term.
- The Shire of Ashburton has provision within the local planning scheme to allow for urban consolidation in Tom Price; however, this generally requires lot amalgamation. Most new dwellings are constructed on newly developed greenfield lots.
- In Tom Price there have been few additions to the stock of residential land over the past five years. The most recent local planning scheme amendment to augment stocks occurred in 2010 when 0.5 hectares of residential zoned land were added.
- Despite high house and lot prices in Tom Price, a limited number of new residential lots and dwellings are reaching the market. Final subdivision approval was granted for 60 residential lots in 2011 and 2012, but these were the only residential lots created in the 10 years to December 2013.
- There is insufficient existing or proposed residential land identified in Tom Price to accommodate population growth at the rate projected under Pilbara Industry's Community Council forecasts.
- There is no new or proposed industrial land in Tom Price suitable for development in the short-term. The identification of additional industrial land in the town will be critical to facilitate economic development and diversification.

- There is scope within phase two of the Tom Price town centre revitalisation plan to develop sufficient commercial/retail space to meet anticipated demand.
- An area has been identified for the development of a sizeable tourist accommodation project, but there is currently no active proposal to develop the site.

Infrastructure

Water

- Rio Tinto Iron Ore (RTIO) is the licensed water provider for Tom Price, sourcing water from dewatering at the Marandoo mine. The volume of water that needs to be extracted from the mine to enable continued production greatly exceeds the amount likely to be consumed by Tom Price and the surrounding mines. The town's ageing reticulation network is the only significant issue with regard to the Tom Price water supply.

Drainage

- Drainage is a major issue in Tom Price. The occasional but heavy summer rainfalls and topography of the area require that drainage be carefully considered as part of planning for any development.

Transport

- Tom Price is not on a major highway and is 72 kilometres away from the nearest airport at Paraburdoo. This has ramifications for Tom Price with regard to its role as a service hub and the transfer of seriously injured patients to other hospitals. A site has been identified for the construction of a Royal Flying Doctor Service (RFDS) airstrip at Tom Price; however, funding details for the construction, maintenance and operation of the airstrip are yet to be confirmed.

2 Background

2.1 Regional HotSpots and the Urban Development Program

The Regional HotSpots series sets out to assess land for future residential, industrial and commercial uses and identifies the planning and infrastructure requirements needed to meet demand across selected regional centres in Western Australia. The series has been prepared by the Department of Planning for the Western Australian Planning Commission (WAPC).

The reports include key information on:

- demand drivers specific to each regional centre including the major economic factors that influence employment and population growth and therefore the demand for land and housing;
- actions to assist in delivering timely and appropriate urban growth;
- assessment of zoned land supply for residential, commercial, industrial and tourism uses;
- recent and future land development activity; and
- existing physical and social infrastructure and future requirements.

The Regional HotSpots series has been prepared as part of the Urban Development Program (UDP) and is the result of consultation with a number of stakeholders, including local government and servicing authorities. Recent editions of the Regional HotSpots publications can be accessed online at the Department of Planning website.

2.2 Settlement context

Newman and Tom Price have similar histories and drivers of economic growth. Both were established as 'company' towns and have more recently been 'normalised'. Although they are relatively close to one another (by Pilbara standards) and have numerous similarities, their development has occurred in a parallel, rather than an interconnected manner.

Tom Price was established to house Hamersley Iron (now a subsidiary of Rio Tinto Iron Ore) employees, and their families, engaged to work on the Mount Tom Price mine, with ore transported by rail to Dampier for export.

Newman's 'parent' company was the Mt Newman Mining Company (now a subsidiary of BHP Billiton Iron Ore) and ore was transported via rail to Port Hedland for export. Although management of the towns has passed to their respective local governments, the 'parent' companies' still play an important role in the community. BHPBIO and Rio Tinto remain the biggest employers in each town (by a substantial margin), still own much of the housing stock and provide many services to the local communities.

Iron ore is the economic life blood of Newman and Tom Price. The circumstances that led to the towns' establishment and those that led to the discovery and development of the region's ore are one and the same. At the beginning of 1952, less than 20 years before the establishment of Newman and Tom Price, iron ore was thought to be in very short supply. Government estimates at the time suggested that there were less than 350 million tonnes of the substance in Australia (more than that amount was extracted in Western Australia in 2013). Stocks of ore were considered in such short supply that an embargo was placed on its export.

That outlook changed in November 1952 when Lang Hancock discovered the world's largest deposit of iron ore. Hancock claims to have discovered the ore when forced to fly low to avoid bad weather near Turner River. From being in a position where iron ore was considered so scarce that it needed to be rationed, it had become apparent almost overnight that stocks of the resource were abundant.

Developing this newfound resource; however, was not a straight forward exercise. Politicians at the time needed to be convinced of the scale of the ore deposits before they would lift the embargo and it required years of lobbying before the embargo was finally lifted in 1960.

Another significant challenge facing the iron ore pioneers was developing a large enough market for iron ore to warrant the massive investment required to extract and transport the ore to a deep water port for export. Such a market was found in the rapidly industrialising nation of Japan. Although an embargo on trade with Japan had been in place since the Second World War, the signing of the *Australia-Japan Commerce Agreement in 1957* enabled Japanese buyers to purchase ore from the Pilbara.

The iron ore boom of the Pilbara unfolded in a very different way to previous booms such as the Kalgoorlie gold rush of the late 1800s. Extracting the resource and delivering it to market required enormous investment in infrastructure and a very large workforce. Acts of Parliament that granted mining companies the right to harvest the resources legislated that companies must, in addition to mining operations, construct rail networks, ports and towns to house employees, their families and other ancillary workers. It was in these Acts of Parliament that the contractual foundations for the modern day towns of Newman and Tom Price were laid.

Both towns were originally closed or 'company' towns and 'parent' companies had full control over town management, maintenance and development. By the 1980s both Newman and Tom Price had grown to towns of several thousand people and it was considered they were of sufficient size to warrant conventional management. To ensure that town and mine decision making would be separate, management of the towns was transferred to local government in a process known as 'normalisation'.

The recent boom in the iron ore industry was also triggered by the emergence of a new Asian market. A shift in policy from the Chinese government to allow commercial activity in special economic zones created a wave of economic expansion and demand for iron ore. Since China's emergence as a significant consumer of iron ore it has become Australia's most substantial export destination. The value of Western Australian iron ore exports to China increased from approximately \$1.3 billion in 2001/02 to \$42 billion in 2012/13.

The increase in demand triggered enormous investment in the Pilbara as mining companies sought to stake a claim in the emerging market. This wave of development was, however, not undertaken by a resident workforce like the one that established the iron ore industry in the region. Rather than develop a workforce near ore deposits, mining companies have increasingly taken advantage of more affordable air travel to use fly-in fly-out (FIFO) workforces to harvest ore.

There is a degree of uncertainty about how many people working in the Pilbara are employed on a FIFO basis. Research by the Pilbara Industry's Community Council indicates that as at 2011, 85 per cent of the mining workforce in the Shire of Ashburton and 95 per cent of the mining workforce in the Shire East Pilbara was FIFO.

FIFO work arrangements have transformed the relationship between mining towns and the mines that fuelled their development. The full economic and social effects of this form of workforce provision are not yet fully understood. There are undoubted benefits for employers and, to a large degree, employees, but the consequences for host communities are less clear.

Although much of the expanded mining workforce is FIFO, numerous workers are required in ancillary industries to facilitate growth; most of whom do not have access to transient workforce accommodation. In addition, workers who do not wish to be separated from their families for extended periods or endure the lengthy commute also require more conventional dwellings near their place of employment.

The scale of migration to the Pilbara has made it one of the fastest growing regions of the country, creating unprecedented demand for housing. Despite the isolation of Newman and Tom Price, and seeming abundance of space, land around both towns is heavily constrained, which has restricted the flow of land and housing to the market even during periods of high demand. Demand for accommodation is generally highest in mining communities during periods of expansion when workforce requirements are largest. Once projects move to an operational phase, fewer staff are required; however, the overall workforce is likely to be larger than prior to the expansion, given the expanded scope of operations.

Long-term land use planning is challenging in Newman and Tom Price due to the economic reliance on a single industry and high rate of population turnover. This uncertainty is compounded by the proliferation of FIFO workers in the area, whereby the workforce can engage or disengage with the community very quickly. The degree to which FIFO workers are involved with host communities also varies greatly depending on individual work arrangements.

To address some of these challenges the Pilbara Cities blueprint was announced in November 2009. The State Government's vision for Pilbara Cities is for modern vibrant regional centres that can attract and support a skilled workforce for major economic projects in the Pilbara. The realisation of this vision rests on the promotion of quality regional living with modern services and facilities that will encourage the development of strong local

communities. Critical to the success of the plan is the attraction of residents and businesses not involved in the traditional mining, oil and gas sectors in the region, creating places where people choose to settle on a permanent basis with access to high standards of services.

2.3 Newman overview

Newman is located approximately 1,200 kilometres north of Perth and 270 kilometres east of Tom Price. The town draws its title from the nearby Mount Newman, named in honour of explorer Aubrey Woodward Newman, who died of typhoid fever just before reaching the area in 1896.

Indigenous Australians have inhabited the Newman area for thousands of years. Excavated rockshelters in the general area have demonstrated past occupation dating back some 35,000 years. The Nyiyaparli people are the traditional owners of the area around Newman; however, the current Aboriginal population in Newman also includes people who identify as Martu.

The Martu people include about a dozen language groups that originate predominantly in the Gibson and Great Sandy Deserts – to the east of Newman. Nyiyaparli People have granted Martu people from Manyjilyjarra and Kartujarra country permission to live in the area due to the cultural and family links between the groups.¹

In 1957 prospector Stan Hilditch discovered a large deposit of iron ore near modern day Newman which he called Mount Whaleback. At the time, a Federal Government embargo on the sale of ore to Japan limited the value of developing the deposit. After the lifting of the embargo in 1960, a consortium established Mount Newman Mining Company Pty Ltd in 1967. By 1969 the first shipments of iron ore left Mount Whaleback by rail for Port Hedland, some 426 kilometres away.

In 1968, the company established the town of Newman to house workers for its Mount Whaleback mine. Early growth during the town's establishment phase was rapid. In the 1976 Census, only eight years after development of the town commenced, the

population was counted at 4,672. Almost half of the current stock of dwellings was constructed during the first six years of the town's existence.

By 1980 it was deemed that the town should be normalised to ensure that the interests of the town and the mine be separated. This process was undertaken in 1981 when administration of the town was transferred from the company to the Shire of East Pilbara.

Rising demand for iron ore over the past decade has driven investment to expand mining operations throughout the Pilbara. As a result, Newman's population has grown rapidly with the town's population growing at roughly three times the rate of Western Australia as a whole between 2003 and 2007. The current resident population now stands at more than 6,000 people. In addition to the permanent population, a FIFO workforce of several thousand workers is based in and around the town.

During the recent period of rapid growth, demand for residential land and dwellings in Newman has been extremely high; however, for several years few additional dwellings were developed, causing a pronounced supply shortfall. The land supply 'crisis' in Newman continued for several years as Government and developers sought to deconstrain land in the town to enable sufficient residential development to meet demand. During this period house prices and rental accommodation costs increased dramatically and Newman's caravan parks and hotels were filled to capacity as people sought out any available accommodation.

More recently there has been a pronounced shift in the land supply/demand dynamics of Newman. From early 2013, residential lots, and then dwellings began reaching the market in substantial numbers; re-opening supply and alleviating the shortage of dwellings in the town.

About this time, several major resource sector projects near Newman were nearing completion, preparing to transition to an operational (and significantly smaller) workforce. The consequent reduction in demand for housing, coupled with the increased supply of additional dwellings caused an eight-fold increase in the number of residential properties advertised for rent in Newman in the six months to March 2014.

¹ Wangka Maya Pilbara Aboriginal Language Centre (2014), Website

In addition to the vacant rental properties in Newman there were (as at March 2014) 80 dwellings for sale and numerous dwellings under construction. More dwellings and residential lots are in the development 'pipeline' in Newman, with 251 vacant residential lots with water connections and 665 proposed residential lots with conditional subdivision approval.

Generally, when supply exceeds demand, prices come down, which would help normalise the economy of Newman by making housing more affordable. In Newman, however, high construction and land development costs mean that the cost of producing housing is very high, so the degree to which the end cost of housing is likely to be reduced may be limited. This scenario is likely to slow dwelling production significantly as investors may reconsider further investment on properties with no certainty of attracting a tenant.

The State Government's Pilbara Cities initiative has established a population target for Newman of 15,000 residents by 2035. Achieving this target will require high population growth to continue for the next 20 years. It is hoped that this growth can be achieved through a broadening of the existing economic base. Possibilities for economic diversification include tourism, agriculture and enhancing the town's role as a service hub for the various mining operations of the region.

Recent events in Newman highlight the challenges associated with setting and achieving population targets in communities with very singular economies. The boom cycle within which mining towns are likely to grow organically is generally not lengthy and delays to the delivery of lots and housing can mean this opportunity is not fully grasped.

Although it is difficult to say what may have occurred under different circumstances it appears probable that the land supply lag in Newman diminished the extent to which long-term residential population growth could be generated from the resources boom. Equally uncertain is the extent to which rapid delivery of land and housing may have created a surplus of dwellings in a post-boom era. What is clear is that, as the population of Newman continues to grow, supply side lags are unlikely to encumber growth due to the stocks of land identified (and in some cases developed) in recent years.

2.4 Tom Price overview

Tom Price is located approximately 1,500 kilometres north of Perth and 270 kilometres west of Newman. At an altitude of 747 metres above sea level, Tom Price is the highest town in Western Australia, earning it the nickname 'top town'.

People of the Banyjima, Kurrama and Innawonga language groups have inhabited the area around modern day Tom Price for many thousands of years. The town itself is located within the Eastern Guruma (Area B) determination area which is represented by the Wintawari Guruma Aboriginal Corporation, which successfully negotiated the first native title claim in the Pilbara region.

The town of Tom Price was named after Thomas Moore Price, who worked for the American company Kaiser Steel. Mr Price travelled to the area to appraise deposits of iron ore in the region and was instrumental in convincing mining companies to invest in the area. He also played a major role in lobbying the State and Federal Government to allow ore mining and export. He was successful in this endeavour but died in 1962, not long before his goals were finally achieved.

The discovery of the iron ore investigated by Mr Price and lobbying from various parties led to the passing of the *Iron Ore (Hamersley Range) Agreement Act 1963* which was, broadly speaking, an agreement between the State and Hamersley Iron to develop the ore deposit at Mount Tom Price. As part of the Act, Hamersley Iron was required to construct a fully functioning town to house employees and their families.

Tom Price was designed as a 'model' mining town by Hamersley Iron in 1962, with construction on the first 250 dwellings beginning in 1965 and the first residents arriving shortly after in 1966. Operation and management of the town remained the responsibility of Hamersley Iron until the normalisation of Tom Price.

In contrast to Newman, the normalisation process in Tom Price was a relatively lengthy process. By the early 1980s, an initial transition agreement was finalised between Hamersley Iron and the Shire of Ashburton. This agreement was renegotiated and renewed several times over an 18 year period, during which time

the State government assumed responsibility for all standard functions of education and health. There was no conclusion mechanism in the transition agreement to pass full governance control and responsibility to the Shire of Ashburton, so the temporary conditions of the transitional arrangement continued for some time. A final transition arrangement was agreed upon in 1997/98, incorporating a 10 year period of incrementally decreasing financial and in-kind support from Hamersley Iron.

Like Newman, Tom Price experienced a marked increase in demand for land and housing during the resources boom. Large numbers of people based themselves in Tom Price, finding work in the various resource sector expansion projects underway in the area. Throughout this period, very few dwellings were available to buy or rent and tourist facilities became predominantly patronised by people travelling to the town for work.

The influx of workers, coupled with the limited stock of available dwellings caused a sharp increase in the cost of housing and rental accommodation, which are still substantially higher than in the Perth metropolitan area. The construction phase of most of the major resource projects in the area is now complete. As these projects transition into their operational phase, much smaller workforces are required, many of whom are/will be housed in TWA camps outside the town. This transition has significantly eased demand for residential land and housing.

Unlike Newman, the increase in demand did not generate a large scale increase in the supply of residential land and dwellings in Tom Price. Despite the high property prices, private sector developers generated very little new housing in the town, with the main residential developments being undertaken by RTIO and the Shire of Ashburton. Consequently housing availability remains tight, despite the easing in demand.

As urban expansion was comparatively restrained in Tom Price, the prospect of an over-supply of dwellings has been avoided in the short-term. However, due to the limited amount of land development undertaken in Tom Price during the boom there

are few parcels of land around the town that could potentially be made available for residential development in the short-term. This shortage of identified land is likely to constrain urban development in future periods of high demand unless planning for growth continues.

Although the Pilbara Cities initiative is active in the development of Tom Price there are no aspirational population growth targets for the town. Pilbara Industry's Community Council projections forecast a modest population increase; however, rapid population growth is unlikely, particularly given the regional shift to a FIFO model of workforce provision. The Shire of Ashburton has identified the development of Paraburdoo as a priority in the medium-term rather than further development of Tom Price.

While mining remains the backbone of the Tom Price economy, there are numerous opportunities for economic diversification, including expanding Tom Price's role as a service hub, agriculture and tourism. Tom Price's proximity to Karijini National Park and Millstream National Park make it an ideal base for travellers exploring the area.

3 Planning context

3.1 State and regional planning

State Planning Strategy (2014)

The *State Planning Strategy*, endorsed by cabinet in 2014, provides an overarching strategic guide for land use planning across Western Australia. The aim of the document is to provide a sound basis for the integration and coordination of State, regional and local jurisdictions. As the economic hub of the State, there are numerous themes discussed in the document that will influence development across the Pilbara. Such themes include: the provision of key infrastructure to enable continued growth in the resource sector; economic diversification; conservation; and improving connectivity within, and to, the region.

State planning policies

State planning policies are prepared and adopted by the WAPC under statutory procedures set out in part three of the *Planning and Development Act 2005*. These policies are concerned with broad planning controls and can be made for matters which may be the subject of a local planning scheme or which relate to a specific region or area of the State. Examples include State policies for coastal planning, rural land-use planning, and residential design codes (R-Codes). The WAPC and local governments must have due regard to the provisions of State planning policies when preparing or amending local planning schemes and when making decisions on planning matters. Further information is available at www.planning.wa.gov.au.

Blueprint for Pilbara Cities (2009)

The State Government's Pilbara Cities initiative is designed to encourage more people to live and settle in the Pilbara. The Pilbara Cities blueprint provides a framework to transform the region by creating modern higher density centres, supported by infrastructure and amenity upgrades and improvements. The blueprint includes proposals for major revitalisations of South Hedland, Karratha, Newman, Dampier, Tom Price and Onslow town centres, in addition to plans to create new marinas and improved waterfronts at Port Hedland, Dampier and possibly Onslow. New infrastructure and facilities such as schools, TAFE centres, leisure and entertainment facilities, medical facilities and retail precincts are also part of the plan.

Critical to the success is the attraction of new residents and businesses not involved in the region's traditional sectors of oil, gas and mining, creating places where people choose to settle

on a permanent basis with access to high standards of services. The private sector is expected to play a crucial role in achieving the plan, including assisting with the delivery of affordable accommodation solutions through the release of development sites and super-lots for land and housing.

Pilbara Planning and Infrastructure Framework (2012)

The *Pilbara Planning and Infrastructure Framework* defines a strategic direction for the future development of the Pilbara region over the next 25 years. It addresses the scale and distribution of future population growth and housing development as well as identifying strategies for dealing with economic growth; environmental issues; transport; infrastructure; water resources; tourism; and the emerging impacts of climate change. The Framework represents an agreed whole-of-government position on the broad future planning direction for the Pilbara and will guide the preparation of local planning strategies and schemes. It will be particularly important in informing Government of infrastructure priorities in the Pilbara and giving the private sector confidence to invest in the region.

Policy on Temporary Workers Accommodation

Developed by the then Department of Regional Development and Lands, the *Policy on Temporary Workers Accommodation* seeks to – where possible – integrate FIFO accommodation with existing towns.

The policy states that leases for sole user accommodation (where accommodation is developed for employees of a single project or company) should only be granted if the duration of the project is expected to be less than 10 years. Longer leases require a higher standard of accommodation, greater integration into the community and other legacy benefits as is deemed appropriate.

Pilbara Groundwater Allocation Plan and Pilbara Regional Water Supply Strategy (2013)

The *Pilbara Groundwater Allocation Plan* and *Pilbara Regional Water Supply Strategy* were published by the Department of Water in 2013. The allocation plan provides clarity on how much water is available from groundwater resources in the Pilbara and will guide water licensing decisions, management and monitoring.

The water supply strategy provides a long-term outlook of water demand and supply options and will guide more detailed planning, investigations and decisions on the water supply options that will be needed during the next thirty years and beyond. It identifies when demand is expected to exceed supply, the water supply options to meet new demand and the actions and triggers for more detailed water supply planning. The water demand-supply balance, including for the towns of Newman and Tom Price, will be reviewed with stakeholders at least every two years to ensure ongoing adequate water supplies.

Pilbara Regional Water Plan 2010-2030 (2010)

Released by the Department of Water in June 2010, the *Pilbara Regional Water Plan 2010-2030*² provides a strategic and long-term approach to sustainable water resource planning and management for the Pilbara region. The plan presents a strategic overview of the region's water resources and the major challenges facing the region, both today and in the future.

Actions included in the plan are intended to address the current shortage of regional, district and local water management plans and strategies that are necessary to guide future developments and demonstrate the land's capability to support these developments from a water perspective.

Better Urban Water Management (2008)

The *Better Urban Water Management* document provides guidance on the implementation of *State Planning Policy 2.9 Water Resources* and has been adopted as the State policy approach to integrating land and water planning and working towards water-sensitive urban design. This approach was collaboratively developed by the (then) Department of Planning and Infrastructure, Department of Water, the Western Australian Local Government Association (WALGA) and the Commonwealth Department of Environment, Water, Heritage and the Arts.

The *Better Urban Water Management* document is designed to facilitate better management and use of water resources by ensuring an appropriate level of consideration is given to the total water cycle at each stage of the planning system. It is intended to assist regional, district and local land-use planning as well as subdivision phases of the planning process. The document is to

be used by all stakeholders and decision-makers and has state-wide application for new urban, commercial, industrial and rural-residential developments.

3.2 Local planning

Newman/Shire of East Pilbara

Shire of East Pilbara Town Planning Scheme No. 4

Local planning schemes set out the way land is to be used and developed. They classify areas for land use and include provisions to coordinate infrastructure and development in a locality. They also include controls to ensure long-term strategic planning objectives are achieved.

Key objectives of the scheme are to:

- assist the effective implementation of the State Planning Strategy and any regional plans and policies which are relevant to the Shire;
- foster efficient, hospitable and aesthetic town centres to serve as residential, civic, cultural, recreational and commercial focal points for the surrounding region;
- assist commercial, industrial and business development in order to maximise business and employment opportunities and to sustain and broaden the economic base;
- accommodate infrastructure and townsite development for the beneficial exploration and mining of minerals within the Shire;
- assist the sustainable and economic operation of the pastoral industry in the region;
- support housing choice in town sites and neighbourhoods with community identity and high levels of amenity;
- support the conservation and wise use of natural resources including land, wetlands, flora, fauna and minerals;
- conserve objects and places of natural, historic and cultural significance; and
- protect routes and corridors for the effective transportation of people and goods within the region.

² Department of Water (2010) *Pilbara Regional Water Plan 2010-2030*
<http://www.water.wa.gov.au/PublicationStore/first/93029.pdf>

The scheme was gazetted on 13 December 2005 and is likely to be reviewed following the release of the forthcoming Shire of East Pilbara Local Planning Strategy.

Newman Tomorrow 2030 Vision (2012)

Prepared in 2012, the Shire of East Pilbara's *Newman Tomorrow 2030 Vision* document shows how quickly priorities have changed from the previous 2009 document. It outlines strategies for Newman to become a sub-regional centre and to keep up with changes to the broader region. The document seeks to address the issues raised by recent growth and capitalise on emerging opportunities to maximise benefits to the town.³

Shire of East Pilbara Local Planning Strategy

The Shire of East Pilbara Local Planning Strategy provides a framework and guidelines for land-use planning within the Shire. The Strategy is intended to describe the objectives, planning intentions and proposals of the council and the community. In Newman the Strategy outlines a basic structure in terms of population, employment, housing, shopping, transport and community facilities.

The Strategy was developed in 2005 and a new version is currently being developed that will inform the next scheme review.

Newman Town Centre Style Guide and Design Guidelines

The aim of the *Newman Town Centre Style Guide and Design Guidelines* is to establish a desired urban design character which will develop a consistent theme of elements to reinforce this distinct character. It will provide Council and developers with a tool to guide development towards the delivery of high quality built form outcomes, materials and colours pallet.

Structure plans

Newman Estate

The Newman Estate comprises 244 lots, including 22 grouped dwelling/multiple dwelling lots and 222 single dwelling lots, ranging in residential density from R20 to R40. It includes a comprehensive, integrated network of multi-purpose parklands and urban water management corridors that create a well-connected and landscaped community environment.⁴

East Newman Master Plan

The plan, which was adopted by the Shire of East Pilbara in 2009, proposes the subdivision and development of the balance of the East Newman area into a residential estate complete with landscaped parks, road reserves and drainage areas.⁵

Newman Light Industrial Area

The Newman Light Industrial Area is a key service centre to the Mt Whaleback Joint Venture which is one of the world's largest iron ore projects and plays a vital role in supporting economic growth and employment in the area's resource industry. LandCorp is currently working towards releasing more light industrial land in the area.⁶

Shire of East Pilbara local planning policies

Local planning policies are prepared to provide guidance on the preparation of development applications and communicate the objectives of the Shire in relation to development and use of land. The Shire of East Pilbara has prepared a number of policies which provide guidance on development requirements in various areas and assist with decision making for various land use proposals. Further information can be found on the Shire of East Pilbara's website at <http://www.eastpilbara.wa.gov.au>.

Tom Price/Shire of Ashburton

The Shire of Ashburton has recently commenced preliminary planning work for a new Local Planning Strategy. Substantive work on the Strategy is likely to commence in the next six to 12 months with completion likely in 2016.

³ Shire of East Pilbara (2012) *Newman Tomorrow Vision 2030*

⁴ Shire of East Pilbara (2013) *Newman Town Centre Guide and Design Guidelines*

⁵ Urban and Rural Perspectives (2012) *Newman Estate Design Guidelines*

⁶ LandCorp website (2013) *Newman Light Industrial*
<http://www.landcorp.com.au/project/newmanlightindustrial>

Shire of Ashburton Local Planning Scheme No. 7

The general objectives of the Shire of Ashburton Local Planning Scheme are to:

- encourage an appropriate balance between economic and social development, conservation of the natural environment, and improvements in lifestyle and amenity;
- implement strategic planning for the municipality, including the recommendations of the State Planning Strategy and relevant regional planning strategies;
- reserve certain portions of land required for public purposes;
- zone the balance of the land within the scheme area for purposes described in the scheme;
- define the uses and types of development to be permitted on land within the scheme area; and
- control and regulate the development of land, erection and demolition of buildings and the carrying out of works.

Tourism Destination Development Strategy

The Shire of Ashburton's Tourism Destination Development Strategy reviews current tourism investment and visitor-based programs and is intended to assist the Shire in planning for tourism development over a five year period. It also identifies key issues for the Shire to address to achieve its full potential as a vibrant visitor destination; and reports on visitor servicing, marketing, destination promotion, and tourism investment.

The strategy was adopted by the Shire of Ashburton in March 2011.

Tom Price Town Centre Revitalisation

Stage one of the Town Centre Revitalisation Project, funded through the Royalties for Regions program, was completed in mid-2011, resulting in a major upgrade to the town centre area, enhancing community use of the space and encouraging investment in residential and commercial/retail developments.

Stage two of the project will include additional retail units as well as apartments, offices and entertainment components. Development of stage two is likely to proceed once additional funding is secured.

Shire of Ashburton local planning policies

The Shire of Ashburton has prepared a number of policies which provide guidance on development requirements in various areas and assist with decision making for various land use proposals. Information regarding the Shire of Ashburton's local planning policies can be found on the Shire of Ashburton's website at www.ashburton.wa.gov.au.

3.3 Indigenous heritage and native title

The *Aboriginal Heritage Act 1972* (AHA) requires that development or research on Aboriginal sites be subject to permission under Section 16 or 18 from the Aboriginal Cultural Material Committee (ACMC). Permission is conditional upon the approval of the registrar of Aboriginal sites on the advice of the ACMC. Development of vacant land requires clearance under the AHA if there are Aboriginal sites on the land (as defined by the AHA).

Much of the area surrounding Newman and Tom Price is subject to native title. The *Native Title Act 1993* (NTA) established processes to determine where native title exists, how future activity impacting upon native title may be undertaken, and to provide compensation where native title is impaired or extinguished.

The NTA also provides ways to negotiate future public works and business activity on lands and waters where Aboriginal people may have native title rights and interests. The nature of such negotiations can be complex and in some cases take several years to resolve. It is important to involve and consult Aboriginal communities at the earliest possible stage of planning and development to identify and consider heritage places and land rights in a timely manner.

Newman

Newman is home to Aboriginal people from a number of groups originating from the inland Pilbara.

There are numerous Aboriginal heritage sites near Newman and one within the townsite boundary. The site has ceremonial and mythological significance to the local indigenous community.

In 2005 the Nyiyaparli people filed a native title claim for the lands surrounding and inclusive of the Newman townsite which is yet to be determined. There are, however, current Indigenous land use agreements in place between the Nyiyaparli and BHPBIO and RTIO which incorporate the Newman townsite and surrounding lands.

Tom Price

Tom Price accommodates Aboriginal people from several Indigenous groups originating from the inland Pilbara. Like Newman there are numerous Aboriginal heritage sites near Tom Price, with perhaps the most apparent being Jarndunmunha (or Mount Nameless) which towers above the township. While there are no specific registered Aboriginal heritage sites in the town itself, there are various sites of significance close by, particularly toward the southern end of the town.

The Eastern Guruma people were granted native title rights over 8,700 kilometres of land surrounding (but not inclusive of) Tom Price in 2007. The claim was originally filed in 1997 and was the first such determination in the Pilbara Region. In 2012 the *Eastern Guruma - Area B Determination* granted native title over parts of the Tom Price townsite to the Eastern Guruma people.⁷

There are no active Indigenous Land Use Agreements covering the Tom Price townsite, however, there is an agreement in place between Pilbara Iron (a subsidiary of RTIO that manages Hamersley Iron assets) and the Eastern Guruma people covering lands surrounding the town.

3.4 Aboriginal Town Based Reserves

The *Draft Whole of Government Policy Framework for the transition of Aboriginal Town Based Reserves in Western Australia* provides the basis for determining the future of Aboriginal Town Based Reserves (TBRs) in Western Australia. It seeks to provide a basis for whole-of-government decision making to improve life outcomes for the individuals and families that currently occupy TBRs. These processes will be informed by the needs and aspirations of residents, land owners and other key stakeholders, and will seek to resolve future land use, service equity and improved accommodation options for TBR residents.

The key policy objectives are to:

- resolve outstanding matters relating to land tenure (including appropriate divestment from the Crown estate);
- ensure the provision of essential services that meet the regulatory standard that would apply to any other community of similar size and location; and
- provide opportunities for improved socio-economic outcomes for residents and access to equitable standards of services.

Newman

There is one TBR in Newman – Parnpajinya – located slightly to the north of town, to the east of Great Northern Highway (See Map 5). The site is an Aboriginal Lands Trust (ALT) Crown Reserve, covering 7.9 hectares for the “use and benefit of Aboriginal inhabitants”. As at 2013, there were 13 houses with approximately 44 residents in the community.

Parnpajinya is connected to the Newman townsite water, power and waste water networks (See Maps 7, 8 & 9) and contains a private waste water pump station. There is no specific zoning under the local planning scheme for the community (it is located on land zoned as rural); however, there is an endorsed community layout plan which can be viewed through the Planning WA website.

⁷ Native Title Corporations (2014) Website
http://nativetitle.org.au/profiles/profile_wa_wintawari.html

Tom Price

While there are several Aboriginal communities in the Shire of Ashburton – the only Town Based Reserve (TBR), Bindi Bindi, is located adjacent to Onslow – there are no TBRs in or adjacent to Tom Price.

3.5 European heritage

Although European settlement in Newman and Tom Price is a relatively recent event, both towns have established municipal inventories to preserve various structures of local significance.

Newman

There are a number of recorded heritage sites in the Newman townsite and the surrounding area. Eight sites/buildings in Newman are listed on the Shire of East Pilbara's Municipal Heritage Inventory including Newman Recreation Club, Kalgan's Pool, Mercure Inn, Newman Primary School, Railway Line from Port Hedland to Newman, Mosque, St Joseph's Catholic Church and the Shire of East Pilbara Administration Centre.⁸

Tom Price

There are six buildings in Tom Price listed on the Shire of Ashburton's Municipal Heritage Inventory (Table 1), all located within close proximity of the Tom Price town centre in the southern part of the town. The sites are categorised either B

(worthy of high protection) or C (retain and conserve if possible). More information on the Shire of Ashburton's Municipal Heritage Register is available on the council's website at www.ashburton.wa.gov.au.

3.6 Role of LandCorp

LandCorp is Western Australia's government land development agency, acting commercially to identify, design and implement major land, tourism and infrastructure projects which have a lasting and positive impact for Western Australians.

Projects are statewide and fall into industrial, metropolitan and regional categories. LandCorp works with all levels of Government and business on projects ranging from discrete residential subdivisions to the creation of whole new towns, industrial infrastructure and tourism development to support the long-term growth of the State.

Principal services include:

- providing sufficient industrial land to assist the growth of WA's economy;
- urban development and renewal projects where unique opportunities or constraints exist;
- optimising triple-bottom-line outcomes from government-owned land;
- providing asset management and expert services to government; and
- supporting the growth of regional towns statewide by providing suitable land.

In Newman, LandCorp has developed six hectares of industrial land and is developing a further 10.6 hectares in an area 1.5 kilometres from the town centre.

LandCorp is also developing the 40 hectare East Newman Residential Estate. This will deliver 296 new home sites as well as new parks, playgrounds and barbecue areas. Stages 1A and 3A of this estate have already been released.

There are currently no LandCorp projects active in Tom Price.

Table 1: Municipal Heritage Inventory – Tom Price

Name of place	Management category
Koobinya/Nintirri centres	B
Pre-Primary Centre: Wombats	B
Residence: 10 Lilac Street	C
Tom Price Community Centre	B
Tom Price Primary School	B
Tom Price Shopping Arcade	C

Source: Shire of Ashburton, Municipal heritage Inventory, Obrien Planning Consultants 1999 (verified 2013).

⁸ Shire of East Pilbara (2010) *Newman Townsite Growth Plan*

3.7 Role of Department of Housing

The Department of Housing seeks to build better communities and is responsible for:

- creating social and affordable housing in Western Australia;
- setting policy and regulating community housing; and
- providing housing for State Government employees in regional and remote areas of the State.

Its principal role is to provide and support housing for Western Australians who cannot otherwise afford their own home. The Department works with government and non-government partners to provide affordable land and housing, assisting with housing finance, providing rental housing and supplying government employees in country areas with quality homes via the Government Regional Officers Housing (GROH) program. The GROH program plays a vital role in attracting and retaining key government workers to Newman and Tom Price due to the limited housing availability and high rental costs.

In 2010, the Department of Housing released the *Affordable Housing Strategy: Opening Doors 2010-2020*. The strategy outlines a suite of policy initiatives to address access to affordable housing across the State including, a target of 20,000 affordable housing opportunities by 2020. As at 31 May 2014, the Department of Housing has achieved 15,406 affordable housing opportunities out of its target of 20,000.

4 Economic outlook and business investment

Key points

Newman

- Billions of dollars in investment has been made in mining projects around Newman in the past five years. Major projects include the Hope Downs 4 expansion, the Jimblebar expansion and the Orebody 24 mine.
- The total value for mineral and petroleum production in the Shire of East Pilbara was approximately \$31 billion in the 2012/13 financial year.
- Forecasts predict contracted global economic growth and declining iron ore prices, which mean further investment in the area's resource sector is likely to be limited to low capital cost brownfield projects in the short to medium-term.
- Newman is a service centre for accommodation, goods and services that support the construction and operational phases of resource projects. This focus may be enhanced by the proposed development of the PortLink inland freight corridor.
- Although there has been recent progress toward economic diversification, iron ore mining remains the fundamental driver of the local economy.
- The Pilbara Cities initiative aims to build on the economic drive of the resource sector to ensure that the towns of the Pilbara become vibrant cities of high amenity and diversified economies.

Tom Price

- Several major projects in the vicinity of Tom Price have driven investment in the area in recent years. Major projects include the Marandoo mine expansion, the Solomon project and the Brockman 4 expansion.
- The total value for mineral and petroleum production in the Shire of Ashburton was more than \$24 billion in the 2012/13 financial year.
- Most of the major new and expansion projects in the Tom Price area have transitioned to an operational phase which generally requires a much smaller workforce.
- None of the major resource sector developments in the Tom Price area have a large residential workforce component.
- Tom Price acts as an important service hub for the mines of the area. The Shire of Ashburton estimates that the town is the main service centre for approximately 10,000 people.
- Tom Price is the closest town to Karijini National Park and is also close to the Chichester Millstream National Park. The tourism industry provides opportunities for economic diversification in the Tom Price area.

Highlights and conclusions:

- Capturing tourist traffic offers one of the best opportunities for economic diversification in the region. The development of the new Martumili Art Gallery and a designated non-TWA caravan park in Newman will encourage travellers to spend a night or two in the town, rather than passing through to camp in nearby national parks or rest areas.

4.1 Economic outlook

The economic outlook for Western Australia is for continued, but contracted growth due to a reduction in resource sector investment as the industry moves from an expansion to an operational phase. This is reflected in the components of the Gross State Product (Table 2).⁹

In 2013 Western Australia produced 26 per cent of global iron ore production. In 2012/13 the State exported 513 million tonnes of the resource; up 13 per cent from 2011/12. The value of iron ore exports rose by seven per cent to \$56 billion, with the strong Australian dollar taking the edge off high prices during that period.

The Western Australian Department of Treasury forecasts a 36 per cent rise in iron ore production from 2012/13 to 2016/17, but predicts a decline in the value of the commodity (Table 2). Despite the expected reduction in value, it is likely that commodity prices will remain significantly higher than the long-term average for some time. Iron ore prices increased sharply from 2005 to 2010 driven by a rapid increase in demand from China, which has for several years, been the largest market for Western Australian iron ore (receiving approximately 74 per cent of the State's iron ore exports). Other major recipients of Western Australian iron ore include Japan, Korea and Taiwan.

Given the export dominated nature of the Pilbara iron ore industry, the future demand for (and therefore price of) ore is heavily dependent on the global economic climate, particularly in China and other parts of eastern Asia.

Table 2: Key economic forecasts and parameters – Western Australia (Western Australia Government)

Average annual growth	2012/13 actual %	2013/14 estimated actual %	2014/15 budget estimate %	2015/16 forward estimate %	2016/17 forward estimate %	2017/18 forward estimate %
Gross State Product growth (GSP)	5.1	3.75	2.75	3.0	4.25	5.0
State final demand growth	5.0	0.25	0.0	0.75	1.5	2.0
Household consumption growth	3.9	3.0	3.25	3.5	3.75	3.75
Business investment growth	8.3	-7.5	-8.5	-6.0	-3.75	-1.25
Dwelling investment growth	-1.8	14	7.0	3.75	2.0	1.5
Government investment growth	2.0	3.75	-0.75	0.5	1.5	1.0
Gross State Income growth (GSI)	6.25	3.5	3.5	1.5	2.25	
Population growth	3.5	2.6	2.1	2.1	2.1	2.1
Employment growth	3.5	1.5	1.5	1.75	1.75	2.0
Unemployment rate	4.4	5.0	5.5	5.25	5.0	4.75
Consumer Price Index growth (CPI)	2.3	3.0	2.75	2.5	2.5	2.5
Wage Price Index growth	4.0	3.25	3.25	3.5	3.5	3.75
Median house price	7.1	6.6	2.5	1.4	0.8	1.5
Crude oil price (\$US per barrel)	92.2	108.9	104.1	99.7	96.6	94.5
Exchange rate \$US / A\$ (cents)	102.7	91.5	90.6	88.3	86.4	84.9
Iron ore price (\$US/tonne) (FOB)	121.1	114.4	111.3	109.6	107.1	104.7

Source: WA State Government Budget Papers 2014/15 Economic and Fiscal Outlook Budget Paper

⁹ Department of Treasury (2013) *WA State Government Budget Papers 2013/14 Economic and Fiscal Outlook Budget Paper No.3*

The World Bank has predicted improving global economic growth in the coming years, forecasting growth rates of 3.2 per cent for 2014, 3.4 per cent for 2015 and 3.5 per cent for 2016. Growth in China is forecast to slow, but remain substantially higher than the rest of the world with the World Bank forecasting growth of 7.7 per cent for 2014 and 7.5 per cent for 2015 and 2016. Growth of this nature is reflected by forecasts that ore prices may decrease slightly over the coming few years (Table 2). Although forecast iron ore prices are significantly lower than during the peak of 2011, it should be noted that they are still significantly higher than prices during the early stages of the 'mining boom'.

4.2 Mining industry and investment

Western Australia draws more investment in the mining sector than any other State, attracting 51 per cent (\$48.1 billion) of the national total for investment in the industry in 2012/13. Expenditure by Western Australia's mining industry has grown at an average rate of 23 per cent per annum over the five years to 2012/13 at which time the industry accounted for 83 per cent of the State's total private new capital expenditure.¹⁰

As at September 2013, there was an estimated \$146 billion worth of resource projects either under construction or committed in Western Australia, with a further \$97 billion planned or possible.¹¹ The total value of major projects under construction or committed, as at the end of September 2013, has fallen by around \$30 billion since March 2013 due to the completion of a host of major projects.¹²

Although there is a variety of types of mineral deposits in the Newman and Tom Price area (Maps 12 and 24), major existing mining operations in the area extract iron ore.

There are three major iron ore exporters in the Pilbara:

- BHP Billiton Iron Ore (BHPBIO);
- Rio Tinto Iron Ore (RTIO); and
- Atlas Iron.

Hancock Prospecting is currently constructing the Roy Hill mine, which will produce 55 million tonnes per annum (Mtpa) when completed.

The two largest operators in the region, RTIO and BHPBIO, are also the most prolific iron ore producing corporations in the world. Both firms have expanded their Pilbara operations considerably with RTIO planning to produce 353 million tonnes per annum (Mtpa) by 2015¹³ and BHPBIO with a market guidance of 245 million tonnes for the 2015 financial year.

Major recent and current investments in iron ore projects in the Newman area are listed in Table 3 and described below. See Map 2 for the locations of the projects described.

¹⁰ Department of Mines and Petroleum (2012), *Prospect Magazine*

¹¹ Department of Mines and Petroleum (2012), *Prospect Magazine*

¹² Department of Mines and Petroleum (2012), *Prospect Magazine*

¹³ Mining Australia (2013), *Rinehart and Rio to develop new Pilbara mine*. <http://www.miningaustralia.com.au/news/rinehart-and-rio-to-develop-new-pilbara-mine--1>

Table 3: Major projects (selected) – Newman

Mine	Location	Production capacity	Capital Investment (approx.)	Construction workforce (approx.)	Operational workforce (approx.)	Start up	Status
Hancock Prospecting / RTIO Joint Venture – Hope Downs 4 Expansion	29km north-north-west of Newman	15 Mtpa	\$1.6b	2,100	720	2013	Operational
Hancock Prospecting Pty Ltd / POSCO Joint Venture – Roy Hill Iron Ore Mine	105km north-east of Newman	55 Mtpa	\$10b	3,600	2,000	2015	Under construction
BHPBIO – Jumblebar Mine Expansion	33km east of Newman	35 Mtpa	\$3.2b	NA	NA	2013	Operational
BHPBIO – Eastern Ridge Mine Expansion	10km north-east of Newman	17 Mtpa	\$698m	NA	NA	2013	Operational
Fortescue Metals Group – Christmas Creek Phase 2 Expansion	112km north east of Newman	50 Mtpa	\$1.1b	1,340	3,000 (total)	2013	Operational

Source: Department of Mines and Petroleum (figures may not include investment in associated port and rail facilities)

Hope Downs 4

The Hope Downs 4 project is a joint venture between RTIO and Hope Downs Iron Ore Pty Ltd. The partner companies have developed the open cut iron ore mine at an estimated cost of US\$1.6 billion. The mine now yields 15 Mtpa of high quality ore.¹⁴ The project also includes the construction of 53 kilometres of railway to connect to the Hope Downs 1 spur line and a 220 kilovolt (kV) transmission line to connect the site to RTIO's power network. The estimated workforce required for the Hope Downs 4 project was 2,100 during construction and 720 once operational.¹⁵

Roy Hill

Hancock Prospecting is developing the Roy Hill iron ore mine approximately 115 kilometres north-east of Newman. It is anticipated that the mine will be fully operational by 2015 yielding approximately 55 Mtpa annum for approximately 20 years. There is also considerable infrastructure development associated with the project including the construction of 344 kilometres of rail line, a processing plant, port works and workforce accommodation. Total

expenditure on the project is estimated at approximately US\$10 billion requiring a total workforce of 3,600 during construction, and 2,000 once fully operational.¹⁶

Jumblebar

In late 2013, first production was delivered from BHPBIO's new \$3.2 billion (100 per cent share) Jumblebar mine, located approximately 40 kilometres east of Newman. The ramp-up of Jumblebar to 35 Mtpa (100 per cent basis) is now expected before the end of the 2014 calendar year, with a long-term low-cost expansion option to 55 Mtpa.¹⁷

Eastern Ridge Expansion Project

Orebody 24 is located approximately 10 kilometres north-east of Newman. The US\$822 million (100 per cent share) investment for the development for Orebody 24 increases the nominal capacity for the Eastern Ridge operation to 30 Mtpa. The project included the construction of an ore crushing plant, train load-out facility, rail spur and other associated support facilities.¹⁸

¹⁴ Rio Tinto (2014) Website: <http://www.riotinto.com/ironore/mines-9939.aspx>

¹⁵ Department of Mines and Petroleum (2012) *Prospect Magazine*

¹⁶ Department of Mines and Petroleum (2012) *Prospect Magazine*

¹⁷ BHP Billiton (2013) *Group Report August 2013*

¹⁸ BHP Billiton (2011) *Home Investors News* (November, 2011)

Table 4: Major projects (selected) – Tom Price

Mine	Location	Production capacity	Capital Investment (approx.)	Construction workforce (approx.)	Operational workforce (approx.)	Start up	Status
Fortescue Metals Group – Solomon Stage 1 – Firetail	60km north of Tom Price	20 Mtpa	\$1.5b	1,000	3,000	2012	Operational
RTIO – Brockman 4 Expansion	60km west of Tom Price	22 to 40 Mtpa	N/A	N/A	250	2013	Operational
RTIO – Western Turner Syncline	22km west of Tom Price	6 Mtpa to 15 Mtpa	N/A	500	200	2013	Operational
RTIO – Marandoo Expansion	45km east of Tom Price	15 Mtpa	\$963m	800	560	2013	Operational
RTIO – Nammuldi Expansion	66km north-west of Tom Price	23 Mtpa	\$3b	1,500	700	2014	Under construction

Source: Department of Mines and Petroleum (figures may not include investment in associated port and rail facilities)

Christmas Creek Phase 2 Expansion

Fortescue Metals Group began mining Christmas Creek, a little more than 100 kilometres north of Newman, in 2009. The expansion project, worth an estimated \$1.1 billion, is part of a broader mining and infrastructure expansion by FMG in the area, enabling overall output of the Christmas Creek operation to increase to 50 Mtpa. The Department of Mines and Petroleum estimated that 3,738 people were employed at Christmas Creek in 2013.¹⁹

Major recent and current investments in iron ore mining in the Tom Price area are listed in Table 4 and described below. See Map 16 for the locations of the projects described.

Solomon

Fortescue Metals Group's Solomon has completed their Solomon project at two sites known as Firetail and Kings. Stage one of the project – Firetail – commenced production in 2012. Development of the Kings deposit was temporarily deferred in September 2012

due to volatile market conditions, but recently a contract to develop the deposit worth \$1.3 billion was awarded to Leighton Contractors which also developed Firetail. Development of the Kings deposit at Solomon will take the overall production of the Solomon site from 20 Mtpa to 60 Mtpa.²⁰

Brockman 4 Expansion

Brockman 4 is an open pit mine operated by RTIO, with on-site processing facilities. Located approximately 60 kilometres north-west of Tom Price, Brockman 4 began operations in 2010. Expansion works have increased the mine's capacity from 22 Mtpa to 40 Mtpa.

