

3.0 CONTEXT & ANALYSIS

3.1 / ROLE AND FUNCTION OF MANJIMUP AND ADJOINING TOWNS

Manjimup is in the lower South West of WA, approximately 307 kilometres south of Perth and 126 kilometres from the regional city of Bunbury (Refer **Figure 5** – SW Location Plan). The Town of Manjimup is a regional centre for the largest shire in the South West of Western Australia (7082km²) with approximately 83% of the Shire being comprised of wilderness area, National Park, State Forests or reserves. It is the sub regional centre for the Warren Blackwood region. The Shire has a high level of annual rainfall and is a significant contributor to the State's agricultural production. The current population of the Shire of Manjimup is 10,162 with the four main Town sites being Manjimup, Pemberton, Northcliffe and Walpole (refer **Figure 6** – Shire of Manjimup Location Plan). The current population of Manjimup Townsite is slightly over 5,000 people.

Traditionally Manjimup's economy was primarily based around the timber and dairy industries however this has diversified to include general agriculture, fruit and vegetable production, tourism, viticulture and timber production. Manjimup has significant orchard produce and boasts the largest single orchard in the state. The cultivation of apples, peaches, apricots, pears, plums, cherries, avocados, chestnuts and truffles are all undertaken within the Shire. The recently-established black truffle industry has Manjimup well placed in relation to gourmet produce. The Shire of Manjimup is the largest food-bowl in Western Australia – larger than Carnarvon and the Ord River horticultural precinct.

Tourism is also a key focus of the Shire of Manjimup due to the natural amenity of the region. Manjimup is in close proximity to the recognised tourist destinations of Bridgetown, Pemberton, Walpole and Windy Harbour. Other attractions include the botanically significant D'Entrecasteaux National Park, the Lake Muir RAMSAR Wetlands, Gloucester Tree, Walpole Wilderness and Marine Parks, Jarrah, Karri and Tingle forests, and the Bibbulman Track (hiking) and Munda Biddi Trail (mountain biking) – altogether attracting over 200,000 tourists annually.

Manjimup has strong links with the neighbouring Shires of Bridgetown-Greenbushes, Nannup and Boyup Brook with each having a different complexion in their agricultural economic base and important forestry and tourism industries.