Operating with a FIFO workforce, the development of the Brockman 4 mine included extending the existing accommodation village, an additional mine fleet, the construction of a primary crusher and a four kilometre overland conveyor. Once completed Brockman 4 will have an operational workforce of approximately 250 people.²¹

¹⁹ Department of Mines and Petroleum (2014) *Average Number of Persons Employed in the Resources Sector*

²⁰ FMG and Leighton (2013) *Fortescue Metals Group Annual Report 2013 and Leighton Contractors News and Media June 2013*

²¹ Rio Tinto (2014) Website: <http://www.mining-technology.com/projects/brockman-mine>

Western Turner Syncline

The Western Turner Syncline expansion incorporates the construction of a primary crusher and a 20 kilometre overland conveyor to deliver ore to the Tom Price primary stockpiles. Pre-existing infrastructure at Mt Tom Price, including the high-grade and low-grade processing plants, stockyards, train load out and on-site facilities are used to prepare and transport the ore. The recently completed expansion increased production from six to 15 Mtpa.²²

Marandoo expansion

The life-time of RTIO's Marandoo mine has been extended by approximately 17 years by recent development, which facilitates below-water table mining. The upgrades, worth approximately \$1 billion, will enable the mine to maintain its current 15 Mtpa output until 2030.²³ Dewatering from the project is now being used to provide drinking water for Tom Price residents and in a pioneering new project to produce hay in the Pilbara.²⁴

Nammuldi expansion

The Nammuldi mine is located approximately 60 kilometres north of Tom Price. The \$2 billion expansion plan, due for completion in 2014, is expected to increase production capacity from 6.6 million to 16 million tonnes of iron ore per annum and extend the life of the mine by 14 years. The Nammuldi expansion will be the site of the world's largest deployment of autonomous haulage systems.²⁵ RTIO has ordered 150 haulage trucks that can be operated remotely from its operations centre in Perth.²⁶

4.3 Tourism

The tourism industry around Newman and Tom Price represents what is arguably the greatest opportunity for economic diversification in the region. The national parks in the area (particularly Karijini) contain spectacular and uniquely Western Australian landscapes that are becoming increasingly popular with visitors.

In recent years, however, investment in the tourism sector in Western Australia, and particularly in the Pilbara, has been tempered by a variety of factors that make it difficult for operators to compete with more affordable overseas destinations.

The high Australian dollar has made holidaying in the Pilbara a relatively expensive option, even for Western Australians, who can now access flights from Perth to a variety of destinations in South-east Asia for a similar price as a flight to the Pilbara. The other key difficulty for tourism development in the Pilbara is competition for human resources with the lucrative mining sector. This drives up construction costs and wage demands from operational staff. Accommodation is also in high demand from people travelling to the area for mining related business or work, which can create a shortage of beds for people visiting the area for tourism.

Despite the significant challenges to tourism development in Western Australia, there are emerging opportunities. Recent growth in China and other East Asian economies has created an expanding middle class who are increasingly able to holiday abroad. The number of Chinese visitors to Western Australia has increased by an average of 21.5 per cent per annum in the three years to December 2013.²⁷

Other notable source countries for Western Australian tourism that have increased significantly in the three years to December 2013 include Ireland, Taiwan, Italy and India. The total number of foreign nationals arriving at Perth Airport in 2013 was up 9.7 per cent from 2012.²⁸

²² Bloomberg (2010), Bloomberg.com *Rio Approves \$1.2 Billion Spend on Iron Ore Expansion – December 2010*

²³ The Australian (February 2011), *Rio-tintos-marandoo-iron-ore-mine-to-get-16-more-years/story-*

²⁴ Department of Mines and Petroleum (2012) *Prospect Magazine*

²⁵ Australian Mining (2012) February edition

²⁶ Mining Link (2014) Website: <http://www.mininglink.com.au/mine/nammuldi>

²⁷ Tourism Western Australia (2013), *Quarterly Visitor Snapshot*

²⁸ Tourism Western Australia (2013), *Quarterly Visitor Snapshot*

Although international tourism is on the rise, evidence suggests that domestic tourism may have declined as locals increasingly travel to other states or nations for vacation. Tourism Research Australia compared visitor nights for the purpose of leisure in 2004/05 and 2011/12 in Western Australia. The number of nights spent on holiday in the State by international visitors increased by 45 per cent during the period. Nights spent by interstate visitors declined by four per cent and declined by 18 per cent for intrastate visitors.

Tourism WA monitors private and public sector tourism development activity across the State, maintaining a comprehensive database that tracks the progress of tourism accommodation projects. A summary is published annually in the *Register of Significant Tourist Accommodation Development*. As at December 2013, the register reported 16 projects at the planning stage in the North West tourism region, with an estimated total tourism investment of \$426 million in the pipeline.²⁹

Development of the tourism industry in Western Australia relies on the provision of appropriate infrastructure, which services the needs of tourists and encourages investment by the private sector. Tourism WA facilitates infrastructure development through its report *Tourism Development Priorities*, which identifies key infrastructure projects for tourism development across the State.³⁰

There are seven priorities flagged for potential investment in the Pilbara region, which are likely to directly benefit the tourism industry in Newman/Tom Price:

- 1) Facilitate the development of additional accommodation in the Pilbara region
- 2) Facilitate the development of accommodation in national parks
- 3) Develop new drive routes within the Pilbara region
- 4) Establish aviation access within close proximity to Karijini National Park
- 5) Facilitate the development of indigenous product and interpretation along the Warlu Way

- 6) Improve visitor amenities in the Millstream Chichester National Park
- 7) Facilitate the development of mining and industrial tourism at key mining towns.

Further information on the *Tourism Development Priorities* is available online at <http://www.tourism.wa.gov.au>.

4.4 Other industries

Pastoral/agricultural

The Pilbara Hinterland Agricultural Development Initiative is laying the groundwork for possible changes in legislation and government regulation that will support larger scale and more intensive agricultural development in the region. It aims to take advantage of opportunities in water availability being created by increasing mining activities, which has led to the need to deal with mine-dewatering. This Pilbara Cities initiative supports the wider Seizing the Opportunities program that is aimed at increasing the State's agricultural production substantially.

In addition, the Shire of East Pilbara has an articulated economic diversification strategy that supports intensified agricultural development and the Pilbara Development Commission considers that the Tom Price area also has substantial potential to support growth in this sector.

The climate in the Tom Price (and to a lesser degree Newman) area is suitable to support cattle grazing activity. Large tracts of land to the west and south are consumed with pastoral leases. RTIO owns six pastoral leases in the Pilbara, five of which they manage. The managed properties cover some 1.5 million hectares and support approximately 25,000 head of cattle. This diversification of industry has afforded RTIO the opportunity to embark on an ambitious irrigation project to produce hay as additional feed for their herds.

²⁹ Tourism Western Australia (2013) *Significant Tourist Accommodation Development*

³⁰ Tourism Western Australia (2010) *Tourism Development Priorities*

The Hamersley Agricultural Project, as it is known, is located approximately 45 kilometres north east of Tom Price and is serviced by water obtained from dewatering at the Marandoo mine. The project will irrigate approximately 850 hectares of hay. The first crop was sown in late 2012 and it is hoped that the site will yield more than 30,000 tonnes of hay per annum.³¹

Biofuel production

The Ashburton Aboriginal Corporation (AAC) began producing a limited amount of biodiesel in 2006 to augment its fuel supply, assisting them to travel great distances on a relatively small budget. With the assistance of RTIO's community Partnerships Program, training in the manufacture of biodiesel was undertaken by 15 corporation members and a production plant was established in Tom Price. In July 2010 the AAC subsidiary Ashoil signed an agreement to remove waste vegetable oil from RTIO mine sites and camps for the purpose of manufacturing biodiesel, enabling the production of 10,000 litres of biodiesel per week.

The AAC has since planted a crop of moringa trees, which produce pods rich in oil suitable for biodiesel production. It is hoped that this will eventually enable an increase in biofuel production up to 20,000 litres per week. The AAC currently supply RTIO with fuel for their blasting and digging equipment as well as remote Aboriginal communities for use in generators. The fuel produces fewer emissions than petroleum diesel and has higher lubrication, which reduces engine wear.

The prospect of biofuel production is also being considered near Newman. Consolidated Minerals is trialling the use of water from mine dewatering as irrigation for biofuel crops from the Woodie Woodie mine. The project is being supported by the Western Australian Government as part of the Pilbara Cities initiative.³²

Service/distribution regional hubs

As the two largest inland towns of the Pilbara, Newman and Tom Price serve as regional hubs for the mining operations of BHPBIO and RTIO respectively. As ore deposits are consumed and new reserves are tapped, mining operations may shift, but it is anticipated that both towns will remain significant service centres for the region.

Newman's role as the service centre for the region is likely to be enhanced in the coming years as development in the town is encouraged through the Pilbara Cities initiative. The significance of Newman as a regional centre is likely to be enhanced by the development of the proposed PortLink Inland Freight Corridor. The project will improve surface transport links from Newman (and other Pilbara centres) to the Goldfields, Esperance Port and the Eastern States.³³

Both the Western Australian and Commonwealth Governments have stated their support for the project. The State Government, through the Royalties for Regions program, has committed \$5 million, and the Commonwealth Government, through the Nation Building Program, has committed \$2 million for the planning and investigation of the PortLink concept.³⁴

Although Tom Price is not located on a major highway it plays an important role as a service hub for the mines in the surrounding area (Map 16). The Shire of Ashburton estimates that Tom Price is the main service centre for an area accommodating approximately 10,000 people.

4.5 Regional Price index

The Regional Price Index (RPI) – funded through the State Government's Royalties for Regions Program – is produced by the Department of Regional Development. The project compares location based prices for a common 'basket of goods' to create a spatial index measuring prices against the Perth metropolitan area.

The RPI can be used as a component for calculating the District allowance for public servants working in regional areas and by the private sector, to assist in setting appropriate wages and allowances. It is an excellent barometer of the costs of living and doing business in different parts of Western Australia. The RPI does not produce figures for Tom Price, but it does publish results for Newman and the Pilbara Region as a whole. Index numbers for 2011 and 2013 are shown in Table 5 measured against a Perth Metropolitan area value of 100.0.

³¹ Department of Mines and Petroleum (2012) *Prospect Magazine December*

³² Pilbara Cities (2012) Pilbara Cities Update, February 2012 Initiative

³³ Department of Transport (2012) *PortLink Inland Freight Corridor Development Plan*

³⁴ Department of Transport (2012) *PortLink Inland Freight Corridor Development Plan*

Table 5: Regional Price index

	Index numbers 2011		Index numbers 2013	
	Pilbara	Newman	Pilbara	Newman
Basket	137.1	137.9	118.6	111.9
Food	113.4	109.6	101.5	102.0
Cigarettes, tobacco, alcoholic drinks	102.2	107.5	108.4	106.4
Clothing	119.0	124.5	109.0	118.3
Housing	199.8	200.6	139.8	121.0
Household equipment and operation	107.8	105.6	108.9	104.2
Health and personal care	110.7	110.1	129.6	113.9
Transport	111.6	114.8	112.0	113.3
Recreation and education	110.8	116.5	111.7	110.8

Source: Department of Regional Development (2013), Regional Development Index

5 Population and employment profile

Key points

Newman

- Newman was established as a 'company' town, built by the Mount Newman Mining Company (now a subsidiary of BHPBIO), to house workers at the Mount Newman iron ore mine.
- 57 per cent of the resident workforce is employed in the mining sector. Mount Whaleback mine remains the backbone of the Newman economy employing 2,279 people in 2012/13.
- Newman is the largest inland town the Shire of East Pilbara and the largest inland town of the Pilbara region, with an estimated resident population of 6,099 at June 2013.
- Increased demand for iron ore has triggered rapid, employment driven population growth in the past 10 years as mining companies have invested heavily in operations in Newman, and the surrounding areas.
- Newman's population growth rate of 4.1 per cent per annum over the past 10 years is substantially higher than the rate for the State (2.6 per cent over the same period).
- The population growth rate elsewhere in the Shire of East Pilbara was higher still. The population of the Shire as a whole increased by an average rate of 7.7 per cent per annum over the 10 years to 2013.
- The service population of Newman is substantially higher than the resident population. At the 2011 Census, 5,478 people stated that they lived in Newman and 6,759 people were counted there on Census night.
- For the Shire of East Pilbara 11,950 people stated that they lived in the local government area and 17,148 people were counted in the Shire on Census night.
- Newman has a much higher population turnover than Western Australia as a whole. At the 2011 Census, less than one quarter of Newman residents stated that they had lived at their address for more than five years.

- The age-sex profile of Newman is very different to Western Australia as a whole. At the 2011 Census only 43 per cent of the population was female. There are a low proportion of high school/tertiary education age residents and very few residents of retirement age.
- Incomes in Newman tend to be substantially higher than elsewhere in the State.

Tom Price

- Tom Price was founded as a 'company town' to house Hamersley Iron (now a subsidiary of RTIO) employees and their families.
- Mount Tom Price mine is the most significant place of employment in and around Tom Price with 1,891 people employed at the mine in 2012/13. At the 2011 Census, 53 per cent of the resident workforce in Tom Price was employed in the mining sector.
- With a resident population of approximately 3,400, Tom Price is the largest town in the Shire of Ashburton, which covers approximately 100,000 km².
- Increased demand for iron ore has triggered rapid population growth in the Shire of Ashburton, although relatively little of this growth has occurred in Tom Price.
- The Australian Bureau of Statistics (ABS) does not report on the population of Tom Price annually. In the five years to 2011 the estimated resident population of Tom Price increased by 3.1 per cent per annum. Population growth for the Shire of Ashburton as a whole has been double that amount, growing at 5.4 per cent per annum over the 10 years to 2013 – a substantially higher rate of growth than Western Australia (2.6 per cent per annum over the same period).
- The service population of Tom Price is marginally higher than the resident population. At the 2011 Census, 3,134 people stated that they lived in Tom Price and 3,271 people were counted there on Census night.
- For the Shire of Ashburton 10,001 people stated that they lived in the LGA and 15,057 people were counted in the Shire on Census night.

- Tom Price has a higher population turnover, or churn factor than Western Australia although it is lower than the Pilbara region as whole.
- In the Shire of Ashburton there is a very high proportion of males compared to females; however, there is a greater degree of gender balance within the town of Tom Price.
- There are a particularly low proportion of high school/tertiary education age residents residing in Tom Price.
- Incomes in Tom Price tend to be substantially higher than elsewhere in the State.

5.1 Population

Tom Price and Newman are the two largest towns of the inland Pilbara – one of the most sparsely populated regions of the world. The towns are separated by a distance of approximately 270 kilometres through Karijini National Park, with the nearest larger towns (Port Hedland and Karratha) 400-500 kilometres away on the north-west coast.

Like much of regional Western Australia, the Pilbara's population was in decline during the latter decades of the twentieth century and early part of the twenty first century. Around 2005/06, the surging price of several key commodities (particularly iron ore) stemmed the flow of people leaving the region as a wave of investment in resource extraction projects created numerous (and lucrative) employment opportunities in the area.

The population has since grown substantially and the prevalence of FIFO work practices has increased sharply. The development of large FIFO camps for mining or construction workers in the region contributes significantly to population in and around regional centres such as Newman and Tom Price.

This section draws heavily on data from the ABS. Population data for estimated resident population and place of usual residence are shown. The key scales of geography used in this section (also based on ABS boundaries) are outlined in Table 5. Definitions for all geographies and classifications used in this section are provided in the glossary of this document.

Table 6: Key geographies – Newman and Tom Price

Geography	Description	Area (kilometres ²)		Population*	
		Newman	Tom Price	Newman	Tom Price
Urban centre/locality (UCL)	Bounded localities – Newman and Tom Price	13.4	3.5	5,478	3,134
Suburb	Broader areas, within which the particular UCL is the major centre	27,962	32,387	9,087	5,460
Local government authority (LGA)	Area covered by the relevant LGA (East Pilbara for Newman, Ashburton for Tom Price)	371,224	100,959	11,950	10,001
State	State of Western Australia	2,526,574		2,239,170	

Source: Australian Bureau of Statistics (2012), Catalogue No. 2001.0 - 2011 - Basic Community Profile

* Population refers to place of usual residence as at the 2011 Census

In the 2011 Census, Western Australia recorded a net undercount of 2.5 per cent; higher than the national average of 1.7 per cent. While regional figures are not available, it is understood that the undercount is more significant where larger populations of Indigenous communities and young males (aged 20 to 29) reside. After adjustments to accommodate the undercount and discrepancies associated with multiple places of residence, the estimated resident population is adjusted accordingly (intra-censal update).

These figures reflect only the resident population, not the total service population (resident plus short-term workers and visitors). Current Census methods do not adequately identify FIFO and construction workforces as many workers residing in mining towns may report that they usually live elsewhere and are therefore classified as visitors on the basis of their response to the Census. A greater understanding of service populations is essential for informed planning for land and dwelling development and infrastructure provision.

The Shire of Ashburton Working Group (Department of Housing, Department of Lands, LandCorp, Pilbara Development Commission, Rio Tinto, and Shire of Ashburton) identified a lack of accurate knowledge and understanding of the current population and accommodation profile, future employment and population growth trends and consequent housing demand for Tom Price, Onslow and Paraburdoo.

AEC Group Ltd is undertaking on behalf of the Pilbara Development Commission, together with the governance of the Working Group, an Assessment of Accommodation Need in the Major Towns of Tom Price and Onslow and the Townsite of Paraburdoo, within the Shire of Ashburton.

This assessment will support future decisions about accommodation, land supply and typologies of accommodation development. This will be achieved by meeting the following objectives:

- Quantify and profile the current (as at 2013) population and accommodation provision;
- Forecast population and employment growth or decline for each year from 2014 through to 2018 and for the year 2024;

- Determine the number and type of accommodation required to meet these forecasts; and to
- Develop land accommodation strategies that meet these forecasts.

The assessment is anticipated to be available in late 2014 and will provide information that will support the Shire of Ashburton Local Planning Strategy review.

Newman/Shire of East Pilbara

The Shire of East Pilbara is one of the largest and most sparsely populated municipalities in the world. With an area of 371,224 square kilometres and an estimated resident population of 12,960 (as at 30 June 2013), the Shire had a population density of just 0.03 persons per square kilometre (or 29 square kilometres for every resident).

At June 30 2013, Newman's estimated resident population was 6,099 persons (Table 7).

At the 2011 Census, 5,479 people were counted as being usually resident in Newman, constituting almost half of the Shire's population (Table 6). Newman is the only town in the Shire with a population of more than 1,000 people. The nearest larger town is Port Hedland, which is approximately 450 kilometres away by road.

Tom Price/Shire of Ashburton

Like the Shire of East Pilbara, the Shire of Ashburton covers a very large area and is extremely sparsely populated. The Shire contains only two towns of more than 1,000 residents – Tom Price and Paraburdoo (Table 8).

The ABS does not release estimated resident population for urban centre/localities. Department of Planning analysis estimates Tom Price's population for 30 June 2011 at 3,136.

**Table 7: Census 2011 locality populations –
Shire of East Pilbara**

Locality	Population	Per cent of local government population
Marble Bar	208	1.7
Newman	5,479	45.8
Nullagine	178	1.5

Source: Australian Bureau of Statistics (2012), QuickStats: Marble Bar (UCL), Newman (UCL) & Nullagine (UCL).

Note: Data based on place of usual residence.

**Table 8: Census 2011 locality populations –
Shire of Ashburton**

Locality	Population	Per cent of local government population
Onslow	667	6.7
Pannawonica	651	6.5
Paraburdoo	1,509	15.1
Tom Price	3,134	31.3

Source: Australian Bureau of Statistics (2012), QuickStats: Onslow (UCL), Pannawonica (UCL), Paraburdoo (UCL) & Tom Price (UCL).

Note: Data based on place of usual residence.

Table 9: Estimated resident population – Newman and the Shire of East Pilbara

	2003 no	2004 no	2005 no	2006 no	2007 no	2008 no	2009 no	2010 no	2011 no	2012r no	2013p no
Newman (SA2)	4,095	4,385	4,753	5,164	5,283	5,407	5,572	5,662	5,698	5,970	6,099
Shire of East Pilbara	6,171	6,563	6,998	7,667	8,510	9,651	10,753	11,522	12,257	12,693	12,960

Source: Catalogue 3218.0 Regional Population Growth, Australian Bureau of Statistics (2014)

r - revised

p - preliminary

5.2 Population growth

Population growth is the fundamental driver of underlying demand for residential land and housing. Growth in the mining towns of the Pilbara has, for the past decade, been abnormally high due to increased labour requirements in the developing resource sector.

It should be noted that there is some consensus among representatives from the Shires of Ashburton and East Pilbara that ABS population estimates based on the 2006 Census may have been significantly lower than the actual population which would skew population growth figures over the five years to 2011.

Estimated resident population in Tables 9 and 11 are provided over a 10 year period.

Table 10: Estimated resident population change – Newman and the Shire of East Pilbara

Change 2008-2013p		
	%	no
Newman (SA2)	11.3	692
Shire of East Pilbara	25.5	3,309

Source: Catalogue 3218.0 Regional Population Growth, Australian Bureau of Statistics (2014)

p - preliminary

Newman/Shire of East Pilbara

Population growth over the past decade has been particularly high in Newman (SA2) and the Shire of East Pilbara, with average annual growth rates of 4.1 and 7.7 per cent per annum respectively during the period. This rate of growth is particularly high in comparison to the statewide growth rate of 2.6 per cent per annum over the 10 year period.

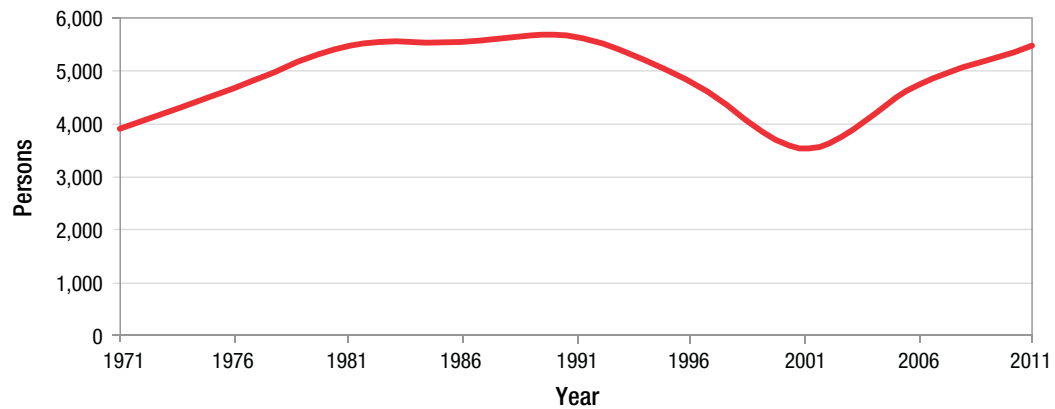
Figure 1 shows the estimated resident population of Newman at each Census since 1971 (data prior to 1971 is not available for Newman). It shows a significant decline in population during the period between 1991 and 2001 followed by a period of rapid population growth in the decade to 2011. The precise cause for the dip in population is not entirely clear; however, in terms of trend direction, it is comparable with the broader Pilbara region.

Tom Price/Shire of Ashburton

Population growth over the past decade has been very high in the Shire of Ashburton. The estimated resident population increased by 69.5 per cent in the 10 years to June 2013 (Table 10). This represents an annual growth rate of 5.4 per cent per annum during the period, which was significantly higher than the statewide rate of 2.6 per cent per annum. In the five years to 2013 ABS data indicate the estimated resident population of the Shire of Ashburton grew by 5.3 per cent per annum.

In the five years to the 2011 Census, Tom Price's population (place of usual residence) increased at the comparatively modest rate of 3.1 per cent per annum, which was marginally higher than the rate for Western Australia (2.6 per cent).

Figure 1: Estimated resident population of Newman (UCL)



Source: ABS and Department of Planning (2013)

Table 11: Estimated resident population – Shire of Ashburton

	2003 no	2004 no	2005 no	2006 no	2007 no	2008 no	2009 no	2010 no	2011 no	2012r no	2013p no
Shire of Ashburton	6,467	6,925	7,263	7,608	7,939	8,480	9,004	9,510	10,227	10,646	10,959

Source: Catalogue 3218.0 Regional Population Growth, Australian Bureau of Statistics (2014)

r - revised

p - preliminary

Table 12: Estimated resident population change – Shire of Ashburton

Change 2008-2013p		
	%	no
Shire of Ashburton	22.6	2,479

Source: Catalogue 3218.0 Regional Population Growth, Australian Bureau of Statistics (2014)

p - preliminary

Figure 2 shows the population of the Tom Price locality at each Census since 1966. It shows the rapid increase in population after the town's establishment in 1966. This growth was followed by a lengthy period of relative population stability, as residents of the then established town had steady access to employment through the nearby mines. There is, however, a dip in the population from 1971 to 1976 – once the mine had moved to an operational phase, followed by an increase after the construction of an iron ore concentrator plant in 1977. Between 1996 and 2001, the population of the town dropped significantly. A variety of factors can cause a sudden change in population in mining towns such as Tom Price. These factors can include:

- cycles in construction/operation phase of mines;
- changes in demand/global commodity prices;
- broader migration trends;

- a change in workforce location of residence (e.g. FIFO); and
- the introduction of labour saving technology.

Data in Figure 2 should be used with a degree of caution as ABS geographies can change over time. In most cases this will involve an expansion of the boundary as the town grows. In Tom Price however, the ABS had a very broad boundary for the urban centre locality until the 2006 Census, which was condensed for the 2011 Census to more accurately reflect the town's urban extent.

5.3 Place of enumeration

Another key population indicator provided by the Census is the place of enumeration, which indicates the number of persons present on Census night. The place of enumeration count includes residents, tourists and visitors, and provides a better indication of the total service population.

The ABS reports that the increasing mobility of Australians and use of population numbers for the allocation of resources has created a growing demand for estimates of service populations within local government boundaries. ABS population estimates in the future will be influenced by the need for service population estimates and their application in matters related to decision and policy making, program formulation and monitoring.

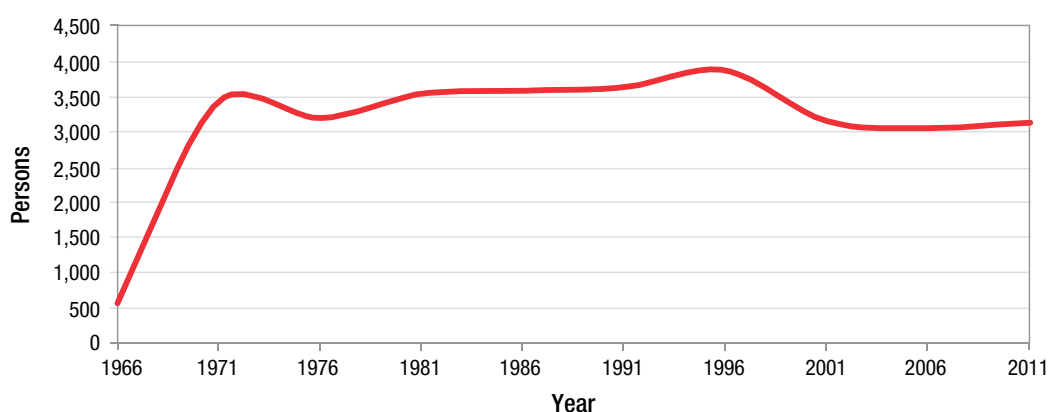
The ABS paper *Population Concepts* (Catalogue 3107.0.55.006) discusses various service population definitions and associated measurement issues.

Figure 3 shows the proportion of people resident and visiting in Ashburton and East Pilbara on Census night 2011. The high proportion of people visiting on Census night is indicative of the large numbers of workers living in mine camps. Camps may be located in remote areas near mineral deposits or in established towns like Newman and Tom Price and the majority of these workers travel to work at such camps on a FIFO basis.

As well as many of the people who stated that they were visitors on Census night, it is likely that a significant number of those who stated that they were resident may also have been FIFO workers. The 2011 Census form states that where a person usually lives means the “*address at which the person has lived or intends to live for a total of six months or more in 2011*”. Consequently, a FIFO worker who spent three weeks out of every month in Ashburton or East Pilbara would be classified as a resident.

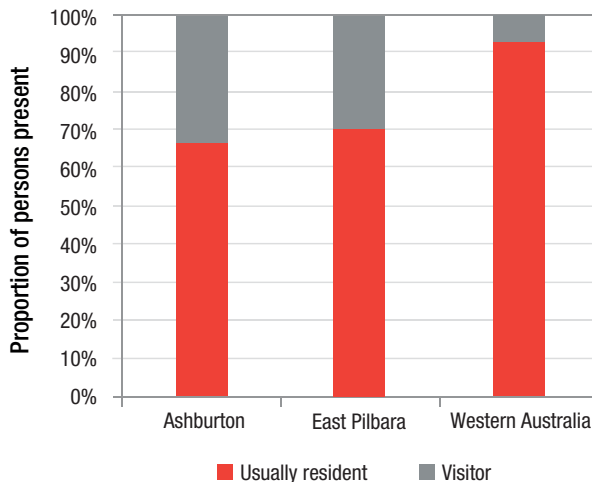
How this question is interpreted by respondents can impact the proportion of those who are considered resident and those who are considered visiting. For example, it is plausible that despite spending over six months in Newman or Tom Price for employment, many FIFO workers identified the ‘family home’ as their place of usual residence.

Figure 2: Estimated resident population of Tom Price (UCL)



Source: ABS and Department of Planning (2013)

Figure 3: Proportion of population resident and visiting from a different area (SA2) on Census night 2011



Source: ABS Catalogue 2001.0 Community profile – place of enumeration

Newman/Shire of East Pilbara

The number of persons present in Newman (UCL) on Census night (place of enumeration) was significantly higher at 6,759 than the estimated resident population which was just 5,478. The number of persons present on Census night in the Shire of East Pilbara was 17,148, which is also substantially greater than the resident population of 11,950. This divergence in figures indicates that there is a substantially larger population in the town and the local government area than the resident population, which must be considered in future growth scenarios.

Based on results from the previous two Censuses, it is clear that there has been significant growth in the population enumerated in Newman (and in the Pilbara more broadly) on Census night. This growth, however, has not translated into a corresponding growth in resident population. Between 2006 and 2011 the resident population in Newman (UCL) grew by 29 per cent while the population counted in the town on Census night grew by 42 per cent. It is likely that the actual increase may have been even greater, given the high proportion of young males in the Shire and their propensity for not returning Census forms.

Tom Price/Shire of Ashburton

In Tom Price the discrepancy between those usually resident and those present on Census night was not particularly great, suggesting that within the town itself the population is predominantly resident.

The number of persons present on Census night in the Shire of Ashburton; however, was substantially greater than the estimated resident population for the Shire, with 15,057 persons present and an estimated resident population of just over 10,000. The latter two figures for place of enumeration include transient workers who utilise services within Tom Price to varying degrees, depending on their proximity to the townsite and individual camp circumstances (i.e. the extent of camp facilities, work rosters etc.).

Population growth within the Tom Price townsite was more moderate than elsewhere in the Shire of Ashburton between the 2006 and 2011 Censuses. The count increased from 3,055 in 2006 to 3,272 in 2011; a seven per cent increase over the five year period.

There was, however, a very large increase in the count of persons in the rest of the Shire of Ashburton. At the 2006 Census, 8,146 persons were counted in the Shire and in 2011, 15,057 were counted – an 85 per cent increase over the five years. Outside Tom Price (UCL), the count of persons in the Shire more than doubled, increasing from 5,085 in 2006 to 11,785 in 2011.

Although other towns in the Shire of Ashburton did experience some growth in this regard, the increase was overwhelmingly outside established towns, in more remote areas – presumably in mine camps.

5.4 Population structure

Newman/Shire of East Pilbara

The age sex profile (Census 2011) for Newman and the Shire of East Pilbara (Figures 4 and 5 respectively) highlight the differences of the age distribution of residents when compared with that of the State (Figure 6).

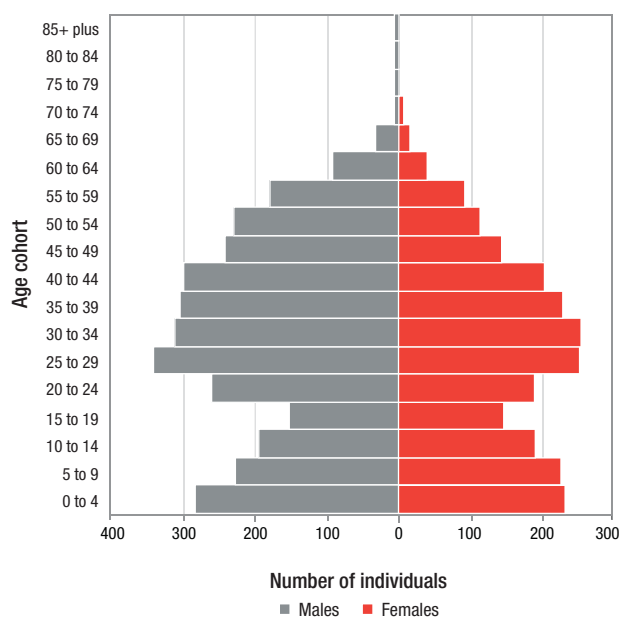
Newman's population is made up of a high proportion of working aged people. At the 2011 Census, just 67 persons of retirement age cited Newman as their place of usual residence. This represents just 1.2 per cent of the population compared to 12.3 per cent for Western Australia. The proportion of working age residents within the Shire of East Pilbara is even higher than for Newman, with 79 per cent of the population aged between 20 and 65, compared to 61.5 per cent across the entire State. At the 2011 Census, based on place of enumeration, approximately 47 per cent of the Newman population were males aged between 20 and 65 compared to 31 per cent statewide.

There is a distinctly low proportion of residents of high school age and young adults, with the 15-19 year old age cohort constituting only 5.4 per cent of the population, compared to 6.6 per cent for the State. Notably, however, there are a large proportion of young children in the town, with 17.6 per cent of the population aged less than 10 compared to 13.1 per cent for the State.

Also apparent, is the unusually high proportion of males residing in the region. Within the town of Newman the ratio of males to females is significantly higher than for the State (50.3 per cent), with males constituting approximately 56.9 per cent of the population. In the Shire as a whole, males outnumber females by more than two to one. Excluding Newman residents, the ratio of males to females in the Shire of East Pilbara is more than three to one.

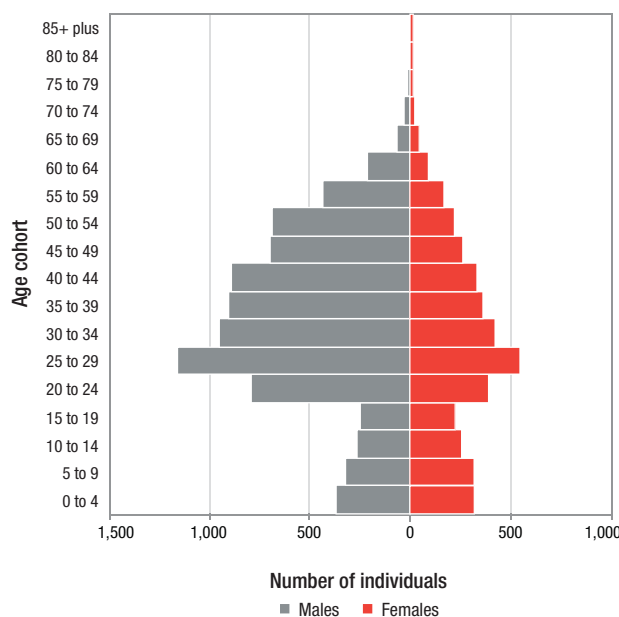
Newman has a marginally lower proportion of residents born in Australia (60.5 per cent) than the broader Western Australian community (62.9 per cent). It should be noted that a high proportion of Newman residents did not state their country of birth. When these persons are excluded from calculations the percentage of Newman residents born in Australia is much higher (74.3 per cent).

Figure 4: Census 2011 age sex profile – Newman



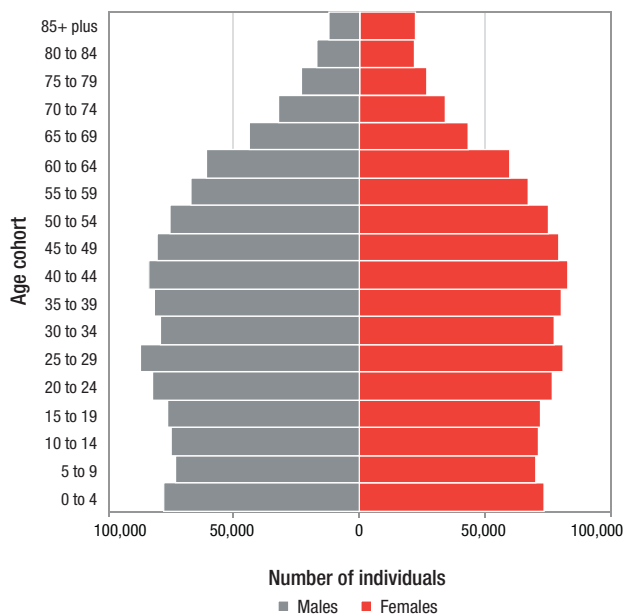
Source: Australian Bureau of Statistics (2013), Table Builder: Age and Sex, persons, location on census night, Newman (urban centre locality)

Figure 5: Census 2011 age sex profile - Shire of East Pilbara



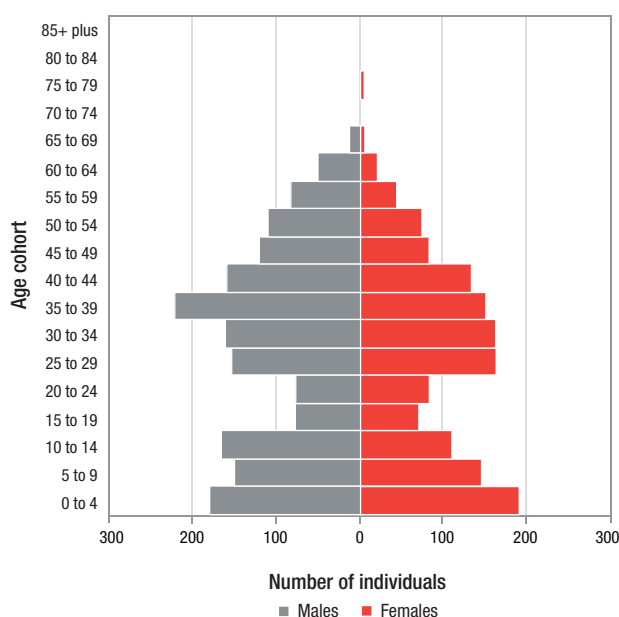
Source: Australian Bureau of Statistics (2013), Table Builder: Age and Sex, persons, location on census night, Shire of East Pilbara (LGA)

Figure 6: Census 2011 age sex profile - Western Australia



Source: Australian Bureau of Statistics (2013), Table Builder: Age and Sex, persons, location on census night, Western Australia

Figure 7: Census 2011 age sex profile - Tom Price



Source: Australian Bureau of Statistics (2013), Table Builder: Age and Sex, persons, location on census night, Tom Price (urban centre locality)

At the 2011 Census, 549 of Newman's resident population reported that they were Indigenous, which constitutes 10 per cent of the population. There is a high proportion of persons born in New Zealand (6.4 per cent) residing in Newman and a significant proportion of residents born in the United Kingdom (3.2 per cent), the Philippines (1.7 per cent) and South Africa (1.4 per cent).

Tom Price/Ashburton

The population structure of the Shire of Ashburton and of Tom Price both differ substantially from the broader Western Australian community. One of the most striking features of the data depicted in Figure 8 is the disparity between the number of male and female residents of working age in the Shire of Ashburton. In Tom Price (UCL) there is a greater degree of gender balance, with males constituting approximately 54 per cent of the population. At the 2011 Census, based on place of enumeration, approximately 35 per cent of the Tom Price population were males aged between 20 and 65 compared to 31 per cent statewide.

The age distribution of Tom Price residents at the 2011 Census was markedly different to the age distribution of Western Australian residents as a whole. At the 2011 Census less than one per cent of Tom Price (UCL) residents stated that they were aged 65 or more years old, compared to 12.3 per cent across the State as a whole.

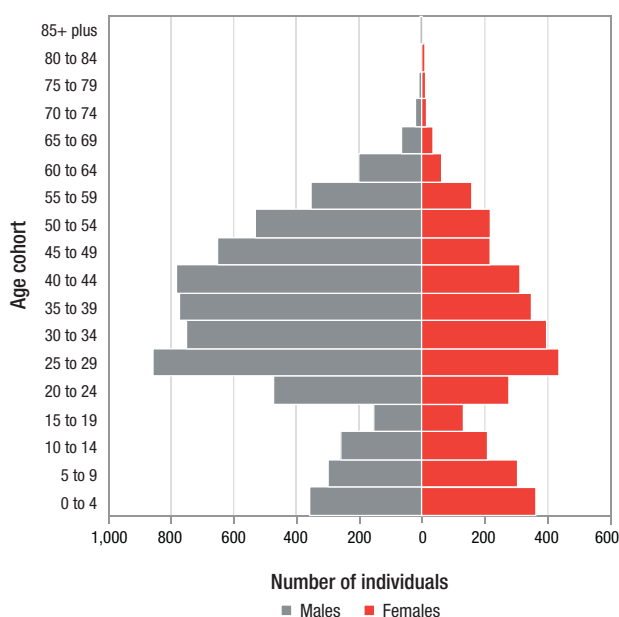
The proportion of residents under 10 years of age in Tom Price (21 per cent) is significantly higher than throughout the rest of the State (13 per cent), reflecting the large number of families in the area. This trend is reversed for people of high school/tertiary education age with 15-24 year olds constituting 14 per cent of the population in Western Australia and just 10 per cent of the population in Tom Price.

Isolated towns such as Tom Price and Newman lack the critical mass of population, particularly those of school age, to sustain higher order education providers. It is not uncommon for families with school age children or young adults to move to larger towns or cities to undertake studies that may not be available locally.

At the 2011 Census, 504 of Tom Price's (suburb) resident population reported that they were Indigenous, constituting nine per cent of the population. Tom Price has a marginally higher proportion of residents born in Australia (67 per cent) than the

broader Western Australian community (63 per cent). A significant proportion of persons residing in Tom Price stated that they were born in New Zealand (6.4 per cent) and in the United Kingdom (3.2 per cent).

Figure 8: Census 2011 age sex profile - Shire of Ashburton



Source: Australian Bureau of Statistics (2013), Table Builder: Age and Sex, persons, location on census night, Shire of Ashburton (LGA)

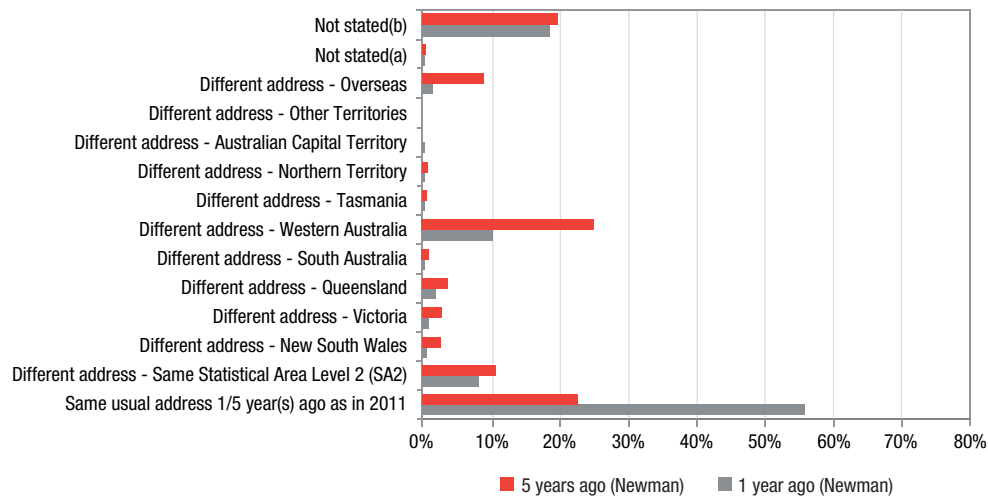
5.5 Population stability

Newman/Shire of East Pilbara

Newman has a significantly higher resident churn factor than Western Australia as a whole. At the 2011 Census only 56 per cent of Newman residents had lived in their address (at that time) for more than one year compared to 77 per cent for the State. Only 23 per cent of residents at the 2011 Census were living at their existing address five years previous, compared to 50 per cent for Western Australia.

Figure 9 reflects the unusually shaped age-sex profiles for the town, which show a high proportion of working age residents and young children, but few retirees and residents of high school/tertiary education age. The data depicted in Figures 4 and 7 suggest that the decision to move to Newman is often based on employment opportunities rather than lifestyle, with most residents staying for fewer than five years and few people remaining in the town after retirement. Most of the people who had moved to the Newman area in the five years to 2011 were from elsewhere in Western Australia (approximately 1,250 persons) or from overseas (approximately 440 persons).

Figure 9: Census 2011 – Place of usual residence 1 and 5 years ago – Newman

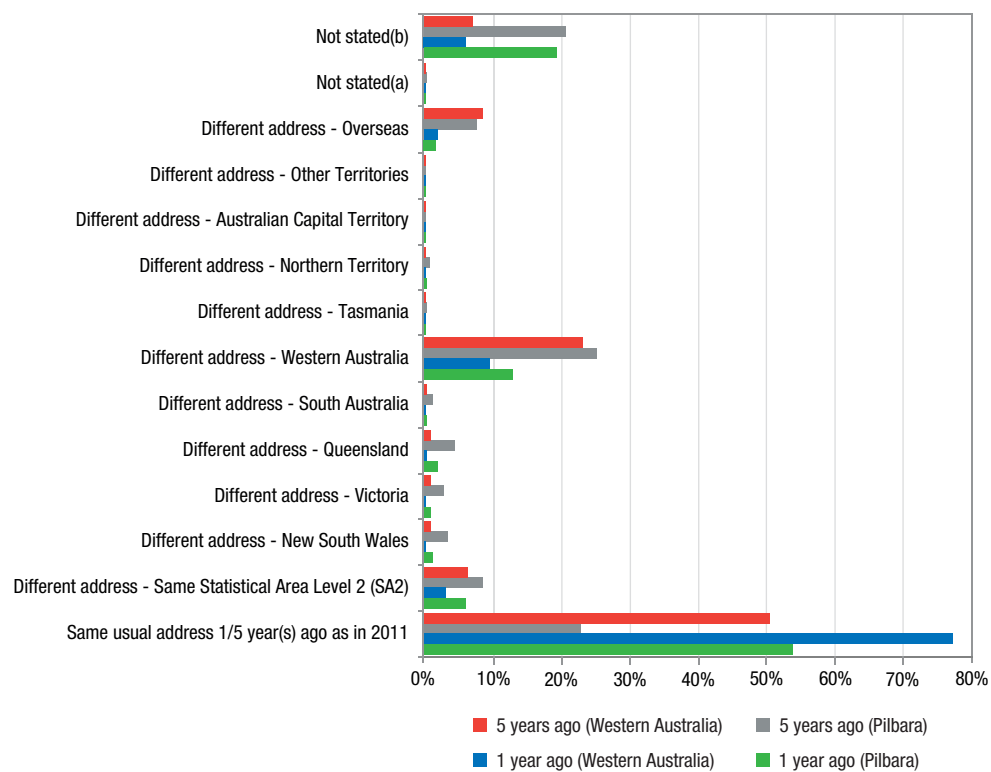


Source: Australian Bureau of Statistics, Catalogue No. 2001.0 - 2011 Basic Community Profile – Place of usual residence 1/5 years ago by sex, Newman (UCL)

(a) Includes persons who stated that they were usually resident at a different address one year ago but did not state that address.

(b) Includes persons who did not state whether they were usually resident at a different address one year ago.

Figure 10: Census 2011 – Place of usual residence 1 and 5 years ago – Western Australia and Pilbara



Source: Australian Bureau of Statistics (2013), Catalogue No. 2001.0 - 2011 – Basic Community Profile, Western Australia (State) and Pilbara (SA3)

(a) Includes persons who stated that they were usually resident at a different address one year ago but did not state that address.

(b) Includes persons who did not state whether they were usually resident at a different address one year ago.

Tom Price/Shire of Ashburton

At the time of the 2011 Census, 71 per cent of Tom Price residents stated that they had lived in the area for less than five years. Although Tom Price has a high resident churn factor compared to the Perth metropolitan area, it has a relatively settled population compared to many other parts of the Pilbara region. At the 2011 Census approximately 75 per cent of the resident population were living in the same address as they were one year previous, which is comparable to the rate for all Western Australians (77 per cent) and significantly higher than the rate for the Pilbara region (54 per cent).

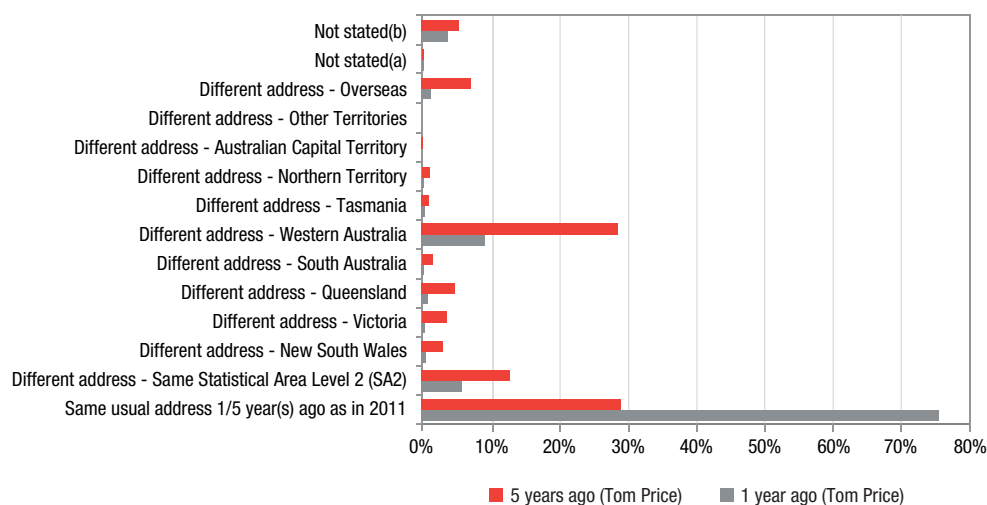
Although the proportion of Tom Price residents who had lived in the same address for the five years to 2011 (29 per cent) was much lower than the State (Figures 10 and 11), it was significantly higher than the rate for the Pilbara region (23 per cent). The proportion of Tom Price residents who lived in the same area (SA2) five years previous to the Census (42 per cent) was also higher than the corresponding figure for the Pilbara region (32 per cent). Most of the people who had moved to Tom Price in the five years to 2011 did so from elsewhere in Western Australia.

5.6 Household formation

Newman

The majority (77.1 per cent) of occupied private dwellings recorded at the 2011 Census were family households (Table 12). Lone person households accounted for 23.2 per cent of occupied private dwellings, and group households 3.9 per cent. A group household consists of two or more unrelated people where all persons are aged 15 years and over. Based on data from the 2011 Census, the average household size in Newman was 2.9 and the average number of persons per bedroom was 1.1. This compares with the Western Australian average household size of 2.5 and the average number of persons per bedroom of 1.1.

Figure 11: Census 2011 – Place of usual residence one and five years ago – Tom Price



Source: Australian Bureau of Statistics (2013), Catalogue No. 2001.0 - 2011 – Basic Community Profile, Tom Price (UCL)

(a) Includes persons who stated that they were usually resident at a different address 1-5 years ago but did not state that address.

(b) Includes persons who did not state whether they were usually resident at a different address 1-5 years ago.

Table 13: Census 2011 household types (occupied private dwellings) – Newman

Household type	Family household type	Number of households	% of total households
Family households	Couple families with children	623	45.8
	Couple families without children	343	25.2
	One parent families	75	5.5
	Other families	7	0.5
	Total family households	1,048	77.0
Lone person households		253	18.6
Group households		59	4.4
Total households		1,360	100.0

Source: Australian Bureau of Statistics (2013), Catalogue 2001.0 Basic Community Profile – Newman SA 2

Note: The number of families may sum to more than the total number of family households due to families living in non-private dwellings or multiple families residing within a single dwelling.

Table 14: Census 2011 household types (occupied private dwellings) – Tom Price

Household type	Family household type	Number of households	% of total households
Family households	Couple families with children	456	48.2
	Couple families without children	239	25.6
	One parent families	57	5.8
	Other families	0	0
	Total family households	739	79.6
Lone person households		165	17.8
Group households		29	2.6
Total households		933	100.0

Source: Australian Bureau of Statistics (2012), Quickstats – Tom Price (UCL)

Note: The number of families may sum to more than the total number of family households due to families living in non-private dwellings or multiple families residing within a single dwelling.

Tom Price

The majority (73 per cent) of occupied private dwellings recorded at the 2011 Census were family households (Table 13). Also, a particularly high proportion of households in Tom Price were occupied by couple families with children (49 per cent compared to 33 per cent for Western Australia). Lone person households accounted for 18 per cent of occupied private dwellings, and

group households just three per cent. A group household consists of two or more unrelated people where all persons are aged 15 years or over. At the 2011 Census, there was an average of three people per household and 3.1 bedrooms per dwelling. Across Western Australia, there were fewer people per dwelling (2.6) and more bedrooms per home (3.3) at that time.

5.7 Industry of employment

Newman

As discussed in Section 1 of this document, the motivation for European settlement in Newman was to house workers (and their families) to harvest the iron ore deposits of nearby Mount Whaleback. The modern day employment structure of Newman reflects the town's original purpose, with the mining industry still the most prominent employment sector.

Approximately 57 per cent of the town's employed residents aged 15 years and over reported that they worked in the mining sector. The second most common industry of employment was construction (12 per cent). No other employment sector constituted more than five per cent of the total jobs stated in Census responses. The dominance of the mining and

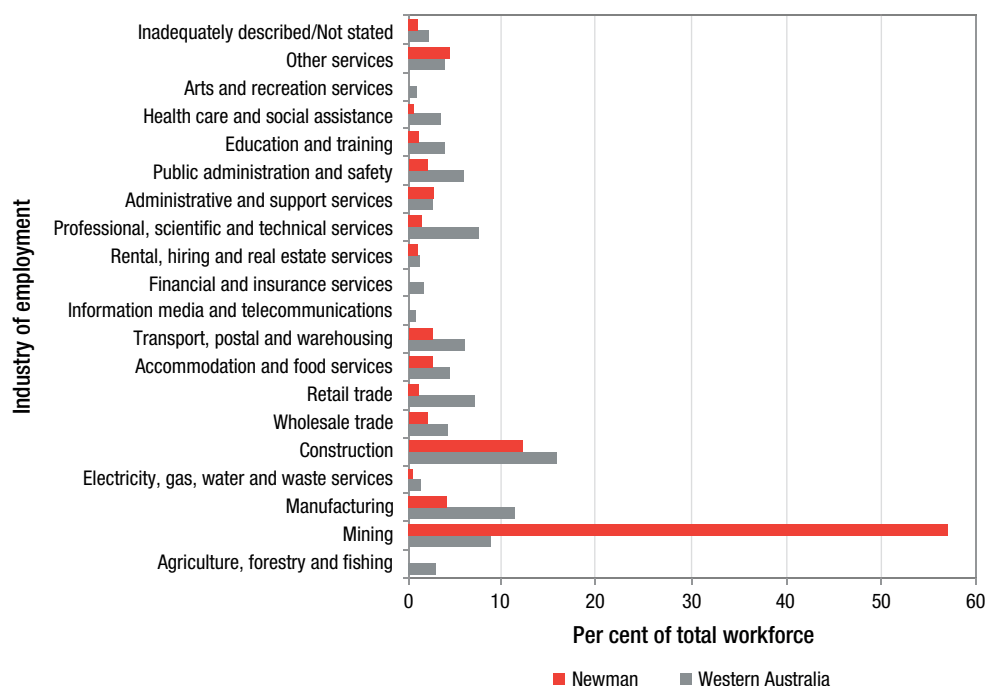
construction sectors represent a challenge to staffing other industries including retail, accommodation and food services, and transport.

The biggest employer in Newman is BHPBIO. The Department of Mines and Petroleum reported that in 2013, an average of 2,814 people were employed at BHPBIO's Mt Whaleback mine at any given time.³⁵

Tom Price

As depicted in Figure 13, the most important industry sector in Tom Price is mining. At the 2011 Census, approximately 53 per cent of the town's employed residents aged 15 years of over stated that they worked in the mining sector. The primacy of the mining industry in Tom Price makes comparing the prominence of other industries with the rest of the State problematic. Only two

Figure 12: Census 2011 industry of employment – Newman and Western Australia



Source: Australian Bureau of Statistics (2013), Catalogue 2001.0 Basic Community Profile – Newman SA 2

³⁵ Department of Mines and Petroleum (2012), *Western Australian Mineral and Petroleum Statistics Digest 2011-12*

other industries in Tom Price employ a higher proportion of the resident population than they do for Western Australia as a whole – ‘healthcare and social assistance’ and ‘education and training’.

As with Newman, non-mining related services industries may struggle to source long-term employees. The biggest single employer in Tom Price is Rio Tinto. The Department of Mines and Petroleum reported that in 2013, an average of 1,913 people were employed at the Mt Tom Price mine at any given time.³⁶

5.8 Income distribution

The description of the Newman and Tom Price population and employment profiles thus far suggests that many workers and their families are attracted, for a period at least, by appealing employment opportunities. The data shown in this section

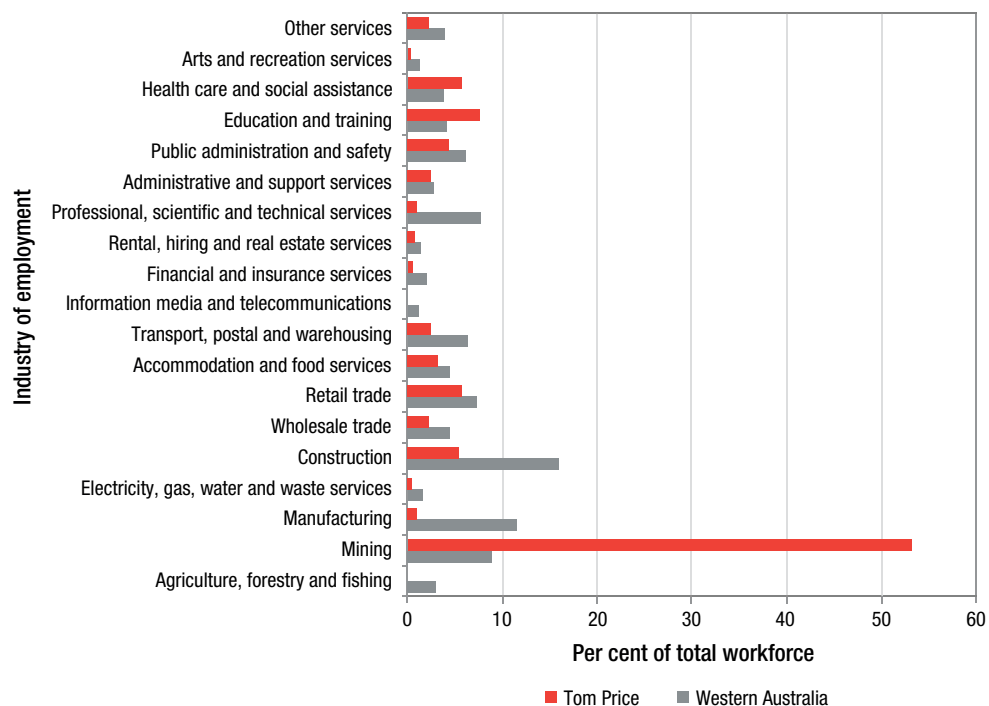
indicates that incomes in Tom Price and Newman tend to be significantly higher than in other parts of the State. It should be noted, however, that mining sector employees in Newman and Tom Price generally work longer hours than is typical across the broader statewide workforce (see Section 5.9).

Although high incomes in Newman and Tom Price may be an incentive for many to move to the towns, high wage demands can present a challenge to small business development.

Newman

The mining sector jobs that underpin Newman’s employment structure (Figure 12) are often well paid and this is reflected in the data for income distribution. The median weekly income for

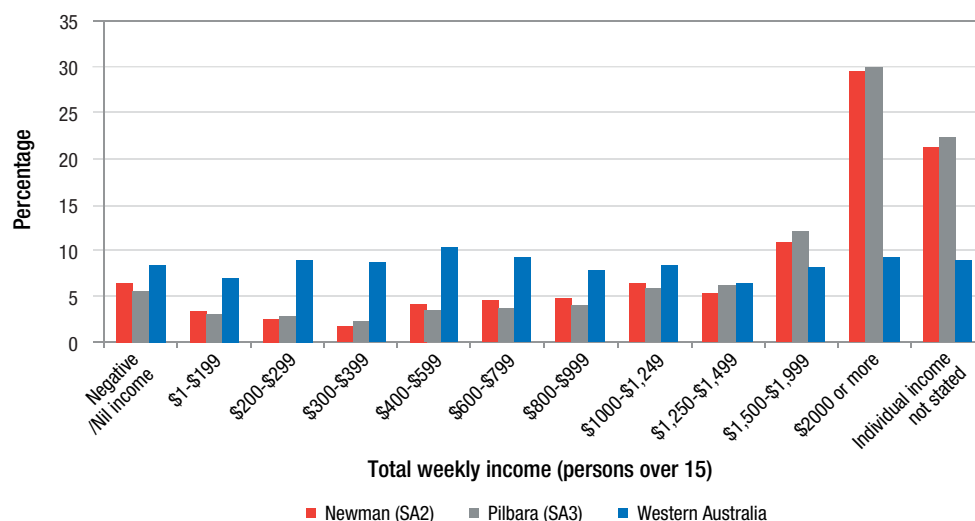
Figure 13: Census 2011 industry of employment – Tom Price and Western Australia



Source: Australian Bureau of Statistics (2012), Retrieved using Table Builder – Employment, Income and Unpaid Work, Industry. Tom Price (UCL) and Western Australia (STE), (February 2013)

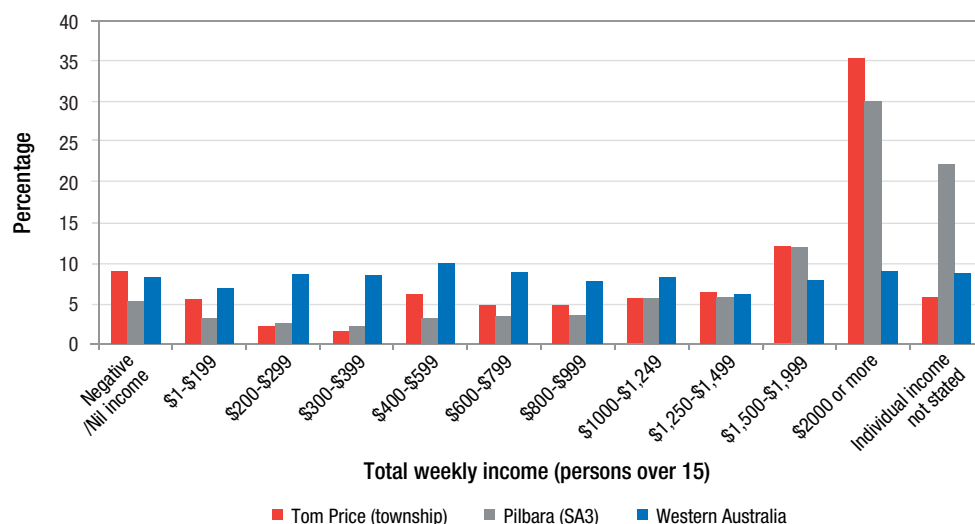
³⁶ Department of Mines and Petroleum (2012), *Western Australian Mineral and Petroleum Statistics Digest 2011-12*

Figure 14: Census 2011 income distribution – Newman, Pilbara and Western Australia



Source: Australian Bureau of Statistics (2012), Catalogue 2001.0 Basic Community Profile – Newman (UCL); Pilbara (SA3); and Western Australia (STE)

Figure 15: Census 2011 income distribution – Tom Price, Pilbara and Western Australia



Source: Australian Bureau of Statistics (2012), Catalogue 2001.0 Basic Community Profile – Tom Price (UCL); Pilbara (SA3); and Western Australia (STE)

Western Australian residents aged over 15 years of age is \$662; the corresponding figure for Newman residents is substantially higher at \$1,536 (Figure 14).

At the 2011 Census, the income distribution in Newman was very similar to the broader Pilbara region. The share of the population in each of the Census income cohorts differed by two per cent or less between Newman (SA 2) and the Pilbara (SA 3); even the income not stated category differed by just one per cent. In Newman there was a much larger proportion of the population earning high incomes than in the broader Western Australian community. Of the usual residents over 15 years of age, 29.4 per cent earned more than \$2,000 per week, compared to 8.7 per cent statewide.

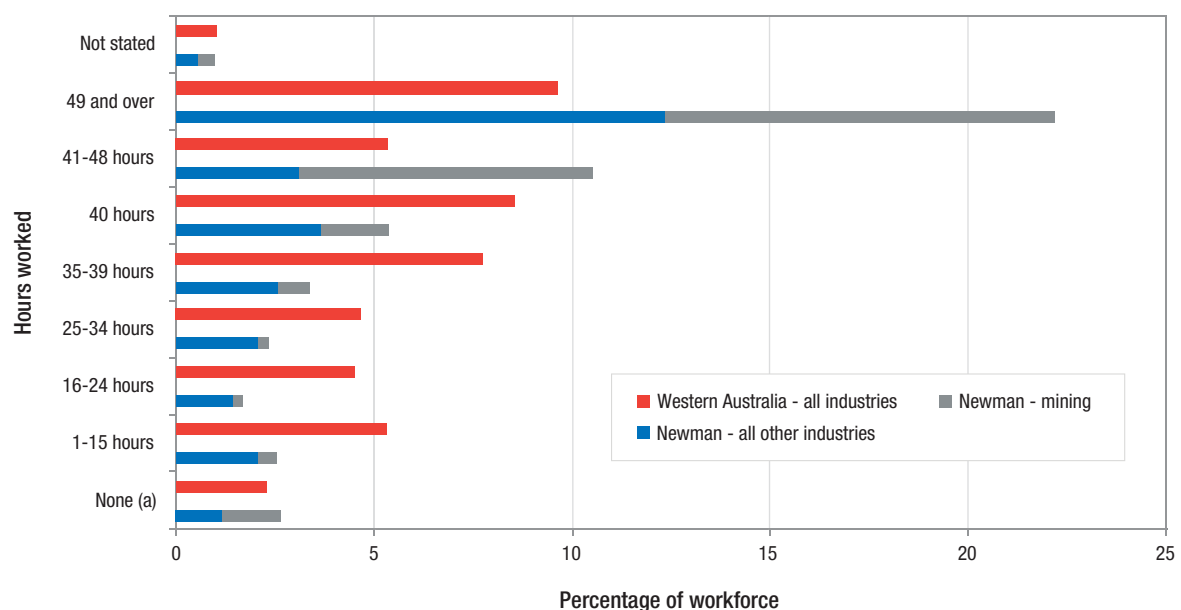
Not surprisingly, there was a correspondingly small proportion of residents with low incomes in Newman, where 13.7 per cent of residents stated earnings of less than \$400 per week, compared to 32.5 per cent of Western Australian residents.

Another significant departure from statewide trends was the proportion of residents whose income was not stated on the Census form. In Newman 21.2 per cent of usual residents' personal income was not stated, compared to 8.7 per cent statewide.

Tom Price

At the 2011 Census, more than one third of the Tom Price labour force stated that they earned \$2,000 or more per week. This was considerably higher than the proportion of the Western Australian labour force earning more than \$2,000 per week (nine per cent), and the Australian labour force (seven per cent). The mining sector jobs that draw many new residents to Tom Price are particularly well-paid. Approximately 82 per cent of Tom Price residents employed in the mining sector stated that they earned more than \$1,500 per week and 66 per cent stated that they earned more than \$2,000 per week.

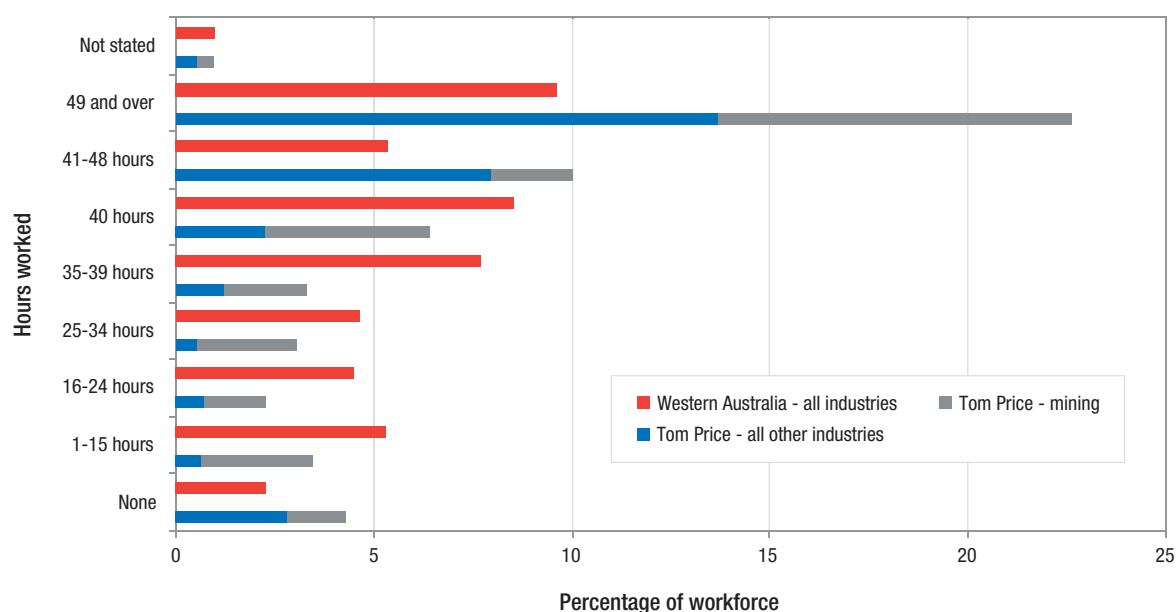
Figure 16: Census 2011 working patterns by industry – Newman



Source: Australian Bureau of Statistics, Table Builder – Employment, Income and Unpaid Work Classifications\Employment\Hours Worked (ranges) – accessed (February 2013)

Note: Percentages do not sum to 100 because persons for whom this part of the census were not applicable are not shown. This constituted roughly 50 per cent of persons for both Western Australia and for Newman.

Figure 17: Census 2011 working patterns by industry – Tom Price



Source: Australian Bureau of Statistics, Table Builder – Employment, Income and Unpaid Work Classifications\Employment\Hours Worked (ranges) – accessed (February 2013)

Note: Percentages do not sum to 100 because persons for whom this part of the census were not applicable are not shown. This constituted roughly 50 per cent of persons for both Western Australia and for Tom Price.

5.9 Working patterns

Several key indicators discussed in this section suggest that many Newman and Tom Price residents move to the town, either directly or indirectly, due to the employment opportunities available. Data showing working patterns indicates that many of those in the workforce work longer hours than what is typical elsewhere in the State. To a large extent, the high proportion of the workforce working 49 hours or more per week is due to the shift rotations at the major mines.

Newman

Newman residents were twice as likely to work more than 40 hours per week than the population of Western Australia as a whole. Many of those working longer hours (40 plus) in Newman were employed in the mining sector. More than one in five Newman residents counted in the 2011 Census stated that they worked 49 hours or more per week.

Tom Price

On average, the Tom Price labour force worked considerably longer hours than workers across the rest of the State, with 40 per cent of the Tom Price labour force stating that they worked 49 hours or more in the week prior to the Census count.

5.10 Labour force

Newman

The *Small Area Labour Markets - December Quarter 2013* report, produced by the Department of Employment (DoE), states that the Shire of East Pilbara had a labour force of 4,885 in December 2013. DoE estimates also indicate a reasonably high unemployment rate for the Shire, which was 6.4 per cent, with an estimated 315 individuals unemployed for the December quarter 2013. This is higher than the rate of unemployment for Western

Australia as a whole (4.1 per cent) and the national unemployment rate (5.5 per cent) for the same period. DoE data is for the whole Shire, and does not necessarily reflect labour force trends within Newman itself.

At the time of the 2011 Census, Newman had a total labour force of 2,908 persons (employed and unemployed persons aged 15 years and over). Of these, 78 per cent worked full time and 12 per cent part time. Approximately 2.4 per cent of the labour force was unemployed, which was significantly lower than the State rate of 4.7 per cent (at the time of the Census). The rest of Newman's labour force was either employed, but away from work (that is, they did not work any hours in the week prior to Census night), or did not state their working hours.

Just seven per cent of Newman residents counted in the 2011 Census stated that they were not in the labour force, compared to 24 per cent for the State.

Tom Price

The *Small Area Labour Markets December Quarter 2013* report, produced by DoE, states that the Shire of Ashburton had a labour force of 4,886 in December 2013. DoE estimates also indicate a low unemployment rate for the Shire, which was 2.1 per cent with just 101 individuals estimated to be unemployed as at June 2013. This is a significantly lower rate of unemployment than for Western Australia as a whole (4.1 per cent) and the national unemployment rate (5.5 per cent) for the same period. DoE datum is for the whole Shire, and does not necessarily reflect labour force trends within Tom Price itself.

At the time of the 2011 Census, Tom Price had a total labour force of 1,811 persons (employed and unemployed persons aged 15 years and over). Of these, 73 per cent worked full time and 12 per cent part time. Less than two per cent of the population (1.8 per cent) reported that they were unemployed at the last Census compared to 4.7 per cent across Western Australia.

Only 10 per cent of Tom Price residents counted in the 2011 Census stated that they were not in the labour force compared to 24 per cent for the State. The labour force statistics for Tom Price are highly indicative of the demographic makeup of the town. Census responses indicated 72 per cent of Tom Price's

usual residents were either working full-time or aged under 15, reflecting the large proportion of working aged population and young families.

6 Population and employment projections

Key points

Newman

- The Pilbara Industry's Community Council uses future and existing resource project employment requirements as a basis for population projections to 2020. These employment based forecasts indicate that Newman's population is likely to increase by 1,700 residents from a 2011 baseline, creating a resident population of approximately 7,400 in 2020.
- There are numerous resource extraction projects under consideration in the vicinity of Newman which suggest that further investment is probable under favourable economic conditions. However, new expansion projects are unlikely in the current economic climate.
- Pilbara Industry's Community Council estimates that the total mining and energy workforce in the Shire of East Pilbara will increase (from a 2011 baseline) by approximately 18,000 workers (5,500 construction and 12,500 operations) to 2017.
- The Pilbara Cities program is encouraging growth in Newman through investment in key community infrastructure projects and economic diversification schemes. Pilbara Cities have set a target for population growth in Newman of 15,000 residents by 2035.

Tom Price

- Tom Price has experienced relatively modest population growth in recent years. Most of the additional workforce requirements created by resources projects have been met by FIFO workers who generally stay at camps outside town.
- *WA Tomorrow* forecasts suggest that the high rate of population growth in the Shire of Ashburton is unlikely to continue.
- The Pilbara Industry's Community Council predicts that the total minerals and energy workforce in the Shire of Ashburton will decline over the next seven years,

with projects currently under construction moving into operational phase and no major new projects likely to commence in the Shire.

- The Pilbara Industry's Community Council employment-based forecasts indicate that the population of Tom Price could potentially increase by 1,400 residents to a population of approximately 4,750 in 2020. Achieving growth of this nature is likely to require an increase in the proportion of resident workers relative to FIFO, or a substantial expansion of the town's role as a service hub for mining operations in the area.
- The Pilbara Cities initiative aims to encourage growth in Tom Price through improving the liveability and economic diversity of the town. However, there is no specific population target for Tom Price under the Pilbara Cities initiative.

Highlights and conclusions:

- There is currently an inadequate understanding of service populations in the towns of the Pilbara. The creation of a comprehensive database cataloguing employment numbers, details and forecasts for major projects across the region will enable more informed forward planning for host communities and emergency services.

The relationship between employment and population growth is more pronounced in the mining towns of the Pilbara than many other areas of the State. As discussed in Section 3 of this document, many of Newman and Tom Price's residents are attracted to the region, either directly or indirectly, by the prospect of employment in the mining industry. Consequently, population growth in the resource sector oriented towns of the Pilbara tends not to occur at a steady rate, rather in bursts, driven by resource project cycles. This dynamic makes preparing accurate population forecasts challenging.

It is noted that population figures in this document reflect the best available data. The use and interpretation of this data is complex (see Australian Bureau of Statistics information paper – Catalogue 3107.0.55.006, Population Concepts, 2008) and is subject to ongoing review and discussion with stakeholders.

This section of the document draws on two key methods of population forecasting; the WAPC's *Western Australia Tomorrow* projection which is based on demographic modelling and the Pilbara Industry's Community Council's employment based forecasts. The divergence between these forecasts highlights the significance of employment-based population growth to the area's total resident population.

Assessments of the future population and the resulting land, housing and infrastructure requirements are further complicated in the Pilbara by the divergence between resident population and service population. FIFO workers and short-term contract workers are generally not counted as resident in the town, nor considered in WAPC population forecasts. In the 2011 Census, 35 per cent of those who were counted in the Shire of East Pilbara stated that they were usually resident in a different local government area. In 2012 it was estimated that less than 20 per cent of the mining and energy workforce in the Shire of Ashburton actually lived in the Shire.³⁷

The impact of these 'extra' non-resident people on the urban centres of the Pilbara is not uniform. It is likely that those living in remote areas will exert different pressures to those based in or near regional towns. The Department of Regional Development's policy on temporary workforce 'accommodation seeks to maximise the integration between transient workers' housing and established communities to create genuine legacy benefits for existing towns. At more remote sites, however, there is little or no interaction between temporary workers and the nearest town, by virtue of the distances involved. These issues are addressed in the ABS report *Towns of the Mineral Boom*.³⁸

Western Australia Tomorrow forecasts are modelled on demographic statistics prepared on behalf of the WAPC. The median population projection to 2020 for the Pilbara using this model is 51,800 residents and the median projection for the high growth quintile is 57,800 (these projections are explained in more detail in section 4.1). The Pilbara Industry's Community Council's employment-based projections for the Pilbara's population growth are significantly higher than the WA Tomorrow forecast, with an estimate that the resident population of the Pilbara at 2020 will be between 72,600 and 76,200.

The State Government's Pilbara Cities initiative aims for even higher growth than that forecast by the Pilbara Industry's Community Council. The initiative aims to increase the proportion of resident workers and enhance the size and amenity of the towns of the Pilbara. Part of the Pilbara Cities vision is for the region to reach a population of 140,000 by 2035. Reaching this target would require a growth trajectory significantly higher than that forecast by either *WA Tomorrow* or the Pilbara Industry's Community Council. Achieving this level of growth will require continued Government investment and economic diversification to create employment opportunities and drive residential population growth.

6.1 Population and employment projections – *WA Tomorrow*

WA Tomorrow forecasts, released in 2012, are prepared using 10,000 different permutations that emulate the variability in population change shown in historical data. Each permutation shows possible growth or decline in a population, based on five variables (birth rate, death rate, net interstate migration, net intrastate migration and net overseas migration) that occur to varying degrees in each simulation.

The range of *WA Tomorrow* forecasts are divided into five 'bands', based on the projected rate of population change produced by each simulation. Each band includes one fifth of the permutations, with Band A representing the lowest quintile of projected population growth, Band C the median and Band E the highest (see figures 18 and 20 for examples). The *WA Tomorrow* documents publish the median value of each quintile to give five forecasts for each geography.

³⁷ Pilbara Industry's Community Council (2012) *Pilbara Population and Employment Study for the CME*

³⁸ ABS (2008) *Towns of the Mineral Boom*

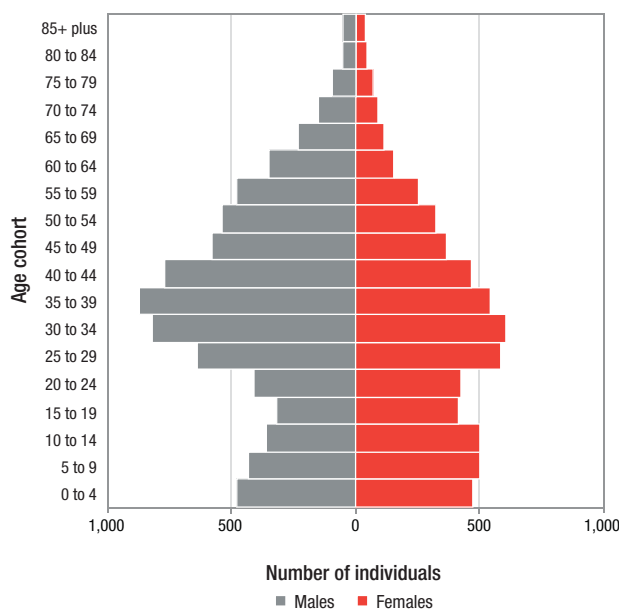
The modelling techniques employed in the *WA Tomorrow* projections could not be employed at the 'urban centre locality' geography for Newman or Tom Price. Section 4.1 discusses projections for the Ashburton and East Pilbara local government areas. A more detailed description of the methods and outputs of the *WA Tomorrow* research is available from the PlanningWA website at www.planning.wa.gov.au.

It should be noted that population modelling based on demographic trends has a limited capacity to account for rapid changes in population caused by particular events. In mining towns such events (like the closure of a mine or substantial investment in a new project) can profoundly impact population change.

Newman/Shire of East Pilbara

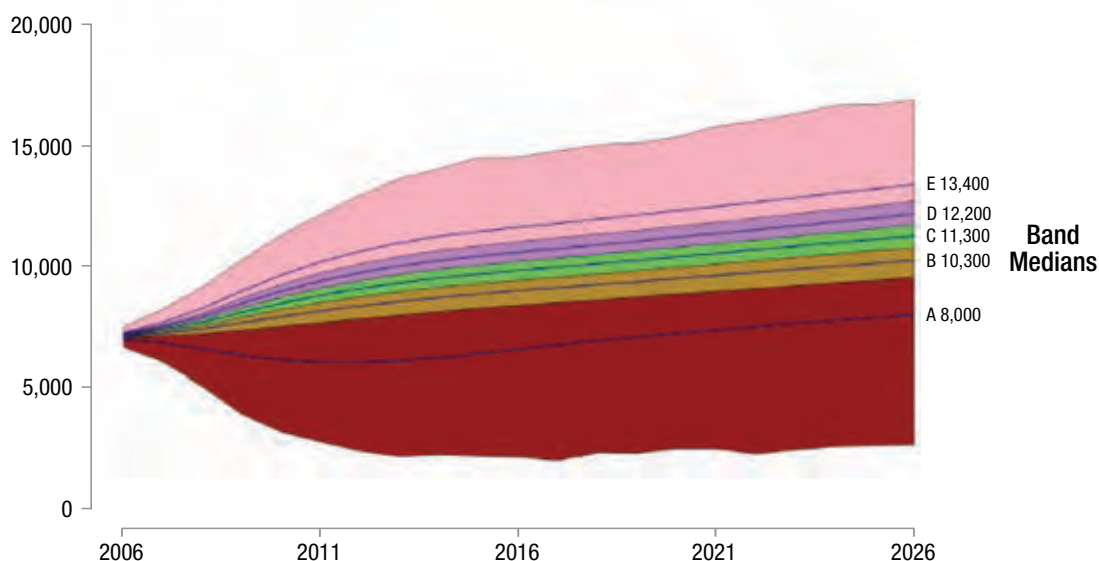
The median (Band C) projection in *WA Tomorrow* modelling for the Shire of East Pilbara shows the possibility of population growth continuing, but slowing over the forecast period to 2026 (Figure 18). The projections are derived from a 2006 baseline. New *WA Tomorrow* population forecasts at LGA level will be available from the Planning WA website in early 2015.

Figure 19: *WA Tomorrow* forecast age sex profile at 2026 – Shire of East Pilbara



Source: WAPC (2012), *WA Tomorrow* – Shire of East Pilbara

Figure 18: Forecast of total population – Shire of East Pilbara



Source: WAPC (2012), *WA Tomorrow* – Shire of East Pilbara

Since 2006, there has been unusually high population growth in the Shire of East Pilbara. When the actual population growth since 2006 is compared to the *WA Tomorrow* forecasts it is apparent that the population increase is comparable with the growth forecast high in Band E of the permutations. The Band E forecast shows sustained but slowing population growth to 2026. The median Band E forecast shows a population of approximately 13,400 residents in the Shire of East Pilbara in 2026.

Based on the *WA Tomorrow* model, the age-sex profile of the Shire of East Pilbara is likely to remain skewed, with a disproportionately large proportion of the population being males of working age. However, the form of the population pyramid depicted in Figure 19 shows a far more 'normal' age-sex distribution than was resident in the Shire at the 2011 Census. In this projection there is a greater degree of gender balance and more elderly residents in the Shire.

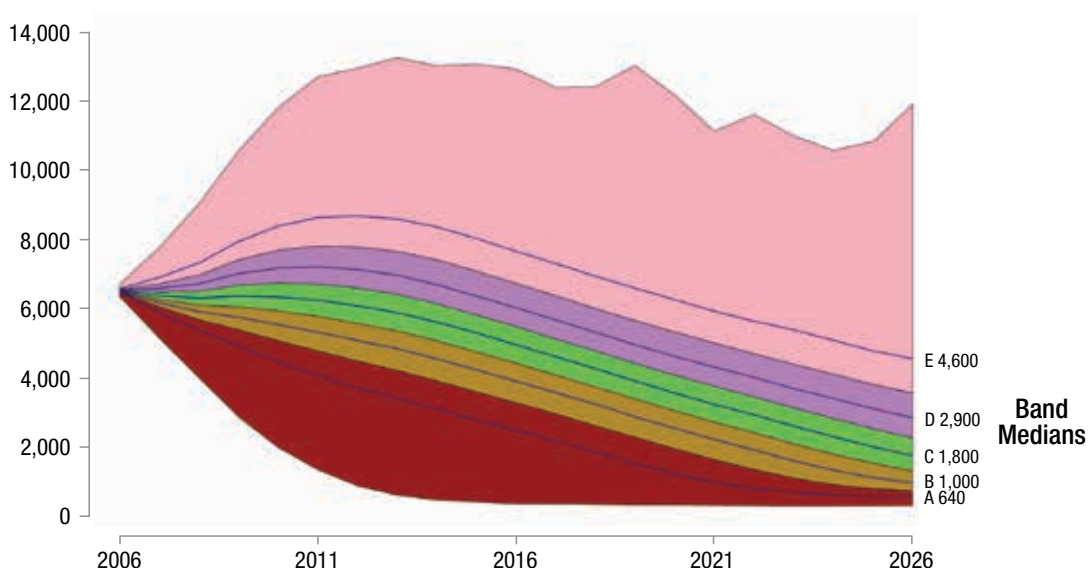
Tom Price/Shire of Ashburton

WA Tomorrow modelling indicates possible population decline in the Shire of Ashburton to 2026 (Figure 20). As with the forecasts presented for the Shire of East Pilbara, the Shire of Ashburton forecasts are derived from a 2006 baseline. Since that time there has been unprecedented population growth in the Shire of Ashburton, driven by investment in the area's resource sector and resulting labour requirements.

When the actual population growth since 2006 is compared to the *WA Tomorrow* forecasts it is apparent that actual population growth is comparable with the growth forecast high in Band E of the permutations. This forecast suggests that resident population growth is likely to peak at around 2013 before levelling off or even declining. The Band E forecast shows population decline, with the Shire reaching a population of approximately 4,600 residents in 2026.

It is important to note that the *WA Tomorrow* model for population forecasts does not make assumptions about future employment prospects. The median (Band C) forecast for the Shire of Ashburton shows population declining to 1,800 residents in 2026.

Figure 20: Forecast of total population – Shire of Ashburton

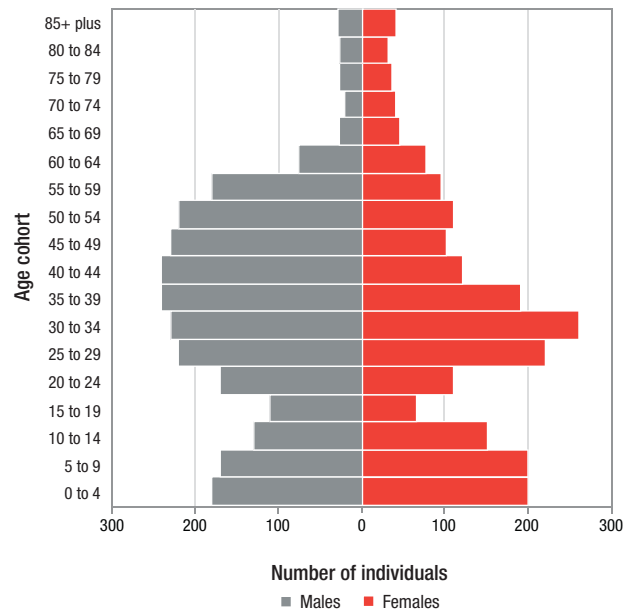


Source: WAPC 2012, Western Australia Tomorrow – Shire of Ashburton

New *WA Tomorrow* population forecasts at LGA level will be available from the Planning WA website in early 2015.

Based on the *WA Tomorrow* model, the age-sex profile of the Shire of Ashburton is likely to remain fairly skewed, with a disproportionately large share of the population being males of working age (Figure 21). The median Band E forecast was selected for display in this instance due to the high rate of population growth between 2006 and 2012 (growth to 2012 is currently tracking in line with permutations high in Band E). Using the forecast age-sex profile it can be seen that there are a greater proportion of women of child bearing age and children in 2026 compared to 2011. In 2026 the population aged over 65 is also forecast to increase relative to 2011 levels.

Figure 21: *WA Tomorrow* forecast age sex profile at 2026 – Shire of Ashburton



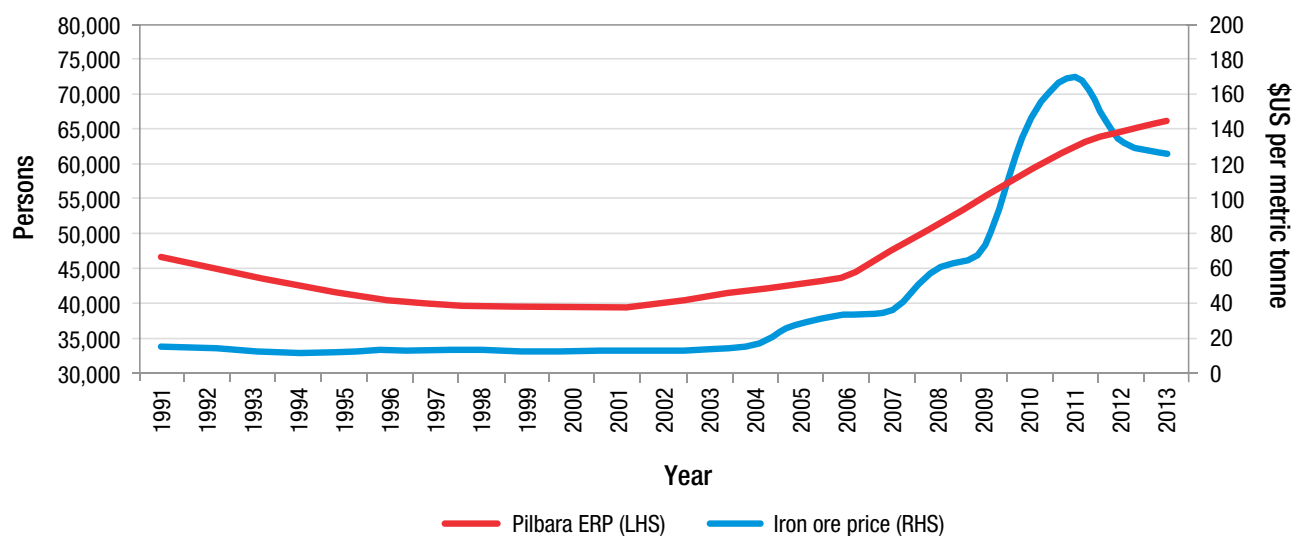
Source: WAPC 2012, Western Australia Tomorrow – Shire of Ashburton)

6.2 Major resource projects

Mining projects represent the key driver to population growth in the inland towns of the Pilbara. The scale and number of such projects are shaped by demand for iron ore and consequent profitability of its extraction. Like many regional areas of Western Australia, the Pilbara experienced a period of moderate population decline between 1991 and 2001.³⁹

Commencing approximately 10 years ago there was an enormous increase in demand for iron ore, primarily from China. During this period the value of Western Australian iron ore exports to China rose from roughly \$2 billion in 2001 to \$43 billion in 2011.⁴⁰ Around this time, the trend of population decline in the Pilbara was reversed as the population increased quickly, driven by emerging employment opportunities in the region (Figure 22).

Figure 22: Pilbara estimated resident population and iron ore prices



Source: ABS (2013) Regional Population Growth, Australia, 2012, Catalogue 3218.0 and Indexmundi⁴¹

Note: Iron ore price is shown in \$US per dry metric tonne, mid-year and does not accurately reflect short-term market fluctuation.

³⁹ Australian Bureau of Statistics (2012) *Regional Population Growth, Australia, 2012*, Catalogue 3218.0

⁴⁰ Department of State Development (2013) *WA Iron Ore Profile*

⁴¹ Indexmundi (2013) *Commodity price index*. Website: <http://www.indexmundi.com/commodities/?commodity=iron-ore&months=300>

Tables 15 and 16 show selected major resource projects within 120 kilometres of Newman and Tom Price. The purpose of these projects is the extraction of iron ore, with the exception of Coobina, where chromium is mined (See also Maps 14 & 26). The tables show 17 major resource projects under consideration around Newman and Tom Price, as at late 2013. Should these projects proceed they will directly impact employment opportunities and consequent population growth in and around Newman and Tom Price.

It is difficult to predict when, and under what conditions projects under consideration are likely to proceed as there are challenging economic, environmental, social and regulatory conditions to be considered when assessing the feasibility of each project. However, given recent declines in the iron ore spot price and continued global economic uncertainty, it is unlikely that many (or any) new projects will proceed in the short-term.

Opportunities for local employment, driven by established and emerging mining operations, can have a major impact on the resident populations in the Pilbara. The Western Australian 2013/14 Budget notes the weakened Chinese growth outlook and the prospect of lower commodity prices over the medium-term. This sentiment is reflected in the Pilbara resource sector with many companies winding back expansion to focus on production.⁴²

The production (or operational) phase of resource extraction is significantly less labour intensive than construction, which typically involves large but short-term demand for labour. Moving into the operational phase of production reduces the overall workforce of a mine; however, it means that employment is more likely to be permanent or long-term. Although there are fewer employment opportunities during the operational phase of projects, the long-term nature of the employment is more likely to encourage workers to settle in mining towns rather than FIFO.

Table 15: Selected major resource projects – Tom Price area

Project/mine	Company	Status	Workforce (includes contractors)
Beasley River	RTIO/Hi	Under consideration	n/a
Brockman 2/Nammuldi	RTIO	Operation	387 operation
Brockman 4	RTIO	Operation	1,359 operation
Channar	RTIO	Operation	See Paraburdoo (inclusive)
Eastern Range	RTIO	Operation	See Paraburdoo (inclusive)
Solomon stage 1 – Firetail	FMG	Operation	1,811 operation
Solomon stage 2 – Kings	FMG	Operation	1,328 operation
Marandoo	RTIO	Operation	261 operation
Paraburdoo	RTIO	Operation	696 operation
Rocklea-Hardey	RTIO	Under consideration	n/a
Silvergrass (deferred until Q3 2014)	RTIO	Extension of Nammuldi	n/a
Tom Price	RTIO/Hi	Operation	1,913
Turee Syncline	RTIO	Under consideration	n/a
Western Turner Syncline	RTIO/Calibre projects	Operation	660

Source: Department of Mines and Petroleum

⁴² BIS Shrapnel (2013)

Table 16: Selected major resource projects – Newman area

Project/mine	Company	Status	Workforce (includes contractors)
Area C	BHPBIO	Operation	2, 427
Christmas Creek	FMG	Existing and expanding	3,738 operation
Cloudbreak	FMG	Existing and expanding	4,248 operation
Davidson Creek	Atlas	Under consideration	n/a
Giles Mini	RTIO	Under consideration	n/a
Hope Downs 1-3	RTIO/Hamersley Iron	Operation	888 operation
Hope Downs 4 (Coondiner HD4)	RTIO/Hancock Prospecting	Operation	718 operation
Iron Valley	FMG/Iron Ore Holdings	Under consideration	n/a
Jimblebar	BHPBIO	Existing and expanding	Operation 2,308
Koodaideri	RTIO	Construction	Project deferred until 2016 or later
Marilana	Brockman	Under consideration	n/a
Mindy Mindy	FMG	Under consideration	n/a
Mount Whaleback	BHPBIO	Operation	2,814 operation
Nyidinghu	FMG	Under consideration	n/a project on hold
Rhodes Ridge	RTIO/Wright Prospecting	Under consideration	n/a
Robertson Range	Atlas	Under consideration	n/a
Roy Hill	Hancock Prospecting	Construction	3,600 construction, 506 operation
West Angelas	Rio/Robe River Mining	Operation	1,588 operation
Western 4	BHPBIO	Under consideration	n/a
Wonmmunna	Rico Resources	Under consideration	n/a
Yandi	BHPBIO	Operation	2,244
Yandicoogina	RTIO	Operation	1,233

Source: Department of Mines and Petroleum

6.3 Population and employment projections – The Pilbara Industry's Community Council

The Pilbara Industry's Community Council was established in 2006 to develop a strategy in relation to the sustainability of Pilbara towns, and improve Indigenous employment participation. The Pilbara Industry's Community Council is also working to develop strategies to reduce gaps in education and training, health and housing. Membership of The Pilbara Industry's Community Council includes BHP Billiton Iron Ore (BHPBIO), Chevron Australia, Fortescue Metals Group, North West Shelf Venture, Rio Tinto Iron Ore (RTIO) and Woodside.

In the interests of realising the Pilbara Industry's Community Council vision, population forecasts were developed based on likely employment requirements in and around Pilbara centres. By identifying major resource developments and assessing the labour force required to construct and subsequently operate each project, an indication can be derived as to the effect (direct and indirect) that the project will have on the local population. The Council engaged Price Waterhouse Cooper to compile a bottom-up picture of major planned and potential resource projects and model the resulting direct and multiplier impacts on Pilbara employment and population growth to 2020.

The 2012 The Pilbara Industry's Community Council data indicates that the minerals and energy workforce across the Pilbara is projected to peak at 65,500 in 2014; up from 51,000 in 2011. The construction workforce was expected to diminish after 2012, but remain above 2011 levels until 2015. The operational workforce in 2020 is expected to be around 51,600, including nearly 43,000 FIFO workers. This compares to an operational workforce of around 31,600 in 2011. The Pilbara Industry's Community Council population and employment projections are based on projects that are either in the construction or operations phase, or have a high degree of certainty that they will proceed.