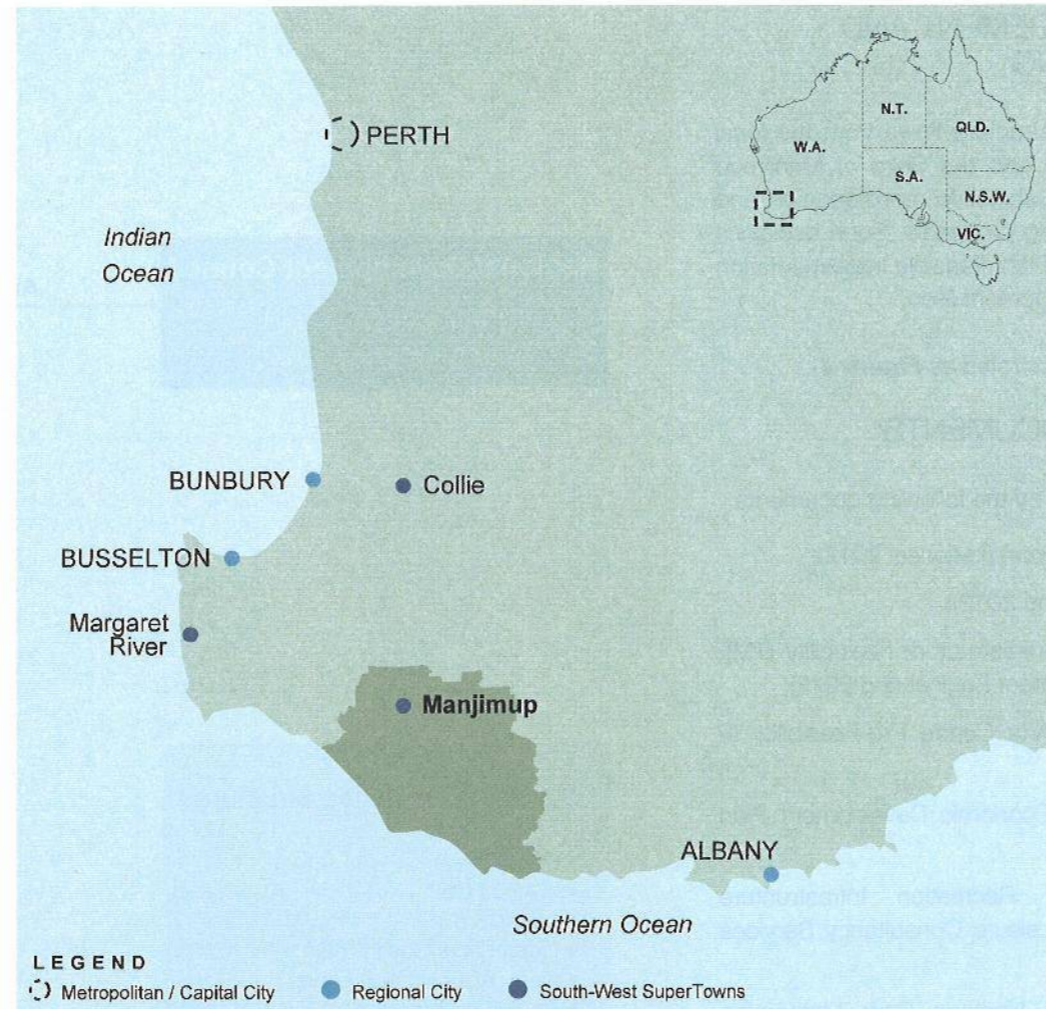


Figure 5 South-West Region Location Plan

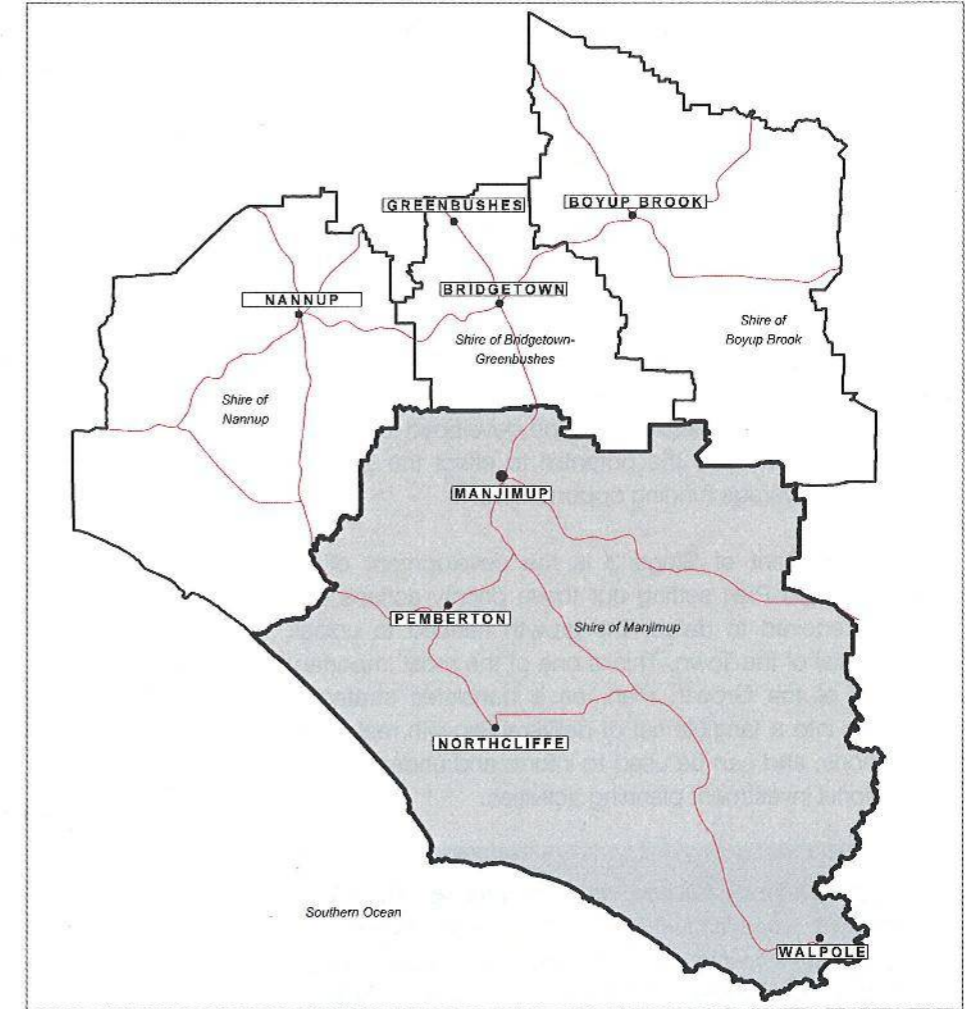


Figure 6 Shire of Manjimup Location Plan



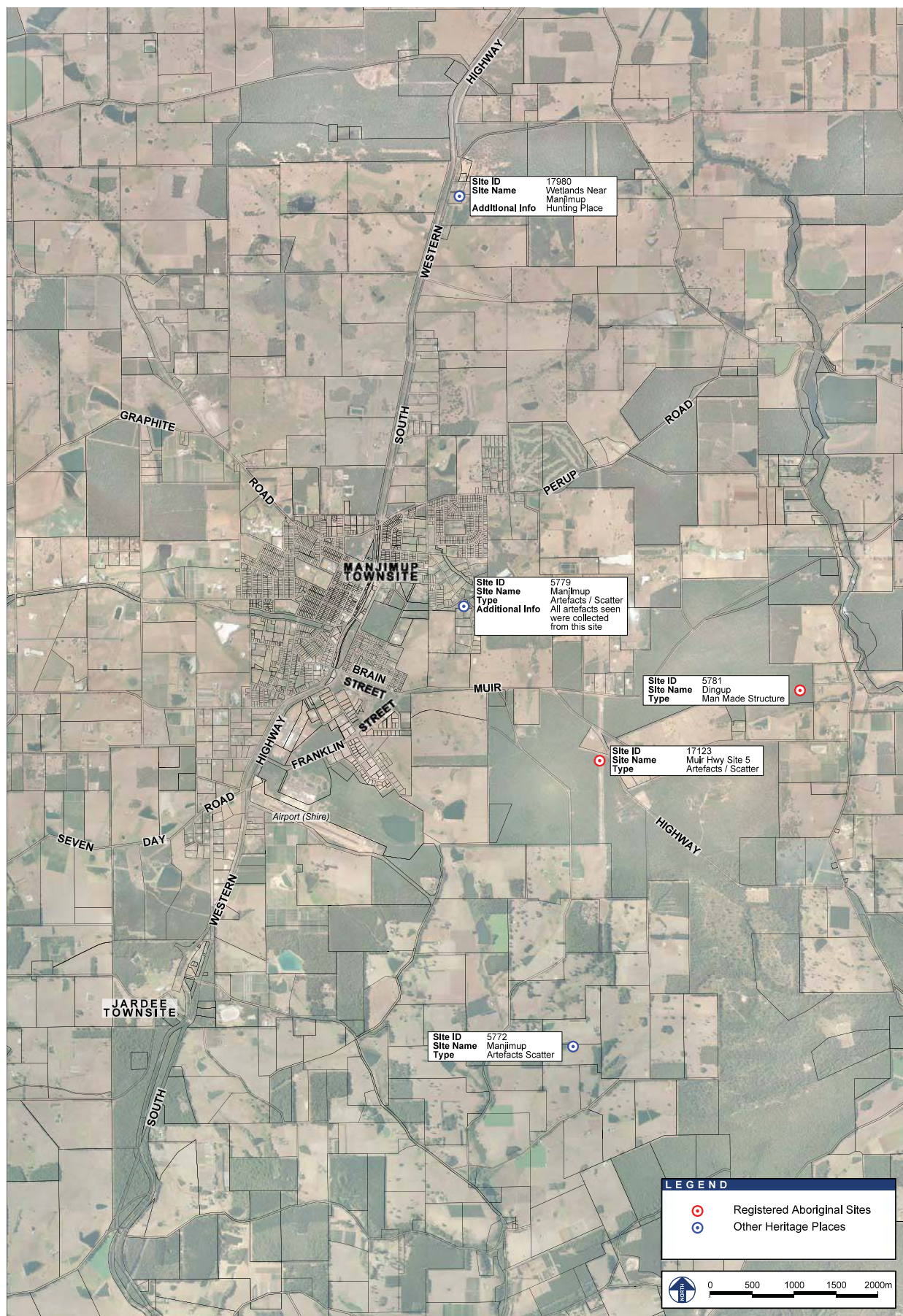


Figure 7 Aboriginal Heritage Sites

3.2 / CULTURAL HERITAGE

It is important when considering the development of Manjimup to consider its history and heritage as this forms part of the character of the Town. In order to achieve the SuperTown population objectives it will be necessary to development new areas and redevelop existing ones. However, with appropriate care and controls, this development does not have to be to the detriment of the heritage and character of Manjimup.

3.2.1 / Indigenous Heritage

It is estimated that the original nomadic residents of this district were the Nyungar / Murrum people dating back 30,000 years. They are the long time custodians of the land who hold a special bond with the land and yet leave little evidence of their presence. They not only used the land as a source of food, but they managed the land to ensure the continuation of their food resources thereby working the land on a “sustainable yield” basis long before the term was coined.

The Shire gains its name “Manjimup” from the indigenous “Manjin” reed, whose edible roots were highly valued, and from “up” meaning place. Originally, Manjimup was spelt with a double “p” however this was later dropped to the singular we have today.

Walgenup Aboriginal Corporation has been active over a number of years in collecting oral histories of local indigenous community members to preserve some of the stories of the area. The Corporation is looking at opportunities to create an Indigenous Cultural Centre in Manjimup that would showcase the local indigenous history and culture.

A number of sites within the Manjimup Townsite have been identified as containing significant Aboriginal cultural heritage, and as a result have been listed on the Register of Aboriginal sites under the Aboriginal Heritage Act 1972, **Figure 7**. It is possible however, that not all sites of Aboriginal significance have been entered onto the register. The development of any future land in and around the Townsite to facilitate urban expansion has an obligation under the relevant legislation to protect all places and objects in Western Australia that are important to Aboriginal people because of the connections to their culture. This will include site surveys and liaising with representatives of the Noongar people as and when detailed planning occurs.

The Shire is currently engaged with the Walgenup Aboriginal Corporation on preparing a Memorandum of Understanding MoU between the two parties. This MoU will cover how the Shire will consult with the Corporation and the local aboriginal