Newman/Shire of East Pilbara

The Pilbara Industry's Community Council estimates that the total mining and energy workforce in the Shire of East Pilbara will increase (from a 2011 baseline) by approximately 18,000 workers (5,500 construction and 12,500 operations) to 2017. After the forecast peak in 2017, the total mining and energy workforce is expected to decline to approximately 14,000 workers (above the 2011 base line) in 2020 as projects move into operational phases.

Few of the new mining and energy employees are likely to reside in the Shire. The Shire of East Pilbara has the highest proportion of FIFO workers of any LGA in the Pilbara; only about 5 per cent of the mining and energy labour force in the LGA is actually resident. The Pilbara Industry's Community Council forecasting suggests that this proportion is unlikely to change significantly to 2020.

The Pilbara Industry's Community Council research indicates that, despite the anticipated increase in workforce requirements in the Shire, the resident workforce is only expected to increase by approximately 700 persons. As a result of direct and indirect employment it is predicted that the increase in resident minerals and energy workers will increase the overall population of Newman by 1,700 by 2020.

Figure 23 indicates that the anticipated growth in FIFO employment in the Shire could also indirectly increase the residential population by 4,700 to 2016. The actual effect of FIFO employment on residential growth is unclear, particularly in the context of the potentially prohibitive cost of relocating to Newman without subsidised accommodation. In the *Pilbara Population and Employment Study* the Pilbara Industry's Community Council states, with regard to the impact of FIFO workers on residential population growth that "A full indirect effect does not appear a realistic outcome under current conditions. We believe that applying multipliers only to the residential workforce represents a more realistic growth scenario."

Tom Price/ Shire of Ashburton

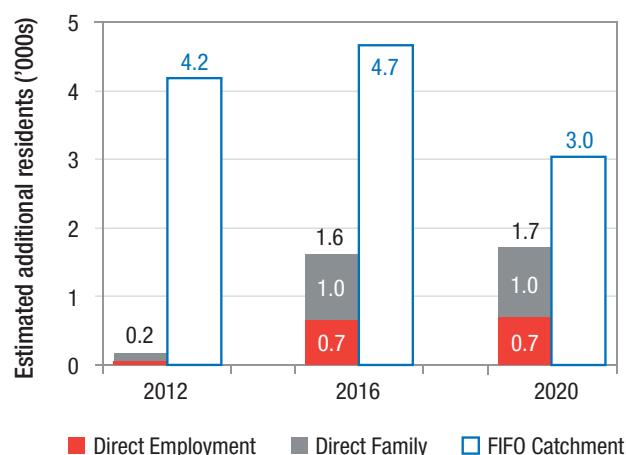
The Pilbara Industry's Community Council has forecasted that the construction workforce in the Shire of Ashburton will peak in 2013 before declining to 2020 as several major projects in the Shire are completed. The construction workforce is forecast

to decline to approximately 5,400 fewer workers than in 2011. The operations workforce, however, will increase substantially as new projects move into production phases from 2013/14. Based on these forecasts, the total labour force is expected to have peaked in 2013 and stabilise from 2017, with roughly 2,000 fewer workers than in 2011.

The Pilbara Industry's Community Council research suggests that in 2011, approximately 16 per cent of the minerals and energy workforce in the Shire of Ashburton were usually resident in the Shire. Although this ratio was forecast to rise to 24 per cent by 2020, new existing projects were anticipated to require only 600-700 additional resident employees by 2020.

The 2012 Pilbara Industry's Community Council projections do not discuss population projections for Tom Price in detail; however, they have stated that current long-term projections are in line with their estimates calculated in 2010. These projections are from a 2008 baseline and forecast that the resident population of Tom Price is likely to be approximately 4,754 in 2020; representing an increase of approximately 1,600 residents.

Figure 23: Minerals and energy employment effects (incremental to 2011) - Newman



Source: The Pilbara Industry's Community Council Pilbara Population and Employment Study (2012)

Note: FIFO catchment refers to growth in nearby resource sector activity creates potential indirect employment and population growth, though the multiplier is considered to be lower than for residential employees.

6.4 Pilbara Cities population targets

Under the Pilbara Cities initiative Newman is considered a sub-regional centre and has a population growth target of 15,000 residents by 2035. Although Tom Price does not have a specific population target, growth will be encouraged through initiatives such as those listed below.

Projects supported by Pilbara Cities in Newman include:

- Newman lazy lands program;
- Mining and irrigated agriculture scheme;
- Sports facility enhancements;
- Town centre revitalisation;
- Woodie biofuels project.
- Shire of East Pilbara planning assistance;
- Assistance with the Shire of East Pilbara Local Planning Strategy and Scheme review.

Projects supported by Pilbara Cities in Tom Price include:

- Tom Price lazy lands program;
- Sports precinct upgrade;
- Shire of Ashburton planning assistance; and
- Tom Price Town Centre Strategy and upgrade.

See Section 11 for more information on the Pilbara Cities initiative.

7 Land and housing demand

Key points

Newman

- During the past decade population growth in Newman has been uncharacteristically high due to the developing resource sector. This growth has driven demand for land and housing in the town.
- Residential lot prices in Newman have increased at a rate well above the rest of the State and are now comparable with prices in the Perth metropolitan area. Prices peaked in 2011 when supply side constraints and heightened demand created a pronounced shortfall in available accommodation.
- Dwelling sales prices have increased sharply over the past decade, with the median price in Newman now substantially higher than the median price in the Perth metropolitan area.
- The construction phase of resource sector projects is far more labour intensive than the operational phase. Projects near Newman such as the Jimblebar expansion were carried out by a large workforce, many of whom had utilised accommodation in Newman. As projects move into an operational phase, overall labour force requirements are reduced, which in turn, reduces demand for accommodation in the townsite.
- Access to staff housing remains a barrier to small business development and an inefficient expense to larger Government and commercial organisations. Future planning should give due regard to the provision of affordable housing for Government and other key workers to help normalise the Newman economy.
- The number of applications for residential subdivision prior to 2011 was not particularly high in Newman, although this is perhaps more indicative of a lack of available land, rather than limited demand. In 2011 and 2012 (after key parcels of land were made available for residential development), applications were lodged for 587 and 450 lots respectively.
- The shift toward a FIFO model of workforce provision in the Pilbara region has created high demand for transient workforce accommodation in Newman.

- Demand for industrial land is high in Newman. Industrial rental prices and sales values are often several times higher than comparable property in the Perth metropolitan area.
- Demand for tourist accommodation is undoubtedly high in Newman, although this is predominantly due to employment related usage. This has resulted in some tourist accommodation facilities effectively being used as TWA.

Tom Price

- Population growth is the fundamental driver of underlying demand for residential land and housing. Growth in Tom Price has not been as pronounced as in other major Pilbara centres.
- Although population growth has been modest, the price of residential land and housing has increased sharply, suggesting high demand for available property.
- The cost of advertised rental accommodation in Tom Price is much greater than in the Perth metropolitan area.
- Most recent data suggests that demand may be easing with a slight reduction in house prices and rental costs, although prices are still considerably higher than in the Perth metropolitan area.
- Access to staff housing is a barrier to small business development and a substantial expense to larger Government and commercial organisations. Future planning should give due regard to the provision of affordable housing for Government and other key workers to help normalise the economy of Tom Price.
- Residential lot prices in Newman and Tom Price have increased at a rate well above the rest of the State and are now comparable with the Perth metropolitan area.
- Data for dwelling approvals in Tom Price is indicative of the limited urban expansion in the town. Only 47 dwellings were approved for development in the town in the four years to March 2014.

- The shift to a FIFO model of resource sector workforce provision has created substantial demand for transient workforce accommodation in and around Tom Price; however, most of this accommodation is operated by resource sector companies for their own employees. Demand within Tom Price is highest during cyclical maintenance peaks.
- There are three main tourist accommodation facilities in Tom Price. Demand for tourist accommodation is high in Tom Price, largely due to the demand from FIFO workers; however, the Tom Price caravan park is reserved for non-FIFO accommodation.

Highlights and conclusions:

- Demand for land and housing in communities with singular economies such as Newman and Tom Price can be subject to industry cycles and is typically more sporadic than in communities with more diversified economies. Meeting this demand effectively will require greater housing diversity and efficient responsiveness to housing needs.

7.1 Residential land sales

The value of residential lot sales is a key indicator of the level of demand for land and housing in specific areas. Sections 7.1 and 7.2 refer to data provided by the Real Estate Institute of Western Australia (REIWA). The data discussed in this section refers to property sales or listings by REIWA member agents and do not include sales where the vendor (such as a developer or mining company) sells directly to a buyer.

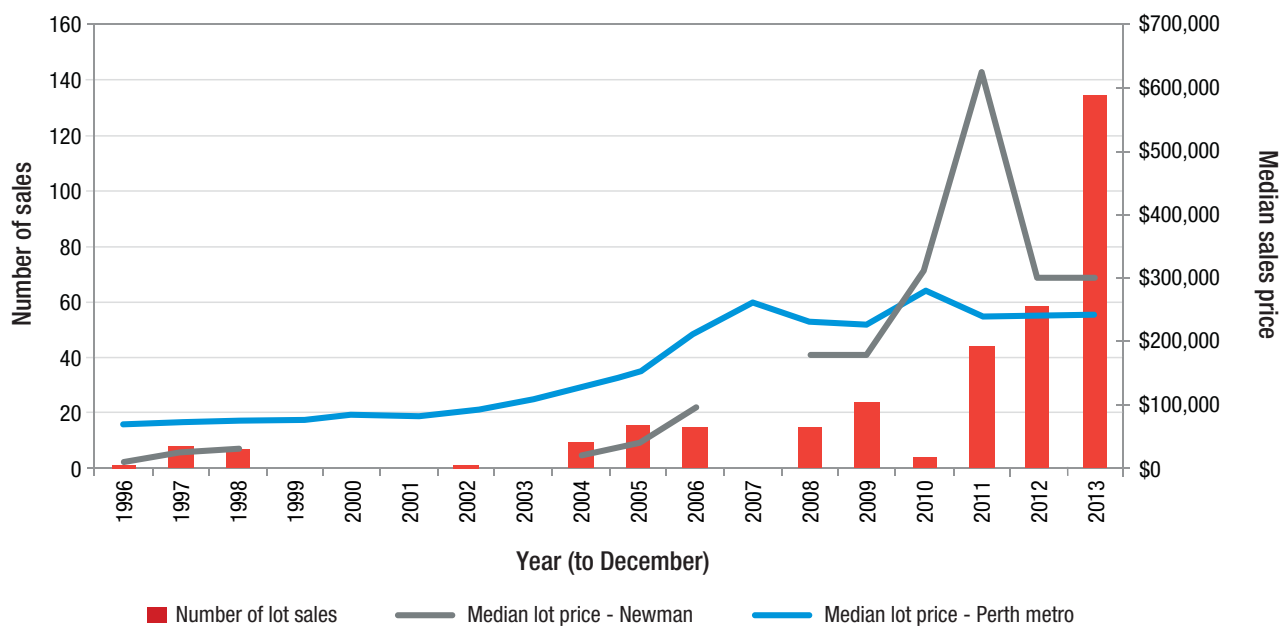
Newman

Between 1996 and 2010, few residential lots in Newman changed hands. A small number of sales occurred, as demand picked up during the early stages of the resources boom; however, prior to 2004 only 17 lots were sold over an eight year period. After 2004 demand for residential lots in Newman increased sharply, although this is not reflected in the number of sales as few lots reached market due to supply side constraints. It was not until 2011/12 that substantial numbers of lots were made available for sale.

The strength of the demand for residential lots in Newman prior to the development of significant new stocks of new lots is evidenced by the spike in prices in 2011. The median lot sales price in Newman increased from \$178,000 in 2009 to \$625,000 in 2011 – approximately 2.5 times the median lot price in Perth at that time. As more lots were developed in 2012 and 2013 price pressure eased with the median lot price decreasing to \$300,000 in 2012 and 2013 (although this is still significantly higher than the median price in the Perth Metropolitan area (\$242,000).

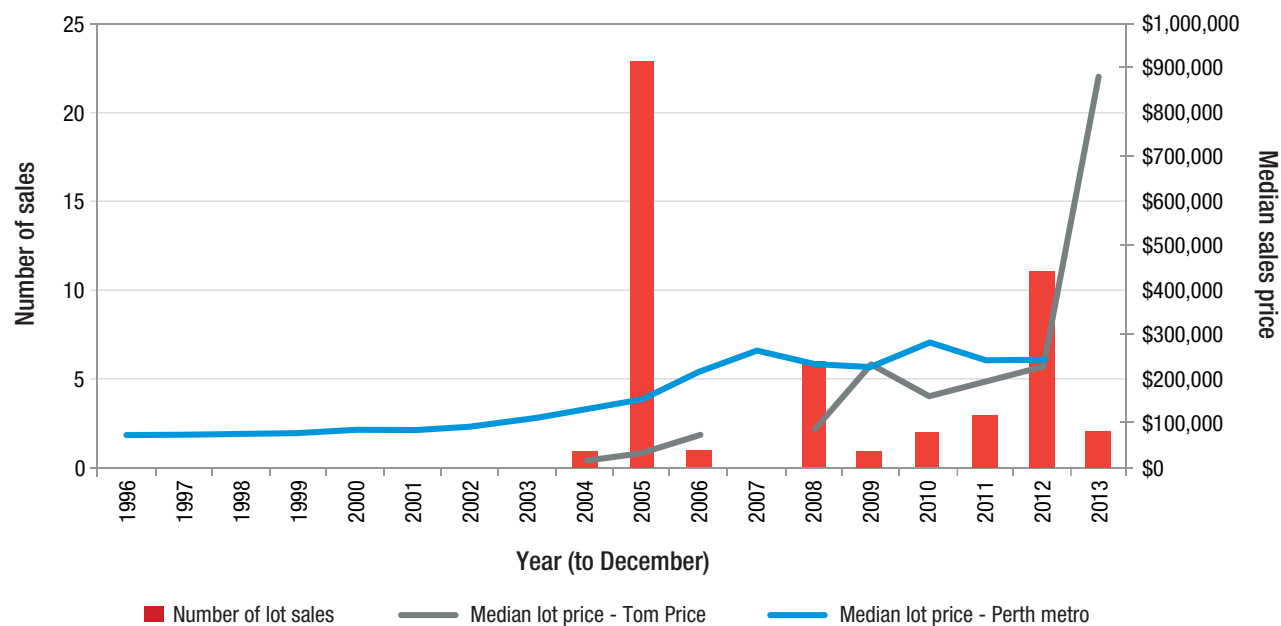
A survey of vacant residential lots for sale (conducted in May 2014) found there were 33 residential lots – up from 18 in August 2013. Advertised sale price ranged between \$249,000 and \$406,000 for lots in the East Newman Estate and Kurra Estate.

Figure 24: Residential land sales 1996 to 2013 – Newman



Source: Real Estate Institute of Australia (2014)

Figure 25: Residential land sales 1996 to 2013 – Tom Price



Source: Real Estate Institute of Australia (2014)

Tom Price

Between 1996 and 2013, an average of 2.7 vacant residential lots were sold each year in Tom Price (Figure 25). Almost half (23 of 50) of the residential lot sales in Tom Price since 1996 occurred in 2005. There were 10 calendar years during this period when no lots were sold.

The median sales price for vacant residential lots in Tom Price increased six-fold over the period 2005 to 2011. This data should be used with caution given the low number of sales recorded. An assessment of property for sale in Tom Price conducted in May 2014 showed there were no residential lots for sale at that time.

7.2 House and unit sales

The cost of housing in Newman and Tom Price is significantly higher than in the Perth metropolitan area, suggesting a high level of demand for land and housing. It should also be noted that supply side constraints such as a shortage of residential land, infrastructure constraints and high construction costs have contributed to price increases in Newman and Tom Price. These issues are discussed further in Section 8 of this document.

Due to the high cost of housing, it is necessary for those considering relocating to these towns to either have very large incomes or have their accommodation supplied, or subsidised, by their prospective employer. This represents a barrier to residential labour force growth and economic diversification, particularly for small business development. The Pilbara Development Commission is working with local stakeholders to address these challenges and make small business development in the towns more attractive to potential operators.

Newman

The median price for house sales in Newman for the year to December 2013 (\$805,000) was substantially higher than the median price for Perth over the same period (Figure 26), having increased approximately nine-fold in the previous decade, from a median of \$88,500 in 2003.

Research by the Pilbara Development Commission indicates that the number of lots advertised for sale in Newman has increased over the year to March 2014 with 80 dwellings advertised for sale at that time, compared to 64 in March 2013. The research also stated that just one dwelling was sold in the March quarter of 2014, for \$690,000. This data suggests that, while prices remain high, growth has slowed and sales activity may be beginning to decline in Newman.

Tom Price

The median price for house sales in Tom Price for the year to December 2013 (\$767,000) was substantially higher than the median price for Perth over the same period (Figure 27). The median house price has increased approximately eight-fold in the past nine years, from a median price of \$84,000 in 2004.

An assessment of residential dwellings for sale in Tom Price conducted in August 2013 showed that a total of 12 dwellings were available for sale. Of these listings, prices ranged from \$635,000 to \$940,000 with a median listing price of \$759,000.

7.3 Subdivision applications

Subdivision applications provide an indication of the level of confidence that developers have in future demand for residential land (over a 12 months to four-year time frame). Subdivision activity is also an indicator of lot supply and is discussed further in Section 8.2 of this document.

Newman

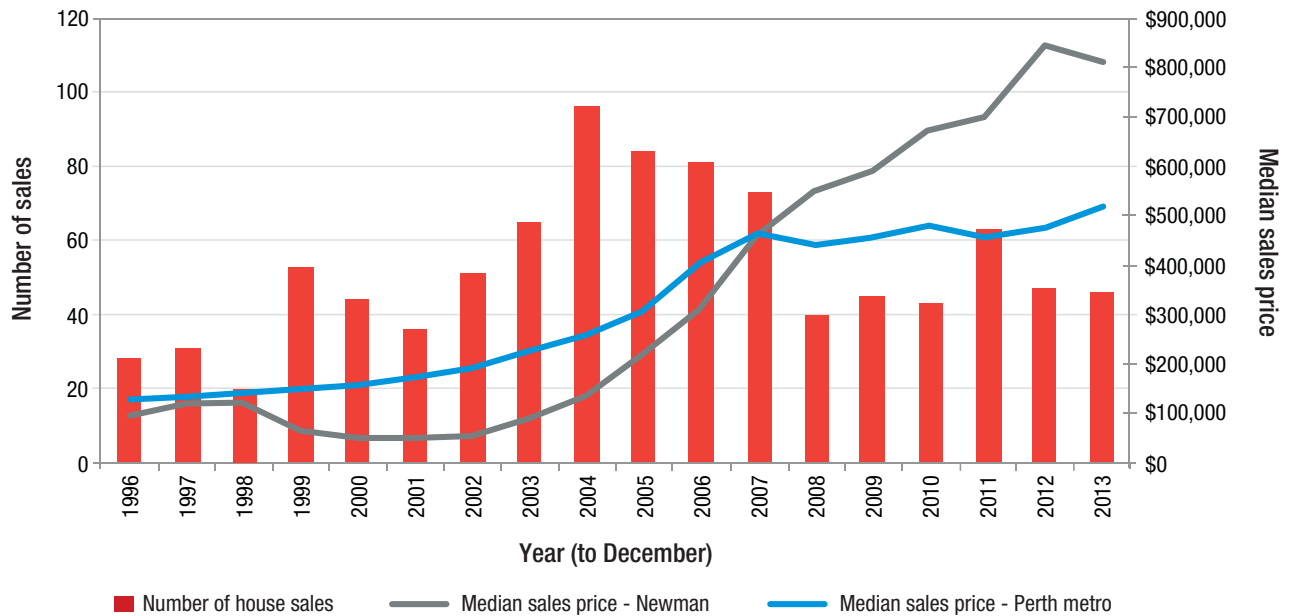
The number of applications for residential subdivision prior to 2011 was not particularly high in Newman, although this is perhaps more indicative of a lack of zoned land rather than limited demand. In 2011 and 2012 (once land had become available for residential development), applications were lodged for 587 and 450 lots respectively. In the six months to March 2014 applications were lodged to create just four lots, suggesting a reduction in demand for residential lots.

Tom Price

There have been applications for far fewer lots in Tom Price than in Newman during the past seven years. Applications were lodged to create 136 residential lots from the beginning of 2007 to the end of the June quarter 2013. The limited subdivision activity in Tom Price suggests that demand for new residential lots is not particularly high; however, it should also be noted that there is very little land zoned for residential development in the town which may also contribute to the limited number of applications.

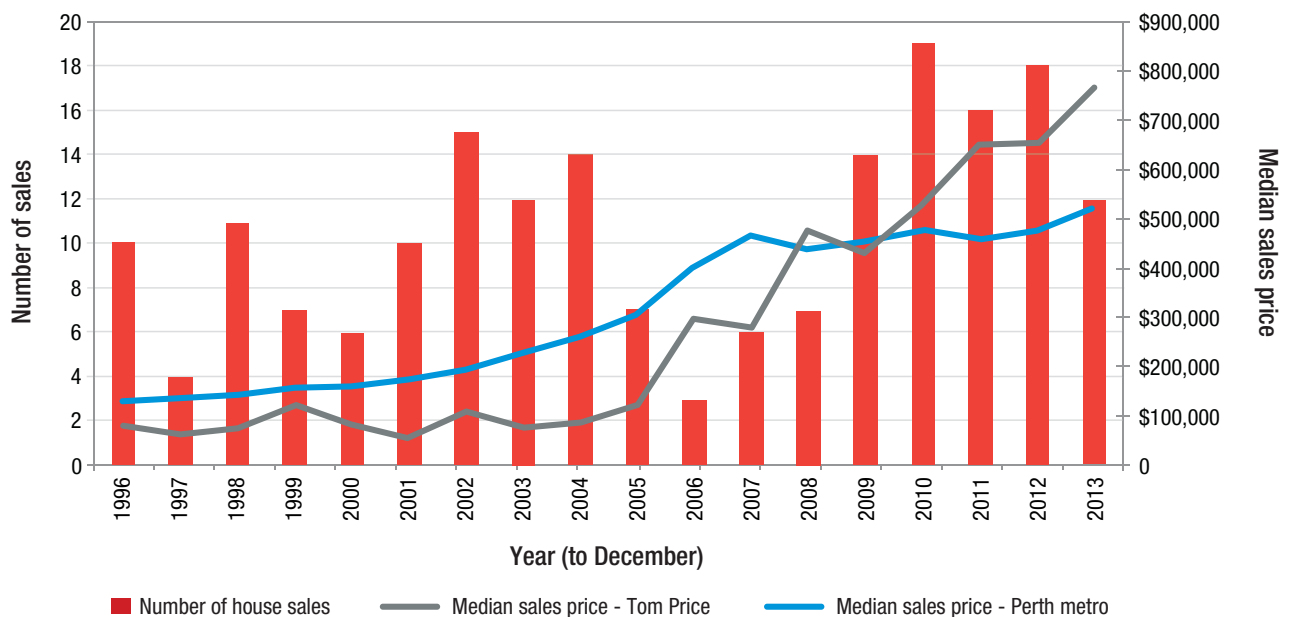
Since 2009 applications have been received to create a total of 69 residential lots. However, the applications cover a single site. The final (and active) application was to create 22 vacant strata lots on the site – construction is (as at March 2014) underway on the development.

Figure 26: Dwelling sales 1996 to 2013 – Newman



Source: Real Estate Institute of Australia (2014)

Figure 27: Dwelling sales 1996 to 2013 – Tom Price



Source: Real Estate Institute of Australia (2014)

7.4 Building approvals

Dwelling approvals are a key demand indicator, representing either owner-occupier demand or investor confidence. As most dwelling approvals proceed to construction and eventually completion, they also provide a leading indicator of dwelling supply.

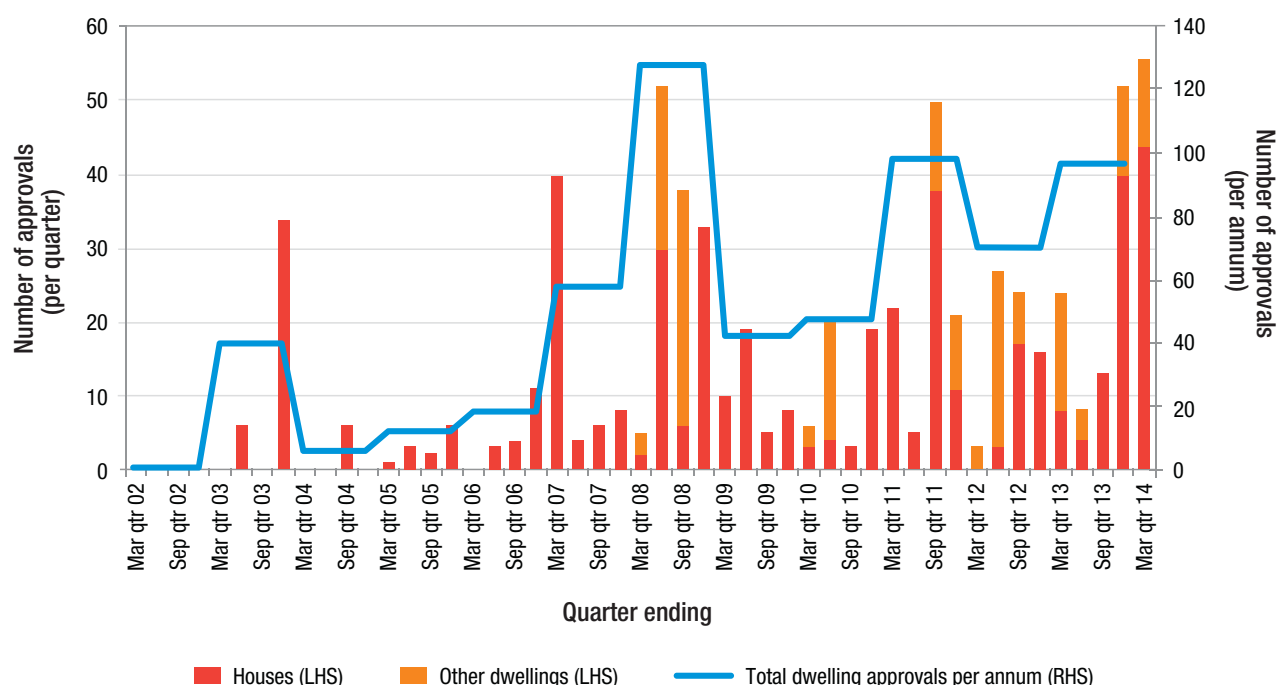
Newman

The number of residential building approvals in Newman increased substantially with the onset of the resources boom around 2006/07 (Figure 28). Since then, the number of dwellings approved annually has generally been higher than the long-term annual average, peaking in 2008. The other notable change in recent years has been the increase in 'other' dwelling development (excluding separate houses) with 132 approved from 2008 to 2012.

The number of dwelling approvals in Newman has been high relative to the population in recent years. In 2012 there were approximately 13 dwelling approvals for every thousand residents compared to eight dwelling approvals for every thousand residents across Western Australia.

In the six months to March 2014, 108 dwellings were granted development approval in Newman – the largest amount in any six month period since early in the town's history. It is unclear how many of these approvals will ultimately be built; however, the recent increase in rental vacancies (see Section 7.5) may mean that some approvals do not progress to construction.

Figure 28: Residential building approvals 1996 to 2013 – Newman

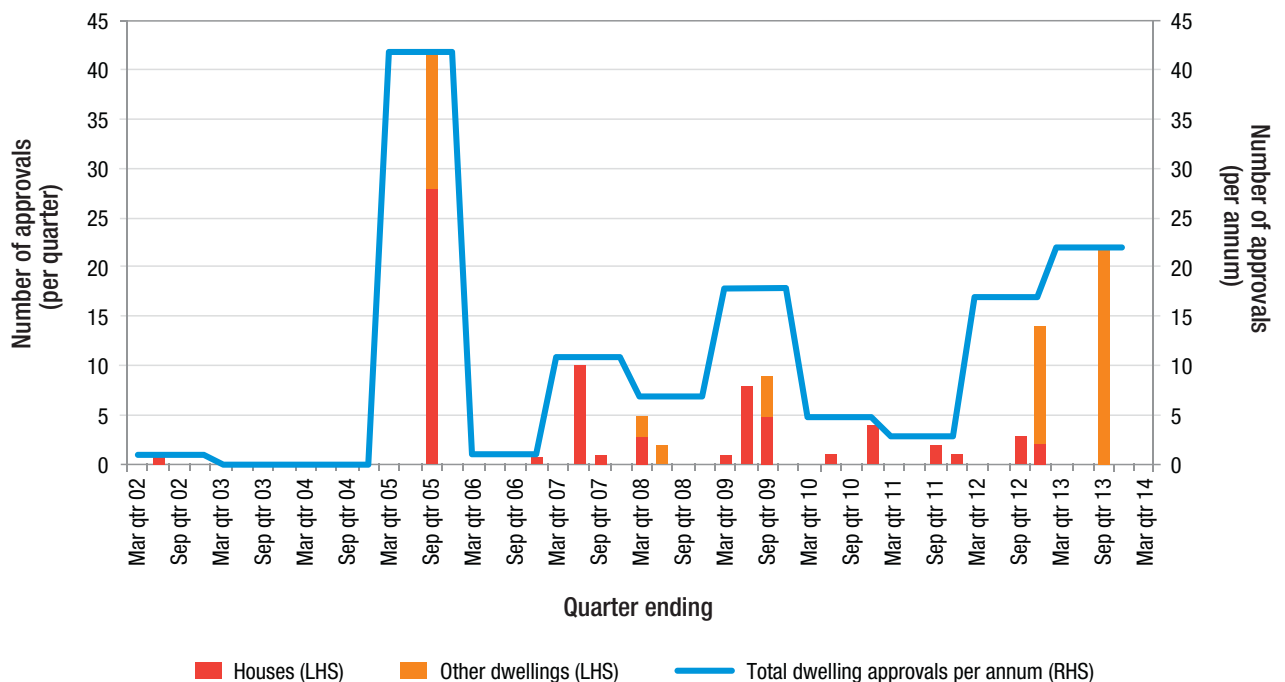


Source: ABS (2014), unpublished

Tom Price

Like Newman, most of Tom Price's dwelling stock was constructed during the early years of the town's establishment. Since 2002, residential construction in Tom Price has been very limited. Since the September quarter 2005, when 42 dwellings were granted approval, an average of just 7.3 dwellings per annum have been granted development approval in the town (Figure 29). The data suggests that despite the apparent demand for housing (as indicated by property prices and rental values), supply has been relatively limited.

Figure 29: Residential building approvals 1996 to 2013 – Tom Price



Source: ABS (2014), unpublished

7.5 Residential rentals

Data in this section is collected from Census responses and the advertised price of dwellings available for rent in Newman and Tom Price. The divergence between typical advertised prices and stated (Census) prices illustrates the significance of employer housing provision in Newman and Tom Price, with people renting through the open market paying substantially more than those with access to subsidised employee housing.

One of the legacies of the towns' beginnings, as 'company' towns is the volume of housing stock still held for employees of the local mine operators. Figures 30 and 31 indicate that the majority of rental accommodation in Newman and Tom Price is either provided free of charge to the tenants or heavily subsidised. The advertised rental values in the private market are all considerably higher than the median rental price for the State, which was \$450 per week, as at December 2013.

Newman

Data collected in the 2011 Census show that 1,034 dwellings were reported as being rented in Newman (Figure 30). Of these, the overwhelming majority (81 per cent) were classed as being rented through 'other landlord type', which includes private employers, Government or through residential parks. Most of the dwellings being rented out by 'other landlords' had very low rental costs, with 81 per cent of these dwellings being rented out for less than \$150 per week, a significantly lower weekly rental cost than the dwellings advertised for rent in March 2014.

Only 38 dwellings were reported in the Census as having a weekly rent of \$650 or more. Properties in this cohort were far more likely to be privately rented than less expensive rental accommodation (Figure 30).

The Pilbara Development Commission has reported that the number of residential properties advertised for rent in Newman has increased substantially in the past 12 months. Analysis from the Commission shows that, as at March 2014, 155 dwellings were advertised for rent in Newman – up from just 19 dwellings one year previous.

This represents perhaps the most significant change to land supply/demand dynamics in Newman since the onset of the boom. Several years ago, at the height of the mining expansion phase, there were literally no residential rentals available. This topic is discussed further in Section 8.2.

There has been a corresponding decrease in weekly rental costs, with the average advertised weekly rent in Newman declining from \$2,189 to \$1,456 over the same period. Although average weekly rental costs in Newman have decreased substantially in the last year, they remain substantially higher than what is typical in the Perth metropolitan area.

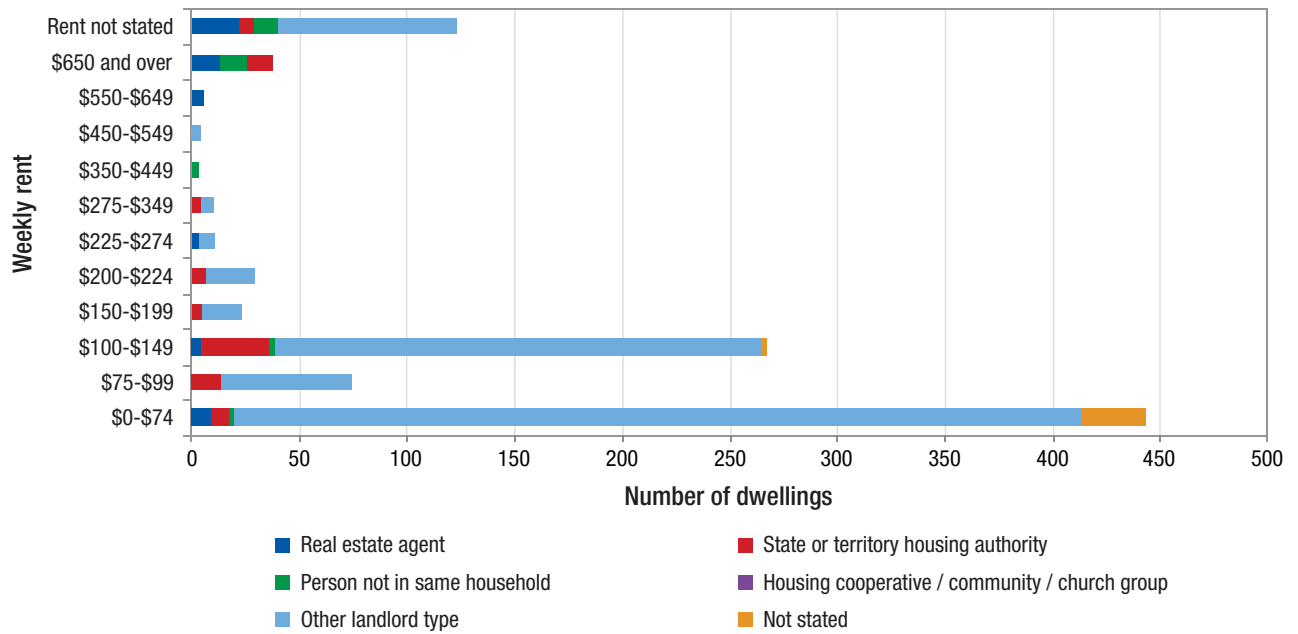
Tom Price

According to 2011 Census responses, most people living in rental accommodation in Tom Price are paying far less per week than is typical elsewhere in the State. Approximately 90 per cent of dwellings were rented for less than \$150 per week. Of these dwellings, 90 per cent were classified as having an 'other landlord' type, which includes homes owned by employers. Just six of the rental dwellings (0.7 per cent) were stated as having a rental value of \$650 or more per week.

Like Newman, the average advertised cost of residential rental properties is significantly higher than that stated in Census responses and much higher than the State average. Research from the Pilbara Development Commission indicates that, as at the March quarter 2014, there were nine properties advertised for rent in the town, with an average weekly rental cost of \$1,489. One year previous there were three dwellings available for rent, with an average weekly rental cost of \$1,850 per week.

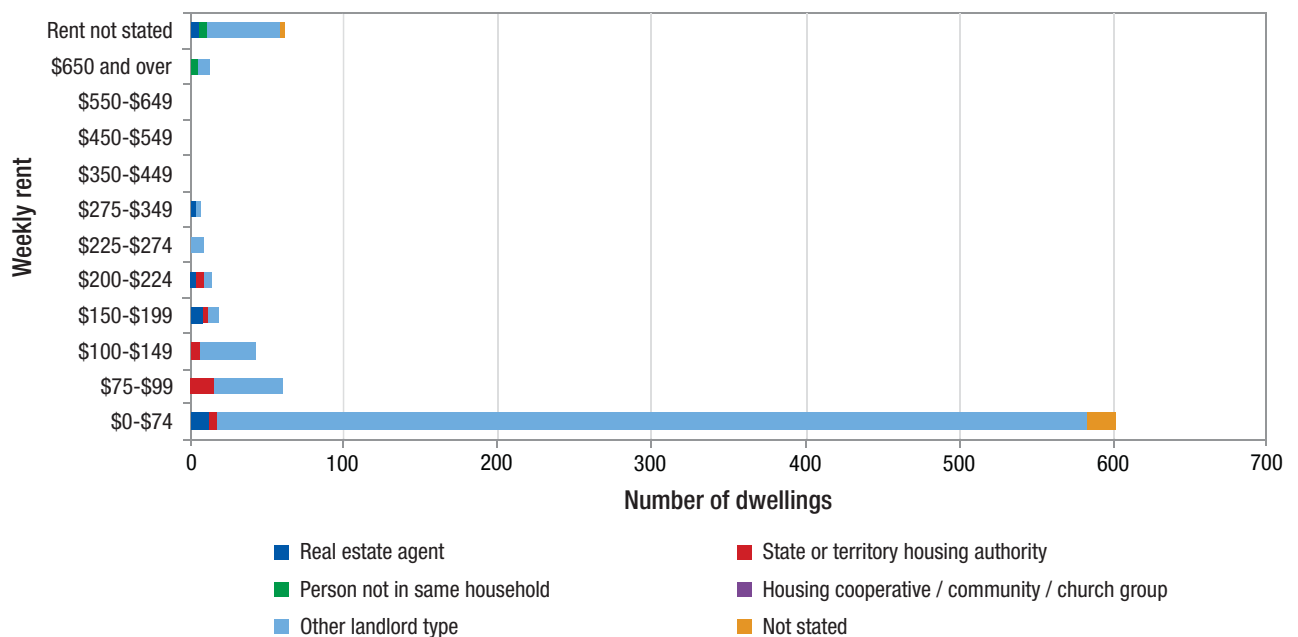
The increasing stock of available rental properties and decreasing weekly asking price in Tom Price has some similarities with the situation unfolding in Newman – although it is far less pronounced. It must also be noted that the sample of dwellings for rent in Tom Price is quite small which can cause seemingly large fluctuations to indicators such as average price.

Figure 30: 2011 Census weekly rent by landlord type (occupied private dwellings being rented) – Newman



Source: Australian Bureau of Statistics (2012) Catalogue 2001.0 Newman (UCL)

Figure 31: 2011 Census weekly rent by landlord type (occupied private dwellings being rented) – Tom Price



Source: Australian Bureau of Statistics (2012), Catalogue 2001.0 Tom Price (UCL)

7.6 Demand for transient workforce accommodation

The fundamental driver of demand for transient workforce accommodation is employment, particularly fly-in fly-out working arrangements. The precise size of the transient workforce in the region and consequent demand for transient workforce accommodation is difficult to gauge. There is currently not adequate information detailing FIFO employee numbers in the Pilbara. Other factors such as shift rotation, duration of contract and transient workforce accommodation type all affect the level of demand for transient workforce accommodation units.

The data discussed in this section is at a local government area level and consequently has a limited capacity to accurately reflect the demand for TWA within the Newman and Tom Price townsites. It is also noted that, at the time of the 2011 Census, various major projects in the region were in a construction phase and have since moved into an operations phase. As a result workforce requirements have been reduced and this is likely to have diminished demand for TWA in the region.

This section draws on data from the ABS and Pilbara Industry's Community Council research to provide an indication of the number of workers likely to require transient workforce accommodation. The ABS provides data for the mining and construction workforce in the Shires of Ashburton and East Pilbara. Tables 17 and 18 show that a greater number of mining and construction workers stated that they worked in East Pilbara or Ashburton than those that stated that they were resident. It is also evident from the tables that the number of non-resident mining and construction workers in the region increased sharply from the 2006 Census to the 2011 Census.

The proportion of the total mining and construction workforce who claimed to be resident in the Shires of Ashburton and East Pilbara in the 2011 Census differs from the Pilbara Industry's Community Council research (Figures 32 and 33). This is likely to be due to:

- The manner in which the place of usual residence question is interpreted on the Census form. Place of usual residence is considered the address at which the respondent resides for more than six months of the year. Consequently, a FIFO worker employed on a 'three

weeks on-one week off' roster would be considered usually resident at their place of work, rather than their source community; and

- There is typically a lower than average Census response rate among young males, who constitute much of the FIFO workforce.

Newman/East Pilbara

Table 17 shows the number of mining and construction workers who were usually resident in the Shire of East Pilbara; the number who were present in the Shire on Census night (place of enumeration); and the number who worked in the Shire at the 2006 and 2011 Censuses. The data depicted shows that there were a total of 3,925 more mining and construction workers employed in the Shire than those who were usually resident, indicating substantial demand for transient workforce accommodation.

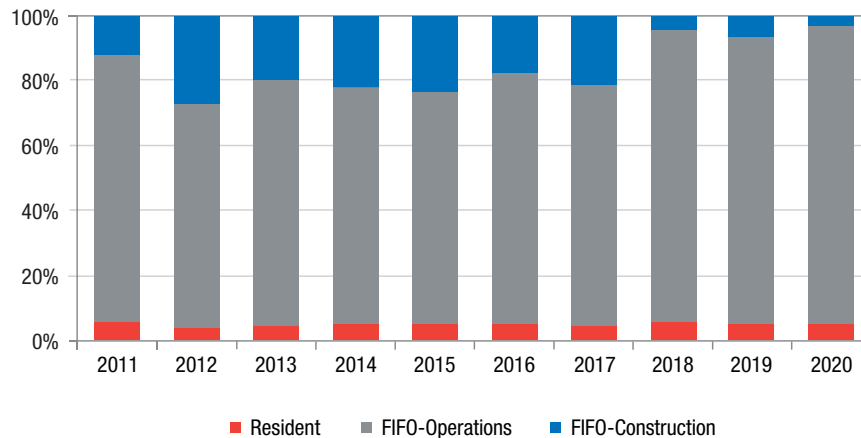
Data in Table 17 should be used with caution with regard to demand for TWA in Newman. Many mining operations in the Shire are in very remote locations and are 100 per cent FIFO; however, within Newman the proportion of workers who are resident is much larger. Most employees at mining operations adjacent to Newman live in the town.

Table 17 also shows that the gap between the number of workers employed in the Shire and the number of residents had widened considerably from the 2006 Census to the 2011 Census, suggesting increasing demand during that period.

Research by the Pilbara Industry's Community Council indicates that 95 per cent of the mining workforce in East Pilbara was FIFO in 2011. The research forecasts that these rates are likely to remain at approximately that level out to 2020.

The Pilbara Industry's Community Council cannot disclose precise employee numbers for confidentiality reasons; however, it has stated that the total FIFO workforce is expected to increase (from a 2011 baseline) by approximately 17,200 employees by 2017, before decreasing to approximately 13,500 employees above the 2011 baseline in 2020. The demand for TWA camp beds in the Shire is projected to substantially increase to 2020, with an anticipated requirement for an additional 16,800 beds (assuming all identified projects proceed) from a 2011 baseline.

Figure 32: Shire of East Pilbara FIFO and residential workforce components (resource sector projects)



Source: Pilbara Industry's Community Council Pilbara Population and Employment Study (2012)

Tom Price/Ashburton

Table 18 shows the number of mining and construction workers who were usually resident in the Shire of Ashburton; the number who were present in the Shire on Census night (place of enumeration); and the number who worked in the Shire at the 2006 and 2011 Censuses. The data depicted shows that, at the 2011 Census, there was a total of 3,402 more mining and construction workers employed in the Shire than those who were usually resident, suggesting a high level of demand for transient workforce accommodation.

Data in Table 18 should be used with caution with regard to demand for TWA in Tom Price as it describes the construction and mining workforce for the entire Shire of Ashburton. The vast majority of employees at the Mount Tom Price mine live in Tom Price.

Table 18 also shows that the gap between the number of workers employed in the Shire and the number resident had widened considerably from the 2006 Census to the 2011 Census, indicating increasing demand during that period.

The Pilbara Industry's Community Council cannot disclose precise employee numbers for confidentiality reasons; however, it has stated that the total FIFO workforce is expected to increase (from a 2011 baseline) by approximately 5,700 employees to 2013 before declining as projects move into an operational phase. The demand for TWA camp beds in the Shire is projected to decline to 2020 with an anticipated requirement for 600 fewer beds than in 2011.

The Council's research indicates that 85 per cent of the mining workforce in Ashburton was FIFO in 2011. It forecast that these rates would increase to 89 per cent in 2013, declining to 76 per cent in 2020 as the construction of major projects is completed.

Table 17: Shire of East Pilbara – Construction and mining workforce (2006 and 2011 censuses)

East Pilbara	Place of usual residence		Place of enumeration		Place of work	
	2006	2011	2006	2011	2006	2011
Construction	243	590	557	1,075	424	927
Mining	1,305	3,874	2,766	5,457	2,511	7,462

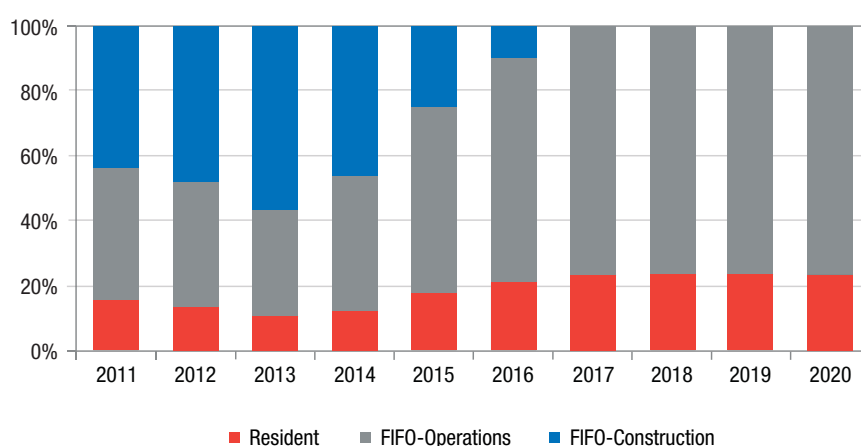
Source: ABS (2012), Basic Community Profile Catalogue 2001.0; Place of Enumeration Profile, Catalogue 2004.0; and Working population Profile, Catalogue 2006.0. Shire of East Pilbara

Table 18: Shire of Ashburton – Construction and mining workforce (2006 and 2011 censuses)

Ashburton	Place of usual residence		Place of enumeration		Place of work	
	2006	2011	2006	2011	2006	2011
Construction	167	902	349	1,075	381	1,848
Mining	1,590	2,961	1,972	5,457	2,921	5,417

Source: ABS (2012), Basic Community Profile Catalogue 2001.0; Place of Enumeration Profile, Catalogue 2004.0; and Working population Profile, Catalogue 2006.0. Shire of East Pilbara

Figure 33: Shire of Ashburton FIFO and residential workforce components (resource sector projects)



Source: Pilbara Industry's Community Council Pilbara Population and Employment Study (2012)

7.7 Demand for service worker accommodation

In addition to natural growth, residential demand is also driven by workers (and families) seeking to capitalise on economic opportunities generated by resource sector projects. These may include mining related and non-mining (population driven) industries. A number of these non-mining workers will not be remunerated to the same high level as those employed by resource companies, nor be supplied with subsidised accommodation. To ensure workers in lower paid industries

are able to access affordable housing, there is a need to ensure adequate service worker accommodation is available. This type of targeted housing can assist the retail, hospitality, tourism and general service sectors to attract and retain labour.

In order to attract and retain these important service workers, who support the day to day functioning of communities, it is likely that purpose built service worker accommodation is needed at least in the initial stages of development and operation of major projects. A project aimed at delivering service worker accommodation is currently being undertaken in Karratha, which is funded through the Royalties for Regions program.

Further investigation and analysis will be required to fully understand demand for this type of accommodation. The Pilbara Development Commission and Shire of Ashburton working group has undertaken an assessment of housing needs in the Shire, which will review population growth forecasts and consequent housing demand in Tom Price, Onslow and Paraburdoo. It is anticipated that the study will provide greater clarity regarding the demand for service worker accommodation in the Shire. Similar studies will likely benefit other towns in the Pilbara facing similar difficulties providing affordable housing for service workers.

Many of those considered key service workers are State Government employees such as nurses, teachers and police – occupations critical to a functioning town, but generally not as well paid as those in the mining industry.

To support these professions the Department of Housing provides accommodation for government employees through its Government Regional Officers' Housing (GROH) program. The GROH program plays a vital role in attracting and retaining key government workers in regional and remote communities, especially in areas with a limited housing supply and lack of a rental market.

Newman

As previously discussed in this section, rental accommodation is extremely expensive in Newman for those who do not have housing supplied or subsidised by their employer. The Department of Housing operates a stock of 143 GROH dwellings in Newman, of which 35 are temporarily unoccupied due to lack of suitability. As at 30 June 2014, the waiting list for GROH in Newman is estimated at five dwellings.