community on future projects, including SuperTown initiatives, as part of the consultation that is underway, the Shire is working with the community on identifying places of significance that are not currently included on the DIA database. Another project will be research and recording of place names in the District.

Planning for the Timber and Heritage Park incorporates a number of spaces where indigenous culture and history can be displayed and interpreted. The Shire will continue to work with the Walgenup Aboriginal Corporation on how best to incorporate indigenous heritage into the SuperTown initiative. The MoU will also seek to foster working relationships between the two parties on a wider range of issues and opportunities than just SuperTowns.

3.2.2 / Development of Manjimup

1850's & 60's Early settlement

European settlement in the District has been traced back to the 1850s. The first settlers were the Muir family in the Perup district, followed by Charles Rose and Frank Hall near Manjimup. Early settlement was characterised by modest clearing of land for cropping and the keeping of livestock. However, due to isolation from other settled areas, poor transport and difficult terrain, large-scale settlement did not occur until after the turn of the Century. The 100 Year Forest near Pemberton is an example of land cleared during this time, which was allowed to return to nature after the early settlers left the land.

1890 Agriculture push

Demand for quality agricultural land led to the release of good land near the Wilgarup River. The first Townsite in the District was gazetted in 1902 on the Wilgarup River at Balbarrup approximately 5km to the east of today's Manjimup Post Office.

1904 Graphite Mine

Graphite was discovered near the Donnelly River in 1882. The famous "One Tree Bridge" was built to cart graphite out from the mine and 65 tons was shipped to New York. However, the quality was poor and the venture failed resulting in the notable swindle of deceived investors.

1908 Local Governance

Originally, the District was partly located in the Sussex, Wellington and Plantagenet Road Boards created in 1871 and later within the Nelson Road Board. By 1900, settlement in the District had developed to the point where the community began to lobby for local governance. After many years of lobbying the Warren Road Board was established in 1908 with an annual rates income of £250 and population of 339. The name was changed in 1924 to the Manjimup Road Board and again in 1961 to the Shire of Manjimup.

1910 Gazettal of Townsite

The Townsite of Manjimup was gazetted and laid out in 1910. Government facilities were established soon after with the first school, railway station, police station and post office in 1911. Some services took longer to establish, particularly the Warren District Hospital, which replaced an earlier hospital in Jardee in 1935.