Tom Price

Like Newman, rental accommodation is also very expensive in Tom Price. The Department of Housing reported that it owns a stock of 81 GROH dwellings, of which 69 are occupied. As at 30 June 2014, the waiting list for GROH in Tom Price is estimated at five dwellings.

More information on Department of Housing accommodation is available in Section 8.3.

7.8 Demand for social housing

A core role of the Department of Housing is to support housing for Western Australians who cannot otherwise afford their own homes, through the provision of social housing. Although the unemployment rate in Newman and Tom Price is low and wages are generally very high, the cost of rental accommodation is often prohibitively expensive for those who do not have employee subsidised rent or earn very high incomes.

Newman

The current stock of social housing in Newman is 74 dwellings, the majority of which are family houses. As at 30 June 2014, the waiting list for social housing in Newman was estimated at 50 dwellings. A large proportion of the demand is for one bedroom dwellings (25), followed by three bedroom dwellings (11) and two bedroom dwellings (11). There is a small requirement for additional four and five bedroom dwellings.

Tom Price

The Department of Housing operates 20 social housing dwellings in Tom Price, which are all three bedroom family houses. As at 30 June 2014, the waiting list for social housing in Tom Price is estimated at nine dwellings, with a requirement for one, two and three bedroom dwellings.

7.9 Demand for commercial/retail floor space

Demand for retail and commercial floor space is influenced by:

- population and population growth (resident, FIFO and visitors);
- expenditure (resident, FIFO and visitor expenditure);
- retail turnover (turnover per square metre of floor space); and
- employment structure (industry type and floor space – square metres per employee).

Establishing a business in Newman or Tom Price can be a challenging endeavour. High wage demands mean attracting and retaining staff can be problematic for small and medium size enterprises. Purchasing products wholesale is also considerably more expensive due to the costs involved in transporting goods by road or plane to the region.

Commercial and retail rental floor space is generally more expensive per square metre than comparable properties in the Perth metropolitan area. In the June Quarter 2013, the average cost of retail properties for lease in the Pilbara was \$558 per square metre per annum.⁴³

A number of advertisements for commercial/retail rental properties in the metropolitan area were surveyed for comparison with similar properties in the Pilbara. Properties in metropolitan district centres with comparable clusters of commercial activity to Newman and Tom Price's town centres were used for this sample. The average cost of comparable retail properties in the Perth metropolitan area was approximately \$322 per square metre per annum.⁴⁴

Newman/East Pilbara

Commercial and retail rental floor space is generally more expensive per metre square in Newman than in comparable properties in the metropolitan area. In the June Quarter 2013, the average cost of retail properties for lease in Newman was approximately \$400 per square metre per annum.⁴⁵

The Shire of East Pilbara's *Your Future's in the Mail – Community Visioning Initiative* (2012) has identified a strong community desire to have increased shopping opportunities such as additional retail shops, supermarkets (including an improved and bigger Boulevard Shopping Centre), eateries, as well more leisure facilities.

Tom Price/Ashburton

Although resident population growth has been modest in Tom Price over the past 10 years, the growing service population has maintained a degree of demand for commercial/retail services. As at September 2013, only one retail property was advertised for sale in Tom Price and none were advertised for lease.

The Shire of Ashburton's *10 Year Community Strategic Plan* (2012) has identified the development of strong local economies, including Tom Price, as essential to encouraging and accommodating growth in the future. Actions to achieve this goal include developing policies and programs to support existing business and encourage business attraction.

7.10 Demand for industrial land

Many factors influence demand for industrial land which makes quantifying demand a complex process.

Demand for industrial land is generally derived from a local, national or international demand for goods and services, with value adding to both locally generated products and products generated in other regions. The *Industrial Land Needs Study* (2008) identified industrial land supply and demand cycles as having three main drivers, summarised as:

⁴³ Pilbara Development Commission (2013) *Housing and Land Snapshots – 2013 June Quarter*

⁴⁴ Real Commercial (2014) Website: <http://www.realcommercial.com.au>

⁴⁵ Pilbara Development Commission (2013) *Housing and Land Snapshots – 2013 June Quarter*

- Population and settlement growth: Increased population growth and labour force participation rates equating to more jobs and increased demand for industrial land (20 per cent of jobs across the State are likely to be in the industrial sector).
- Economic growth and decline cycles: High levels of economic growth and productivity will result in an increased demand for land for industrial activity. This is particularly true for the Pilbara sector, given the contribution of the resource industry to the economy of the region.

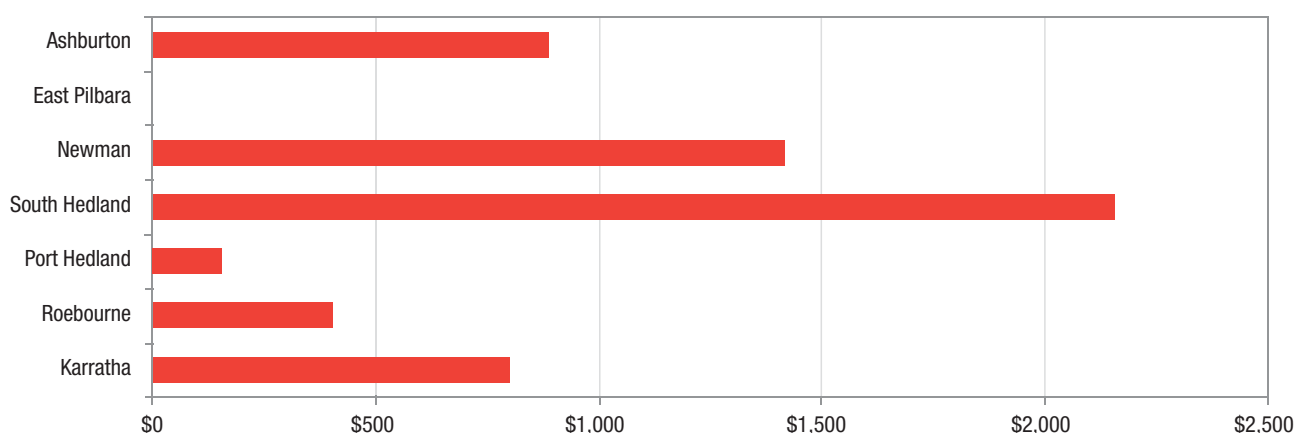
The cyclical nature of economic growth can make short-term predictions difficult; therefore, long-term predictions provide the best indication of demand. An additional supply (land bank) of 25-30 per cent above the long-term requirements should be allowed to create flexible market choice, respond to short-term hyper growth situations and for emerging and inward investment opportunities.

- Location criteria and market preferences: Industries will seek sites with sufficient amenity and location advantage in order to perform their activity in a competitive way (for example proximity to services, proximity to transport such as roads and ports, protected and buffered sites, and sites where industry is able to expand).

Although it is hard to accurately gauge, most indicators suggest that there is generally high demand for industrial land in the Pilbara. In autumn 2012, Colliers International reported that industrial rents in the Pilbara were three to four times the cost of comparable sites in Perth.⁴⁶

Figure 34 shows land values (advertised sales price) at various industrial estates around the region. The Pilbara average during the June quarter 2013 was \$1,748 per square metre.⁴⁷ To put these values in perspective, land at industrial estates in the metropolitan area such as Welshpool, Malaga and Canning Vale have recently had average values of ranging from \$400 to \$550 per square metre.

Figure 34: Advertised industrial/warehouse property average price per m² (2013)



Source: Pilbara Development Commission (2013), *Pilbara Commercial Property and Land Snapshot, June quarter*

⁴⁶ Colliers International (2012)

⁴⁷ Pilbara Development Commission (2013) *Housing and Land Snapshots – 2013 June Quarter*

Newman

As the largest town of the inland Pilbara, Newman is developing as a service centre for the mining operations of various companies operating in the region. Strong demand for residential land is reflected in the high prices depicted in Figure 34. Demand for industrial land prompted LandCorp to develop the Newman Light Industrial Estate to provide additional land for industrial development. Since the first land release in 2012, there has been a high level of take up for lots on the site. All lots have been sold and only approximately 10 per cent of developed lots remain vacant. More information on industrial land in Newman is available in Section 8.7.

Tom Price

Tom Price is a hub for Rio Tinto's mining operations in the region. Although much of Rio's servicing work is conducted 'in house', there are benefits to the establishment of mining related industries in close proximity to Tom Price.

Gauging the level of demand for industrial land in Tom Price is difficult due to the lack of industrial land available to lease or purchase and the unconventional leasing arrangements at the mine industrial site. Anecdotal evidence from Shire of Ashburton staff indicates that there is recurrent interest from industrial operators seeking to lease/purchase industrial land near Tom Price. Refer to Section 8.7 for more information on industrial land in Tom Price.

7.11 Demand for tourist accommodation

The use of tourist accommodation (particularly caravan parks) by mining and construction workers has meant that – at times – tourist facilities in the Pilbara have not been available for use by tourists. Discussions in August 2013 with hotels and caravan park operators in Newman and Tom Price revealed that facilities were usually operating at or near capacity. The take-up of tourist accommodation for non-tourism related purposes undermines the economic diversity of the region and has the potential to adversely affect the tourist industry over the longer-term.

Demand for tourist accommodation around Newman and Tom Price peaks in the winter months. During this period both towns have a large intake of 'grey nomads'. Most of these visitors travel in caravans or camper vans and consequently there is a large degree of seasonal variation in demand for this type of accommodation.

The principal tourist attractions of the region are the gorges, mountains and water holes of the national parks and reserves of the area (Maps 13 and 25). Typically, travellers do not stay for extended periods in either Newman or Tom Price, tending instead to stop for a day or two before continuing on to stay in one of the surrounding national parks. The Department of Parks and Wildlife estimates that in 2011/12 approximately 196,500 people visited Karijini National Park and approximately 60,000 people visited Millstream Chichester National Park.⁴⁸

In the 12 months to December 2012, an estimated 669,700 people visited WA's North West (which encompasses both the Pilbara and Kimberley regions). In the first six months of 2012, international visitors tended to spend the longest time in the region, staying for an average of 30 days. Interstate visitors stayed for an average of 11 days and intrastate visitors stayed for an average of seven days.

Tourism WA surveys indicate that there were approximately 340,000 visitors per annum to the Pilbara in the three years to December 2012, spending approximately 3.6 million visitor nights per annum in the region.⁴⁹

Research by the Tourism Forecasting Committee shows the annual growth rate for visitor nights in regional Western Australia (areas excluding Perth) was 10.4 per cent for the period 2005/06-2010/11. Visitor nights in regional WA are predicted to increase by 4.3 per cent each year between 2010/11 and 2015/16 and increase by 3.2 per cent annually between 2015/16 and 2020/21.⁵⁰

⁴⁸ Department of Environment and Conservation (2013), information available on request

⁴⁹ Tourism Western Australia (2013) *Overnight Visitor Fact Sheet, Years Ending 2010/11/12, Pilbara Development Commission Area*

⁵⁰ *Tourism Australia (2013) Tourism Forecasts. Tourism Australia, Sydney*

Newman/Shire of East Pilbara

There is limited data available regarding tourism visits to the Shire of East Pilbara. Although Tourism WA no longer specifically reports on East Pilbara tourism statistics, older research indicates that approximately 67,300 people per annum visited the Shire of East Pilbara during the three years to December 2011, the vast majority of whom (91 per cent) were domestic visitors.⁵¹

Data collected by Tourism WA shows that the leading purpose of visit to the Shire of East Pilbara for domestic visitors was holiday or leisure (50 per cent) and business (29 per cent). The holiday or leisure was the most prominent purpose of visit among international visitors (83 per cent).

Tom Price/Shire of Ashburton

Tourism WA research indicates that approximately 120,500 people per annum visited the Shire of Ashburton during the three years to December 2013, the majority of whom (85 per cent) were domestic visitors.⁵²

This data also indicates that the main purpose of visits to the Shire of Ashburton for domestic visitors was business (63 per cent). Holiday or leisure was the predominant purpose of visit for international visitors (64 per cent).

⁵¹ Tourism Western Australia (2012) *Overnight visitor fact sheet (Years ending December 2009/10/11), Shire of East Pilbara*

⁵² Tourism Western Australia (2014) *Overnight visitor fact sheet (Years ending December 2011/12/13) Shire of Ashburton*

8 Land and housing supply

Key points

Newman

- Despite Newman's remote location there are numerous constraints to urban expansion which can delay the supply of land, even during periods of high demand.
- High residential building costs and issues associated with sourcing construction workers can constrain the supply of residential, industrial and commercial property.
- There is provision in the local planning scheme to support urban consolidation in Newman. At present, however, most dwellings are built on newly constructed greenfield lots.
- One of the legacies of Newman's time as a 'company town' is that much of the housing stock is still owned by BHPBIO.
- Most of the existing dwellings in Newman were constructed in the first decade of the town's establishment (1967-1976).
- After a period of relatively constrained supply in Newman, residential developments at East Newman and Kurra Estate have enabled a substantial flow of lots and dwellings to the market over the past few years.
- There have been significant land releases in Newman in recent years and, as at August 2013, there was a stock of 43.6 hectares of undeveloped 'residential' zoned land, much of which is in the process of being serviced prior to subdivision.
- Contrary to the previous six to seven years, demand for accommodation in Newman has waned substantially in the past 12 months, as major resource sector projects have transitioned into operational phases. The stock of residential lots and dwellings moving through the development pipeline; however, is sufficient to meet high levels of demand and as such, it could be argued that residential lot production is now moving towards (or perhaps already in) a state of oversupply.
- A high level of subdivision activity reflects recent urban expansion in Newman; 306 residential lots reached final approval in during 2012 and 226 in 2013. However, no lots were granted final approval in the March quarter of 2014.
- Development approval was granted for 108 dwellings in Newman during the six months to March 2014 – more than any other six month period since the beginning of the resources boom. Evidence suggests that this surge in activity may be supply side driven, i.e. is being prompted by the volume of residential land coming through the pipeline rather than demand.
- The sites identified in the Regional HotSpots land release plan have the potential to yield a sufficient number of dwellings to accommodate a population of 15,000.
With most of the proposed sites, however, deconstraining work will need to be ongoing to ensure a consistent flow of residential lots and dwellings to market in a timely manner.
- Assuming all servicing and statutory barriers to development could be overcome to release build-ready lots at a sufficient rate, it should be acknowledged that demand/market conditions are likely to be a substantial impediment to achieving the rate of urban growth required to meet the Pilbara Cities population targets by 2035.
- The Newman Light Industrial Estate has delivered 102 industrial lots since 2007. Further development of the site is likely to yield an additional 25 lots in the short-term and there is scope for further expansion at the site in the medium-term.
- The Shire of East Pilbara is currently finalising a Newman Airport MasterPlan which will outline plans to develop land around the airport for light industrial/commercial purposes.
- The completion of the Newman Town Centre Revitalisation Project has the potential to accommodate most of Newman's future retail/commercial requirements. Additional commercial development is also underway along Newman Drive to the east of the town centre.

Tom Price

- Despite its remote location, there are significant constraints to urban expansion in Tom Price which restricts the supply of residential land, particularly in the short-term.
- The Shire of Ashburton has provision within its local planning scheme for urban consolidation in Tom Price; however, this generally requires lot amalgamation. Most new dwellings are constructed on greenfield lots.
- One of the legacies of Tom Price's time as a 'company' town is that most of the housing stock is still owned by Rio Tinto Iron Ore.
- Most of the existing dwellings in Tom Price were constructed in the first decade of the town's establishment.
- Despite high demand for housing in Tom Price, the 2011 Census recorded an unusually high dwelling vacancy rate. However, Rio Tinto (which owns most of the dwelling stock in Tom Price) has recently stated that its housing is (as at August 2014) fully utilised.
- In Tom Price there have been few additions to the stock of residential land over the past five years. The most recent local planning scheme amendment to augment stocks was in 2010, when 0.5 hectares of residential zoned land were added.
- Despite high prices in Tom Price, few new residential lots or dwellings are being developed. In the two years to December 2013 final subdivision approval was granted for 22 lots and development approval was granted for the construction of 39 dwellings (22 of which were part of a single grouped dwelling project).
- There is insufficient existing or proposed residential land identified in Tom Price to accommodate population growth at the rate projected under Pilbara Industry's Community Council forecasts.
- There is no new industrial land in Tom Price suitable for development in the short-term. The identification of additional industrial land in the town will be critical to facilitate economic development and diversification.
- High construction costs and issues associated with sourcing construction workers can dampen enthusiasm for investment in residential, industrial and commercial property in Tom Price.
- There is scope within phase two of the Tom Price town centre revitalisation plan to develop sufficient commercial/retail space to accommodate anticipated growth.
- An area has been identified for the development of a sizeable tourist accommodation project but there is no active proposal to develop the site.

Highlights and conclusions:

- An assessment of the stocks of basic raw materials in the region would benefit long-term appraisals of the costs of future urban expansion, particularly given the drainage issues associated with each town. There may also be the need to examine the use of appropriate substitute materials or alternative approaches where supplies are limited.
- Priority should be given to the provision of affordable housing for Government and other key workers to help normalise the economies of Newman and Tom Price.
- The land supply lag during the recent boom illustrated how housing prices and local economies can become distorted during periods of high demand. Work should be undertaken – even during periods of low demand – to identify, and where possible deconstrain, land for future development to ensure land and dwellings can be delivered in a timely manner during future upturns in demand. The 'Lazy Lands' Program has already achieved some positive outcomes in this regard, identifying under-utilised or surplus Crown land with development potential.
- High development and construction costs in the Pilbara inflate property prices in the region, contributing to housing unaffordability and creating a barrier to small business development. A study investigating building methods and costs in the region, and how built form may be delivered more efficiently, could assist in 'normalising' the economic structure of Newman and Tom Price by reducing the end cost of housing.
- Both Newman and Tom Price have had substantial upgrades to their town centres in the past five years as part of the State Government's Royalties for Regions Program. It is important that each of these projects is seen through to completion to deliver the intended level of amenity – to help attract residents and visitors and to facilitate sufficient commercial development to meet future demand.
- The stock of industrial land in Tom Price is currently very limited, which creates a barrier to small business development and economic diversification in the town. New industrial land should be identified and deconstrained to promote economic development.
- There is very little land in Tom Price zoned for urban development. It is important that appropriate sites are identified and where possible deconstrained – irrespective of short-term demand – to avoid shortages in the future.

8.1 Issues affecting delivery of land and housing to market

Although Newman and Tom Price are very isolated towns, a variety of factors constrain urban expansion, even during periods of high demand. Some of these constraints are unique to one town or the other and some are common to both. Key constraints to urban development include:

- *Fragmented land ownership* – means land assembly can be a significant constraint, particularly to urban consolidation. Both towns have provision within their planning schemes for urban consolidation; however, this often requires lot amalgamation.
- *High construction costs in the region* – make delivering residential property substantially more expensive than in other parts of the State. The construction of dwellings in Newman and Tom Price can cost \$200,000 to \$400,000 more than a comparable project in the Perth metropolitan area which deters many potential investors and would-be owner occupiers.
- *Shortage of skilled labour* – particularly during periods of high growth, may mean that delays are caused while builders or developers source staff, for whom they generally need to provide accommodation.
- *Access to finance* – represents a barrier to development when lenders are not convinced of the sustainability of property markets. In the mining towns of the Pilbara, lenders may be reluctant to provide finance to investors, or even owner occupiers looking to purchase property in the region.
- *Proximity of mining operations to both Newman and Tom Price* – presents a significant constraint to development in both towns. Mining operations and related service industries must be physically buffered so they are not in close proximity to residential development.
- *Most of the land around Newman and Tom Price being subject to native title claim* – development approval in these areas is contingent on the consent of traditional owners and custodians. In some cases resolution of native title may take several years.
- *Ageing Newman wastewater treatment plant* – currently operating at capacity and needs to be upgraded to accommodate anticipated population growth in the short-term.
- *Ageing power and water distribution networks in both towns* – are (in some sections) reaching the end of their operational lives and in need of significant upgrades to accommodate population growth.
- *Geology of both towns (particularly Tom Price)* – steep hills and rock formations around the towns can make construction challenging and costly.
- *Topography of Tom Price* – surrounded by large hills and rock formations the area is subject to occasional but very heavy rains in summer that make site drainage a serious issue when considering future development projects.
- *Gazettal of a Ministerial reserve* – occurred to achieve normalisation of the Newman townsite through recognising a growth boundary for the town within which further mining tenement applications would not be permitted. Urban expansion beyond this boundary requires Ministerial approval to proceed.
- *Great Northern Highway along the eastern edge of Newman* – while not a permanent barrier to development, there is currently limited infrastructure available on the eastern side of the road, which effectively demarks the eastern edge of the town. Main Roads WA has advised that it does not support development on the eastern side of the road.

8.2 Residential

Newman/Shire of East Pilbara

Existing dwelling stock

Statistics from Landgate (Valuer General's Office) indicate that more than half (approximately 58 per cent) of the dwellings in Newman were constructed between 1968 and 1978. This was primarily for workers of the Mount Newman Mining Company, during the town's establishment.⁵³ Following normalisation, relatively few houses were developed (barring a brief spurt from 1985 to 1987) until 2008, when a new period of residential development commenced (Figure 35).

Although management of the town has passed from BHPBIO to the Shire of East Pilbara, a substantial stock of property in Newman is still owned by BHPBIO. Other organisations that own significant stocks of land in the town include the Department of Housing (social housing and government regional officer housing), the Commonwealth Government and the Shire of East Pilbara.

The overwhelming majority of Newman's housing stock consists of single detached houses (Table 18). At the 2011 Census, approximately 86 per cent of occupied dwellings fell into this category, with 88 per cent of detached houses containing three or more bedrooms.

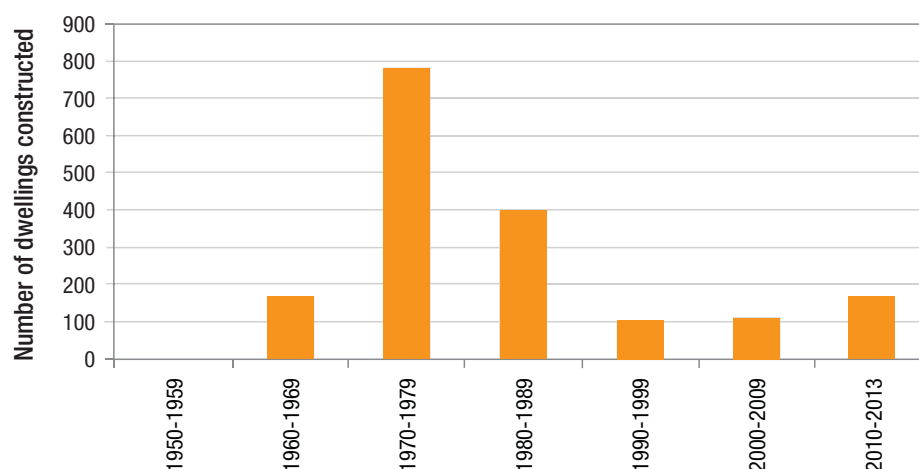
Table 19: 2011 Census – Newman housing stock

Dwelling type	Number of dwellings
Total private dwellings (including unoccupied private dwellings)	1,826
Occupied private dwellings	1,342
Unoccupied private dwellings	484
Separate house	1,158
Semidetached, row or terrace house, town house etc.	70
Flat, unit or apartment	105
Other dwellings	6
Not stated	3

Source: ABS (2012), Community Profiles (SA 2 area - Newman)

Note: Table excludes visitor only and other non-classifiable households.

Figure 35: Age of dwelling stock – Newman



Source: Landgate (Valuer General's Office) (2013)

⁵³ Valuer General's Office (Landgate) 2013

Perhaps the most surprising statistic to emerge from the Census regarding Newman's housing stock was the number of unoccupied dwellings in the town. At the 2011 Census, 484 private dwellings (27 per cent) were reported as being unoccupied. Across Western Australia approximately 12 per cent of private dwellings were unoccupied. The high rate recorded in Newman may be a reflection of the ABS classification of unoccupied dwellings on the Census Night, including where occupants may be enumerated at another location, such as at their place of employment. Newly completed dwellings, dwellings to let and those due for repair are also classed as unoccupied through the Census process.

An assessment of the spatial distribution of unoccupied dwellings indicated the highest proportion of dwellings classed as unoccupied at the 2011 Census are situated in an area which contains a large number of apartment-style units owned by BHPBIO. This suggests that at least some of the dwellings reported as unoccupied are used by company employees and are unlikely to be vacant all of the time.

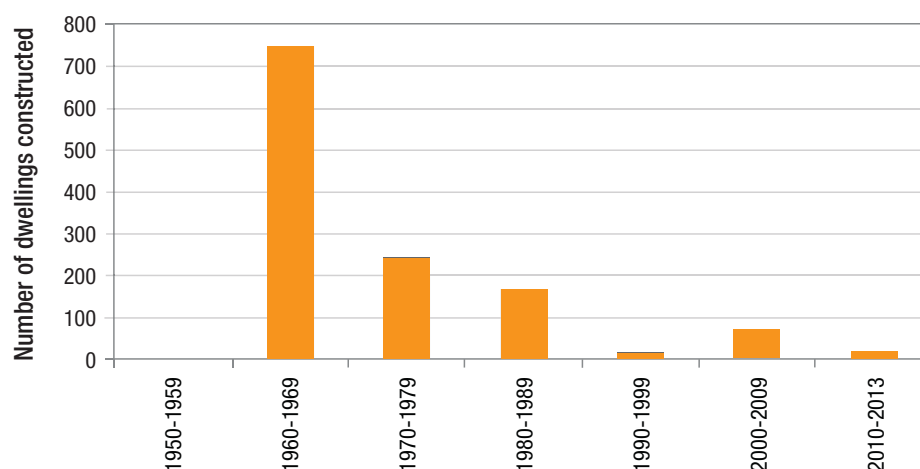
Responses from the 2011 Census indicated that a particularly high proportion of the occupied dwellings (77 per cent) in Newman were being rented at that time. This represents a slightly higher proportion of rented dwellings than the wider Pilbara region (73 per cent) and a much higher proportion than Western Australia as a whole (29 per cent).

The greatest point of distinction between Newman's housing stock and that of the rest of the State is the number of dwellings being rented by 'other landlord type'. Approximately 62 per cent of occupied dwellings were being rented by landlords in this category at the 2011 Census, compared to two per cent across Western Australia. The concentration of this type of housing arrangement is reflective of various employers holding dwellings to house employees.

Tom Price/Ashburton

Most of the dwelling stock in Tom Price was constructed during the initial five years of the town's development (Figure 36). During the 1970s there was further residential development to the north of the established settlement but this was followed by a relative lull in dwelling construction until a small resurgence during the recent commodities boom.

Figure 36: Age of dwelling stock – Tom Price



Source: Landgate (Valuer General's Office) (2013)

The majority of homes in Tom Price are single detached houses (Table 19). At the 2011 Census, 91 per cent of private dwellings in the town were classified as 'separate houses'. There is a high degree of uniformity among the housing stock of Tom Price. Most homes are constructed of brick, or timber frame with brick veneer, with tile roofing. Approximately 77 per cent of dwellings have three bedrooms.

Significant housing stock owners in Tom Price include RTIO, the Department of Housing, the Commonwealth Government and the Shire of Ashburton.

Existing lots/lot size and additional lot potential

Figure 37 shows the lot size distribution for lots zoned for residential use in Newman and Tom Price. Lot size distribution provides an indication of the density of development within each town and likely land requirements if future residential development occurs in a similar format. Approximately 70 per cent of residential lots in Newman are between 600–800 square metres.⁵⁴ The most common lot size in Tom Price is slightly larger (800–900 square metres) and accounts for just under half of all residential lots. Residential lots in excess of 2,000 square metres represent undeveloped land that will likely be further subdivided.

The residential lot size distribution in Newman and Tom Price is comparable to other Pilbara towns such as Port Hedland, South Hedland and Karratha where the most common lot sizes are 800–900 square metres; 600–700 square metres and 700–800 square metres respectively.

Lot potential and average lot size for residential lots in Newman and Tom Price has been assessed under the Department of Planning's Integrated Land Information Database. The database is a net land use assessment and capability model that is generated at a cadastral level for the whole of Western Australia. In the case of split R-Codes the highest R-Code is used (that is maximum potential) to calculate additional lot and dwelling potential. Tables 21 and 22 show the additional lot and dwelling potential for Newman and Tom Price.

Table 20: 2011 Census – Tom Price housing stock

Dwelling type	Number of dwellings
Total private dwellings (including unoccupied private dwellings)	1,157
Occupied private dwellings	934
Unoccupied private dwellings	223
Separate house	847
Semidetached, row or terrace house, town house etc.	76
Flat, unit or apartment	8
Other dwellings	3
Not stated	0

Source: Australian Bureau of Statistics 2011 Census – Tom Price

Note: Table excludes visitor only and other non-classifiable households.

It is important to note that the model used to calculate the maximum lot potential as shown in Table 21 and 22 assumes that lots can be subdivided to the maximum density allowed by the R-Code, regardless of existing boundary alignments and built form.

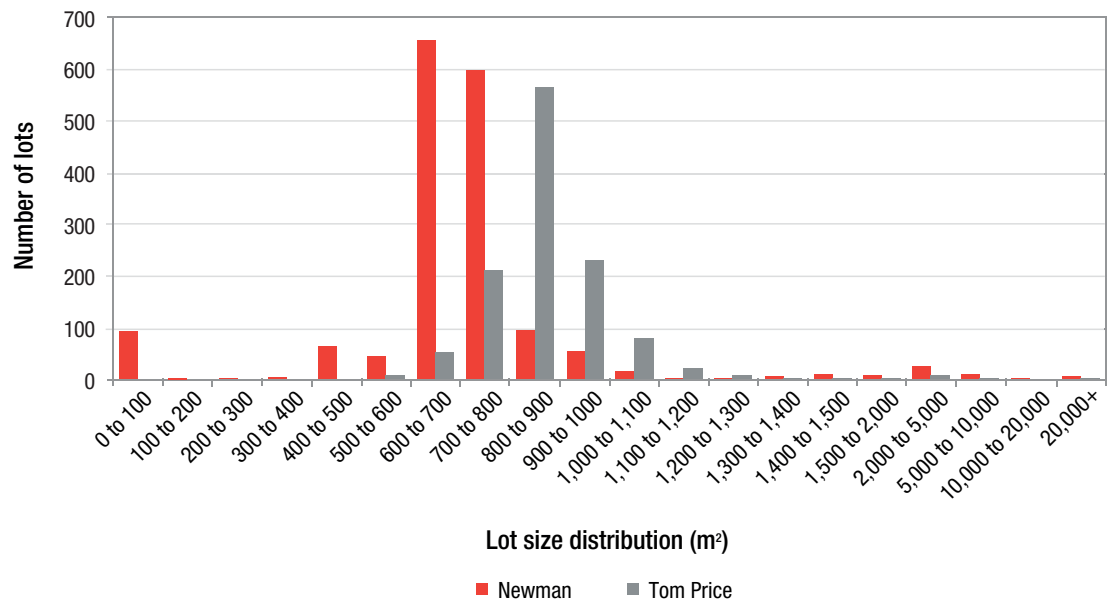
Newman/Shire of East Pilbara

Approximately 84 per cent of the residential land that has been attributed an R-Code in Newman is zoned R15/40. Whether the R15 or R40 density is enforced is up to the discretion of the Shire of East Pilbara, guided by the shire's *Local Planning Policy No. 8 – Residential Development Policy*. The R15/R40 zoning enables the development of additional dwellings in response to strong housing demand or delays in additional land release. The policy also promotes a mix of dwelling types within the town to cater for a broader spectrum of housing needs and supports the implementation of the *Newman Revitalisation Plan*.

Data from the Integrated Land Information Database indicates that there is theoretically potential for approximately 5,052 additional lots in Newman if the existing zoned area was developed to its maximum density. The release of additional lots through infill development represents an efficient utilisation of existing infrastructure and should be encouraged where possible.

⁵⁴ Department of Planning (2012) *Integrated Land Information Database*

Figure 37: Residential lot size distribution – Newman and Tom Price



Source: Integrated Land Information Database, Department of Planning (November 2012)

It should be noted, with regard to the data depicted in Table 20, that fulfilling the lot potential in Newman is highly unlikely due to local land economics. Residential construction costs are such that demolition of an existing residence, subdivision of a lot and construction of two new dwellings is likely to be prohibitively expensive, even during periods of high demand.

Table 21: Integrated land information database outputs – Newman

Suburb	R-Code	Existing lots	Average lot size (m²)	Lot potential (low)	Lot potential (high)	Additional lot potential (high)
Newman	R15	390	719	392	392	2
	R15/40	1,349	1,200	2,012	6,396	5,047
	R25	1	1,432	4	4	3
Total		1,740	1,092	2,408	6,792	5,052

Source: Integrated Land Information Database, Department of Planning (November 2012)

Note: Additional dwelling potential refers to existing developed lots and is based on current R-Codes and lot size.

Tom Price/Shire of Ashburton

Areas zoned 'residential' in Tom Price have a residential density code ranging from R5 to R50, with the majority of lots falling under the R20 and R30 code.

Data from the Integrated Land Information Database indicates that there is theoretically potential for approximately 903 additional lots in Tom Price if the existing zoned area was developed to its full potential (developed to maximum density). Recent amendments to *Shire of Ashburton Local Planning Scheme No. 7* provide additional incentives to infill developments which utilise existing infrastructure. Amendment No. 12 will be further discussed in the next section. Like Newman, urban consolidation in Tom Price is constrained by the high cost of dwelling construction.

Existing vacant lots

Newman/East Pilbara

The vacant lots survey undertaken by the Department of Planning in August 2013 revealed 99 vacant residential lots in Newman. The majority of the residential lots were located in LandCorp's recent East Newman Stage 3B development. Very few of the vacant lots were held in private ownership and few were located on residential zoned land in older areas of town.

More recent data from the Water Corporation indicates that the stock of vacant lots with water connections has increased substantially in Newman, with 237 lots identified at the end of 2013 compared to 50 such lots in 2011.

Tom Price/Ashburton

Based on a survey of vacant lots undertaken in August 2013, there were approximately 35 vacant residential lots in Tom Price. A number of vacant lots were recently constructed as part of a Shire of Ashburton residential development on Pilkena, Yaruga and Warara streets. A vacant lot on South Road to the south of the townsite represents the single largest residential zoned lot and is currently in State Government ownership. Similarly to Newman, few vacant residential lots are held in private ownership and there are very few vacant lots in long-established areas of the town.

Residential subdivision activity

Newman

Residential subdivision trends in Newman during the past 10 years have been characterised by sporadic applications (sometimes for large numbers of lots) translating to a relatively modest number of final approvals. Final approvals were granted for 306 lots in 2012 and 226 lots in 2013, which constitutes 87 per cent of final approvals for the past decade (Figure 38).

Large numbers of residential lots were granted conditional approval in 2012 and 2013 which enlarged the stock of conditionally approved lots in the town. As at March 31 2014, there were 665 conditionally approved residential lots in Newman – equivalent to more than one third of the existing stock of residential lots.

Table 22: Integrated land information database outputs – Tom Price

Suburb	R-Code	Existing lots	Average lot size (m ²)	Lot potential	Additional lot potential
Tom Price	R5	3	5,714	6	3
	R20	1,159	872	1,582	423
	R30	59	2,576	423	364
	R50	2	11,987	115	113
Total		1,223	984	2,126	903

Source: Integrated Land Information Database, Department of Planning (November 2012)

Note: Additional dwelling potential refers to existing developed lots and is based on current R-Codes and lot size.

Recent subdivision activity is far more subdued. Applications were lodged to create just eight lots in the nine months to March 2014. In the March quarter of 2014 no residential subdivision applications were lodged for sites in Newman, none were pending and no lots progressed to final or conditional approval. Although this is not unusual in Newman, it represents a stark contrast to the heightened subdivision activity of the past few years.

Tom Price

There has only been a hand full of residential subdivision applications in Tom Price over the past decade. Three applications in 2009 to create a total of 73 lots all progressed to final approval in 2011 and 2012. The other applications shown in Figure 39, lodged in 2011, 2012 and 2013 all cover a single site (TP01, Map 17). The applications lodged in 2013 are for a vacant lot strata subdivision which is partially developed.

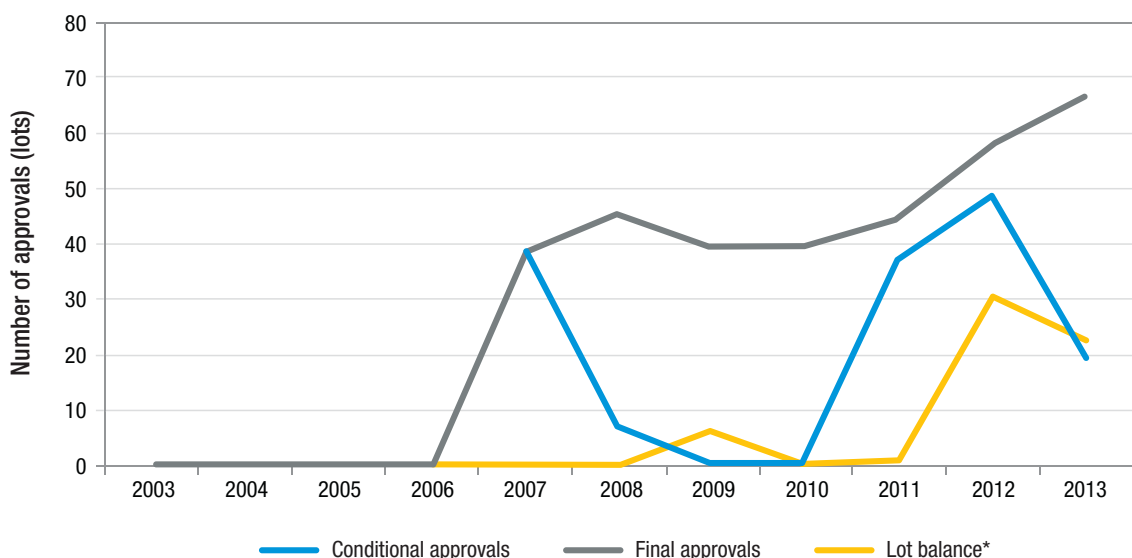
Residential zoned land supply

Newman

Much of the residential land in Newman may be considered developed; however, the discretionary R15/40 zoning means that a significant increase in the town's dwelling stock is theoretically possible without rezoning additional land. Analysis indicates that approximately one fifth of the land zoned for residential purposes is undeveloped (Table 23).

Development of detached dwellings is generally confined under the local planning scheme to the zones listed below. Grouped and multiple dwellings are also permitted on 'town centre' and 'mixed business' zoned land at the discretion of the council. There is also scope for residential development on some 'special use' zoned land and there is provision for one caretaker's dwelling per lot on the Newman Light Industrial Estate. One site (Kurra Estate – Stage 2) is zoned for 'residential development', and will accommodate approximately 180 dwellings.

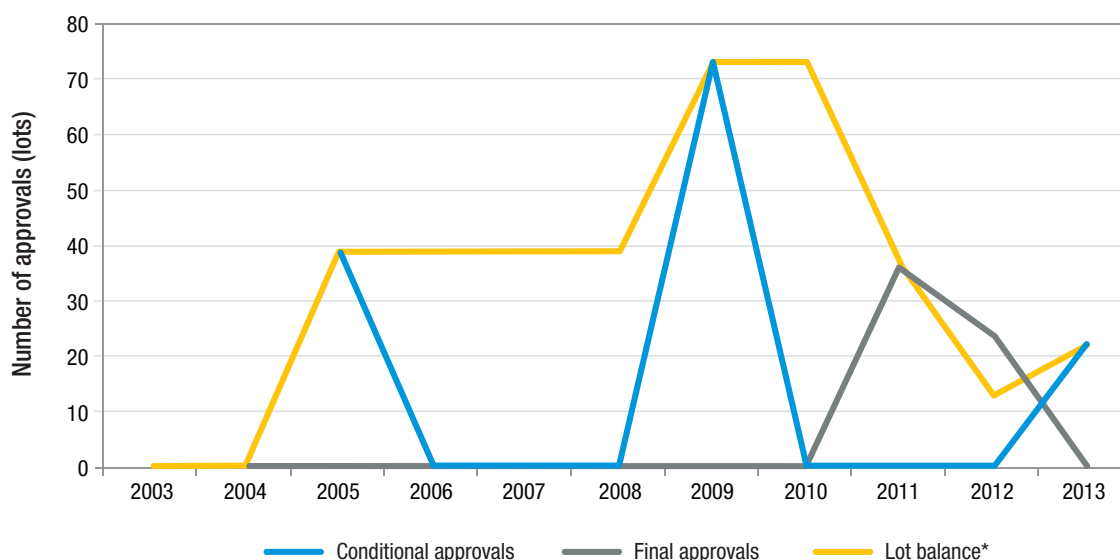
Figure 38: Residential conditional and final approvals 2003 to 2013 – Newman



Source: Department of Planning (2014) approvals database

* As at 30 June each year. Refers to conditional approvals for which construction or servicing has not yet commenced, or is currently underway (has not reached final approval stage).

Figure 39: Residential conditional and final approvals 2003 to 2013 – Tom Price



Source: Approvals database, Department of Planning (2013)

* As at 30 June each year. Refers to conditional approvals for which construction or servicing has not yet commenced, or is currently underway (has not reached final approval stage).

Recent amendments to *Shire of East Pilbara Town Planning Scheme No. 4* have rezoned additional land surrounding the Newman town centre to allow for medium density residential development. The development of these sites is dependent on the resolution of native title and servicing issues.

Tom Price

Like the housing stock in Tom Price, there is a high degree of uniformity among the R-Code zonings within the town (Table 23). Amendment No. 12 to the *Shire of Ashburton Local Planning Scheme No. 7* was gazetted in 2012. The amendment introduces

Table 23: Residential zoned land supply – Newman

Zone	Developed (ha)	Undeveloped (ha)	Total (ha)
Residential R15	28.0	1.6	29.6
Residential R15/40	122.4	37.3	159.8
Residential R25	0.1	0.0	0.1
Residential development	8.5	0.0	8.5
Total	159.0	38.9	198.0

Source: Internal databases, Department of Planning (2014)

Note: Lots are considered developed once they are serviced and subdivided, irrespective of whether there is any built form on the lot. Numbers may not sum due to rounding.

a density bonus allowing vacant lots currently zoned R20 and R30 to be developed for grouped housing. Redevelopment of serviced lots through vacant strata and built strata subdivisions in Tom Price – and Paraburdoo – represents an opportunity to consolidate development within the existing urban footprint, as opposed to greenfield expansion areas.

There is very little undeveloped residential land in Tom Price. The most recent local planning scheme amendment to augment the stock of residential zoned land in the town was in 2010 (Amendment 5 to *Shire of Ashburton Local Planning Scheme No.7*), when half a hectare of residential land was added.

In addition to the residential zoned land there is 24.2 hectares zoned 'special use', where permitted land uses include residential, transient workers accommodation, tourist accommodation, tourist-related and ancillary uses. Only about 20 per cent of this area is developed, which includes Windawarri Lodge and RTIO's Marandoo TWA camp. It is noted, however, that this site is constrained leasehold land and is not native title cleared.

Residential land development pipeline

The residential land development pipeline (Figures 40 and 41) presents data for key points of the land development process, from identification of land in strategic plans, through to subdivision and building approvals. Assessments of the amount of land and approvals flowing through the pipeline can assist to identify bottlenecks in the development process and potential periods of over or under supply.

Newman

Despite high demand, the supply of new residential lots and dwellings in Newman was very limited for several years. Only 75 lots were granted final approval in the five years to December 2011. In 2011, however, substantial tracts of land were deconstrained, enabling applications to be lodged to create 1,037 residential lots in Newman during 2011 and 2012. To date, only a fraction of these (proposed) lots have actually had dwellings constructed on them. As at March 2014 there was a stock of 665 conditionally approved residential lots in Newman and 237 vacant lots with water services.⁵⁵

Table 24: Residential zoned land supply – Tom Price

Zone	Developed (ha)	Undeveloped (ha)	Total (ha)
Residential R5	1.7	0.0	1.7
Residential R20	101.4	0.9	102.3
Residential R30	11.0	11.7	22.7
Residential R50	2.4	0.0	2.4
Special use	5.0	19.1	24.1
Residential (blank)	0.4	0.0	0.4
Total	121.9	31.7	153.6

Source: Internal databases, Department of Planning (2014)

Note: Lots are considered developed once they are serviced and subdivided, irrespective of whether there is any built form on the lot. Numbers may not sum due to rounding.

⁵⁵ It is noted that not all residential lots with water services will be made available for dwelling construction. The figure of 237 refers to all vacant land used for a residential purpose with a water service available. This includes both land rated for water service charges and non-rated land such as crown land, land owned by local and state government and charities. Also includes newly developed lots with an up to 12 month exemption from service charges.

As shown in Table 19, there were 1,826 private dwellings in Newman at the 2011 Census. The stock of vacant lots and conditionally approved lots in Newman therefore has the potential to increase the housing stock in the town by roughly 50 per cent – even if none of the proposed lots were used for grouped or multiple dwellings.

Comparatively few dwellings have been constructed in Newman relative to the large numbers of residential lots that have been proposed for the town. There has, however, been a substantial number of dwelling approvals in the town in the past year, although it is difficult to say how many of these approvals have progressed to construction.

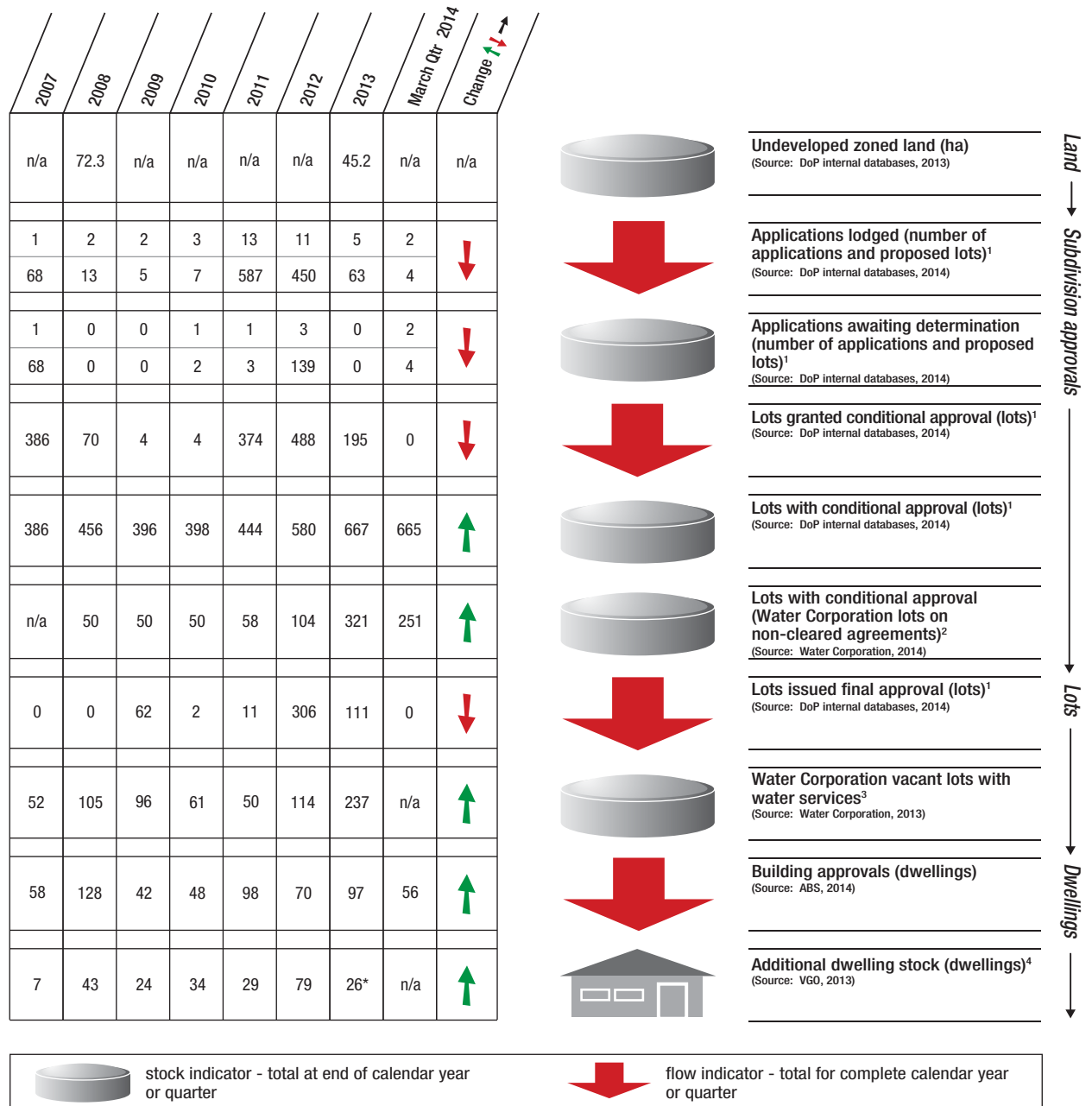
Tom Price

As at December 2013, there was a limited stock of residential lots in Tom Price – only 22 vacant strata lots were conditionally approved for subdivision. During the time series shown in Figure 41, few lots have progressed to final approval and fewer still dwellings have been completed.

The limited volume of residential land and dwellings that have been developed in Tom Price over the past decade has not been reflective of the apparent demand in the town (based on property prices). Private sector developers have – for the most part – not engaged in the development of residential land in Tom Price. This may be due to the shortage of suitable land and challenging construction conditions, or to doubts over longer-term demand for additional housing, which has been diminished by the shift to a FIFO method of workforce provision (although this has limited implications for smaller service providers).

As the Water Corporation is not the licensed water provider in Tom Price there are no statistics available for vacant lots with water services or conditionally approved lots on non-cleared agreements.

Figure 40: Land supply pipeline – Newman



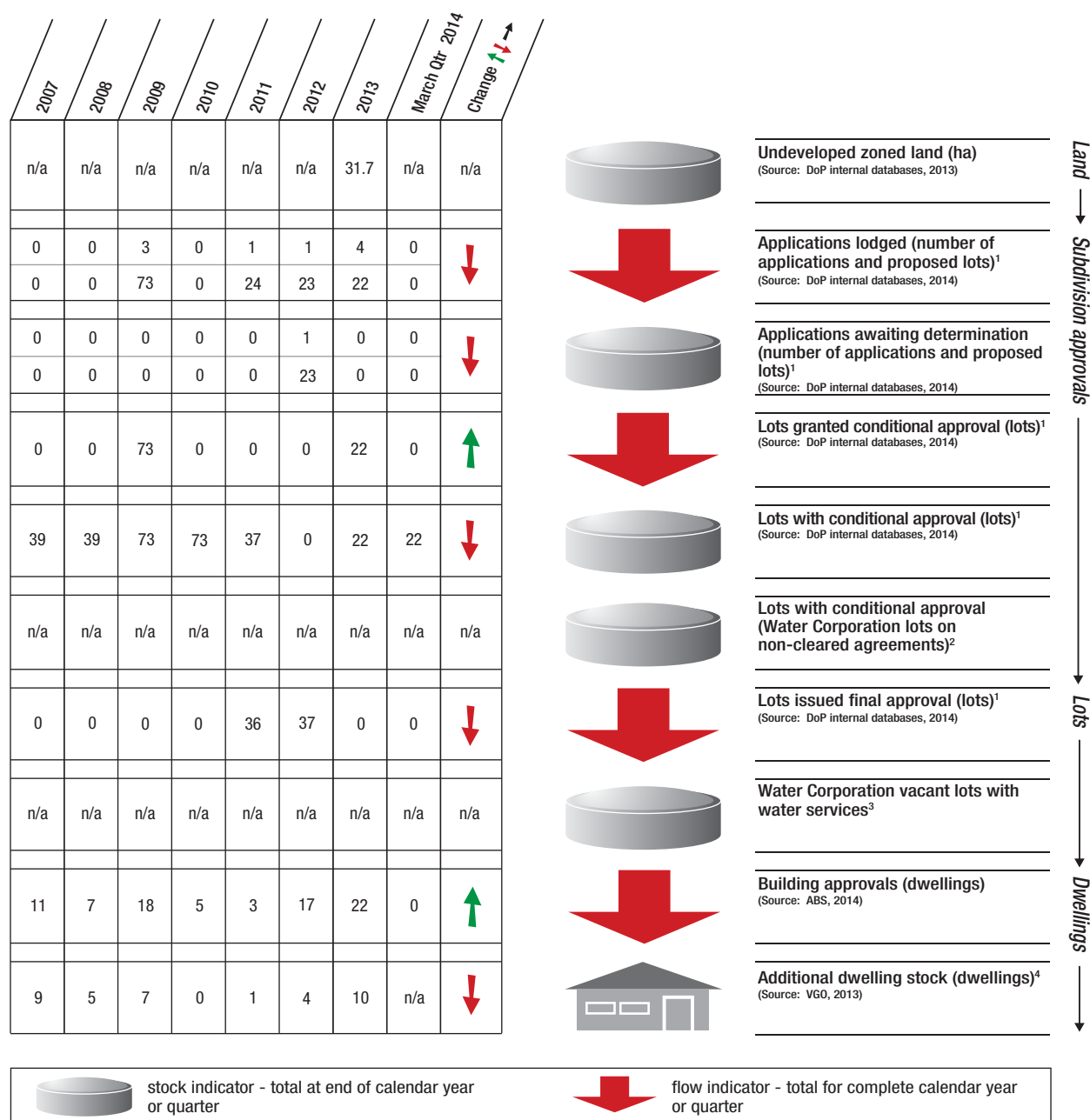
¹ Includes additional residential lots only. (i.e. excludes purposes such as amalgamation, boundary realignment or road reserve).

² Refers to conditionally approved lots where a servicing agreement (agreement to construct) has been signed between the Water Corporation and the developer. These are termed lots on non-cleared agreements.

³ Water Corporation's vacant lots with water services. Refers to all vacant land used for a residential purpose with a water service available. This includes both land rated for water service charges and non-rated land such as crown land, land owned by local and state government and charities. Also includes newly developed lots with an up to 12 month exemption from service charges. Annual data as at June each year.

⁴ Data is as at October 2013.

Figure 41: Land supply pipeline – Tom Price



¹ Includes additional residential lots only. (i.e. excludes purposes such as amalgamation, boundary realignment or road reserve).

² No available data as the Water Corporation is not the licensed water provider in Tom Price.

³ No available data as the Water Corporation is not the licensed water provider in Tom Price.

⁴ Data is as at October 2013.

Residential land release summary

Newman

- Most of the area likely to be developed in the short-term is located just east of the town centre in the area between Newman and Great Northern Highway. The prominent exception is stage two of Kurra Estate, which is located at the northern edge of Newman (NEW26).
- Long-term land release planning for Newman has been reoriented in the last 12 months. Previous documents such as the *Newman Townsite Growth Strategy* depicted long-term future growth scenarios with urban expansion concentrated in a northward direction from the existing town. Issues related to mining activity have since complicated development, resulting in expansion plans shifting to the south of the townsite.
- Sites NEW18, NEW19 and NEW20 are still shown in this land release plan but are likely to be delayed or abandoned due to mining buffer issues. Site NEW22 is the site of the Kurra Village transient workers accommodation camp. Previous plans to develop the site have been put on hold indefinitely and it is probable that the site will continue to be used for TWA for the foreseeable future. Assuming none of these sites proceed to development, the long-term 'development front' will shift to the south of the town.
- NEW 39 is the largest site identified in this plan, covering 129 hectares. The entire site is shown as residential in Map 6; however, given the size and anticipated timing of development for the site, it is likely that portions of the site will also need to be allocated for community infrastructure such as education or recreation facilities.
- The areas shown as urban consolidation on Map 3 illustrate the geographical extent of the Shire of East Pilbara's *Local Planning Policy No. 8 – Residential Development Policy*, within which multiple dwellings may be considered for development. It is noted, however, that infill development is not confined to these areas; under the R15/40 R-Code split most of the town has infill potential. More detailed information on individual projects in the Newman land release plan are shown in Table 45, Map 3 and Map 6.

Tom Price

There is very little residential land available for development in Tom Price that does not require substantial works. Land in the pipeline can be broadly summarised into three categories:

1. *Small sites* identified under the 'lazy lands' scheme that are generally not heavily constrained and can be progressed to a build-ready stage in the short-term.
2. *Larger parcels of land* (TP06, TP09, TP13 - Map 17) with the potential to yield a relatively large number of lots. However, a greater degree of work is required with regard to planning and infrastructure provision before these sites can be build-ready.
3. *Sites with long-term development potential* (TP07 & TP08 - Map 17) have been identified as potential future growth areas. However, little work has been undertaken to assess the level to which they are constrained and further assessment of the sites is required to determine whether development would be cost-effective, even in the long-term.

More detailed information on the individual projects in the Tom Price land release plan are shown in Table 46, Map 17 and Map 20.

Adequacy of supply

Population growth is the fundamental driver of underlying demand for residential land and housing. As discussed in previous chapters, it is difficult to accurately forecast population growth (and consequent land demand) in mining towns due to the complicated economic drivers at play.

Newman

For much of the past decade, demand for residential land and dwellings in Newman has been extremely high; however, for several years few additional dwellings were developed, causing a pronounced supply shortfall. The land supply 'crisis' in Newman continued for several years as Government and developers sought to deconstrain land in the town to enable sufficient residential development to meet demand.

More recently there has been a pronounced shift in the land supply/demand dynamics of Newman. From early 2013, residential lots, and then dwellings, began (albeit after some delay) reaching the market in substantial numbers, re-opening supply and alleviating the shortage of dwellings in the town.

About this time, several major resource sector projects near Newman were nearing completion, preparing to transition to an operational (and significantly smaller) workforce. The consequent reduction in demand for housing, coupled with the additional dwellings being constructed in the town triggered an eight-fold increase in the number of residential properties advertised for rent in Newman.

In addition to the vacant rental properties in Newman, there were (as at March 2014) 80 dwellings for sale and numerous dwellings under construction. Still more dwellings and residential lots are in the development 'pipeline' in Newman; 251 vacant residential lots have water connections and 665 proposed residential lots have conditional subdivision approval.

Although population growth appears to have moderated in Newman, future upturns in demand for resources are likely to drive population growth and demand for housing in the future. The following section measures the adequacy of identified future land supply in Newman against the Pilbara Cities population targets.

As variations in future rates of population growth are unknown, a linear rate of growth is assumed in this assessment to estimate the average number of additional dwellings required to accommodate new residents. An average dwelling occupancy rate of 2.9 persons per dwelling is assumed, which was the Pilbara average at the 2011 Census. The Pilbara Cities population growth scenario for Newman and the Pilbara Industry's Community Council's forecast for Tom Price are used in conjunction with the respective land release plans to assess the adequacy of demand.

It should also be noted that the estimated additional dwelling requirements for Newman and Tom Price in the following scenarios assume an occupancy rate of 95 per cent.

Land to supply the Pilbara Cities population targets

The land release plan in this document shows sufficient sites to facilitate population growth to a population of 15,000 and beyond. However, most of the remaining undeveloped land is heavily constrained. To achieve the Pilbara Cities population target of 15,000 by 2035, a flow of development-ready land and lots must be maintained to avoid supply-side delays to future population growth. The growth scenario below does not incorporate land already developed (i.e. vacant serviced lots).

Short-term (five-year time frame)

Estimated additional dwellings required = 737

Identified potential dwellings = 948

Short-term demand will be met by development at Newman Estate, East Newman and the next stage of Kurra Estate. Delays to the development of Newman Estate present the most significant risk to meeting short-term demand. Although the site is partially developed, it has not been progressed to a build-ready stage due to complications regarding drainage and access to finance. Approximately 310 dwellings (or two years supply under a Pilbara Cities growth scenario) are tied up in the site. If lots from East Newman do not begin reaching the market in the next two to three years there is likely to be insufficient greenfield residential land to maintain growth of the sort required to meet Pilbara Cities population targets.

Medium-term (five-ten year time frame)

Estimated additional dwellings required = 737

Identified potential dwellings = 1,135

Keeping pace with targeted population growth in the medium-term is contingent on opening up a southern development 'front' in addition to continued development in the north of the town. This will require substantial

investment in infrastructure provision and extensive planning. There are two sites (NEW03 and NEW25 - Map 3) that are anticipated to yield more than 500 dwellings between them. The area will also require native title clearance and NEW25 will require rezoning. Planning for native title and infrastructure provision should commence in the short-term to allow these sites to deliver build-ready lots within a five to 10-year time frame.

Long-term (10+ year time frame)

Estimated additional dwellings required = 1,474

Identified potential dwellings = 1,440

Long-term, supplying sufficient residential land to achieve a resident population of 15,000 will require the development of the site NEW39 (Map 3). Plans to develop the site are in their infancy and consequently there are numerous issues to be resolved before development can commence.

Tom Price

Like Newman, Tom Price experienced a marked increase in demand for land and housing during the past decade. Large numbers of people based themselves in Tom Price during that time, finding work in the various resource sector expansion projects underway in the area. Throughout this period, very few dwellings were available to buy or rent and tourist facilities became heavily patronised by people travelling to the town for work.

The influx of workers, coupled with the limited stock of available dwellings caused a sharp increase in the cost of housing and rental accommodation, which are still substantially higher than the Perth metropolitan area.

The construction phases of most of the projects driving growth are now completed. As these projects transition to an operational phase, much smaller workforces are required. Many of these workers are/will be housed in TWA camps outside the town, which has eased demand for housing.

Unlike Newman, the increase in demand did not generate a large scale increase in the supply of residential land in Tom Price. Despite the high property prices, private sector developers generated very little new housing in the town, with the main residential developments being undertaken by RTIO and the Shire of Ashburton. Consequently, housing availability remains tight, despite the easing in demand.

Land to supply the Pilbara Industry's Community Council population projections

The resident population of Tom Price has been relatively stable for some time. The 2012 Pilbara Industry's Community Council's population forecasts do not go in to detail on Tom Price; however, the Council has stated that its 2010 long-term forecast (to 2020) is comparable with current estimates. These projections estimate that Tom Price's population will reach approximately 4,750 residents in 2020.

Growth at this rate would represent a significant increase in population growth relative to previous years. Most forecasts for Tom Price's population growth suggest the resident population will 'level off' at some point, which appears to be a realistic possibility, given the increasing prevalence of fly in fly out (FIFO) work practices. The Shire of Ashburton has also indicated that urban growth in Paraburdoo, rather than Tom Price is a priority in the medium-term.

This scenario assumes that growth at the rate forecast by the PICC will be achieved to 2020, but there will be no substantial increase in Tom Price's population past 4,754 within a 20 year timeframe.

There is almost no 'residential land bank' to accommodate short-term population growth in Tom Price. The Pilbara Industry's Community Council's population projections do not account for supply side constraint to population growth and without additional residential land in the town being made available; reaching the population suggested by the Council is unlikely.

Short-term (five-year time frame)

Estimated additional dwellings required = 310

Identified potential dwellings = 94

There is insufficient residential land available to support population growth at a rate forecast by the Pilbara Industry's Community Council. The site at TP01 is under

construction and will yield 22 dwellings in the short-term. Other sites likely to be build-ready in the short-term are 'lazy lands' sites adjacent to drainage systems, none of which will be able to yield substantial numbers of dwellings without large amounts of fill or disturbing the town's drainage network. These sites are currently zoned for 'parks, recreation and drainage' and require local planning scheme amendments to proceed.

The limited stock of residential land available for development in Tom Price in the short-term means that some projects identified as being suitable for development in the medium-term may need to be expedited if growth of the sort forecast by the Pilbara Industry's Community Council is to be achieved. Site TP09 for example (shown as medium-term) is in the process of being relinquished to the Shire of Ashburton and may be developed sooner than first thought.

Medium-term (five-to-10 year time frame)

Estimated additional dwellings required = 325

Identified potential dwellings = 278

The key site with regard to meeting demand of the sort forecast by the Pilbara Industry's Community Council in the medium-term (and realistically also short-term) is site TP06 (Map 17) at the northern end of Area W. The site has been flagged for development in earlier versions of the Shire of Ashburton planning scheme (Shire of West Pilbara Town Planning Scheme No. 3) and has the potential to yield an estimated 200 dwellings. Developing the site will require extensive planning, rezoning and infrastructure provision to proceed. Given the significance of the site with regard to Tom Price's prospects of urban growth, it may be advisable to de-constrain the site to expedite the development of lots and dwellings.

Long-term (10+ year time frame)

Estimated additional dwellings required = 0 (based on the assumption that Tom Price's population does not exceed 4,750 by a substantial margin after 2020.)

Identified potential dwellings = 924 (including the heavily constrained TP07 and TP08 sites which are shown as having uncertain development timeframes on Map 17).

There are two sites identified as potentially being build-ready in an uncertain timeframe (T07 and T08 – see map 17), both of which are heavily constrained. Both sites were identified as potential growth areas in the Pilbara Planning and Infrastructure Framework; however, little detailed planning has been undertaken on either site and conditions may be such that development is prohibitively problematic and expensive. If this proves to be the case, alternative areas will need to be identified and de-constrained to meet the level of underlying demand created by population growth at the rate forecast by the PICC. The area to the north of site (TP06 - Map 17) between the railway line and Bingarn Road may be a suitable alternative assuming demand for housing is sustained and alternative areas prove to be unsuitable for development.

8.3 Social housing and government regional officer housing

Newman

The existing supply of social housing managed by the Department of Housing in Newman is outlined in Table 25. In 2013/14, the Department completed construction of eight additional social housing dwellings. A further four dwellings were constructed for sale under the Affordable Housing Sale Program. There are an additional 10 key worker housing units at the final stages of construction. A further nine key worker housing units are planned to commence within the next four years. An additional 40-dwelling development is also being investigated on a parcel of unallocated Crown land (lot 505) at the corner McLennan and Daniels drives) and has progressed through the preparation of a business case for financial approval.

The Department is not planning to construct or spot-purchase social housing properties in 2014/15. The proposed social housing programs beyond 2014/15 have not been established in detail and will depend on available funding and priorities.

As at 30 June 2014, the waiting list for social housing in Newman is estimated at 50 dwellings. Half of the demand is for one bedroom dwellings (25), with a further requirement for two, three, four and five bedroom dwellings.

In addition to the social housing and government regional officer housing (GROH) accommodation 10 rental units for service workers have recently been made available in Newman. Opened in July 2014 and funded through the Royalties for Regions Program, the project is designed to provide affordable housing for workers who play a key role in delivering essential community services.

The existing stock of GROH is outlined in Table 26. At present, all stock is owned by the Department. In 2014/15, construction will commence on a further six GROH dwellings. If future demand substantially increases beyond these levels, housing under this initiative will be leased through the private market.

The Department of Housing has stated that, as at 30 June 2014, the waiting list for GROH in Newman is estimated at five dwellings.

Tom Price

The existing supply of social housing managed by the Department of Housing in Tom Price is outlined in Table 27. In 2013/14, the Department of Housing constructed one additional social housing dwelling. No further dwellings have been planned for construction in 2014/15. The proposed building and spot-purchase programs for social housing beyond 2014/15 have not yet been established in detail and will depend on priorities and the availability of funding. At present, there are no projects in the design phase or under construction for social housing.

The construction of an additional 28 key worker dwellings after 2015/16 is also being investigated, but is subject to funding and Cabinet approval.

The Department of Housing has been offered three vacant land parcels through the Pilbara Development Commission's Lazy Lands project for infill residential development. They include sites at:

- Jabbarup Place (TP16 – Map17) 6,199 square metres (Lazy lands ref. T7);
- Killawarra Drive (TP11 – Map 17) 1.0591 hectares (Lazy Lands ref. T9); and
- Ceron Street (part TP13 – Map 17) 3,655 square metres (Lazy Lands ref. T18)

The Department of Housing is progressing a rezoning application for these lots prior to acquisition. The capacity of existing servicing infrastructure represents a necessary consideration for infill residential development.

As at 30 June 2014, the waiting list for social housing in Tom Price is estimated at nine dwellings, with a requirement for one, two and three bedroom dwellings. The Department of Housing's existing social housing stock is outlined in Table 27.

As at 30 June 2014, the waiting list for GROH in Tom Price is estimated at five dwellings. The Department of Housing's existing GROH housing stock is outlined in Table 28. In 2013/14, three additional GROH dwellings were constructed. In 2014/15 construction will commence on an additional five GROH dwellings.

Table 25: Social housing supply – Department of Housing – Newman

Household type	No. of bedrooms	Occupied (current)	Total owned stock (including unoccupied)
Pensioner houses	1	3	3
Singles houses	1	8	9
Family houses	2	14	19
Family houses	3	32	37
Family houses	4	5	6
Total		62	74

Source: Department of Housing, unpublished data, as at 30 June 2014

Table 26: GROH housing supply – Department of Housing – Newman

Household type	No. of bedrooms	Occupied (current)	Total owned stock (including unoccupied)
Singles houses owned	1	0	5
Family houses owned	2	21	37
Family houses owned	3	64	76
Family houses owned	4	23	25
Total		108	143

Source: Department of Housing, unpublished data, as at 30 June 2014

Table 27: Social housing supply – Department of Housing – Tom Price

Household type	No. of bedrooms	Occupied (current)	Total owned stock (including unoccupied)
Family houses	3	18	20

Source: Department of Housing, unpublished data, as at 30 June 2014

Table 28: GROH housing supply – Department of Housing – Tom Price

Household type	No. of bedrooms	Occupied (current)	Total owned stock (including unoccupied)
Family houses owned	2	11	11
Family houses owned	3	40	51
Family houses owned	4	16	17
Family houses owned	5	2	2
Total		69	81

Source: Department of Housing, unpublished data, as at 30 June 2014

8.4 Basic raw materials

The expansion of Newman and Tom Price will consume large quantities of basic raw materials (BRM). These include sand, clay, hard rock, limestone, metallurgical limestone, gravel and other construction and road building materials. For example, several proposed industry and residential sites will need large quantities of fill to raise them above flood levels. To keep building costs down it is essential that supplies are identified as close to the towns as possible.

The identification of BRM sources and the transportation of supplies to construction sites has become a critical issue to be addressed in the Pilbara. The Department of Mines and Petroleum has indicated that a program to determine the availability of supplies and consider the cost effectiveness of using alternative sources where supplies are limited should be undertaken to improve efficiencies moving forward.

On private land, basic raw material extraction is administered under the *Planning and Development Act 2005* by the Western Australian Planning Commission (WAPC). In most areas, the WAPC has delegated to local government its authority for planning approval for BRM extraction. BRM production on Crown land however, is administered under the *Mining Act 1978*, and is therefore recorded by the Department of Mines and Petroleum. These comprise 35 to 40 per cent of all basic raw material production sites.

Newman/East Pilbara

Based on information collected by the Department of Mines and Petroleum, as at 2011 there were three operational (sand, rock and aggregate) quarries within 50 kilometres of Newman covered by the *Mining Act 1978*. There are two sand deposits yet to be developed.

To address the supply requirements of Newman's planned expansion, the Shire of East Pilbara is in the early planning stages of creating a new quarry suitable for supplying road pavement and general fill materials. The proposed quarry site is approximately 3.5 kilometres north of Newman and is sized to meet the requirements of the town site expansion in the short-term. In addition, a gravel quarry exists approximately two kilometres

north of the town, which is also used for road construction. This quarry is located on a BHPBIO mining lease and is strictly used by BHPBIO and the Shire of East Pilbara.

Newman seems well-placed in regard to the planning and supply of basic raw materials in the short-term. It is noted however, that the Newman Town Site Growth Plan does identify that the expansion of the townsite will require fill materials for bulk earthworks and pavements to be sourced from elsewhere. This is, of course, unless adequate new supplies can be identified and brought into production from nearby and/or alternative fill materials sourced.

Tom Price

There is currently one operational (extracting sand) and one proposed BRM quarry in Tom Price, both covered by the *Mining Act 1978*. While a number of other sites have previously been operational, all now appear to be in care and maintenance or shut. As a result, some basic raw materials are now being sourced from Newman, 276 kilometres by road from Tom Price, which substantially increases the cost of these materials.

Most proposed residential and commercial developments within Tom Price will require substantial amounts of fill due to drainage issues in the town. There has also been a marked increase in basic raw material requirements due to the expansion of mining operations in the area during the past decade. However, demand for resource sector purposes is expected to decline as projects move into an operational phase.

8.5 Construction costs

Construction costs in the Pilbara are substantially higher than elsewhere in the country. In the Regional Development Australia Document *The Cost of Doing Business in the Pilbara* it was stated that construction costs in Newman were typically approximately 65 per cent higher than in the Perth metropolitan area.

There are two key reasons that dwelling construction costs are high in Newman and Tom Price relative to the metropolitan area:

1. *Cost of labour* – finding and retaining a skilled construction workforce for residential projects in the Pilbara is difficult as employers must compete with the lucrative mining industry for workers. In addition to the actual wage demands

of employees, builders generally need to bring workers to the town. The provision of employee transport and accommodation represents a considerable additional expense to builders which is passed on to the customer.

2. *Transportation of building materials to the Pilbara* – adds significant cost to residential construction with most of the materials required for construction trucked from the Perth metropolitan area; approximately 1,200 kilometres to the south.

As a consequence of these two cost factors, building techniques vary significantly from the metropolitan area. Very few buildings constructed in Newman or Tom Price during the past five years are made of brick, which is the material of choice in most new housing estates in the Perth metropolitan area.

Many new dwellings in the Pilbara (particularly in Newman) are prefabricated elsewhere (usually the metropolitan area) and transported to the town by road. This method minimises the amount of in situ labour required to deliver the dwelling. Using this method, however, transportation costs are substantially higher due to the logistics and safety requirements involved with transporting oversize loads long distances.

The other main method of construction in Newman and Tom Price is tilt up construction using steel (or timber) frames on concrete slabs. Using this method, steel frames can be pre-fabricated elsewhere and erected in situ, being fixed to a pre-laid concrete slab. Often the frames are already clad (usually with colourbond steel) to further reduce on-site construction times and labour requirements. This method greatly reduces the bulk of truck loads,

reducing transport costs (compared to transportable homes) and requires much less on-site labour than more conventional construction methods.

8.6 Transient workforce accommodation

The stock of transient workforce accommodation in the Pilbara has increased dramatically over the past decade. A 2012 study coordinated by the Pilbara Development Commission identified 50,388 transient workforce accommodation beds in the region, as at 2011. At that time (based on 2011 Census data) the estimated resident population of the Pilbara was 62,736. A further 23,281 beds were identified in the study as being added to the stock of transient workforce accommodation to 2015. The stock of existing and proposed beds identified by the study is shown in Table 29.

Newman/Shire of East Pilbara

Under the *Town Planning Scheme No. 4*, the Shire of East Pilbara does not have a specific use class for transient workforce accommodation. The closest use class, Single Persons Quarters, may be developed (pending advertising) under the zones: Residential and Town Centre. The Shire of East Pilbara, gazetted Amendment No. 8 in 2008 to rezone 2.2 hectares of 'rural' land to 'special use' so that it may, in part, be used for single persons quarters.

A list of individual transient workforce accommodation sites in the Newman area is shown in Table 30.

Table 29: Transient workforce accommodation beds in the Pilbara region

Pilbara local government area	Current		Potential		Total		
	Town	Remote	Town	Remote	Town	Remote	Total
Ashburton	2,848	9,305	287	7,300	3,135	16,605	19,740
East Pilbara	2,209	18,203	955	1,600	3,164	19,803	22,967
Port Hedland	3,885	900	6,613	0	10,498	900	11,398
Roebourne	9,178	3,860	6,436	90	15,614	3,950	19,564
Total	18,120	32,268	14,291	8,990	32,411	41,258	73,669

Source: Pilbara Development Commission (2012), *Transient Worker Accommodation in the Pilbara - Final Draft*

Table 30: Selected transient workforce accommodation camps within approximately 120 kilometres of Newman

Newman	Number of beds (2011)	Proposed growth 2012-2015	Distance from Newman (approx. km)
Christmas Creek	1,300		120
Cloudbreak	1,200		130
Caramulla South DSO Project	n/a		70
Eco Villages	96		-
Hickman DSO Project	n/a		40
Hope Downs 1 (north)	1,060		80
Hope Downs 1 (south)	538		80
Hope Downs 4	0	1,100	30
Jigalong DSO Project	45		90
Jocelyn	60		100
Kalgan's Rest	516		-
Marillana Village	652		80
New REG	0	500	100
Newman Caravan Park	450		-
Newman Race course Camp	50		-
Nicholas Downs	48		120
Packsaddle	1,400		100
Phil's Creek	126		90
Roy Hill Exploration Camp	304		80
South Flank	80		80
Spinifex	1,589		100
Warrawandu (Jimblebar)	1,140		20
West Angelas	870		110
Whaleback Village	178		-

Source: Pilbara Development Commission (2012), *Transient Worker Accommodation in the Pilbara - Final Draft*

Tom Price/Shire of Ashburton

Transient workforce accommodation is a discretionary use under the following *Shire of Ashburton Town Planning Scheme No. 7* zones: Residential, Urban Development, Tourism, Industrial and Mixed Business Development, Rural and Rural Living. Transient workforce accommodation is also an incidental use in the following zones: Mixed Business, Community, Education and Airport.

The Shire of Ashburton has initiated Amendment No. 14 to the Local Planning Scheme to allow transient workforce accommodation as a discretionary use in the Commercial and Civic zone. The intent of the amendment is to encourage transient workforce accommodation development of a high quality for the benefit of occupiers, as well as the broader community. It is proposed that future transient workforce accommodation style developments be of a permanent nature (i.e. motel or resort-style development), with a limitation on the overall proportion of transient workforce accommodation within a development. A draft local planning policy defining design criteria has also been prepared and will be advertised concurrently with Amendment No. 14.

The Shire of Ashburton is also guided by its *Local Planning Policy 13 – Transient Workforce Accommodation*. This policy defines two types of transient workforce accommodation camps (Type A – within or close to existing urban centres and Type B – more remote and independent from urban centres) and outlines a number of development standards and requirements. The Shire of Ashburton is in the final stages of amending this policy so that:

- transient workforce camps housing construction (short-term) workers may be placed close to specific development for a limited length of time, whilst operational transient workforce accommodation camps should as far as practical, be placed within an existing town to incorporate the workforce with the community and add to the vibrancy and economic sustainability of the towns of Tom Price, Onslow, Paraburdoo and Pannawonica;
- operational transient workforce accommodation within townsites be of a high quality for the benefit of the occupiers and the community; and
- with motel style development, Council may seek to limit the overall proportion of transient workforce accommodation within a development so that some tourist access may be available.

Table 31 lists individual transient workforce accommodation sites in the Tom Price area.

Table 31: Selected transient workforce accommodation camps within approximately 120km of Newman

Tom Price area	Number of beds (2011)	Proposed growth 2012-2015	Distance from Tom Price (approx. km)
Brockman 2/Nammuldi	386		80
Brockman 4	1,200		70
Cowra	300		60
Kirri Kulli (Paraburdoo)	118		70
Marandoo FIFO	244		50
Marandoo mine site	863		50
Rocklea Palms (Paraburdoo)	433	84	70
Silvergrass	90		70
Solomon's Camp	500		60
Solomon's Expansion	0	2,000	50
Tom Price Camp	400		0
Wandoo Housing Project Village (Paraburdoo)	141		70
Windawarri	250		0

Source: Pilbara Development Commission (2012), *Transient Worker Accommodation in the Pilbara - Final Draft*

Adequacy of supply

The transition to a FIFO workforce model has created unprecedented demand for transient workforce accommodation throughout the Pilbara. Much of this demand is met by project specific camps such as the Marandoo mine site camp near Tom Price. There is, however, a large number of contractors working in the region who do not have access to camp beds who must find alternative accommodation.

It can be argued that there is currently a substantial undersupply of transient workforce accommodation, given the large numbers of transient workers staying in caravan parks and other short-stay accommodation. The extent to which workers occupy tourist accommodation is perhaps one of the clearest indicators of demand for transient workforce accommodation exceeding supply. However, such facilities have increased capacity specifically for the purpose of accommodating transient workers in what generally appear to be mutually beneficial arrangements.

Recently, as major resource sector projects in the area have transitioned to operations, the demand for TWA has diminished significantly in both Newman and Tom Price. Consequently the strain on existing stocks of TWA (and tourism accommodation) has eased considerably.

Newman

High levels of demand have prompted the development of substantial new stocks of TWA in Newman over the past few years. The town's two caravan parks are operating at or near capacity, primarily due to the large numbers of transient workers as are the two hotels. Newman's two pubs have also significantly enlarged their accommodation capacity to take in transient workers. The Red Sands Tavern now has a number of caravan/donga style accommodation units that cater for transient workers and the Newman Hotel has approval to develop 200 accommodation units on-site (see NEW05 - Map 6).

There is approval for a new transient workforce accommodation camp to the north of town (see NEW35 - Map 6) to accommodate construction workers on key residential projects and the Newman Town Centre Revitalisation Project. The site has been obtained by the Shire of East Pilbara on a five-year lease as it is located on land where mining tenements would be likely to prevent development of permanent structures.

It also appears as though dwelling construction will take up some of the slack in regard to transient workforce accommodation housing. Little of the take-up of new dwellings has been from owner-occupiers, suggesting that many of the new owners will rent the properties to transient workers and/or their families.

Tom Price

The demand for workers accommodation in Tom Price is not as immediately evident as it is in Newman. The caravan park does not take FIFO workers, although the long-stay section is permanently full of service workers. However, the Windawarri Lodge and Tom Price Hotel both operate at or near capacity (largely due to transient workers), suggesting that demand for transient workforce accommodation is high, relative to the number of units available.

Like Newman, there is significant evidence to suggest that the supply of transient workforce accommodation is struggling to match demand. Department of Planning analysis indicates that many of the residential properties sold since the beginning of 2010 have not been purchased by owner-occupiers, suggesting that they will be rented to workers and/or their families.

There is a developing trend in Tom Price for homeowners to use residential property as transient workforce accommodation. In September 2013 the Shire of Ashburton approved *Local Planning Policy 18 Conversion of Dwellings and Outbuildings to Residential Buildings*. The purpose of the policy is to ensure a suitable standard is maintained as houses and outbuildings are converted to be rented as transient workforce accommodation.

8.7 Aged persons housing

As discussed in Section 3 of this report, few Newman or Tom Price residents are of retirement age. There is a distinct tendency in both towns for residents to move to more temperate climates once they retire.

Newman

As at August 2013, there was no designated aged persons' housing in Newman. The Pilbara Development Commission's 2011 publication Situational Analysis of Aged Care in the Pilbara stated that, if the Pilbara Cities target population of 15,000 was achieved, Newman would need to "increase current aged care options of 0 to 100+ beds."

Tom Price

As at July 2013, there were no designated aged persons housing in Tom Price. There has been some interest from the Gumala Aboriginal organisation in developing six to ten units for community elders; however, this project currently appears to have lost momentum.

Adequacy of supply

Although demand for aged persons housing in Newman and Tom Price is very limited due to the low proportion of elderly residents, the lack of any facility potentially provides a barrier for those who wish to stay in the community through their later years. If Newman and Tom Price are to develop more 'normal' population profiles, this issue will need to be addressed in the short-term.

8.8 Industrial

Industrial zoned land supply

Newman

As the largest inland town in the Pilbara, Newman acts as a service hub for mining operations that span a vast area and there are significant opportunities for related service industries to position themselves in the town. LandCorp has developed six hectares of light industrial land and is in the process of developing a further 10.6 hectares approximately 1.5 kilometres south of the town.⁵⁶

There are two parcels of land zoned specifically for industrial purposes in Newman, each located approximately 1.5 kilometres from the town centre to the south and south east of the town. As at March 2014, there was a total of 70.8 hectares of industrial land in Newman, approximately 82 per cent of which was developed (Table 32). Light industrial developments may also be permitted on rural zoned land at the discretion of the local government.

The remaining undeveloped industrial zoned land in the Newman Light Industrial Estate is constrained to a degree, by topography and will require significant ground works to enable development.

The Shire of East Pilbara permits one caretaker's dwelling on each industrial lot in the light industrial estate, catering for a maximum of one family per dwelling. A survey of the site indicated that there is a strong take-up of this option, which is perhaps not surprising given the high rental costs in the town.

Table 32: Industrial zoned land supply – Newman

Zone	Developed (ha)	Undeveloped (ha)	Total (ha)
Industrial	58.5	12.3	70.8

Source: Internal databases, Department of Planning (2014)

Note: Lots are considered developed once they are serviced and subdivided, irrespective of whether there is any built form on the lot.
Numbers may not sum due to rounding.

⁵⁶ LandCorp (2013) Website: <http://www.LandCorp.com.au/>

At present there is no reticulated sewer in the estate and although this is not a significant issue at this stage it could potentially become relevant depending on the take-up rate of the caretaker's dwelling option. It also has an impact on the lot density of future subdivision in the estate as septic tanks need to be well dispersed in order to avoid groundwater contamination.

Tom Price

There are two main parcels of land zoned for industrial purposes under the local planning scheme. The parcel of land zoned 'industry' (known locally as the mine industrial area), located approximately 3.5 kilometres south of the town, is virtually fully consumed but not developed in a conventional sense (Table 33). The site is leased (subject to State Agreement) by Hamersley Iron (a subsidiary of Rio Tinto) and under the Agreement they are able to sublease land for industrial purposes related to the operations of Mt Tom Price mine.

Lots on the site are not formally subdivided, however, there are subleases between Hamersley Iron and the tenants. More than half of the site lots were covered by an old *Licence to Occupy* agreement which included holding over provisions giving the tenant the right to remain on the property on a periodic month to month basis (with 30 days' notice). Rio Tinto on behalf of Hamersley Iron is currently implementing new subleases for tenants, and as at October 2013, over half of the tenants had signed the new lease. The new sub-lease arrangement provides tenants with a three-year term.

Land zoned 'industrial and mixed use/business development' is located in the Boonderoo Road area of Tom Price, west of the town centre. This land is owned by the State and is currently entirely undeveloped. It is understood that the original intent was to develop a contiguous light industrial/commercial estate spanning from the petrol station on Mine Road in the south to the Boonderoo Road light industrial estate in the north (see TP19, Map 20). The land in between, however, is heavily constrained by drainage and topography and would therefore be very costly to develop. There are currently no plans to develop the site due to these constraints.

Recent subdivision activity

Newman

In recent years, Newman has experienced low levels of industrial subdivision activity. In the 10 years to December 2012, four applications to subdivide for industrial purposes were received by the WAPC.

Tom Price

Similarly to Newman, Tom Price has experienced very low levels of industrial subdivision activity in recent years. In the 10 years to December 2012, just one application was received by the WAPC to subdivide for industrial purposes. The application for eight lots was received in 2010 and was granted final approval in 2012.

Table 33: Industrial zoned land supply – Tom Price

Zone	Developed (ha)	Undeveloped (ha)	Total (ha)
Industry	37.1	15.1	52.3
Industrial and mixed use/business development	0	18.8	18.8
Mixed business	10.2	0	10.2
Total	47.3	33.9	81.2

Source: Internal databases, Department of Planning (2014)

Note: Lots are considered developed once they are serviced and subdivided, irrespective of whether there is any built form on the lot. Numbers may not sum due to rounding.

Existing vacant lots

Newman

A survey of Newman's two industrial areas indicated that the only vacant industrial lots remaining were in the light industrial area to the town's south. As at August 2013, there were 22 industrial lots developed where building construction was yet to commence.

Tom Price

As at August 2013 there were eight vacant lots on land zoned for industrial purposes. The vacant lots were located on land zoned for mixed business, on which light industry is permitted under the local planning scheme. The vacant lots were part of a nine-lot subdivision initiated by the Shire of Ashburton in 2012. All of the lots have been sold and are now in private ownership.

Industrial land release

Newman

The next stage of LandCorp's Newman Light Industrial Estate is de-constrained and zoned appropriately for development. It is anticipated that development will commence in the short-term (NEW33, Map 3). In the medium-term the site is likely to be expanded further south past Welsh Road and McBride Drive (NEW36, Map 3).

The Shire of East Pilbara has identified the investigation and development of an airport enterprise precinct as a key priority for economic development.⁵⁷ The Shire is currently developing a masterplan that will guide the development of a large new light industrial estate adjacent to Newman Airport.

Tom Price

There are currently no immediate plans to release further land for industrial purposes. The Shire is currently investigating options to facilitate future industrial land supply.

Adequacy of supply

Newman

There is a demonstrated appetite for industrial land in Newman. Stage two of the Newman Light Industrial Estate will likely provide sufficient supply of industrial land in the short-term. Given Newman's projected growth and consumption of industrial demand it appears likely that a substantial new stock of land will be required to meet long-term demand.

Should the proposed site at Newman Airport be deemed suitable for development it should be de-constrained to maintain supply once sites at the Newman Light Industrial Estate is consumed. The stock of land proposed for industrial purposes at the airport site will be adequate to meet long-term demand.

Tom Price

The stock of build-ready industrial land in Tom Price is inadequate to meet moderate short-term growth. The stock of available vacant lots has been purchased and is currently held by private companies.

Although the mine industrial site operates in an unconventional manner it currently accommodates all of Tom Price's heavy industry and much of the light industry. Ideally this site would be normalised (conventionally serviced and subdivided) to allow a greater degree of planning control to the Shire and/or State Government. Given the current lease arrangements, however, the normalisation of the site may well be a costly endeavour.

Rio Tinto has indicated that normalisation of Tom Price Mine Light Industrial Area would be problematic and is not recommended due to:

- Tenure issues: The lease is connected to the state agreement and cannot be easily modified. Tenants must be working for Rio Tinto Tom Price mining operations to occupy;
- Infrastructure: The current infrastructure, while fit for purposes, would require a significant upgrade;

⁵⁷ Shire of East Pilbara (2012) *Strategic Community Plan 2013-2022*

- Future growth: The site is at maximum size – it cannot expand without encroaching on the mine lease or encountering large topographic and drainage constraints; and
- Strategic concerns: Considering the costs required to normalise in its current form and the constraints to future growth, development of other possible sites closer to the townsite will potentially benefit the town more.

The stock of land zoned mixed business is sufficient to meet short-term demand, however, the land is constrained to such a degree that development in the short-term is prohibitively costly. The identification and de-constraining of new industrial land will be vital for future economic growth and diversity in Tom Price.

Given the substantial issues associated with further development at either of the existing sites, the identification of additional industrial land in Tom Price must be a priority to stimulate economic development.

8.9 Commercial/retail

Commercial/retail zoned land supply

Newman

As at April 2013 there were 24.2 hectares of 'mixed business' and 'town centre' zoned in Newman land where most commercial and retail uses were permitted under the local planning scheme. Almost all of the land zoned for commercial /retail purposes is considered developed as it has progressed through final subdivision approval (Table 34). A variety of commercial/retail land uses are also permitted on land zoned 'industry' at the discretion of the council.

Tom Price

Commercial/retail uses are concentrated in the Tom Price town centre; an area bounded by Stadium, Central and Willow Roads. There are currently 10 hectares zoned 'commercial and civic' with just half a hectare of this land currently undeveloped (Table 35). The *Pilbara Framework: Regional Profile* estimates that Tom Price has approximately 7,800 square metres of retail floor space, with a potential of 8,250 square metres by 2020.⁵⁸

Commercial/retail land release summary

Newman

The majority of the commercial/retail space in Newman is located in the town centre, to the north of Newman Drive. There are two large vacant lots between the existing shopping centre and Newman Drive that will be developed to expand the current retail precinct. The town centre area is currently the focus of a revitalisation project (stage one of which is complete), which will intensify commercial and retail development in the existing area and create a new mixed business precinct between East Newman and the town centre. The timeframe for development of the town centre commercial area is dependent on funding.

In addition to the scope for retail/commercial expansion in the town centre, there is also provision for significant new mixed business development along Newman Drive to the north-east of the town centre. Although much of this land is considered developed it is intended to be redeveloped to accommodate a mixed business precinct with a residential component.

⁵⁸ WAPC (2012) *Pilbara Planning and Infrastructure Framework*

Table 34: Commercial zoned land supply – Newman

Zone	Developed (ha)	Undeveloped (ha)	Total (ha)
Mixed business	5.5	1.6	7.0
Town centre	17.1	0.0	17.1
Total	22.6	1.6	24.2

Source: Internal databases, Department of Planning (2014)

Note: Lots are considered developed once they are serviced and subdivided, irrespective of whether there is any built form on the lot.
Numbers may not sum due to rounding.

Table 35: Commercial/retail zoned land supply – Tom Price

Zone	Developed (ha)	Undeveloped (ha)	Total (ha)
Commercial and civic	10.3	0.5	10.8
Total	10.3	0.5	10.8

Source: Internal databases, Department of Planning (2014)

Note: Lots are considered developed once they are serviced and subdivided, irrespective of whether there is any built form on the lot.
Numbers may not sum due to rounding.

Tom Price

There are no current plans to rezone any land in Tom Price to augment the stock of commercial land. Future plans for commercial/retail expansion in the town will be accommodated through the intensification of the town centre through the Tom Price Town Centre Revitalisation Plan. The time frame for stage two of this project is dependent on funding.

Adequacy of supply

Newman

The vacant area adjacent to Newman shopping centre (NEW08, Map 6) provides a suitable location for commercial expansion in the short-term. Between them, the two lots cover more than one hectare and could potentially double the commercial floor space of the town centre.

Longer term, the area zoned mixed business – to the east of the town centre – will provide an adequate supply of additional commercial land as residential land in East Newman, Newman Estate and further north is developed. Current indicators suggest that suitable provision has been made for expanded commercial/retail activity to meet medium/long-term demand in Newman.

Tom Price

The Tom Price town centre has capacity to provide adequate commercial/retail facilities to support projected population growth, however, development of the town centre could be progressed in the medium-term to ensure adequacy of supply and to enhance the amenity of the town centre.

8.10 Tourism

Accommodation/occupancy summary

Newman

Relative to its resident population, Newman has a high number of tourist accommodation spaces. There are six main tourist accommodation facilities in the town, all of which are heavily patronised by transient workers. A list of tourist accommodation venues in Newman is shown in Table 36.

There is limited ABS data available for occupancy rates in the Shire of East Pilbara due to the low number of hotels and motels. Discussions with tourist accommodation operators and Newman Visitor Centre management indicated that occupancy rates are high in Newman with the majority of spaces taken up by transient workers. Only a very small proportion of the accommodation options in Newman are designated as being specifically for tourists.

Tom Price

There are three tourist accommodation facilities in Tom Price: Windawarri Lodge, Tom Price Hotel/Motel and Tom Price Tourist Park (Table 37). Unlike the other tourist accommodation facilities in Tom Price (and Newman), the tourist park is owned by the local government and is designated as a non-FIFO facility.

Small area data from the ABS indicates there were five recorded hotels, motels and serviced apartments with five rooms or more in the Shire of Ashburton during the June quarter of 2013. During this period there were 676 rooms and 957 bed spaces available. Over the time series depicted in Figure 42, the number of establishments counted by the ABS declined from eight to five. It is likely that this has contributed to the slight downward trend in the number of rooms and beds available in the Shire.

The occupancy rate shown in Figure 42 increased in the five years to June 2013, although this may be partly attributable to the decline in total room numbers.

Tourism zoned land supply

Newman

There is a limited amount of land set aside specifically for tourism purposes within the Newman townsite. The Newman visitor centre and mining museum are located on the western edge of town on Newman Drive, which leads west to the Mount Whaleback mine site. No land in Newman is specifically zoned for tourism under the local planning scheme. The town's two caravan parks are both located on parcels of land zoned as special uses.

Tom Price

There are approximately 30.2 hectares of land zoned for tourism purposes in Tom Price, located in two parcels – one near the eastern edge of the town and another one three kilometres to the west (Table 38). The eastern site, Windawarri Lodge, is predominantly used for workers' accommodation, with just 30 of 450 rooms reserved for short-stay visitors. The western parcel is the location of Tom Price's caravan park – Tom Price Tourist Park.

The Shire's *Tourism Destination Development Strategy* recommends that the current lessee of the Tom Price Tourist Park be granted a new 21-year lease. Although there are substantial stocks of undeveloped land zoned for tourist purposes around the park, there are no recommendations in the strategy for large-scale expansion on the facility. The strategy does, however, discuss the possibility of a new short-term visitor facility closer to the town. The proposed site is adjacent to the Paraburdoo and Mine Site roads junction on land currently zoned 'parks recreation and drainage'.⁵⁹

It is also worthwhile to note that holiday accommodation, hotels and motels may be permitted within land zoned as 'commercial and civic' or 'rural' under the local planning scheme, at the discretion of the local government'.⁶⁰

⁵⁹ Shire of Ashburton (2011) *Tourism Destination Development Strategy*

⁶⁰ Shire of Ashburton: *Town Planning Scheme No. 7*

Table 36: Tourism accommodation summary – Newman

Site	Accommodation type	Capacity (approx.)
Mia Mia Hotel	Hotel/motel	180
Seasons Hotel	Hotel	190
Whaleback Village Caravan Park	Caravan park	500
Kalgan's Rest	Caravan park, dongas, camping site	1,000
Red Sands Tavern	Dongas	83
Newman Hotel/Motel	Hotel/motel	220
Newman Visitor Centre	Chalets	7

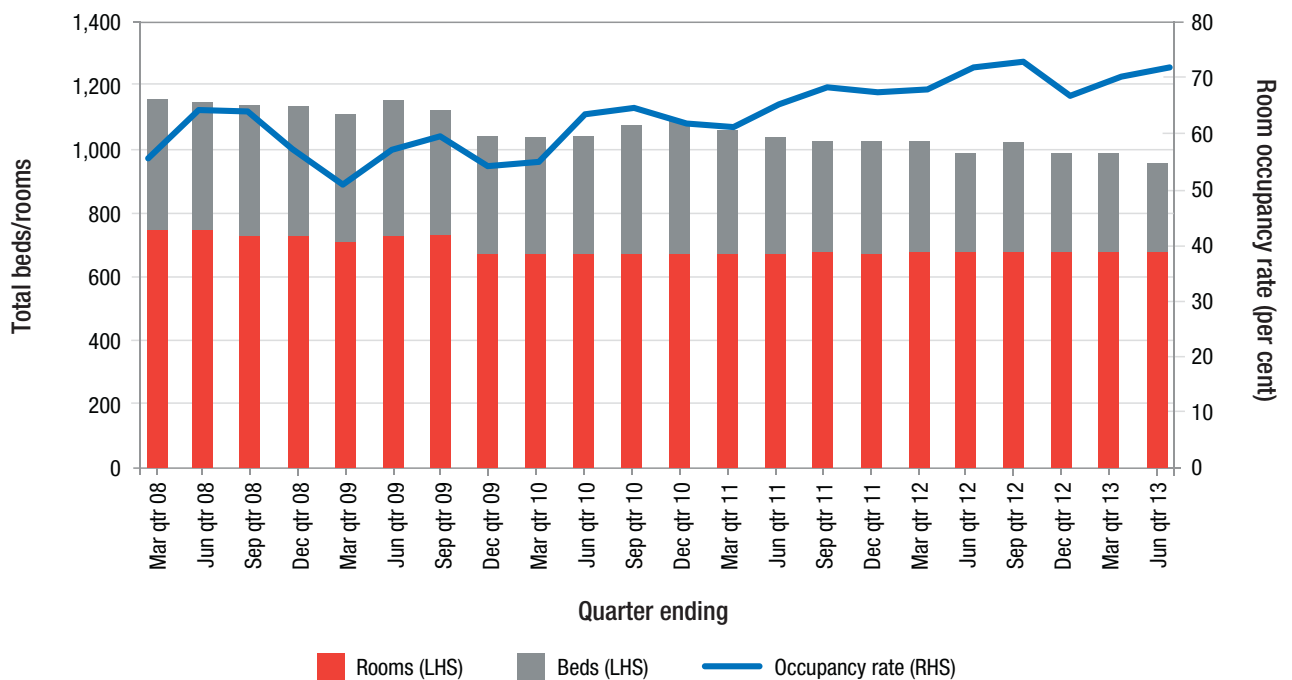
Source: Information obtained directly from individual sites

Table 37: Tourism accommodation summary – Tom Price

Site	Accommodation type	Capacity (approx.)
Tom Price Hotel/Motel	Hotel/motel	42
Windawarri Lodge	Hotel	450
Tom Price Tourist Park	Caravan park	167

Source: Information obtained directly from individual sites

Figure 42: Hotels, motels and serviced apartments – Shire of Ashburton



Source: Catalogue 8635.5.55.001, Tourist Accommodation, Small Area Data, Western Australia, Australian Bureau of Statistics (2013)

Note: Data to June 2010 includes establishments of five or more rooms. From September 2010 data is for establishments of 15 or more rooms. For both June and September quarters 2010, six establishments were incorporated in the count.