1911 Establishment of the Timber Industry

Timber felling had begun in the last decades of the 19 Century, although due to a lack of transport, large-scale exploitation of the Districts forest resources did not occur until the 1910s. The requirement for hardwood timber sleepers for the Trans-Australia Railway from Kalgoorlie to Port Augusta led to the opening up of the karri and jarrah forests in the District. In 1911, the Wilgarup Karri and Jarrah Co mill was opened near Jaradanup (now Jardee) and State Saw Mill No.1 established in Deanmill. The need to ship the cut timber from the area led to the extension of the Western Australian Government Railways (WAGR) line from Bridgetown to Jaradanup (Jardee) in 1911. This was later extended to State Saw Mills 2 and 3 at Big Brook (now Pemberton) in 1914. Other mills and their supporting mill towns followed over the next four decades at Northcliffe, Shannon, Quinninup, Nyamup, Tone River and Palgarup. Manjimup became a base of operations for Bunnings Bros, which continues to this day, under the ownership of Auswest Timbers.

1921 Group Settlement Scheme

Premier Sir James Mitchell initiated the group settlement scheme to "bring together idle hands and the idle lands of the South West". This resulted in hundreds of new migrants moving into the District. However, it was a period of harshness, isolation and poverty with most of the group settlement properties subsequently abandoned.

1928 Tobacco Industry

The tobacco industry was established in the Manjimup District in 1928. Its growth is closely connected to the influx of Macedonian immigrants to Manjimup in the Inter-War period. The industry continued until its sudden demise in 1961 due to tobacco companies halting purchase of Manjimup product,

1929 Manjimup Butter Factory

A co-operative butter factory was established in Ralston Street, Manjimup in the late 1920's to support the burgeoning dairy industry. This facility was later brought under the South West Dairy Farmers Co-operative trading as 'Sunnywest' butter and operated until 1976. The butter factory was later supplemented by the Peters Creamery in Rose Street, which has ceased operations by the early 1980's as the dairy industry declined.

1938 Introduction of Town Planning Scheme

Manjimup was one of the first towns outside of Perth to create a Town Planning Scheme to guide development. Gazettal of

Town Planning Scheme No.1 in 1938 highlighted the fact that the Town was growing rapidly in a period where many other towns were still affected by the Great Depression. Further illustrating the importance of Manjimup in the State economy at this time is that many larger towns did not receive Town Planning Schemes until the 1960s or even 1970s.

1950s War Relocation

This was a period of boom for the local population with hundreds of displaced people from the war ravaged countries of Europe seeking to make a new start. There was a significant change to the mix of nationalities and cultures at this time. This period also saw investment in the Town in the form of new commercial and industrial businesses and construction of Manjimup Senior High School. Civic pride was displayed with the establishment of a number of parks and gardens and the erection of the famous Timber Arches at each end of Town.

1960s Horticulture and Fruit Processing

Large scale horticulture commenced after the Second World War in many product groups, including potatoes, apples and stone fruit. The desire to value add local horticultural produce resulted in the building of a cannery in Manjimup in the late 1960s. After a period of ownership by a number of private companies, the cannery was taken over by a local cooperative. Unfortunately, this was unsuccessful and the facility converted to potato processing, which continues to this day, albeit at a smaller production rate. Manjimup remains the base of a number of large-scale apple production and packing companies and has seen the establishment of vegetable and avocado packing.

1970s - 1990s Decline in Timber Industry

The decline in the timber industry commenced in 1970 as community attitudes began to change. The last steam-driven timber mills were closed in the late 1970s with the location of large mills rationalised to Deanmill (jarrah), Diamond Mill (woodchips) and Pemberton (karri). More recently, the 1996 Regional Forest Agreement and 2001 ban on old growth logging resulted in over a 50% reduction in the volume of timber harvested and a large increase in areas of the Shire protected from harvesting. The downscale of native timber production has been partly offset by the creation of the plantation timber industry. The dispersed nature of plantations has led to a greater dependence on chipping at the plantation site or at Bunbury Port with a gradual decline in output from large chipping mills such as Diamond Mill south of Manjimup. Although not as dominant as previously,

timber production remains a major employer and economic generator in the District.

1980s Grape production and Wineries

In the early 1980s, the area's potential to produce high quality cool climate grapes was noticed. Two wine appellation regions have been established with the Manjimup Wine Region extending south to Seven Day Road with the Pemberton Region beyond. The coming of vineyards and wineries has led to a number of related café, restaurants, short stay accommodation and galleries being established on these properties.

1990s Dairy Deregulation

One of the less publicised but darker times for the District was the period of dairy deregulation which resulted in a massive reduction in the number of operative dairies. Notwithstanding this, companies such as Bannister Downs Dairy in Northcliffe are investing heavily in modern dairy and milk production facilities to provide premium milk products. Overseas interest in the District's dairy potential may lead to a continuing investment in dairy farms and down-stream production, including powdered milk for the Asian market.

2000s Tourism and Truffles

The natural attributes of the District have made it a popular tourism destination. The growing interest in food and wine tourism has led to a range of large and small tourist developments being established over the past two decades. The growth in tourism and diversification of agriculture is demonstrated in the establishment of the local black truffle industry in the mid 2000s, which continues to grow in domestic and international reputation. The District's climate and soils allows for the production of a range of other niche products, including nuts, marron and trout. The planting of a range of vegetables also continues with supply dependent upon commodity prices.

3.2.3 / Built Heritage

Manjimup's history is reflected in a large number of buildings and places with local and state heritage significance. Manjimup has been identified as the only town in Western Australia whose main centre is predominantly 'Art Deco' or 'Inter-War Functionalist' in character. The large growth of the Town in the 1920s and 1930s saw the town centre develop rapidly with the various commercial and civic buildings reflecting the modern architecture styles of the times. The general 'Art Deco' style was reflected in commercial building construction in Manjimup up to and including the 1950s.

Unlike contemporary images of Art Deco, which can include relatively opulent elements, Manjimup's Art Deco buildings are more modest and simple. This reflects a booming regional town whose residents and business owners wished to show the Town as modern, but had more limited resources available to achieve it.