Table 38: Tourism zoned land supply – Tom Price

Zone	Developed (ha)	Undeveloped (ha)	Total (ha)
Tourism	30.2	24.9	55.1
Total	30.2	24.9	55.1

Source: Internal databases, Department of Planning (2014)

Note: Lots are considered developed once they are serviced and subdivided, irrespective of whether there is any built form on the lot.
Numbers may not sum due to rounding.

Tourism accommodation development summary

Newman

The construction of seven designated tourist accommodation units adjacent to the Newman Visitor Centre has recently been completed. The units are set among machinery that forms part of the visitor centre museum.

The Shire of East Pilbara has identified a site for a designated tourist short-stay caravan park to the south of Whaleback Village. It is anticipated that the site will have approximately 40 caravan sites and 15 powered camping sites.

Tom Price

The area located directly north of Windawarri lodge is zoned 'special use', which permits development for the purpose of tourism. Conditional development approval was granted on the site for a resort-style hotel, but the project has not progressed further. The development was to include 132 accommodation units, a restaurant and gymnasium. The site is ideally located for this type of development, affording excellent views across the town to Mount Nameless. While there is still 'in principle' support for a tourist accommodation development on the site, there is currently little enthusiasm for the project from the development industry.

There are plans for a significant expansion of the Tom Price Hotel's accommodation units. The publican has sought approval to demolish 23 of the existing rooms and construct 63 new accommodation units, creating a net increase of 40 units.

The *Shire of Ashburton Tourism Destination Development Strategy* discusses the possibility of a short-term visitor facility being established at the T-junction between Paraburdoo and Mine Site roads. The strategy states that, should the project go ahead, it may include a visitor information bay, a vehicle wash-down facility and a small number of short-term overnight caravan bays. The strategy does not specify a timeframe for the project and there appears to be no immediate plans to initiate a development of this nature on the site.

Adequacy of supply

Newman

Resource sector-related travel underpins the tourist accommodation industry in Newman. The limited stock of designated tourist accommodation in Newman presents a barrier to the growth of the tourism industry in the town. The under supply of designated tourist accommodation in Newman is most apparent during the winter months.

Many of the tourists at this time of year are 'grey nomads', most of whom are travelling with camper vans or caravans. The Shire of East Pilbara's caravan park will be a designated short-stay facility which should provide sufficient capacity to meet demand for this type of traveller during the peak season. It is anticipated that the facility will have capacity for approximately 40 powered caravan sites and 15 powered camping sites.

Tom Price

There is significant year round demand for tourist accommodation in Tom Price from visitors who are involved in mining or mining-related industries and therefore not classified as tourists. In the high tourism season (May-October) the increase in tourist numbers, coupled with mining-related demand for accommodation can result in a shortage of accommodation.

The Shire of Ashburton's *Tourism Destination Development Strategy* recommends that more investment in visitor accommodation be encouraged.⁶¹ The town's two hotels (Tom Price Hotel/Motel and Windawarri Lodge) both cater predominantly for transient workers. Tom Price is particularly well-placed to capitalise on the tourism generated by Karijini National Park. An additional resort-style hotel could potentially encourage travellers to spend more time in Tom Price as they visit the national parks of the area.

⁶¹ Shire of Ashburton (2011) *Tourism Destination Development Strategy*

9 Infrastructure - Newman

Key points

Water

- The responsibility for water supply is shared between BHP Billiton Iron Ore (BHPBIO) and the Water Corporation. BHPBIO is responsible for extracting and treating potable water and the Water Corporation is responsible for the reticulated supply.
- There is a sustainable supply of water available to supply long-term population growth in Newman.
- BHPBIO and Water Corporation infrastructure is being progressively upgraded to meet the requirements of a population of 15,000.

Wastewater

- The responsibility for wastewater management is shared between the Water Corporation, which is responsible for the reticulated sewage system, and the Shire of East Pilbara, which operates the wastewater treatment plant.
- The wastewater treatment plant is currently operating at capacity and an upgrade is required in the short-term to facilitate further development. The Shire of East Pilbara has planning in place to increase the capacity of the plant in stages over a three to four year period.
- Coordinated strategic planning for the water and wastewater schemes is essential to ensure that a long-term plan is developed to address the effective and efficient expansion of wastewater distribution and treatment assets.

Power

- Newman's electricity is currently generated at Alinta's gas-fired power station to the east of the town. Alinta is contracted to provide 100 per cent of its power station's generating capacity to BHPBIO under a Power Purchasing Agreement. BHPBIO has constructed a separate power station (Yarnima Power Station) that will take over Newman's power provision at the end of the existing contract with Alinta.

- There is sufficient power generating capacity at Yarnima to support further urban development in Newman, however, further de-constraining of the distribution network will be required to support a population of 15,000 residents.
- Recent project works such as the South Town substation and Town kiosk substation replacements will assist with the management of load growth.

Transport

- Passenger numbers through Newman Airport increased seven-fold between 2004/05 and 2012/13. The forecast number of passengers for 2013/14 was 540,300, which would represent a 23 per cent increase on 2012/13 numbers.
- While Newman Airport is in need of substantial upgrades, there is potential for development of complementary and industrial land uses at the site. The Shire of East Pilbara is developing an Airport Development Masterplan, however, there are substantial infrastructure provision issues that need to be resolved prior to development.

Education

- There are two primary schools and one senior high school located in Newman. Enrolments at Newman Senior High School are low, with many students choosing to complete their high school education at larger or more specialised schools.
- Based on population growth estimates, Newman is likely to require a third primary school to meet demand in the next 10 to 20 years.

Health

- Newman Hospital was built in 1969 and there has been significant interest in upgrading the facility to meet future demand; the North West Health initiative identifies Newman as a priority area and a masterplan for a new Hospital has been developed by WACHS.

Police

- The Newman Police Station is considered adequate to meet medium-term demand, but may require some expansion to serve a population of 15,000 residents.

Community

- Newman is well-served with sporting facilities with considerable investment in the town's two main sports precincts – Boomerang Oval and the Capricorn Sports Complex.

Highlights and conclusions:

- The diversification of land uses around Newman Airport has the potential to shore up light industrial land reserves and provide revenue to the council for expanded services as airport usage increases. Land around the airport should be deconstrained in the short-term to provide the Shire of East Pilbara more options for development and expanded services in the future.
- Achieving the Pilbara Cities population target of 15,000 residents by 2035 will require significant upgrades to the water, wastewater and power networks in Newman. Long-term forward works programs for these utilities should be considered with due regard for the Pilbara Cities growth targets.

9.1 Water

Like much of the infrastructure in the Pilbara, responsibility for the provision of Newman's water does not rest with a single organisation. A memorandum of agreement, between BHPBIO and the Water Corporation to manage Newman's water supply has been in place since 1991. The water supply network in Newman is shown on Map 7.

Under the memorandum, BHPBIO is responsible for operating raw water abstraction bores and water treatment, while the Water Corporation is responsible for operating the reticulated supply.

BHPBIO operate the Homestead and Ophthalmia borefields, which supply raw potable water to the Newman Treatment Plant. The Ophthalmia Borefield was developed in the early 1970s and provides potable water to the town of Newman and the Mt Whaleback and Eastern Ridge mining operations. As the Mt Whaleback operation and the town of Newman grew throughout the 1970s, abstraction volumes from the Ophthalmia Borefield increased. Concerns regarding the sustainable yield of the Ophthalmia aquifer system led to the construction of the Ophthalmia Dam Aquifer Recharge Scheme, which was commissioned in 1981.

Groundwater recharge to the alluvial aquifer is generally by incident rainfall and through direct infiltration along the alluvial bases of the creeks. Recharge to the Ophthalmia aquifer system has been augmented by the construction of the Ophthalmia Dam and its artificial recharge system. The dam intercepts surface flow, enables controlled discharge to infiltration ponds and provides some recharge when there is standing water in the dam.

BHP Billiton is licensed to abstract up to 10 gigalitres per annum (GL/a), from the Ophthalmia Borefield, and 2.5 GL/a from the Homestead Borefield. The licenced rates of extraction are considered to be sustainable given the current recharge rate. Groundwater is abstracted for raw potable and process water as detailed below:

- Homestead Borefield and Ophthalmia central and northern bores supply raw potable water to the Newman Water Treatment Plant;
- Southern bores supply the Newman Airport; and
- Western bores supply process water to BHPBIO's Eastern Ridge operation and the Yarnima Power Station.

Water is pumped from the bore fields to the water treatment plant where it is treated. The treatment plant consists of a multiple barrier approach inclusive of reverse osmosis. It also undergoes filtration, UV treatment and chlorine dosing.

The capacity of the plant is approximately 12 mega litres (ML) per day, which is fully utilised support the local region.⁶² BHPBIO has indicated that current summer maximum consumption is approximately 12ML in a single day. As the current level of summer peak consumption is already near the capacity of the water treatment plant, it represents a constraint to further population growth. BHPBIO is therefore progressing construction of a new water treatment plant sized for ~16ML per day to support population growth up to 15,000 residents in Newman.

Not all water extracted from the borefield is transferred to the treatment plant. Approximately five per cent of the raw water drawn is used to irrigate sports grounds, recreation areas and public open spaces around Newman (Figure 43).

Once treated, the water is pumped into storage tanks, then gravity fed into the town's reticulated water scheme. The storage tanks have capacity for approximately 12-24 hours supply to the town should delivery be interrupted for a prolonged period. There are no water pump stations or hydraulic control valves downstream from the storage tanks.

Treated water is transferred to the Water Corporation at a metering point downstream from the outlet point of the town's service storage tanks. The Water Corporation is responsible for water provision from this point, managing the operation and maintenance of the town's water distribution and reticulation system. The Corporation rates customers and charges headworks fees at the building and/or subdivision stage of development in a conventional manner.

The Water Corporation has advised that the town's storage tanks are only able to provide sufficient water pressure up to an altitude of 560 metres above sea level. For areas above 560 metres a planning review will be required to identify how best to provide sufficient pressure. This may affect possible urban expansion

areas to the south and west of the existing town. A local tank and water booster pump station may be considered should development proceed in such areas.

The water distribution and reticulation pipe system, while generally sound, is of varying type, age and condition. Older sections of the network, constructed during Newman's early development, are still in operation and nearing the end of their functional life.⁶³ Most of the water pipes are located within road reserves. However, some sections of pipe (for example within the town centre) are on non-standard alignments, often traversing private properties and in close proximity to buildings.

This non-standard arrangement is a legacy of Newman's history as a 'company' town and is also evident in parts of the town's sewer reticulation network. Sections of the Water Corporation's system are gradually being replaced and/or decommissioned as part of development activity in the town.

The current annual consumption rate of approximately 3.7GL/a, is well within the rate of licensed draw from the Ophthalmia Borefield (10GL/a) which has been supplemented by the recent development of the Homestead Borefield. Climate change impacts to rainfall, alluvial flows and resultant aquifer recharging mechanisms may, however, result in issues with potable water treatment and provision in the long-term. Approximately 15 per cent of potable water from Newman's water treatment plant is currently consumed by mining operations with the town consuming the remaining 85 per cent.

Future requirements and planning

An assessment of the capability of the existing potable water storage tanks (operated by BHPBIO) based upon normal Water Corporation planning criteria suggests that there is insufficient reserve storage capacity to meet anticipated demand. BHPBIO is planning to upgrade its potable water storage facilities to support future population growth.

There is also limited capacity in the existing reticulation network to support a significant increase in demand. Capital projects to augment the existing reticulation system are likely to be required to support increased demands associated with Newman's expansion. The Water Corporation has identified a

⁶² LandCorp (2010) *Newman Revitalisation Plan Volume 2 Town Site Growth Plan*

⁶³ Odysseus-imc Pty Ltd (2013) *Asset Management System Effectiveness Review, Water Corporation Western Australia*

need to undertake a comprehensive planning project in the event of continued high population growth in Newman and has also flagged upgrading the capacity of Newman's water distribution infrastructure as a priority.⁶⁴

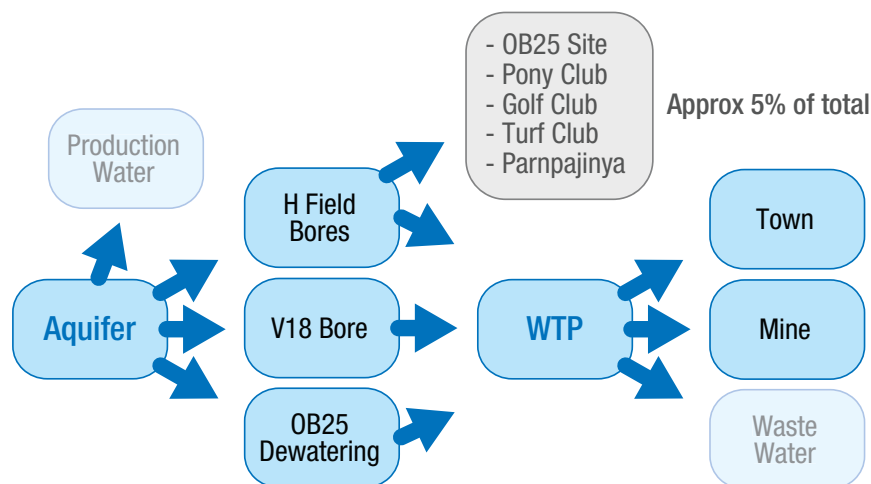
Water balance modelling, taking into account long-term demand and supply for BHPBIO's mining operations and the Newman townsite, has provided the foundation for BHPBIO's water management strategy. BHPBIO has identified and is executing several key projects required to meet anticipated demand for water over the next 10 years, including:

- Upgrades to the existing Newman Water Treatment Plant in order to meet its current water supply obligations in Newman at 12ML per day;
- Renewal of the Newman Water Treatment Plant to 16ML per day to support a population of up to 15,000 people;
- Planned upgrades to potable water storage to support future capacity requirements.

- Refurbishment of existing and installation of additional groundwater bores to support existing and future raw water demand;
- Upgrades to raw water distribution networks involving pumping stations and pipelines to deliver water to the treatment plant; and
- Upgrading town reticulation networks to support new and existing consumer developments in some areas.

Allocations for infrastructure include capital required for water treatment facilities, supply and dewatering bores as well as distribution networks. BHPBIO has stated that planned and in-execution water infrastructure expenditure over the five years commencing 2012, in the Newman region is in excess of approximately \$80 million with a further \$20-30 million required to resolve storage and similar end of asset life constraints over the next five-year period.

Figure 43: Newman water treatment plant infrastructure and operations



Source: BHPBIO (2011)

⁶⁴ Water Corporation (2013) Website: <http://www.watercorporation.com.au/water-supply-and-services/solutions-to-regional-water-supply/north-west>

9.2 Drainage

The climate in Newman is generally arid, apart from occasional summer storms caused by tropical low pressure systems. Consequently, the drainage network in the town must cater for infrequent but heavy rainfall. There is very little natural gradient in the town, which does little to disperse surface water during heavy rains. Most of the town's drainage network is made up of large table drains, with a limited pipe network.

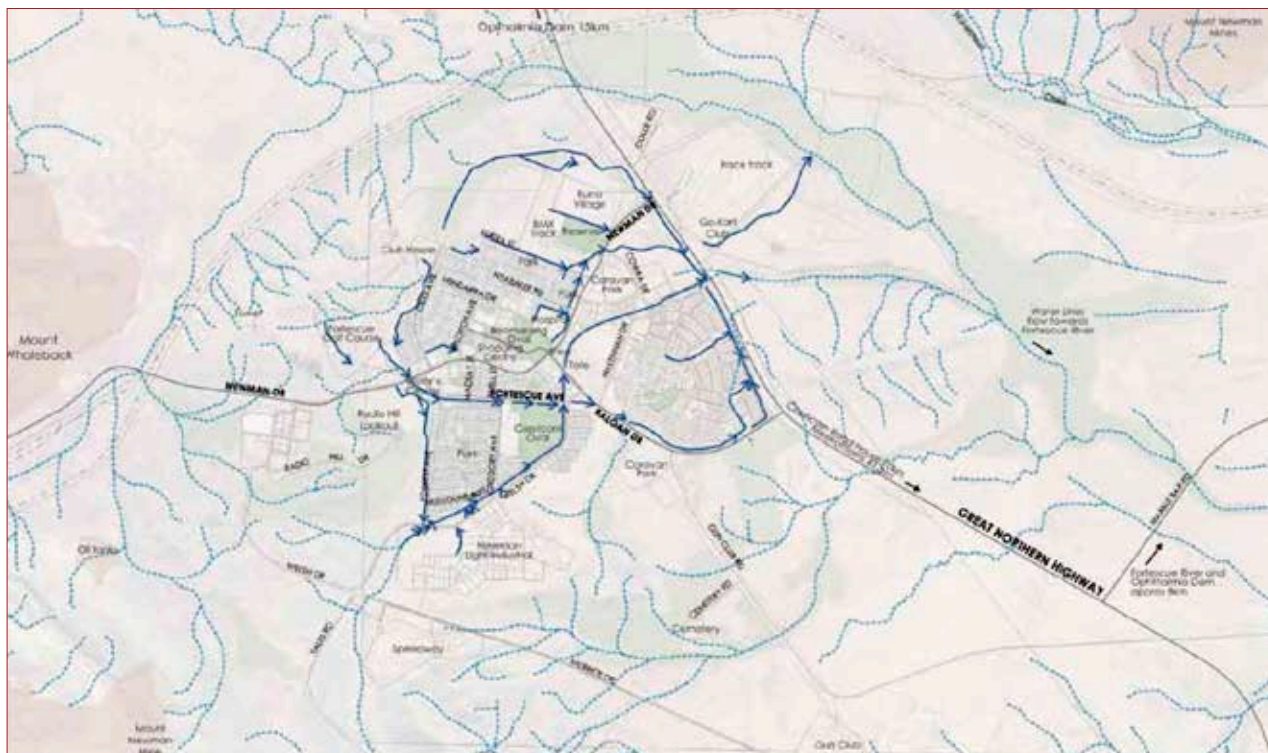
Most of the drainage lines or creeks follow natural flow paths and are seasonal, so generally only show flow activity between December and April. No Department of Water flood modelling or mapping has been undertaken for the Upper Fortescue River, Whaleback or Homestead creeks, so the impact that the flooding of these systems may have on the town has not yet been evaluated. It is clear, however, that various areas of Newman are prone to occasional inundation.

One of the most significant issues with regard to drainage is the inadequate drainage culverts near the East Newman and Newman Estate developments (sites NEW01 and NEW02, Map 3) along the Great Northern Highway. This area is significantly lower than the Great Northern Highway and requires the construction of adequate culverts allowing water to run off to the eastern side of the highway (see Figure 44). Funding for the construction of adequate culverts has been a point of contention between Main Roads WA and site developers.

Future requirements and planning

The Shire of East Pilbara has advised that a water management strategy is required, however, funding for this has not yet been identified. Ongoing maintenance is required for open drains throughout the town and ageing infrastructure will need to be replaced to meet growth demand. New building activity will increase the capture of water flows and the drainage system needs to ensure that there is no inundation in new or existing areas.

Figure 44: Newman drainage network



Source: LandCorp, *Newman Revitalisation Plan Volume 2 Town Site Growth Plan* (2010)

Other than suitable drainage provision in new development areas there is no immediate need, nor plans for, major drainage upgrades in Newman.

9.3 Wastewater

Newman's wastewater system was developed, and initially maintained, by BHPBIO during Newman's time as a company town. In 1991, the then Water Authority assumed responsibility for the Newman wastewater scheme from BHPBIO, in line with the State Government's mining townsite normalisation process. The Newman Wastewater Treatment Plant, located to the north of the town, has been operated and maintained by the Shire of East Pilbara since its transfer to that authority in 1996. The Water Corporation owns and maintains the sewerage reticulation system.

Under the transfer arrangement, the Shire is also responsible for any expansion of the treatment plant or any new works required to meet Newman's wastewater treatment and disposal needs. The Water Corporation operates the wastewater collection and conveyance system and pays the Shire an annual fee for wastewater treatment services.

The *Newman Sewerage Treatment Plant Capacity Study* investigates the effects of increasing the capacity of Newman Sewerage Treatment Plant to accommodate an increased population over time. According to the study the existing facility is capable of treating approximately 1,750 kilolitres of sewage per day, which equates to about 11,500 people in the town. This amount was breached three times (as a weekly average) during 2012; once due to a high rainfall event⁶⁵ and twice due to large numbers of FIFO workers staying in the town.

Parts of the reticulation system are located on non-standard alignment as a legacy of Newman's time as a 'company' town. These sections are gradually being replaced or decommissioned as the system is upgraded to meet the demands of the town's expansion.

Future requirements and planning

The *Newman Sewerage Treatment Plant Capacity Study* showed that throughout 2012 the wastewater treatment plant was operating at or close to capacity and was in need of a significant upgrade to ensure it is able to meet future demand.

The study concluded that the preferred method of increasing capacity at the plant would be to construct a new mechanical clarifier to operate in tandem with the existing plant, which would be refurbished once the additional plant becomes operational. This method is deemed to facilitate optimum long-term functionality and would enable the upgrade to proceed with minimum disruption.

The upgrade will be carried out in four stages:

- Stage 1:** Construction of a hardstand to receive additional treatment units and works to divert sewage to storage from the discharge point.
- Stage 2:** Installation of new clarifier and refurbishment of the existing one.
- Stage 3:** Installation of a new treatment unit on hardstand site. This treatment will work in conjunction with the upgraded existing plant.
- Stage 4:** The provision of additional modular units, increasing the capacity of the plant as needed.

The Water Corporation has advised that the reticulation network is due to be upgraded with a new pump station in the near-term in order to meet service requirements as growth continues.

⁶⁵ During periods of high rainfall the system can be infiltrated by stormwater, which means that the volume of water passing through the plant exceeds capacity causing the system to cease functioning effectively.

The project is likely to be completed in 2015/16 at an estimated cost of \$10 million. Table 39 shows an outline of the programmed upgrades.

The Water Corporation's conceptual planning indicates that significant upgrades to the reticulation network will also be required to service Newman's anticipated urban expansion. The Corporation's planning indicates a need for upgrades to existing wastewater pump stations; two new wastewater pump stations; and new gravity sewers. The timing for these upgrades is subject to the rate of growth in the town and the availability of capital funds.

9.4 Power

BHPBIO is the Supply Authority and Network Operator responsible for the provision of power to Newman. Electricity is generated locally and although it is nearby to the North West Interconnected System (NWIS) – via Rio Tinto Iron Ore's connection – the Newman network is not connected to the NWIS grid and is an independent system.⁶⁶ The arrangement for power provision has, until recently, been for electricity to be generated by Alinta Energy and transferred via a transmission and distribution network owned, operated and maintained by BHPBIO.

The Newman Alinta Energy power station is located within the BHPBIO Mount Whaleback mineral lease and was contracted to provide 100 per cent of its power station's generating capacity to BHPBIO under a Power Purchasing Agreement (PPA). This Alinta PPA expired in May 2014. No agreement was reached to extend or renew the contract, prompting BHPBIO to build a new combined cycle gas turbine power plant to provide power to the Newman town supply authority and BHPBIO's Eastern and Central Pilbara mining operations.

The Alinta plant will soon be used to power operations at the Roy Hill mine, requiring the construction of a 123 kilometre 220 kV transmission line. The new line may provide opportunities for Alinta to supply power to smaller operations in the region and opens up the possibility for an integrated power grid across the Pilbara region.

In late 2011, BHPBIO approved US\$597M to develop the 190 megawatt Yarnima Power Station to provide power to replace supply from the Newman Power Station. The Yarnima Power Station combined cycle power plant contains gas turbines that generate electricity with waste heat being used to generate electricity via steam turbines. The plant has also been configured to be dual fuel, allowing it to run off diesel back-up in the case of gas interruptions.

Table 39: Wastewater treatment plant upgrade program

Suggested time line	Town population*	Proposed sewage works
January 2013 (at capacity)	9,500	Existing plant
June 2013-December 2013	11,000	Plant headworks and concrete hardstand
December 2013-December 2014	13,000	New clarifier and refurbish existing plant
December 2014-June 2015	15,000	Addition 1 packaged plant
June 2015-June 2016	18,000	Addition 2 further plant modules

Source: Shire of East Pilbara, *Newman Sewage Treatment Plant: Expansion Strategy for Town Population Growth up to 18,000* (2013)

Note: Based on sewage generated per capita 150/1 per day which correlates with measured sewage flows and census figures.

*Town population refers to approximate service population, rather than estimated resident population in this case.

⁶⁶ WAPC (2012) *Pilbara Planning and Infrastructure Framework*

Electricity is transferred through BHPBIO's transmission network which includes a 66 kV supply to the Newman town, Mt Whaleback, Eastern Ridge and a 132 kV line servicing the Yandi, Area C and Jimblebar Mines. Much of the power distribution network was constructed in the 1970s and ongoing upgrades are required to support urban growth.

The existing town substation is operating at capacity due to substantial urban growth. To accommodate this, BHPBIO has recently constructed and commissioned the new South Town Substation which provides additional transformer capacity and relieves load from the Town Substation. Many of the town feeder power lines are operating at maximum capacity during summer. As a result of the limited network geography, new industrial and residential developments will require additional feeders to service greenfield development areas.

The existing town distribution network is ageing and requires renewal and upgrade to maintain existing levels of service and support future urban growth. BHPBIO has been undertaking the Newman town substation kiosk renewal program over the past two years and has replaced ~ 32 pad substation or kiosk transformers with further upgrades planned as part of a five-year prioritised works program. In addition to asset renewal, BHPBIO is currently undertaking investigation activities to identify opportunities that will facilitate the release of any latent distribution network capacity.

If progressed, proposals such as the airport development are forecast to create an additional 20MW demand by 2030 requiring significant investment in generation, transmission and supporting substations to be built to meet this load. A 20MW demand increase represents a doubling of the existing town load. The current average daily energy consumption for the network is 1,600 megawatt hours (MWh) which includes Newman township energy consumption of 220MWh (average daily energy consumed). There is significant seasonal variation in Newman township energy consumption with winter historically representing 60 per cent of summer demand. Seasonal variation is generally limited to residential and commercial loads. The level of seasonal variation is less significant across the overall network, with winter equating to approximately 90 per cent of summer demand.

Future requirements and planning

At 190 megawatts, the Yarnima Station has a larger generating capacity than the current Alinta Energy Power Station (178 megawatts).⁶⁷ The increased capacity provides sufficient power to supply a progressive population increase in Newman, however, this asset capacity is primarily assigned to enable growth in BHPBIO's mining operations in the central and eastern Pilbara. Rapid population growth or industrial development in Newman is likely to require significant investment to support potential load demand.

BHPBIO has developed a high-level forecasting model to predict electricity usage levels in the Newman region for the next 10 years. Current analysis indicates that power demand in Newman and surrounding areas is expected to incrementally grow and stabilise over the next five to 10 years. The near and mid-term growth of mining operation outputs in the Eastern and Central Pilbara region will provide the greatest increase in demand for power.

Newman's power supply can sustain some urban growth in the town, however, system limitations exist and future developments will need to cost in the necessary network upgrades and expansions to support the resultant town based load growth. Upgrades are required to much of the existing distribution network (particularly overhead power lines, poles and pole top transformers) to support service levels and BHPBIO has mechanisms in place to manage the planning and operation of the network to support existing load, the existing planned and approved incremental growth.

From 2013, BHPBIO's executed and planned expenditure forecasted for Newman Town power infrastructure is estimated in excess of \$115 million.

⁶⁷ Alinta (2013) Website: <http://alintaenergy.com.au/wa/Everything-Alinta-Energy/Power-Generation/Newman>

9.5 Transport

Roads

By far the most important road through Newman is the Great Northern Highway. It is the only sealed road connecting the town to the rest of the State. Main Roads WA is responsible for Great Northern Highway and has no immediate major upgrades proposed for this road in the vicinity of Newman. The provision of overtaking lanes through the hills north of Newman is being considered, however, no timeframe has yet been identified.

Main Roads has advised that any proposed expansion for Newman should be confined to the western side of Great Northern Highway, to avoid safety issues associated with crossing the highway. In principle, no direct property access would be permitted onto the highway and any additional road connections would require Main Roads approval.

The other key arterial road into Newman is the Newman-Marble Bar Road which heads north east from the Great Northern Highway at a junction approximately five kilometres south of Newman. The State Government has allocated \$20 million to upgrade the road, which is approximately 300 kilometres in length and in poor condition in various sections. The road is mainly unsealed apart from targeted areas where a low-cost seal has been used to mitigate dust disturbance.

To upgrade the entire route would cost an estimated \$400 million, prompting the Marble Bar Road Improvement Strategy Community Reference Group to prioritise sections of the road for upgrade in the short-term.

Roads within the Newman townsite are the responsibility of the Shire of East Pilbara. There are two roads that link the Great Northern Highway to the Newman townsite. Newman Drive is the main route through the town centre from the north east and Kalgan Drive provides access from the south-east. Both roads lead toward the centre of town, which means that industrial traffic bound for Mt Whaleback or the town's industrial area is channelled through the town centre.

The Shire of East Pilbara is advocating an airport-industrial area road linkage, likely to be approximately six kilometres in length that will bypass the town, connecting the airport with the light industrial area and perhaps more importantly, Mt Whaleback mine. Three alternative routes are shown in Map 10 with option 'A' being the Shire's preferred alternative. Preliminary estimates indicate the cost of the project will be in the vicinity of \$10 million, with more detailed costings to be provided after further surveying. The timeframe of the project is dependent on funding, however, it is estimated that it will take at least five years to secure funding, de-constrain the necessary land and construct the road.

As part of the Newman Town Centre Revitalisation Project, there have been two recent key improvements to the road network in the town centre providing improved connectivity:

1. The east-west road link from Newman Drive/Kalgan Drive intersection through the southern side of Boomerang Park to connect Rogers Place through to Hilditch Place on the western side of the town centre.
2. Extending Rogers Place to Calcott Crescent.

Future requirements and planning

There is a clear need to improve the Marble Bar Road which is being addressed, in part, by the Marble Bar Road Improvement Strategy Community Reference Group. Given the scale of the project, the remoteness of the road and the use of low-cost seal to maximise the proportion of the road upgraded, it is likely that this project will continue for some time. Improving safety on the road remains a priority, particularly as expanding mining activity in the region increases the volume of heavy traffic using local roads.

The airport-industrial area link is a further priority project for the future development of Newman. The route proposed by the Shire of East Pilbara will remove the majority of heavy traffic from the centre of town, making it considerably quieter and safer. Essential infrastructure projects such as these complement the various initiatives aimed at improving the amenity of Newman.

As the population (and consequent traffic volume) of Newman increases, it may be necessary to make significant improvements to the Great Northern Highway. There are currently no overtaking lanes on the highway in the vicinity of Newman. Given the relative regularity of road trains and other over size loads on the road, overtaking is frequently required, particularly as many of these heavy vehicles are travelling slowly, having stopped or about to stop in Newman.

Airport

Air travel to Newman is serviced by Newman Airport, which is operated by the Shire of East Pilbara. The airport provides Newman's main link to the rest of the State and the only public transport link apart from the coach service that passes through the town twice a week. When this is compared with the eight to 10 commercial flights that arrive in Newman per day, it highlights the importance of the airport to the town and the broader region.

Located approximately 12 kilometres south-east of the town, Newman Airport comprises a single asphalt-sealed runway 2,072 metres in length, with pilot-activated lighting. The runway is suitable for large aircraft such as Boeing 737-800 and Embraer 190 and aircraft refuelling is available on the site. Current air traffic consists primarily of QantasLink and Virgin Regular Passenger Transport Service route (RPT) flights, as well as charter operations for the mining industry.

There is considerable demand on Newman Airport services due to the increase in fly-in-fly-out employment activity. In the 2004/05 financial year 62,414 passengers passed through Newman Airport; in 2012/13 that figure had increased to 440,374.⁶⁸ This represents an average increase of 28 per cent per annum during that period, compared with a five per cent per annum increase across Australia. Attempts to increase capacity have thus far struggled to keep pace with demand. A new terminal was opened in 2009, but within a few months the expanded airport struggled to cope efficiently with the increasing volume of passengers.⁶⁹ The recent increase in passenger numbers travelling through Newman Airport is forecast to continue (Airport management forecasts 540,300 passengers for 2013/14) and further expansion of the airport will likely be required to facilitate the expected volume of traffic.

Newman Airport management estimates indicate that approximately five per cent of passengers at Newman Airport are travelling for the purpose of tourism, with the rest of the passengers travelling for mining-related activities. It is estimated that each mining job created in the area stimulates demand for up to 45 flights to/from Newman Airport per year. The increase in passenger traffic through Newman Airport has placed pressure on the capacity of the facility to cope during peak periods.

There are also a substantial number of Royal Flying Doctor Service (RFDS) flights that leave from Newman. The RFDS has recently completed a patient transfer station at Newman Airport. Newman acts as a transfer station (or hub) for RFDS activities. Rather than bring patients directly to Perth, some RFDS planes will fly to Newman to transfer patients to a second plane. This reduces the turnaround time of each plane, thus minimising the duration each area is without an RFDS service.

Newman Airport operates on a slightly different arrangement with regard to infrastructure provision than the Newman townsite. Water for the airport is provided by BHPBIO, but not conveyed there by the Water Corporation as is done in the town. Nor has the water necessarily been treated by BHPBIO's water treatment plant. Under the existing arrangement, BHPBIO has agreed to supply water, but cannot guarantee the quality due to the limited capacity of the water treatment plant.

The airport also has its own wastewater treatment plant, as the site is not serviced by mains sewerage. The system services the airport, businesses and other organisations at the site, including three staff houses and is modular, so has some capacity to accommodate increase use. There are plans for 11 additional dwellings at the airport, some of which will be used to house Air Services Australia staff, who intend moving to the airport some time in 2014.

A major constraint to further development, however, is the availability of power to the site. The airport is supplied with power via the BHPBIO distribution network and is currently operating at capacity. Airport management has advised that requests for additional power from commercial tenants have been declined due to the limited power supply available to the airport. The site is serviced by a 500 kV/a transmission line, which will need

⁶⁸ Shire of East Pilbara (2013) *Newman Airport Management*

⁶⁹ Shire of East Pilbara (2013) *Newman Tomorrow - 2030 Vision*

to be replaced to facilitate any significant increase in power consumption at the airport. BHPBIO and the Shire of East Pilbara have commenced discussions regarding this project, but there has, as yet, been no commitment to construct the new line.

Future requirements and planning

Future demand for regional airport infrastructure will be dependent on the growth of the mining industry and its reliance on a FIFO workforce. Recent forecasts suggest that FIFO air services will continue to increase, resulting in the need for regional airstrips to handle larger aircraft and more aircraft movements at airports (including Perth Airport) and in uncontrolled airspace.

There is a demonstrated need for expansion at Newman Airport to accommodate growing passenger numbers. Current planning provides for managing air traffic in the short-term, however, the Shire of East Pilbara is currently developing an Airport Development Masterplan that will accommodate growth in the long-term. The plan also proposes the development of a large commercial/light industrial precinct at the airport that will require expansive infrastructure upgrades to proceed.

A broadening of land uses at the airport site is also constrained by the current lease agreement under which the airport is operated. Newman Airport and the surrounding land are vested to the Shire of East Pilbara by the State Government. Current lease arrangements only permit the development of industry directly related to the running of the airport. The Shire is currently seeking to gain freehold title of the land, which will enable a broader variety of land uses within the airport land.

The Shire of East Pilbara has called tenders to increase the capacity of the existing terminal by 60 per cent, increase parking facilities (including paid parking) and on-site staff housing as well as increasing availability of sites for airport service providers.

Rail

There are three railway networks in the Pilbara (operated by RTIO, BHPBIO and FMG), with additional lines, operated by Hancock and API/MCC likely to be operational some time in 2014. This new infrastructure will extend the region's mainline rail system from 1,525 kilometres to approximately 2,245 kilometres. All rail in the Pilbara Region is used for the transport of iron ore.

BHPBIO owns and operates a rail network from Newman to Port Hedland. One of Australia's longest private railways, it runs for 426 kilometres transporting iron ore from Mount Whaleback, Orebodies 18, 23 and 25, Jimblebar, Yandi and Area C to the port at Port Hedland. The rail line is located just north of the Newman townsite.

Public transport

Public transport to/from Newman and within the town is very limited. Integrity Coaches operates a bus service once a week between Perth and Port Hedland, which includes Newman as a destination. The bus leaves Perth every Wednesday evening and departs from Port Hedland every Friday morning. A one-way trip between Perth and Newman takes approximately 16 hours and the journey between Port Hedland and Newman takes approximately five hours.

There is also a bus service operated by the Shire of East Pilbara with a maximum capacity of eight passengers. The service runs between Port Hedland, Marble Bar, Nullagine and Newman and is predominantly patronised by the Indigenous communities in the area.

The only public transport available within Newman is provided by the three taxis licensed to operate in the town (one of these being a multi-purpose taxi). A country taxi plate review is conducted every three years in regional towns to ensure that service levels are adequate. BHPBIO provides a private bus service that provides transport to and from work for employees.

9.6 Education

As discussed in Section 3 of this document, the population structure of Newman is not typical of the rest of the State, with an unusually small proportion of residents of high school or tertiary education age (Figure 4).

Traditionally it has been common for some families with high school aged children in the Pilbara to either send their children to Perth for boarding school or for the entire family to relocate.

There are two primary schools and one senior high school in Newman. Due to the transient nature of the population, student numbers can vary quite significantly from year to year, which can affect the ability to plan for school needs and maintain staff stability. The recent trend in school enrolments is shown in Table 40.

Of particular note is the decline in high school enrolments, particularly in the context of the high rate of population growth over the past five years. The trend is particularly prominent for senior high school students. Since 2007 senior high school enrolments have declined by approximately 40 per cent. In 2014 only 18 students enrolled for semester one of year 12.

Newman Primary School

Originally built in 1969 as a district high school, Newman Primary School is located on a 2,537 square metre site on Hilditch Avenue, adjacent to the central business area of Newman and close to the aquatic centre, medical, police and child care facilities (Map 11). In semester one of the 2014 school year, 285 students were enrolled in years one to seven. The school has a new library; music and art room; and recently upgraded early childhood classrooms.

South Newman Primary School

The South Newman Primary School was established in 1976 on a six hectare site on Gregory Avenue (Map 11) that it shares with Newman Senior High School. In semester one of the 2014 school year, 477 students were enrolled in years one to seven at South Newman Primary School.

Newman Senior High School

Newman Senior High School is located on Gregory Avenue, sharing the site with the South Newman Primary School (Map 11). The school opened in 1971 as a district high school with 700 students from Year 1 to Year 10. It became a senior high school in 1995 with the addition of years 11 and 12.

Newman Senior High School has several computer laboratories and classrooms networked across learning areas, a library with video conference links to other schools in the State and shared facilities including two fully air conditioned gymnasiums and a performing arts theatre.

Table 40: Newman schools – 2007-2014 (semester one)

School	Education level	2007	2008	2009	2010	2011	2012	2013	2014
Newman Primary	Primary	310	248	275	301	279	279	287	285
South Newman Primary	Primary	391	444	450	465	444	435	449	477
Total Primary		701	692	725	766	723	714	736	762
Newman Senior High School	Lower secondary	218	194	199	153	161	150	168	152
	Upper secondary	109	120	124	109	99	79	64	65
Total High		327	314	323	262	260	229	232	217

Source: Department of Education

Note: Only includes full time students.

Newman Senior High offers courses including tertiary entrance programs and courses of study, structured workplace learning, integrated education support programs, vocational programs, academic extension initiatives and apprenticeship links to industry. Newman Senior High School has also been selected to run a specialist Mining Academy Program. This program caters for students with an interest to work in mine-related industries.

The school has developed strong partnerships with BHPBIO and Westrac. Newman Senior High School is one of two schools to be directly involved in a major educational partnership between BHPBIO and the Department of Education and Training. This partnership has enabled the school to establish several programs and projects that enhance the learning environment at Newman Senior High School.

A recent Federal Government initiative, supported by BHPBIO and local industry has enabled the development of the recently completed Trade Training Centre. The facility creates a pathway for students wishing to further their abilities in the trade skills and engineering areas.

Future requirements and planning

In rural towns the accepted standard of provision is for one primary school for every 4,000 residents. By this rationale there is no immediate need for a new school. However, as part of longer term planning it will be necessary to identify a site for a third primary school. The Department of Education has identified a potential site in Newman. However, neither the location, nor the requirements for the primary school have yet been confirmed.

It is expected that the Newman Senior High School has adequate capacity to accommodate more students in the short to medium term. Even if Newman's population structure was more conventional, one high school per 16,000 residents is considered adequate in country towns. It is noted, however, that the high school site is severely restricted in size and has limited room for future growth should demand warrant an expansion of services.

Tertiary education and other training

Pilbara TAFE has recently been rebranded and become Pilbara Institute. The Pilbara Institute has a focus on delivering industry-relevant training with employment-based outcomes and provides vocational education and training to apprentices, trainees, small businesses, Aboriginal communities, corporations and individuals.

The Pilbara Institute has a Newman campus located on Kalgan Drive. The Pilbara Institute offers the following courses in Newman:

- Certificate I in Gaining Access to Training and Employment (GATE), General Education for Adults (Introductory), General Education for Adults and Information, Digital Media and Technology;
- Certificate II in Business and Resources and Infrastructure Work Preparation; and
- Certificate III and IV in Occupational Health and Safety.

9.7 Health

Newman Hospital was built in 1969 by Mount Newman Mining Company. The hospital is situated on Mindarra Drive in Newman on a 4.37 hectare site located in a Crown reserve, which is vested to the Minister for Health for the purpose of a hospital and allied health services.

There have been several major upgrades to the facility since its construction including:

- The redevelopment of a new accident and emergency department, including a dedicated resuscitation room, administration/medical records block, upgraded medical imaging facilities and a new pathology laboratory in the mid-1990s;
- In 2012 the hospital's medical imaging department was refurbished and new x-ray equipment installed; and
- An upgrade to the emergency department, increasing treatment bay capacity from three to five, improved patient waiting area and nurse base station, and upgraded electrical and emergency power generation capacity in 2014.

Under the *Western Australia Clinical Services Framework 2010–2020*, Newman Hospital is designated as an Integrated District Health Service, it forms part of the WA Country Health Services (WACHS) Pilbara integrated network of services and is supported by the larger Hedland Health Campus in South Hedland. Patients requiring specialist treatment not available in Newman are referred to Hedland or Perth, depending upon patient care and treatment needs.

Eligible patients requiring specialist care or treatment not available locally can access the Patient Assisted Travel Scheme (PATS). The PATS provides subsidised assistance toward the cost of travel and accommodation for eligible permanent country residents, who are referred by their treating medical practitioner to the nearest specialist service.

Health specialists visit Newman on a regular basis. Generally, patients using PATS are referred to Port Hedland or Perth.

Future requirements and planning

A Health Service Plan was completed for Newman in late 2010 which:

- describes the current and future service and facility planning issues; and
- outlines the key ideas for progressing improved health services and health facilities in Newman.

Further planning work has been commissioned to inform the development of a concept site master plan and options for redevelopment.

The Newman hospital currently operates with eight beds. Growth in emergency presentations and increased demand for ambulatory (non-acute), mental health, community and population health services have impacted on the capacity of the facility to deliver within the current infrastructure.

In addition to the local population, the hospital also provides services for FIFO workers, the highly mobile Aboriginal community in the region and a large influx of tourists during the dry season. The Health Department notes that the average age of FIFO workers is increasing and that older workers are more likely to have chronic conditions which require health service usage at Newman Hospital.

The current facility is outmoded, with service fragmentation over the site and there is limited scope for the provision of contemporary models of care within the existing structures. Sufficient land is available at the current site to accommodate a staged redevelopment.

The attraction and retention of health staff is a key priority in rural and remote WA. The provision of high quality staff accommodation is known to be a significant determinant to the success in attracting and retaining staff. As the cost of publicly available rental accommodation in Newman is generally very high, the provision of sufficient suitable and affordable housing for hospital staff should be a priority for future planning.

9.8 Police, justice and emergency services

Police and justice

The Newman community is serviced by a 24 hour police station, which was commissioned in 2005. Newman Police Station has 19 sworn officers employed at the station and provides limited operational support to stations in Tom Price, Nullagine and the multi-functional police facility at Jigalong. Officers based at Newman Station are also committed to assist at the airport, which would usually be the jurisdiction of the Australian Federal Police (AFP), as the AFP does not currently have officers stationed in Newman (although with new master plans for the airport, this may change in the future).

WA Police collaborates with the Department of the Attorney General regarding the use of the police station as a base for the provision of courtroom services to the Newman community. The police station operates under the command of the Pilbara District Office. The station also accommodates a Regional Department of Transport office with limited licensing capabilities.

Future requirements and planning

Newman Police Station is a modern facility with capacity to meet demand for the short to medium-term. However, WA Police has stated that the facility's capacity for growth will be challenged by the Pilbara Cities population target of 15,000. Most of the existing site is consumed with the current facility, making any substantial expansion at the site challenging.

The Shire of East Pilbara's local planning strategy (currently under review) identifies an alternative site at the corner of Kalgan Drive and Welsh Drive as potentially being suitable for a police station. Shorter-term, pressure on the facility could potentially be alleviated by considering alternative locations for the Department of Transport office elsewhere within the town centre.

Emergency services

The Newman Volunteer Fire and Rescue Service facility is located at Lot 1612 Newman Drive, Newman. There are no paid employees, however, 33 volunteer workers carry out the fire and rescue services. Newman fire station is approximately 45 years old and will require replacement to adequately service the town as it grows.

The Newman State Emergency Service (SES) facility is located at Kurru Street, Newman. It is equipped with two four-wheel-drive station wagons, one personnel carrier, a general rescue trailer and a communications trailer. There are no paid employees, with 22 volunteers providing emergency services.

The Newman ambulance sub-centre is located on Newman Drive. Services are provided by a community paramedic, office administrator, three casual first aid trainers and a kit servicing operator together with 33 active volunteers and 10 non-operational volunteers. The ambulance service has an extensive relationship with the RFDS, which has recently developed a patient transfer centre at Newman Airport.

Each mine has an emergency services response unit and non-resident workers are able to volunteer in the emergency services unit of their host community. FIFO workers can bring valuable expertise in disaster response, however, they are not always available, with capacity to contribute often dependent on mine rosters. There is, however, an agreement between the BHPBIO and the Shire of East Pilbara that, in the event of a major disaster, the mine will halt operations to enable employees to assist with the disaster response.

Future requirements and planning

Emergency services infrastructure in Newman is ageing and in need of replacement. Funding has been allocated for a new SES building to be located at the existing site. It is anticipated that the building will be completed in 2013/14 and will cater for growth for the foreseeable future.

Preliminary investigations are underway to identify a site for a new ambulance sub-centre. Although no site has been confirmed it is likely to be adjacent to the SES and Fire Station facilities (Map 11).

9.9 Communications

Newman has one telephone exchange, with three exchange distribution areas connected to the Telstra statewide fibre backhaul network; and is serviced by the reticulated Copper Access Network (CAN) providing connectivity to the Public Switched Telephone Network for voice services and ADSL/ADSL2+ broadband. Mobile phone coverage in Newman is limited to Telstra's GSM and NextG mobile networks and Optus' GSM and 3G coverage networks.

The most significant constraint on telecommunications in and out of Newman is the lack of competition in backhaul services. This has prevented the establishment of competition in broadband services and mobile services.

Future requirements and planning

The deployment of the NBN in Newman should address expected communications demands. The NBN is anticipated to take 10 years to be fully deployed across the State, however new property developments in Newman are already connected.