A major characteristic of Manjimup is that most of its period buildings in the Town Centre remain in place and relatively unaltered. This compares favourably with larger regional towns, such as Bunbury and Geraldton, where many buildings of this era have been demolished due to development pressure. It is vital that any development of Manjimup seeks to respect and where possible, protect and enhance the Art Deco character of the Town Centre. Manjimup's heritage significance is best characterised as the whole being more than the sum of its parts. This reflects that although an individual building may not be particularly significant on its own its significance is heightened by being located in a group of buildings of the same age and character.

This fact will require heritage considerations to be targeted at the precinct level, rather than be limited to an individual place alone.

Preservation of Manjimup's built heritage will require employment of a range of mechanisms. These mechanisms may include, but are not limited to statutory protection through the Shire's Local Planning Scheme or the State Register of Heritage Places. The Shire of Manjimup is currently preparing a new Local Planning Scheme Heritage List and Heritage Protection Local Planning Policy that will provide statutory protection to places identified in the Shire of Manjimup Municipal Heritage Inventory as Category A+, A and B. In addition to statutory measures, heritage preservation can be promoted through incentives, including, but not limited to grants for conservation and interpretation works, town improvement programmes and rates reductions.

3.2.4 / Intangible Heritage

Intangible heritage can be considered the collection and telling of "stories" that are integral to the history and character of Manjimup. The history and heritage of Manjimup is an important part of the Town's identity and will feature strongly in many of the projects that are planned to enhance the attractiveness and functionality of the Town.

For many years, the Manjimup Historical Society has been active in collecting a range of artefacts and information that illustrate the history of Manjimup and districts. This collection is primarily displayed in the Timber and Heritage Park. The history and heritage features of the Timber and Heritage Park create the main theme of the Park and will underline projects to enhance its role as the predominant resident and visitor focal point of the Town.

The Growth Plan incorporates a large-scale upgrade of the Timber and Heritage Park as part of the strategic projects identified under the SuperTowns programme. One key objective of the upgrade is to expand on its heritage themes and provide a purpose-built facility for storage of the community's archives. A 'History House' is planned for the hamlet area, which will provide an archive area built to modern standards and include facilities for access and interpretation of this information.

The area's timber history is displayed in the State Timber Museum located within the Timber and Heritage Park. Established in 1977, it is planned to relocate it to the nearby Timber Roundhouse. This will allow the displays to be modernised and new information contained within the museum. A new display building is planned to house the State's energy heritage, which will complement the existing timber and steam displays within the Park. This new building is designed to act as a 'landmark' to entice visitors into stopping in Manjimup and will be located so as to clearly link into the Town Centre.

In addition to the Timber and Heritage Park, heritage themes will be incorporated into other public spaces. In the case of Manjin Park and the Linear Park along the existing railway corridor, the former railway use of the land will be interpreted. The Linear Park also allows for other forms of 'story telling', particularly that relating to Manjimup's strong multicultural heritage.

The Shire of Manjimup is currently working on a Heritage Icons Trail, with the first three 'icons' having been installed. This trail will over time will link the Shire's towns and places of

heritage significance within the Shire and seek to tell a range of stories from a variety of perspectives. Each icon includes a sculpture depicting a heritage theme and an interpretation panel and will be linked into a cohesive trail. As part of the Town Centre Revitalisation concepts, a heritage icon trail head has been identified at South Western Highway and Seven Day Road and will act as the southern end of the Linear Park through the Town.

3.2.5 / Town Character

An important objective of the Growth Plan is to protect and enhance the 'character' of the Town. However, character is not easily defined, as is perceived differently by different people. During the consultation process, the notion of character and how history and heritage contributes to this was explored. It is apparent that people perceived Manjimup's character as being made up of a number of tangible and intangible elements. Tangible elements include the Town's buildings, public places, forest setting and agricultural industries. Less tangible elements included the town's multi-cultural heritage, working class nature and the general unpretentiousness of the place.

What becomes apparent in considering of the Town's character is the general themes that many people in the community perceive. These themes have played an important role in identifying the vision for the Town (see Chapter 4). The general character themes for Manjimup include, but are not limited to:

- Nature - Natural attributes, climate and the forest setting, with a particular connection to the karri forest given the bulk of it is located within the Manjimup Shire;
- People – Multicultural and working class nature of the Town given its roots in timber and agriculture and a strong sporting culture;
- Buildings - Its relatively late development (1920s and 1930s) when compared to towns further north, with this fact reflected in its architectural style; and
- Uniqueness – Unique areas such as the Timber and Heritage Park and the fire lookout trees are highly regarded by the community and help to define Manjimup as different to other places.

3.3 / NATIVE TITLE

The Town is located within the South West Boojarah 2 Native Title Claim (Native Title Tribunal No. WC2006/004). This claim extends to approximately 8km east of Manjimup Post Office and covers the western third of the Shire, including the towns of Manjimup, Pemberton and Northcliffe (refer **Figure 8** - Native Title Claim).

The eastern two-thirds of the Shire is covered by the Wagyl Kaip Claim (WC1998/070) and shares a common boundary with the South West Boojarah Claim. Also covering the eastern portion of the Shire is the Southern Noongar Claim (WC 1996/109), with the exception of some land in the Quinninup, Nyamup and Strachan localities.

All three claims have been incorporated into the Single Noongar 1 Claim (WC2003/006) and are being considered collectively. At the time of preparing the Growth Plan, a settlement was yet to be finalised on the Single Noongar Claim. What any agreement will mean to Manjimup is unknown at this time.

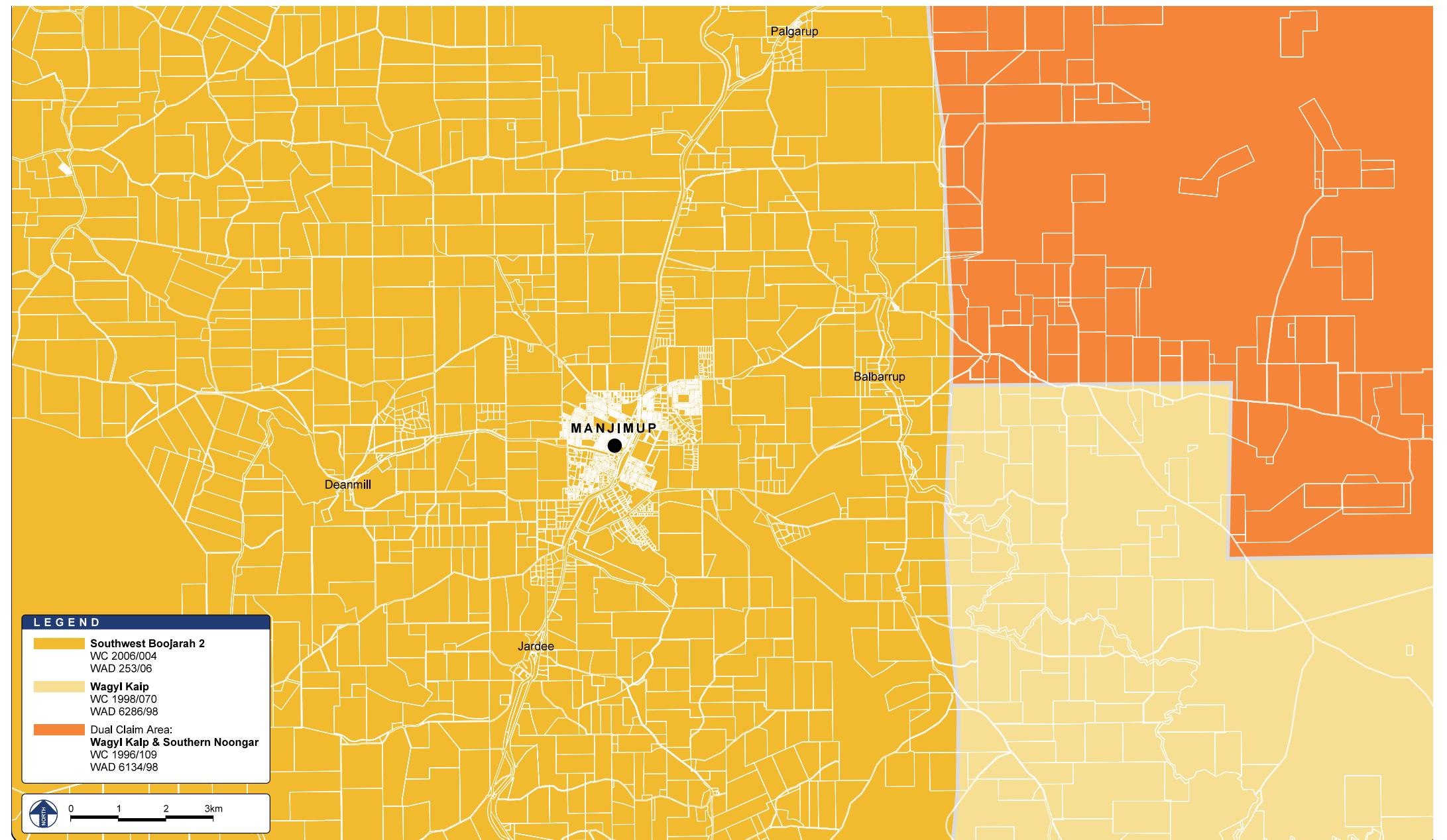


Figure 8 Native Title Claim



3.4 / STATE, REGIONAL AND LOCAL PLANNING CONTEXT

3.4.1 / State Planning Framework

The “State Planning Framework” is a Statement of Planning Policy (Variation No. 2), which applies to all land within Western Australia. It is an amalgamation of all planning policies, strategies and guidelines that provide direction on the form and methods of growth and development throughout the State.

3.4.2 / State Planning Strategy

The “State Planning Strategy” (SPS) was originally prepared in 1996 and is currently under review. It provides an overall government framework for the co-ordination and management of regional planning and development. It contains a number of scenarios for the State’s development based on certain predicted levels of regional economic growth.

3.4.3 / South-West Framework

The South-West Framework was prepared in 2009 to clearly establish the WAPC position with regard to planning for a sustainable future so that both current and future generations can enjoy the benefits of living in the South-West.

The Department of Planning commenced a review of the Framework in July 2012 and intends to broaden its scope to include regional and sub-regional infrastructure requirements to support the growth and development of the region. It is in the context of this review that the findings of this Growth Plan will need to be reflected at the regional level.

The current Framework acknowledges Manjimup as the sub-regional centre of the Warren-Blackwood. The framework identifies Manjimup as a centre for high-value and specialised / creative / innovative industries, such as plantation timber and food industries. The Growth Plan seeks to reinforce Manjimup’s role as the sub-regional centre and builds upon this focus in developing a Town that not only services its own residents, but those of surrounding towns and districts and is a centre for a burgeoning agriculture and food industry.

3.4.4 / Agricultural and Rural Land Use Planning Policy (SPP 2.5)

The overarching intent of this State Planning Policy is the long term protection and support for agriculture within the State. This Policy is guided by the following fundamental principles:

- The State’s priority agricultural land resource should be protected;
- Rural settlement opportunities should be provided if sustainable and of benefit to the community;
- The potential for land use conflict should be minimised;
- The State’s natural resources should be carefully managed.

The provisions of the Policy have been applied in the Shire’s Local Planning Strategy (LPS) and associated Local Planning Scheme No. 4, through the identification of “Priority Agriculture” areas and other rural land uses and activities, including rural-residential areas.