9.10 Waste management

Newman's waste management facility, located approximately five kilometres south of the town, is owned by the Shire of East Pilbara and operated by a local contractor. According to the Pilbara Planning Infrastructure Framework, the Windell refuse site incorporates a Category 64 – Class II Putrescible Category waste site and a Category 61 – Liquid waste facility. It also separates paper, metal, glass, batteries, green waste for recycling and reuse.

The liquid waste facility at the site takes four million litres of waste from camps in a year (charged at 10 cents per litre). The intake of liquid waste has increased from 80,000 litres a day to the current rate of roughly 200,000 litres per day over the past decade due to the increased number of TWA camps in the Shire.

There are limited records of rubbish disposal practices prior to Newman's normalisation. This can affect project certainty in some cases where site soil may have been impacted by refuse disposal in the past.

Future requirements and planning

The Windell Refuse site has an expected lifespan of 20 years. The Pilbara Regional Council Waste Management plan stated that a compactor, weigh bridges and a transfer station would benefit the efficiency of the site. The Shire of East Pilbara is also considering expanding the liquid waste disposal facility to accommodate additional waste from the mining camps.

9.11 Community infrastructure

Sport and Recreation

The Shire of East Pilbara has circumvented one of the key challenges to providing sport and recreation facilities in an arid climate by pursuing a very progressive program of recycled water use. Approximately 800,000 to 900,000 litres of recycled water per day are used to irrigate public open space and recreation facilities in Newman. The town boasts the Pilbara's first reticulated golf course and has numerous sports grounds (Table 41). When Newman is viewed from nearby Radio Hill, the green playing fields and parks stand in stark contrast to the red dirt of the surrounding country.

This secondary role of the wastewater treatment plant provides an invaluable service to the community and additional water for public irrigation will be an additional benefit of the planned upgrade to the facility.

Most of the sporting and recreation facilities in Newman are based around two hubs:

- The Capricorn Complex – located between Fortescue Avenue and Welsh Drive and includes an Australian Rules football oval, hockey, cricket and netball; and
- Boomerang Oval – located on the corner of Mindarra and Newman Drives and includes soccer, softball, rugby and touch. It is also adjacent to the lawn bowls club, swimming pool and recreation club.

Newman swimming pool is centrally located, opposite the Newman Boulevard Shopping Centre and is fully operational from September to April. Between May and August the pool is open on a reduced timetable. The facility contains an Olympic sized pool with shaded toddlers' pool, kiosk, and barbeque and picnic area.

The Newman Recreation Centre is located on Gregory Avenue and includes gym facilities, sports and recreation activities, fitness classes and a crèche, as well as conference rooms and equipment hire.

Table 41: Existing sport and recreation facilities in Newman

Facility	Number	Usage (high/medium/low)
Aquatic centre (50m pool)	1	high
Race course	1	low
Golf course	1	High
Rodeo grounds	1	high
Soccer oval	1	high
Football oval	1	high
Rugby oval	1	high
Cricket oval	1	high
Tennis courts	3	medium
Skate park	1	high
Netball courts	6	high
Cricket nets	3	high
Oval Events	1	medium

Source: Department of Sport and recreation and Shire of East Pilbara, October 2011

In January 2012, the Minister for Regional Development, Lands and assisting the Minister for State Development announced the allocation of \$4.855 million Royalties for Regions funding for sport in Newman. Works commenced in early 2012 including lighting and upgrades to the Capricorn sporting precinct and new amenities for Boomerang Oval (change rooms, meeting and function room, kiosk, public toilets, club stores, first aid and umpires' room).

Future requirements and planning

Newman is well-provided with a range of recreation facilities available, although varying in age and condition. As a result, many of the town's assets have recently undergone or are currently undergoing upgrading or replacement.

While Newman has a large number of sport and recreation facilities available relative to its population, the enthusiasm for sport in the town is such that many are currently fully or near fully utilised. The Shire of East Pilbara has recognised the need for a third sports precinct to cater for additional participants as the town grows. A site has been selected for 'overflow' sports events (NEW12, Map 3); however, a more substantial complex may be required to meet for future demand. In the Shire of East Pilbara's *Strategic Community Plan 2013-2020* the development of a recreation precinct is identified as a key priority for asset enhancement/replacement.

The Shire of East Pilbara has engaged a planning consultant to prepare a Newman Recreation Masterplan to:

- assess the condition and capacity of existing sporting and recreation facilities;
- determine the future need for additional facilities in Newman considering planned population growth and where facilities should be located; and
- consider the sustainability of clubs and the role of Council in facility provision and future service delivery.

The project masterplan will culminate in a design concept for any new facilities likely to be viable.

9.12 Civic, community and cultural

Opened in April 2010, the Newman Collocation Centre (Newman House) is situated on Rogers Place and Calcott Crescent. This facility was funded by State Government, Lotterywest and BHPBIO, providing access to office and meeting room facilities in the heart of the town centre for use by non-government organisations, community groups and government agencies. The centre includes a shared reception area and video conference facilities.

Future requirements and planning

The Martu Milli Arts Centre is hosted by the Shire of East Pilbara and receives funding from BHPBIO. The centre provides a mechanism for artists from the Martu Indigenous community to show and distribute their art and gives the public the opportunity to view it. The Martu artists who contribute to the gallery come from seven different communities – mainly in the Western Desert.

A new gallery is planned at a site just north of the existing gallery (see Map 11) which will enhance the profile of the organisation and create a new tourist attraction in the town. Funding for construction has been confirmed from Pilbara Cities and BHPBIO, with the site provided by the Shire of East Pilbara. It is anticipated that the project will be completed in mid-2015.

Other priorities for future civic and community development outlined in the *Newman Tomorrow – 2030 Vision* include:

- planning and constructing a new Civic Centre;
- planning and constructing a purpose-built youth centre; and
- building an outdoor amphitheatre.

The Vision outlines a range of construction and improvement projects aimed at creating vibrant civic spaces in which cultural interactions can occur.

9.13 Child Care

There are three day care facilities operating in Newman.

The Newman Day Care Centre is located on Calcott Crescent and provides long day care for children aged up to five years. The mychild.gov.au website showed that, as at November 2013, there were no spaces available at the centre for children 0-24 months of age and spaces available on only one day per week for children aged 24 months to school age.

The YMCA Newman Early Learning Centre is located at 38 Rogers Place and provides long day care, before school care and after school care services for children aged up to five years. The mychild.gov.au website showed that, as at November 2013, there were spaces available for children aged up to pre-school age five days a week.

10 Infrastructure - Tom Price

Key Points

Water

- Rio Tinto Iron Ore (RTIO) is the licensed water provider in Tom Price. Water supply is plentiful and of high quality due to dewatering at RTIO's Marandoo Mine.
- RTIO has developed a progressive water management scheme to ensure that excess water is consumed in a responsible manner.
- While supply is not an issue, water and wastewater infrastructure is ageing, requiring remediation and in some cases replacement.

Drainage

- Drainage is a major issue in Tom Price, with occasional but heavy summer rainfalls, in conjunction with the surrounding hills, requiring that drainage is carefully considered as part of planning for any development.

Power

- RTIO is the licensed power provider in Tom Price. The power generation capacity of RTIO power plants in the region is unlikely to present a barrier to future urban expansion.
- The distribution network within the town is ageing and in some cases will need to be upgraded to enable substantial urban expansion.

Transport

- Tom Price is served by Paraburdoo Airport, located 72 kilometres south of Tom Price, which is owned and operated by RTIO.
- Prior to the global financial crisis there was interest from RTIO and the Shire of Ashburton in developing an airport at Tom Price, however, enthusiasm for the project has since waned. Paraburdoo Airport will remain the primary public airport for the area.
- Tom Price and Karratha are linked by rail, but there is no direct sealed road between the two towns. Plans were underway to connect the towns via the Millstream

Link Road project. Stages one and two were completed in 2008, however, stages three and four have not commenced and no funding has been allocated for the completion of the project.

Health

- The Tom Price Hospital is ageing and there is little room for expansion on the current site.
- The Tom Price Ambulance service currently spends considerable time transferring patients to Paraburdoo Airport for Royal Flying Doctor Service (RFDS) trips which leaves ambulance services in Tom Price diminished during this time. A site has been identified for the construction of a RFDS airstrip at Tom Price, however, funding details for the construction, maintenance and operation of the airstrip have not been confirmed.

Community

- Tom Price is well served with community infrastructure, particularly with sports and recreation facilities.

Recommendations and priorities:

- Tom Price is not on a major Highway and is 72 kilometres from Paraburdoo Airport. Improving connectivity to/from the town is likely to improve prospects for developing the town's tourism industry and role as a service hub for mining operations in the region.
- Development of the Tom Price RFDS air strip will expedite the treatment of seriously ill/injured patients from the town and surrounding mine camps. The airstrip will also alleviate pressure on the town's ambulance service, which is currently responsible for the transfer of patients requiring treatment in a major hospital to Paraburdoo Airport for transfer.

10.1 Water

Hamersley Iron Pty Ltd (a subsidiary of Rio Tinto) is the licensed water service provider for the Tom Price township. Until recently water was sourced from a series of bores in the Southern Fortescue borefield, which is situated approximately 30 kilometres northeast of town. Hamersley Iron is licensed to draw up to 11 gigalitres (GL) per annum from the bore field. Existing water infrastructure is capable of drawing approximately 9.8GL per annum.⁷⁰ The current level of consumption is approximately 1GL per annum, which is comfortably lower than the volume that can sustainably be drawn from the borefield.

In 2012 Phase two of RTIO's Marandoo mine (45 kilometres east of Tom Price, adjacent to Karijini National Park) began operations which involved mining below the water table. This requires substantial 'dewatering', with hydrological modelling indicating that approximately 100 megalitres (ML) per day would need to be extracted to enable sustained mining operations. This presented RTIO with what is an unusual problem in most parts of Western Australia, whereby the supply of water exceeds demand.

Given the generally arid climate of the Pilbara, continual discharge of such a large volume of water into ephemeral creek beds would impact on creek ecology and riparian vegetation. Consequently rigid environmental conditions are in place to ensure that water is used in a responsible fashion. The issue of an excessive water supply is managed through an integrated water management scheme involving six different outlets including:

- supply to the Marandoo mine operations and accommodation village;
- supply to Tom Price mine and town;
- a proposal to reinject into the aquifer accessed by the Southern Fortescue Borefield;

- the Hamersley Agriculture Project, consisting of an irrigated agriculture scheme using centre pivot irrigators on Rio Tinto's Hamersley Station to grow hay (see Section 2);
- a buffer dam (at the Hamersley Agriculture Project site) to store irrigation water volumes unable to be utilised during winter; and
- limited discharge to a nearby creek in the event that all the surplus volumes cannot be appropriately managed under the other scheme components.⁷¹

The Tom Price water supply is of high quality, with raw water having a dissolved solids concentration that meets the Australian and New Zealand Environment and Conservation Council (ANZECC) Drinking Water Guidelines.⁷² Consequently the water treatment requirements are not overly onerous.

Water is pumped to three storage tanks (see Map 21) where it is treated with chlorine; one tank for Mt Tom Price mine (4,550m³) and to two tanks supplying the townsite (9,500m³ each) located to the southwest of Tom Price. Levels of chlorine are monitored using online instrumentation and regular testing.⁷³ The town's storage facility has sufficient capacity for a period of at least two weeks, should there be an interruption to supply.⁷⁴ The water storage tanks are located in an elevated position from which water is gravity fed into Tom Price's reticulated water supply system.

Much of the water supply network in Tom Price was constructed in the late 1960s and early 1970s, coinciding with the town's establishment. The supply system comprises of 50 mm, 100 mm and 250 mm mid steel concrete lined, asbestos cement (AC) and PVC pipes.

In a 2007 audit of Tom Price's water supply network, the system was found to be in reasonable condition apart from occasional leaks and interruptions to supply.⁷⁵ An assessment of the Tom Price water system capacity in 2008 concluded that a number

⁷⁰ Department of Water (2011) *Southern Fortescue and Marandoo Water Reserves drinking water source protection plan*

⁷¹ Field, G & Harold M – Rio Tinto Iron Ore (2013) *Development of Beneficial Use Solutions for Surplus Water From Marandoo Mine: Lessons Learned*

⁷² Field, G & Harold M – Rio Tinto Iron Ore (2013) *Development of Beneficial Use Solutions for Surplus Water From Marandoo Mine: Lessons Learned*

⁷³ Rio Tinto (2012) *Drinking Water Quality Annual Report – Towns 1/7/2011 to 30/6/2012*

⁷⁴ Tom Price Settlement Profile (unpublished)

⁷⁵ Aquaterra Consulting (2007) *Pilbara Iron 2007: Operational Audit and Asset Management System*

of pump stations would need to be adjusted and sections of strategically located water mains would need to be duplicated in order to accommodate additional town development.⁷⁶ The system is being upgraded on an ongoing basis, as ageing sections of the network infrastructure come to the end of their operational life.

Future requirements and planning

The *Southern Fortescue and Marandoo Water Reserves drinking water source protection plan* (2011) covers water sourced for the Tom Price water supply from both the Southern Fortescue borefield and from mine dewatering activities. The plan proposes the establishment of water reserves to manage and protect the water and the respective borefields.

The major water quality risks to these water reserves are in-pit mining activities and pastoral activities close to bores. The plan recommends careful management of mining operations and relocation of stock watering points to reduce the water quality contamination risk these activities pose to the Tom Price water supply. It is noted that the Southern Fortescue and Marandoo Water Reserve is yet to be proclaimed. In the meantime, RTIO has developed a Catchment Management Plan, in accordance with the recommendations of the drinking water source protection plan and are progressing other recommendations within the plan.

The main requirement to ensuring Tom Price's future water needs will be upgrading the ageing distribution network to maintain constant supply and water pressure.

10.2 Drainage

Tom Price is subject to occasional, but heavy rainfall through the summer months. Although it is located at a high altitude by Western Australian standards, Tom Price sits in a valley, with no natural gradient to aid in the dispersal of water. The town is also located on the watershed between three river systems: Fortescue, Ashburton and Robe.⁷⁷ Drainage issues are compounded by RTIO's railway which runs along the western edge of the southern part of the town creating an additional obstacle for flood water.

Several very broad and deep drains, empty for most of the year, run in an east-west direction across the town and numerous smaller drains also crisscross the town, helping manage water flow during heavy rains.

Future requirements and planning

Most of the undeveloped land in Tom Price is constrained by drainage issues. Any substantial urban expansion areas will need to allocate a significant proportion of land to drainage.

10.3 Wastewater

The wastewater collection and conveyance system and wastewater treatment plant for Tom Price are owned and operated by Hamersley Iron Pty Ltd (a subsidiary of Rio Tinto). The plant is situated approximately 1.5 kilometres west of the town centre off Nameless Valley Drive. The plant comprises a six-bag Agisac screening system to collect solid waste together with a series of three oxidation ponds within a site area of 3.85 hectares.

The residual treated wastewater is treated and chlorinated, prior to off-site discharge in a nearby creek in accordance with the Environmental Protection Authority licence. The creek feeds into King's Lake which is man-made and surrounded by parks which are used as a passive recreation area.

The Tom Price wastewater treatment plant was designed to accommodate a population of 5,000, which is substantially larger than the resident (3,134) population and the PICCC population projection for 2020. A 2008 study found that the plant had capacity to service 1,302 dwellings with the potential to service 1,464 dwellings if all existing ponds were fully utilised.⁷⁸ At the 2011 Census there were 934 occupied private dwellings in Tom Price.

There are two wastewater reticulation systems that connect to the Tom Price wastewater treatment plant. The area east of the railway line is served by a gravity fed system, while the area to the north (Area W) is served via two pump stations. Wastewater is reticulated by a system of mainly 150 millimetres (mm) and

⁷⁶ Voran Consultants (2008) *Water and Sewerage Infrastructure Study for Tom Price Township Expansion*, report prepared for Pilbara Iron, Perth

⁷⁷ Tom Price Settlement Profile and Draft Tom Price Townsite Strategy (unpublished)

⁷⁸ Voran Consultants (2008) *Water and Sewerage Infrastructure Study for Tom Price Township Expansion*, report prepared for Pilbara Iron, Perth

225mm earthenware and PVC pipes. Approximately 30 per cent of the pipes are earthenware and due to aging are susceptible to cracking. The main constraint to the capacity of the plant is the diameter (225mm) of the pipe connecting the town reticulation network to the waste water treatment plant.

Future requirements and planning

The Tom Price wastewater treatment plant has capacity to service the town in the long-term without substantial upgrades. The key works to the network will be upgrading the reticulation system on an ongoing basis, in particular, replacing the earthenware pipes east of the railway. This issue is likely to become more significant as the pipes continue to deteriorate.

10.4 Power

Tom Price is connected to the Rio Tinto 220kV transmission system, which provides power to the towns of Paraburdoo, Pannawonica, Wickham and Dampier within the Pilbara region. The system is connected to the North West Integrated System which connects infrastructure owned by Horizon Power, Pilbara Iron (a subsidiary of RTIO), Alinta and BHP Billiton Iron Ore.

RTIO has decommissioned two power stations at Dampier and Cape Lambert and has built a replacement power station (Yurralyi Maya) at the Maitland Industrial Estate near their 7 Mile rail operations site in Karratha. The Yurralyi Maya power station was initially constructed with four open-cycle, state-of-the-art gas turbines. A fifth turbine was commissioned in 2013, increasing the capacity of the plant to 200MW.

Rio Tinto also operates a four turbine power station at Paraburdoo. Three turbines – commissioned from 2006 – at the Paraburdoo station are gas fired, capable of generating 120 megawatts (MW). The fourth turbine – commissioned in 1985 – is a dual fuelled machine capable of generating 20MW, but is now reserved for emergency power supply.⁷⁹

Town power supply

RTIO is responsible for the provision of power to Tom Price. Electricity is supplied through power produced at RTIO's power station at Yurralyi Maya, and conveyed to Tom Price by a 220kV overhead transmission line. This network connects to a substation located at the entrance to the Tom Price mine, approximately eight kilometres south of the town. The townsite consumes a small portion of the power produced by Rio Tinto's power station, with the majority consumed by mining activity.⁸⁰

Power distribution runs on a range of system voltages including 33kV, 11kV and 415 volts (V). From the mine entrance substation, power supply is stepped down to two inter-connectable 33kV feeders ('Town 1' and 'Town 2') for townsite distribution.

Four zone substations convert the supply from 33kV to 11kV before the flow is again stepped down to 415V by 43 distribution substations located within the town. The Tom Price distribution demand ranges from 14 megavolts per annum (MV/a) in summer to 9 MV/a in winter. The 'Town 1' 33kV feeder has a capacity of 13MV/a. The 'Town 2' 33kV feeder has recently undergone reconstruction and now has a capacity of 20MV/a.

Future requirements and planning

RTIO is in the process of upgrading the 11kV/415V transformers, requiring additional capacity to meet the demands of local businesses and residents. This project (likely to be completed later in 2014) will see the upgrade of over half the existing transformers, cabling, high voltage and low voltage switchgear in Tom Price.

Rio Tinto continually studies power demand in order to understand the capacity required to adequately supply its mining operations and associated towns with capacity enhancement and growth projects for the system continuing. Current and forecast short-term power demand requirements are catered for. A 2008 study found that the main limiting factor, with regard to Tom Price's power supply, was the capacity of the town sub-stations. The Zone 1 substation was upgraded from five MV/a to 12MV/a in 2012 to allow for the town centre expansion.

⁷⁹ WAPC (2012) *Pilbara Planning and Infrastructure Framework*

⁸⁰ Rio Tinto (2008) *Public Environmental Review: Marandoo Mine Phase 2*

10.5 Transport

Existing transport networks in and around Tom Price are shown on Map 22.

Roads

Tom Price is not situated on or near to a major highway. Access from Great Northern Highway involves an approximately 110 kilometre route along Karijini Drive to the Paraburdoo-Tom Price Road and then a further 10 kilometres from this point.

The current direct road link to Karratha is unsealed and includes a section of the RTIO railway access road (permits required). The unsealed roads can be unusable during heavy rain periods. There has for some time been interest in constructing a high grade sealed road, linking Tom Price with Karratha. Completing the project would create a reasonably direct 270 kilometre sealed road linking Tom Price with Karratha and Dampier. The shortest existing sealed route is 573 kilometres.

The Karratha-Tom Price Road project, known as the Millstream link, is comprised of four stages, two of which are complete. Stage 1 consists of a 25 kilometres section from the north of Tom Price to the Nanutarra-Munjina Road (known as Bingarn Road) and Stage 2 consists of a 90 kilometres section between North West Coastal Highway at Karratha and the Roebourne-Wittenoom Road at Barowanna Hill. The timing of, and funding for, Stages 3 and 4, are yet to be finalised and the project appears to have lost momentum, with the last works (the completion of stage 2) undertaken in 2008.⁸¹

Main Roads Western Australia (MRWA) maintains the Nanutarra-Munjina Road, which links the North West Coastal Highway and the Great Northern Highway and provides access to Paraburdoo and Tom Price. There are currently no works proposed likely to impact Tom Price.

RTIO is responsible for maintaining tracks and unsealed roads required to support drive-in, drive-out operations to the various mine sites. The Shire of Ashburton maintains all other roads. All roads within the Tom Price urban area are sealed.

Future requirements and planning

Main Roads has advised that there are no immediate major upgrades proposed for the Paraburdoo to Tom Price road or the Karratha to Tom Price roads. Resource development activities are expanding generally to the north of Tom Price and Main Roads is working with proponents to identify and implement road upgrade requirements to manage the increased transport task in the area. The completion of stages three and four of the Karratha to Tom Price road is currently a long-term proposal.

Rail

RTIO owns and operates a rail network within the Pilbara, linking the mine sites near the towns of Paraburdoo, Tom Price and Pannawonica and the sites at Brockman, Marandoo, Yandicoogina, Hope Downs and West Angelas to the ports at Dampier and Cape Lambert.

The town of Tom Price is bisected by the Paraburdoo to Dampier railway system. The system splits into two lines to the south of the town, with one line accessing the Tom Price mine site and the other line accessing the Paraburdoo and Marandoo mine sites.

Public transport

There is no regular regional bus service from other major centres to Tom Price. The only buses visiting Tom Price are part of organised tour groups. A privately operated bus service (Lestok) transports students between Paraburdoo and the Tom Price Senior High School and passengers between Tom Price and Paraburdoo airport.

RTIO operates a free bus service for employees, taking them to and from the Mt Tom Price and Marandoo mine sites.

There is one taxi service in Tom Price with three taxis licensed to operate in the town. A country taxi plate review is conducted every three years in regional towns to ensure that service levels are adequate.

⁸¹ Main Roads (2008) <http://www.millstreamlink.com.au/The+Larger+Project/default.aspx>

Airports

Air travel to Tom Price is serviced by the Paraburdoo airport, located approximately 70 kilometres south of Tom Price and 10 kilometres north east of Paraburdoo. Opened in 1974, it is a public airport, which is owned and operated by RTIO.

Paraburdoo airport comprises a single asphalt-sealed runway which is 45 metres wide and 2,132 metres in length, with pilot activated lighting and capacity to accommodate up to Code 3C sized jets (such as Fokker 100, Boeing 717 and BAe 146). Aircraft refuelling is currently handled by a refuelling truck. A small passenger terminal exists on the site.

Current air traffic consists primarily of Qantas Regular Passenger Transport Service route flights, as well as jet and turboprop charter aircraft and general aviation light aircraft. As of August 2013, QANTAS operated 30 to 40 flights to and from Paraburdoo per week. Virgin (formerly SkyWest) also operates three closed charter flights per week from Paraburdoo to Carnarvon and Geraldton.

There has been a substantial increase in traffic through Paraburdoo as a result of the resource sector boom and growth in fly-in fly-out work practices. Passenger numbers more than doubled from 2006/07 to 2010/11. In 2000/01, 1,143 flights arrived at/departed from Paraburdoo Airport. During the 2012/13 financial year traffic had increased to a volume of 3,394 flights carrying 266,146 passengers.⁸² RTIO estimates that, including small aircraft and freight flights, there were approximately 6,000 plane movements through the airport in 2012/13.

RTIO has recently upgraded Paraburdoo Airport to cater for increased regional FIFO charter and community needs. This includes resurfacing of the runway and apron area, an increase in the number of aircraft parking bays, significant upgrading of the terminal facilities including: enlarged departure lounge; additional airline office/briefing room for light charter services; new and enlarged/refurbished toilet facilities; and an additional check-in counter.

Future requirements and planning

Future demand for regional airport infrastructure will be dependent on the growth of the mining industry and its reliance on a fly-in fly-out workforce. The Department of Transport considers that the need for fly-in fly-out air services will continue to grow, resulting in the need for regional airstrips to handle larger aircraft and more aircraft movements.

The Central Pilbara Airport Study conducted by Pilbara Iron in 2005 recommended the relocation of the airport from Paraburdoo to a location near Tom Price which is more central to RTIO's developing field of operation.

In 2008, RTIO proposed the development of a new airport approximately 18 kilometres north of Tom Price with the intent that it may become the region's main public airport, rather than Paraburdoo. The proposal was for RTIO to own and operate the airport in much the same way as it currently manages Paraburdoo Airport.

Enthusiasm for the proposal waned in the wake of the global financial crisis, with the company withdrawing its development application to construct the facility in 2009.⁸³ The airport had been billed as the 'Gateway to Karijini National Park' and would have had undoubted benefits to the tourism industry. However, the overwhelming majority of traffic through Pilbara airports is mining related and any decision to develop (or not develop) an airport facility in the region is, to a large extent, dependent on demand from the resources sector.

The Shire of Ashburton continued to investigate the possibility of an airport at Tom Price. In late 2011, however, the council voted not to proceed with a business case for developing an airport at Tom Price and it appears highly unlikely that this option will be pursued in the near future.⁸⁴

Growth in FIFO work practices has not only increased air traffic through existing airports but has also led to the development of numerous private air strips at, or adjacent to, mining operations and transient workforce accommodation camps. Resource

⁸² Bureau of Infrastructure, Transport and Regional Economics (2013) Website: <https://www.bitre.gov.au/statistics/aviation/>

⁸³ WA Today (2009) Website: <http://www.watoday.com.au/wa-news/rio-kills-karijini-airport-bid-20090115-7h10.html>

⁸⁴ Shire of Ashburton (2011) *Inside Ashburton December 2011*

companies generally prefer airstrips that service fly-in fly-out operations to be within a 30-minute drive from their mining site, for occupational safety and health reasons as well as reducing operational down time for the mine site.

Not developing a public airport at Tom Price ensures the continuation of regular air services to Paraburdoo. Some of the additional traffic generated by the expansion of mining operations has been diverted to private airports and the expected life of the Paraburdoo mine has been re-estimated at approximately 30 years, ensuring long-term demand for the facility.

10.6 Education

There are two primary schools and one senior high school in Tom Price. Due to the highly transient nature of the population, student numbers can vary significantly from year to year, which can affect the ability to plan for educational requirements. The trend in school enrolments is shown in Table 42.

Tom Price Primary School

Located near the town centre on a 1.76 hectare site on Wattle Street, the school was opened in 1967 to service the children of local iron ore mine workers. The school consists of an on-site purpose built kindergarten; two transportable pre-primary centres; nine classrooms; an administration block; an undercover

area with canteen; and specialist areas including a new library/resource building, an art/craft room, an information technology centre, a Language Other Than English (LOTE) room and an Indigenous education centre.

In semester one of the 2014 school year, 287 full time students were enrolled at the school in years one to seven.

North Tom Price Primary School

The North Tom Price Primary School was established in 1978 on a 1.78 hectare site on Tanunda Street in the northern part of the Tom Price townsite (Area W). In semester one of the 2014 school year, 245 full time students were enrolled at the school in years one to seven.

The school consists of a purpose-built kindergarten, three transportable pre-primary centres, 12 classrooms, an administration area, an undercover area, a library and a music room.

Tom Price Senior High School

Tom Price Senior High School is located on a 4.05 hectare site on the corner of Central Road and Milpera Street. Opened in 1971 as a district high school with 700 students from Year 1 to Year 10, the school has undergone numerous changes in response to community needs. It became a senior high school in 1995, with the addition of years 11 and 12.

Table 42: Tom Price school enrolment trends: 2007–2014 (semester one)

School	Education level	2007	2008	2009	2010	2011	2012	2013	2014
Tom Price Primary	Primary	333	341	269	271	282	280	267	287
North Tom Price Primary	Primary	221	226	203	217	230	234	229	245
Total Primary		554	567	372	488	512	514	496	532
Tom Price Senior High School	Lower secondary	182	156	175	157	174	170	162	163
	Upper secondary	89	98	75	81	71	76	55	71
Total High		271	254	250	238	245	246	217	234

Source: Department of Education (2014)

In semester one of the 2014 school year, 234 full time students were enrolled at the Tom Price Senior High School. The school serves not only the town of Tom Price, but also Paraburdoo and the Bellary and Wakathuni Aboriginal communities.

In the mid-2000s, the former Department of Education and Training and the Shire of Ashburton constructed an indoor recreation facility to be shared by the high school and the community. This provides an air-conditioned gymnasium and a performing arts space capable of seating 250 people.

Tertiary education and other training

Pilbara TAFE has been rebranded to become the Pilbara Institute, with a focus on delivering industry-relevant training with employment-based outcomes. The Pilbara Institute provides vocational education and training to apprentices, trainees, small businesses, Aboriginal communities, corporations and individuals.

The Pilbara Institute has a Tom Price campus located on Stadium Road. The facility offers up to 40,000 student contact hours across a range of vocational courses, designed to meet the needs of industry and the general community. It also offers programs to the Tom Price Senior High School.

A private training organisation, Pilbara Training Solutions, is also located at the Pilbara Institute campus, providing training courses such as construction and equipment, occupational health and safety, leadership and management and computer skills. Pilbara Training Solutions is a supplier to Rio Tinto Iron Ore for induction and training courses.

In 2013, the Pilbara Institute offered the following courses in Tom Price:

- Certificate I in Gaining Access to Training and Employment (GATE), General Education for Adults (Introductory), General Education for Adults and Information, Digital Media and Technology;
- Certificate II in Business and Resources and Infrastructure Work Preparation; and
- Certificate III and IV in Business Admin and Occupational Health and Safety.

Future requirements and planning

Tom Price primary and high schools have adequate facilities to meet current and projected demand for the medium-term. Population projections indicate that two primary schools will be sufficient to meet long-term demand and there is sufficient capacity at the high school site for expansion should that be required in the future. There is adequate opportunity on the TAFE campus site for long-term future expansion should sufficient demand eventuate.

10.7 Health

Under the *Western Australia Clinical Services Framework 2010-2020*, Tom Price Hospital is designated as a 'small hospital/health centre'; it forms part of the WA Country Health Services Pilbara integrated network of services and is supported by the Nickol Bay Hospital in Karratha and Hedland Health Campus in South Hedland.

Tom Price Hospital is located on Lot 862 Hospital Drive in Tom Price on land reserved under the Shire of Ashburton Town Planning Scheme No. 7 for Public Purposes (Health) and is under the control of the Minister for Health. The original facility was built in 1962 by Hamersley Iron Pty Ltd. Significant upgrades were carried out in 1999, including upgrades to the emergency department and resuscitation area.

Tom Price hospital has eight inpatient beds. There is a 24-hour nurse-led emergency service with on-call support from local general practitioners, engaged as visiting medical practitioners. There are currently two emergency department bays and one large, well-equipped resuscitation bay located at the hospital.

A number of facility issues are impacting directly on service delivery and the ability to implement contemporary models of care, including increasing ambulatory and Aboriginal health care.

There is an increasing need for emergency and ambulatory care services. In recent years Tom Price has experienced growth in the number and acuity of emergency department presentations, particularly during the peak tourist season (May to September).

Community and population health services also operate from the hospital facility. A private-visiting dental practice also services the town and school dental healthcare is provided by a visiting mobile dental service to school children aged between five and 16 years.

As at May 2014 work was underway at Tom Price Hospital to develop a larger, more modern waiting area. The project, costing \$220,000, was funded as part of a joint venture project between the State Government's Royalties for Regions Program and the WA Chamber of Minerals and Energy's Pilbara Industry's Community Council (PICC).

Future requirements and planning

A Health Service Plan was completed for Tom Price in late 2011 which:

- describes the current and future service and facility planning issues; and
- outlines the key ideas for progressing improved health services and health facilities in Tom Price.

Although resident population growth in Tom Price has been modest compared with other parts of the Pilbara, the service population (FIFO and resident) of the hospital catchment area has increased considerably. The current facility is ageing and its design no longer meets the needs of the health service. This includes issues relating to security, facility wide access and egress, patient and visitor flow around the facility and the distance between the ED and inpatient area.

The availability of affordable housing impacts the development and expansion of private practices (e.g. physiotherapy, pharmacy). The high cost of publicly available housing also has a detrimental impact on attracting and retaining health services staff and impacts on the overall health budget. Ensuring an adequate supply of affordable housing for health workers in Tom Price is critical for the efficiency of the industry in the town.

There is limited room for further expansion of the current facility within the existing site. The identification of a new hospital site may be important for future health infrastructure planning in Tom Price.

10.8 Police, justice and emergency services

Police and justice

The Tom Price community is serviced by a dedicated non-24 hour police station commissioned in 1985. The Tom Price Police Station provides minimal operational support to the Paraburdoo Police Station. Seven sworn officers operate out of the station which WA Police consider is well positioned to provide the policing and emergency management support services required by the town and the seasonal flow of tourist traffic through Karijini National Park.

WA Police collaborates with the Department of the Attorney General regarding the use of the police station as a base for the provision of courtroom services and with the Department of Transport for the provision of licensing services to the Tom Price community.

Emergency services

The Tom Price Private Volunteer Fire Brigade (PVFB) is a Rio Tinto entity registered with the Fire and Emergency Services Authority under section 49 of the *Fire Brigades Act 1942*. This brigade receives Emergency Services Levy funding and effectively acts as the Department of Fire and Emergency Services' agent for fire services in the Tom Price area. The fire brigade facility is located at 30 Central Road, Tom Price. There are no paid employees, however, 30 volunteer workers carry out fire and emergency services work.

In addition to the PVFB, the Tom Price Volunteer Bush Fire Brigade (BFB) was formed in 2007 after bushfires in Karijini National Park in 2005 and 2006. Rio Tinto has supplied the BFB with a station on Boonderoo Road which was opened in August 2013.⁸⁵

⁸⁵ Shire of Ashburton (2013) Shire website <http://www.ashburton.wa.gov.au/community/tom-price/community-story/318/>

The Tom Price State Emergency Service (SES) is located in a RTIO owned premises at 562 Coolaroo Street, Tom Price. The facility is equipped with one canter and one personnel carrier vehicle, a general rescue trailer and vertical rescue training tower. There are no paid employees, with 17 volunteers providing emergency services.

An ambulance sub centre is located in Tamarind Street, Tom Price. This service is run by a paid office manager and 15 active volunteers. The centre has an extensive relationship with the Royal Flying Doctor Service (RFDS), including incident response and patient transfers to Paraburdoo Airport.

One of the most significant issues currently facing the Tom Price Ambulance service is the distance from the town to Paraburdoo Airport, which is the closest airstrip available to the RFDS. Collecting and transferring patients to Paraburdoo Airport can take several hours, during which time the capacity of services in Tom Price is reduced. The Tom Price ambulance centre management has stated that they receive roughly 300 call-outs per year, approximately half of which involve transferring patients to RFDS services at Paraburdoo. From January to July 2013 the ambulance service transported patients to Paraburdoo Airport on 76 occasions.

Future requirements and planning

The Tom Price Police Station plays an important role in the ongoing provision of policing services to the Pilbara Police District. The current facility is located on a large site that will support building upgrades and expansion should sufficient demand eventuate. The level and timing of any future investment will be influenced by evolving statewide police service delivery priorities and available funding.

The SES has advised that land will be required for a local government-owned facility in the near future and that discussions have commenced with the Shire of Ashburton regarding available land to accommodate a new facility.

The construction of a RFDS airstrip at Tom Price has been under consideration for some time. A site for the air strip has been identified and the project is supported by the Shire of Ashburton, however, funding for the construction and on-going maintenance

and operation of the airstrip is yet to be confirmed. There is broad support among the local community for the development of the airstrip and the resolution of funding issues appears to be the final significant hurdle for the project.

The recent placement of an office manager for the St John Ambulance has created the need for some internal works to create an office and retail space. A focus has been placed on delivering first aid training courses in the sub centre and this will increase the demand on training facilities. The Tom Price ambulance service is also seeking to employ a full time paramedic in the town, however, securing suitable accommodation had (as at August 2013) proved problematic, delaying the appointment.

10.9 Communications

Tom Price is connected to the Telstra statewide fibre backhaul network and is serviced by the reticulated Copper Access Network (CAN) providing connectivity to the Public Switched Telephone Network for voice services and ADSL/ADSL2+ broadband. The town has one telephone exchange and three exchange distribution areas. The town is also serviced by Telstra's GSM and NextG mobile networks. Optus also provides GSM and 3G coverage to the town.

Tom Price has been indicatively nominated to be covered as part of the fibre to the premises (FTTP) rollout of the NBN in WA. This is likely to be confined to the immediate township with surrounding properties supported through the next generation KU (portion of the electromagnetic spectrum in the microwave range of frequencies) band satellite services.

The planned deployment of the NBN in Tom Price should address expected communications demands. The NBN is anticipated to take up to 10 years to be fully deployed across the State, however, it is uncertain as to when this will be deployed for Tom Price. The most significant constraint on telecommunications in and out of Tom Price is the lack of competition in backhaul services. This has prevented the establishment of competition in broadband services and mobile services.

Future requirements and planning

No provisions have been made in forward budget estimates or capital investment plans as telecommunications is a market based infrastructure. The implementation of the NBN by the Commonwealth is providing a significant improvement in baseline infrastructure and utilisation to enhance services for the general population.

10.10 Waste management

Solid waste is disposed of at the Shire's landfill site, located to the north of Tom Price, on a 20 hectare Crown reserve for the purpose of a waste disposal site. According to the *Pilbara Planning Infrastructure Framework* (2011), the Tom Price refuse disposal site is a Category 64 – Class II Putrescible waste site with an expected life span of 15 years. The landfill facility is broken up into four main components: domestic waste, commercial waste, household waste and recyclable waste.⁸⁶ More than 14,000 tonnes of waste was recycled at the facility in the two years to September 2012.⁸⁷

10.11 Community infrastructure

Sports and recreation

Tom Price has a high standard of sport and recreation infrastructure for a town of its size. Notable recent developments include the refurbishment of the town civic centre and the redevelopment of the Clem Thompson Oval area.

The \$10 million upgrade to Clem Thompson Oval includes a two storey pavilion building which includes a function area, bar kitchen, change rooms and seating. The project was funded by the State Government Royalties for Regions Program, Rio Tinto, the Department of Sport and Recreation and the Shire of Ashburton.

Key community infrastructure in Tom Price is shown in Table 43 and on Map 23.

The three main ovals in Tom Price include:

- Clem Thompson Memorial Oval (previously called Number One oval) – a full sized football oval constructed to WAFL standard, with lighting available and one cricket net. Football is played at the ground in winter and cricket during summer.
- Tjiluna Oval (previously named Number Two oval) – is predominantly used for softball and baseball throughout the year. Lighting is available.
- Minna (Area W) Oval is adjacent to the North Tom Price Primary School – is a joint facility between the Department of Education and the Shire of Ashburton. This oval does not have lighting towers for night sport.

There are also a number of small parks and playgrounds scattered throughout the town. Access to reliable water resources close to town and the proximity of natural resources such as Karijini and Millstream-Chichester National Parks also provides recreation opportunities for Tom Price residents.

Table 43: Existing Sport and recreation facilities in Tom Price

Facility	Number	Usage (high/medium/low)
Aquatic centre (50m pool)	1	high
Go kart race course	1	low
Equestrian centre	1	medium
Oval	3	high
Cricket nets	1	medium
Tennis club	1	medium
Outdoor basketball/netball courts	4	medium
Skate park	1	high
Speedway track	1	medium
Golf Course	1	high
BMX track	1	high
Bowling green	1	medium
Squash courts	2	medium
Gymnasium	1	high

Source: Department of Sport and recreation October 2011 and Shire of Ashburton, October 2011

⁸⁶ Sinclair Knight Merz (2011) *Tom Price Land fill – Environmental Impact Assessment*

⁸⁷ Shire of Ashburton (2012) Website: http://www.ashburton.wa.gov.au/library/file/publications/articles/Recycling%20Article_Sept%202012.pdf

The Tom Price swimming pool is located on the corner of Willow and Stadium roads. It is 50 metres long and six lanes in width. The Shire of Ashburton has recently upgraded this facility with a major contribution from Rio Tinto Iron Ore. The facility now includes a shaded infants' pool, shading over half of the main pool, kiosk and barbeques. The Tom Price swimming pool is only open between October and April due to cold water temperatures in the winter months.

Recreational facilities were given a major boost in 2005 with the opening of the Tom Price Community Recreation Centre. This is a shared facility between the high school and the community and features a performing arts theatre (seats 250), green room, offices, multipurpose sports hall (including a gymnasium) and a crèche room.

Future requirements and planning

Many of Tom Price's community infrastructure assets have recently undergone or are currently undergoing upgrading or replacement. One of the most prominent upgrades in recent years has been the Town Centre redevelopment. Stage one of the project is largely complete, however, there are no immediate plans to commence development of stage two, which includes a "Village Green" area, and would substantially enhance the amenity of the town centre.

Other proposed features of the town centre redevelopment include a landscaped amphitheatre which will accommodate 300-400 people and provide a staging area for events and a large LCD screen is proposed to replace the current drive-in. No funding has been secured for these projects.

The Shire of Ashburton has advised that there is a need for upgrading of the ageing ablution facilities at the BMX/Speedway. The speedway lighting also requires upgrading for night racing, which is a requirement due to the high temperatures during daylight hours.

Further funding for sport and recreation developments is available through the Royalties for Regions initiative and the Department of Sport and Recreation's Community Sporting and Recreation Facilities Fund, subject to applicants suitably addressing program criteria.

10.12 Civic and cultural facilities

In addition to the 250 seat theatre in the Tom Price Community and Recreation Centre, there are two other community facilities in Tom Price:

- Tom Price Community Centre – located in the town centre on Central Road with a capacity of 313 people. The hall (including a stage) is hired by sporting groups such as dancing and aerobics. It is also used for quiz nights, bands and youth cinemas.
- Tom Price Civic Centre – Located on Tanunda Street, Area W, it has a capacity of 225 people. This is used for function hire and regularly used by a playgroup and arts and craft groups.

The Tom Price library is the largest library facility in the Shire of Ashburton, in terms of both stock and patronage. With a staff of three, the library is open 27 hours per week.

10.13 Child Care

There is one child care centre in Tom Price known as Little Geckos. This is located within the Nintirri Neighbourhood Centre, located on the corner of Central and Stadium Roads. It is licensed for 43 children up to six years old. There is a large waiting list particularly for babies and toddlers and also a waiting list for kindergarten aged children. No before and after school care is available for school age children, however, some casual care is provided for the siblings of enrolled children who attend on rare occasions during school term and holidays.

11 Royalties for Regions and Pilbara Cities

Each year the State Government's Royalties for Regions Fund receives \$1 billion of the State's annual revenue from mining and resources royalties, which is reinvested in regional communities.

The Royalties for Regions program provides a framework to support and maintain strong and vibrant regions by funding improved infrastructure and headworks, enabling across-government strategic regional and community services projects, and providing contestable grant funding.

Funds are invested against six policy objectives:

- building capacity in communities;
- retaining benefits in local communities;
- improving services to achieve equality with metropolitan communities;
- attaining sustainability;
- expanding employment and growth opportunities; and
- growing prosperity.

Royalties for Regions benefits regional communities, including Newman and Tom Price, through several funds, including the Regional Infrastructure and Headworks Fund. The fund supports large-scale strategic regional infrastructure and headworks projects that are acknowledged as being of strategic importance to the state. The fund aims to support strong investment in regional areas and help leverage investment from other sources for projects that will contribute to the development of regional infrastructure and headworks. It also supports planning for infrastructure at the regional level and encourages regional communities to develop infrastructure projects that benefit local organisations and communities.

Royalties for Regions funding allocated to the shires of Ashburton and East Pilbara in 2012/13 from the Regional Infrastructure and Headworks Fund and the Country Local Government Fund are shown in Tables 44 and 45 respectively.

The Pilbara Cities initiative is funded from the Regional Infrastructure and Headworks Fund. The Government's vision for Pilbara Cities is for modern vibrant cities and regional centres that can support and deliver a skilled workforce for major economic projects in the Pilbara.

The realisation of this vision rests on the promotion of quality regional living with modern services and facilities that will encourage the development of strong local communities. It will also maximise opportunities for Aboriginal communities, while lowering high local costs for people, businesses and government.

The key focus areas to achieve the Pilbara Cities Vision are:

- Infrastructure coordination – energy, water, waste water, roads, ports and marinas
- Land availability and development – land preparation, planning, developer attraction and retention and housing
- Community projects and engagement – education, health, community facilities and Aboriginal participation
- Economic diversification – industry development, supply chain development, business attraction and development, and transformational projects.

By the end of 2015-16, Royalties for Regions will have committed over \$1 billion directly to Pilbara Cities projects.

The implementation of the Pilbara Cities vision is transforming the region into a vibrant network of communities that are economically successful, and socially sustainable.

Many Pilbara Cities State Government funded projects, including numerous land and housing, infrastructure and community and sporting facilities, have been completed in towns across the Pilbara.

A total of \$340.2 million, including \$46.6 million in 2012-13, was provided by Royalties for Regions to partner with the Australian Government and the private sector (including mining companies and Aboriginal corporations) on major infrastructure projects to address the development of this nationally important region.

Funded projects include areas such as:

- Land and housing development
- Education
- Aboriginal communities
- Economic diversification
- Infrastructure

Examples of key Royalties for Regions projects in Newman and Tom Price include:

The Newman Revitalisation Project

The project will plan for the growth of Newman from a current estimated population of 5,000 permanent residents and 3,000 FIFO residents into a more significant town for up to 15,000 people. It will identify how current shortfalls should be addressed, and guide the development of future housing, open spaces, commercial activities, tourist accommodation and retail areas as well as provide a program for delivery of service infrastructure, transport, and education and community facilities.

Newman Service Worker Housing

The project will provide ten group site dwellings within Stage 3B of the East Newman residential estate. Royalties for Regions has allocated \$6.6 million to the Department of Housing. The housing will be made available to local small and medium business enterprises and their service worker employees. The dwellings will consist of two bedrooms and two bathrooms and will be offered at a discounted rental to the businesses, who will seek rent from the tenant of up to 30 per cent of their gross income.

Tom Price Town Centre Revitalisation

In 2009, funding of \$10 million was provided by Royalties for Regions to bring this plan into fruition and since then, the project has provided a wide range of community and commercial services within an attractive environment. Tom Price town centre now offers:

- Upgraded utilities including water, sewer, power and drainage to support the development
- Upgrades to the shopping mall and a facelift to commercial and retail facilities
- Modifications of roads and car parks
- New street scaping, improved public open spaces and community facilities – shade structures to shops and walkways, landscaping and paving, children's water playground
- Facilities and amenities for tourists – bus shelter, RV parking, public toilets

Clem Thomson Oval Redevelopment

The Shire of Ashburton received \$4.86 million from Royalties for Regions towards the \$10 million project which will include the replacement of light towers, ground works, reticulation and drainage for the oval and demolition of the existing club rooms to make way for the new Sports Pavilion and upgraded sporting facilities. Along with the Pilbara Cities Royalties for Regions funding and the Shire of Ashburton contributing \$700,000, Rio Tinto also contributed \$3.65 million towards the project.

Table 44: Pilbara – Regional Infrastructure and Headworks Fund 2012/13

Allocation	2012/13 funding (\$ million ex GST)
Community Development Projects – Shire of Ashburton	\$231,525
Community Development Projects – Shire of East Pilbara	\$3,578,443
Community Priority Road Infrastructure – Marble Bar Road Improvements Project	\$122,090
Housing for Workers	\$5,066,665
Martumili Artists Infrastructure Project	\$19,717
Newman Service Worker Housing	\$1,276,626
Newman Sporting Complex	\$3,929,532
Newman Town Centre Revitalisation Stage 3	\$23,016
Pilbara Cities Development Office	\$2,847,645
Pilbara Cities Office	\$835,000
Pilbara Cities Planning Program	\$1,064,662
Pilbara Health Partnership - Enhancing Health Services for the Pilbara Region in a Joint Partnership with industry	\$5,475,807
Regional Airports Development Scheme	\$275,925
Regional Hospitals - Nickol Bay	\$2,423,247
Regional Mobile Communications Project	\$1,087,050
Tom Price Sporting Precinct	\$5,609,733
Woodie Bio Fuels Project	\$49,514

Source: Royalties for Regions 2012-13 , Department of Regional Development

Table 45: Country Local Government Fund 2012/13 – Pilbara region

Allocation	2012/13 (\$ ex GST)
Administration of Country Local Government Fund	\$262
Capacity Building – Regional Governance Services and Asset Management Tools	\$10,341
Local Infrastructure Asset Renewal and New Assets	\$2,814,972
Regional Groupings of Local Governments	\$3,714,103
Support to Groupings of Country Local Governments 2012-13 – PDC	\$123,745
Supporting Local Government Reform government Reform	\$100,936

Source: Country Local Government Fund 2012-13 Allocations, Department of Regional Development