The Growth Plan recognises and protects Manjimup’s priority agricultural areas through a more thoroughly critiqued approach to the Town’s growth opportunities given the existing land use and natural constraints that influence many of the potential expansion areas initially identified by the Shire in its LPS.

3.4.5 / Warren Blackwood Rural Strategy

Preparation of the Warren-Blackwood Rural Strategy (WBRS) was one of the principal recommendations of the Warren-Blackwood Regional Planning Strategy. Its purpose is to provide a planning framework to address the rural land use, land management, agricultural productivity, environmental protection and resource rehabilitation issues.

The main objective of the Strategy has been to introduce the principles of sustainability and natural resources management into the planning system and to attain an appropriate balance between enhancing productive capacity, protecting the environment and maximising community opportunity.

The WBRS forms the basis for rural land use planning, management and decision-making across the region and forms the basis for the rural component of the Shire’s Local Planning Strategy.

The preparation of the Growth Plan for Manjimup recognises the intent of this Strategy through an examination of

economic development and land use opportunities to help unlock the growth potential of the Town.

3.4.6 / Local Planning Strategy (LPS)

Endorsed by the WAPC in 2003, the Local Planning Strategy guides the vision and long term land use planning direction for the Shire forming the basis of the Local Planning Scheme No. 4.

The Growth Plan for Manjimup undertakes an analysis of the LPS in terms of its capacity to accommodate growth. It does not replace the existing LPS as the primary decision-making tool but will be used to guide the review and / or preparation of any future LPS (as referenced within the supporting Implementation Schedule) through the normal statutory planning procedures.

The Local Planning Strategy will be reviewed by the Shire during 2013/14. The land use planning elements of the Growth Plan will be incorporated into the Local Planning Strategy at this time. The review will allow the Shire and WAPC to consider the growth and development of the other centres in the Shire of Manjimup as the SuperTowns initiative may positively affect growth rates and land demand in surrounding towns.

3.4.7 / Local Planning Scheme No. 4

The Shire of Manjimup Local Planning Scheme No. 4 (gazetted in December 2010) will continue to set out the Shire’s planning aims and intentions for the Scheme area along with the procedures and assessment of development proposals.

The Growth Plan for Manjimup will not replace the role of the current Local Planning Scheme. However, initiatives outlined in the Growth Plan Implementation Schedule may result in Scheme amendments being required, after review of the Local Planning Strategy.

3.4.8 / Shire of Manjimup Integrated Planning Framework

The Shire is currently preparing a Strategic Community Plan and Corporate Business Plan as required by the Department of Local Government for completion by 30 June 2013. Together with a number of informing strategies, these Plans form the Integrated Planning Framework (IPF) within which

the Shire organisation will operate and respond to the community's aspirations. The IPF applies to the whole of the Shire district, which is a broader scope than this Growth Plan.

The IPF does not include land use planning, as this is undertaken via the Local Planning Strategy required by the Western Australian Planning Commission.

The Shire has determined that this Growth Plan will be an informing document into the IPF. It has taken this stance given the Growth Plan is based on extensive community consultation and provides a long-term strategic direction for the Town.

3.4.9 / Other State Government Agency Strategies and Planning

Various State Government agencies have vested interests within the Shire of Manjimup and the surrounding South-West region, in the context of the SuperTown process.

The relevant State Government agencies are identified below along with a brief summary of their respective statutory or strategic interest.

Department of Transport

Currently State transport strategic documents are being completed by the Department of Transport (DoT). Strategic documents, which are in various stages of preparation, are as follows:

- **The State Transport Strategy** – currently being drafted;
- **The Regional Freight Strategy** - currently in draft form;
- **The Aviation Strategy** - currently being drafted; and
- **A Regional Transport Strategy** - prepared but is yet to be finalised.

It is unknown whether or not the various strategies will acknowledge the SuperTown initiative, as consultation for the many of the documents was undertaken prior to commencement of the project. The Strategies will be considered further upon completion.

Department of Education and Training

The key Strategy prepared by the Department of Education

and Training (DET) is the *Plans for Public Schools 2008 – 2011*. The document provides the strategic direction for the education system within the State and aims to deliver quality schools, effective teachers, successful students and build confidence in the schooling system.

Other documents include: the Classroom First Strategy; and Futures 2012 which underpin the strategic plan and set objectives goals for the delivery of education within the State.

The DET uses demand based infrastructure planning, with the delivery of school infrastructure and upgrades based upon population size and estimated growth.

Department of Environment and Conservation (DEC)

The Department of Environment and Conservation (DEC) carries out the majority of its works under management plans which sit within a framework under State legislation and policy. Of key importance to the Manjimup Shire are the following documents:

- **Forest Management Plan (FMP) 2004-2013**
- **Management Plans for National Parks (D'ENTRECASTEAUX National Park Management Plan; WALPOLE Wilderness & Adjacent Parks and Reserves Management Plan 2008; and the Walpole and Nornalup Inlets Marine Park Management Plan 2009-2019)**
- **Augusta to Walpole Coastal Planning Strategy (WAPC)**

The Warren-Blackwood Regional Forestry Agreement is a document that provides for the establishment of forest reserves across the Warren Blackwood Region while providing funds for an industry development program. The program is focused on assisting the timber industry to move into a new phase, with a key emphasis being placed on downstream processing and value adding. The agreement also provides for the establishment of tourism facilities within the region, with a major focus being placed on the upgrading of tourist roads and access to attractions.

Forestry Products Commission (FPC)

The Forestry Products Commission operates as a state owned and run business. The FPC operates under strategies and plans established controlled by other State Agencies, including: The Warren Blackwood Regional Forestry Agreement, which is administered by DEC; and Western Australia's Strategy for Plantations and Farm Forestry

administered by the Department of Agriculture and Food.

The importance of the timber industry in the Shire has been acknowledged through the preparation of Growth Plan and reinforced as a key economic driver to deliver economic and social benefits to Manjimup.

Department of Health (DOH)

The Department of Health (DoH) is currently involved in the implementation of the Southern Inland Health Initiative as part of the Royalties for Regions program. The project has funding for a period of 4 years and has the primary objective of increasing the number of doctors working within the southern inland region.

Additionally, the DoH is also implementing the WA Health Clinical Services Framework 2010–2020. This framework provides for the provision of planned public health services within Western Australia until 2020, describes the current state of clinical services and provides estimates of future demand on clinical services. The framework has also been designed to assist Area Health Services in developing localised clinical service plans.

Water Corporation (WC)

Water Corporation currently uses demand based infrastructure planning to identify future infrastructure requirements and network expansion projects. Anticipated population growth for Manjimup will result in an increased demand upon current water and sewer infrastructure that will necessitate the need for future infrastructure upgrades to ensure adequate network capacity is delivered.

Western Power (WP)

Western Power builds, maintains and operates the electricity network in the south west corner of Western Australia. The Western Power Network forms the vast majority of the South West Interconnected Network (SWIN), which together with all of the electricity generators comprises the South West Interconnected System (SWIS).

Western Power carries out infrastructure planning based on 5 yearly review periods. The last review undertaken for Manjimup was undertaken in May 2011. Present and future capacities of the Western Power system will be considered to ensure Manjimup is suitably serviced to cater for the projected population growth.



Department of Water (DoW)

The Department of Water is responsible for the management of water resources within the State and the South West region. The State Water Strategy for Western Australia 2003, aims to deliver a state wide approach to the management of water resources. Under this document a number of regional strategies exist, including the document Water Planning for the South West Region 2010-2030.

The Water Planning for the South West Region document establishes a regional framework for the management of delivery of water resources. At a local level, the Southwest Ground Water Plan and the Warren Donnelly Water Allocation Plan, which is currently still in draft form, have been considered. The overarching aim of these documents is the protection and management of existing water resources and the provision of long term water security for business, farming and residential uses within the South-West region.

Department of Agriculture and Food (DAFWA)

The Department of Agriculture and Food Western Australia (DAFWA) has a vested interest in the Shire as a major contributor to the State and local economy to ensure the sector continues to be sustainable and profitable, with a clear focus on export-led growth through the implementation of the following key strategic documents:

- 2011-2015 Strategic Plan;
- Operational Plan 2011-2012;



- Plan to support Horticulture Industry Development 2009-2012; and
- Western Australia's Strategy for Plantations and Farm Forestry.

The strength and reputation of the agriculture sector in the Shire has been acknowledged through the preparation of Growth Plan and reinforced as a key economic driver to build capacity and stimulate growth in the local Manjimup economy.

Department of Housing (DoH)

The Department's Affordable Housing Strategy 2010-2020 aims to increase affordable housing options available to low-moderate income earners. At a local government level, this involves the Department of Housing working in conjunction with Councils to facilitate planning reforms and approvals and the creation of incentives for developers.

Development of Regional Development and Lands (RDL)

The Department of Regional Development and Lands (RDL) is responsible for a number of strategic land use projects. The most prominent of the projects is the Royalties for Regions program, which provides a long term vision aiming to support the sustainable development of regional areas of Western Australia. A number of projects sit under the banner of the Royalties for Regions Program, including the SuperTowns project.



Support for Manjimup through this initiative will assist with the transformation of the Town through the identification of key economic drivers to ensure it's well placed to take advantage of opportunities created by the future growth of Western Australia's population.

South West Development Commission (SWDC)

The SWDC works in close partnership with government bodies, industry, business and community groups to ensure the region develops in a positive and sustainable way.

Developing the region's economy and improving quality of life are key areas of focus and the Commission's Strategic Plan for the South-West region guides the delivery of services into the areas of people, infrastructure and enterprise and innovation.

A number of key documents that are relevant to the growth of Manjimup and the surrounding Shire include:

- **South West Action Statement;**
- **South West Active Ageing research project,** which is supported at a local level by the Shire of Manjimup's Active Ageing Strategic Plan 2008 – 2028;
- **Manjimup Futures Project in 2012;**
- **Strategic Tourism Plan** for the South-West; and
- **National Broadband Network: Impact Assessment**



The SWDC has recently commenced preparation of a Regional Investment Blueprint. Key infrastructure requirements identified in this Growth Plan will need to be reflected in the Blueprint in order to be considered for funding.

Department of Sport and Recreation

The Department's 'Strategic direction for the Western Australian Sport and Recreation Industry' identifies the challenges and issues facing the sport and recreation industry and outlines the key elements which should be considered in the future development of plans and strategies.

The Shire also has produced a number of documents relating to the delivery of sports and recreation facilities across the shire. These documents include the:

- **Shire of Manjimup Sport and Recreation Strategic Plan;**
- **Collier Street / Rea Park Precinct Sport and Recreation Facility Master Plan;**
- **Shire of Manjimup Disability Access and Inclusion Plan;** and
- **Shire of Manjimup Local Bike Plan.**

Department of Indigenous Affairs (DIA)

The Department's interests relating to service delivery to indigenous people, social inclusion and the protection of all registered and non-registered places and objects under the Aboriginal Heritage Act 1972 will be acknowledged through the anticipated growth of Manjimup.

Department of Planning (DoP)

The Department of Planning has a state-wide responsibility for the planning of future communities. The expansion of Manjimup as a SuperTown will acknowledge and implement where relevant the various State, regional and local planning Policy to facilitate sound land use planning outcomes to support a strong future economic base.

The above list of State Government strategies and plans is not exhaustive and is broadly representative in the SuperTown context. A comprehensive list of State, regional and sub-regional strategies and policies, as they relate to elements of the Growth Plan, are enclosed as Appendix A.

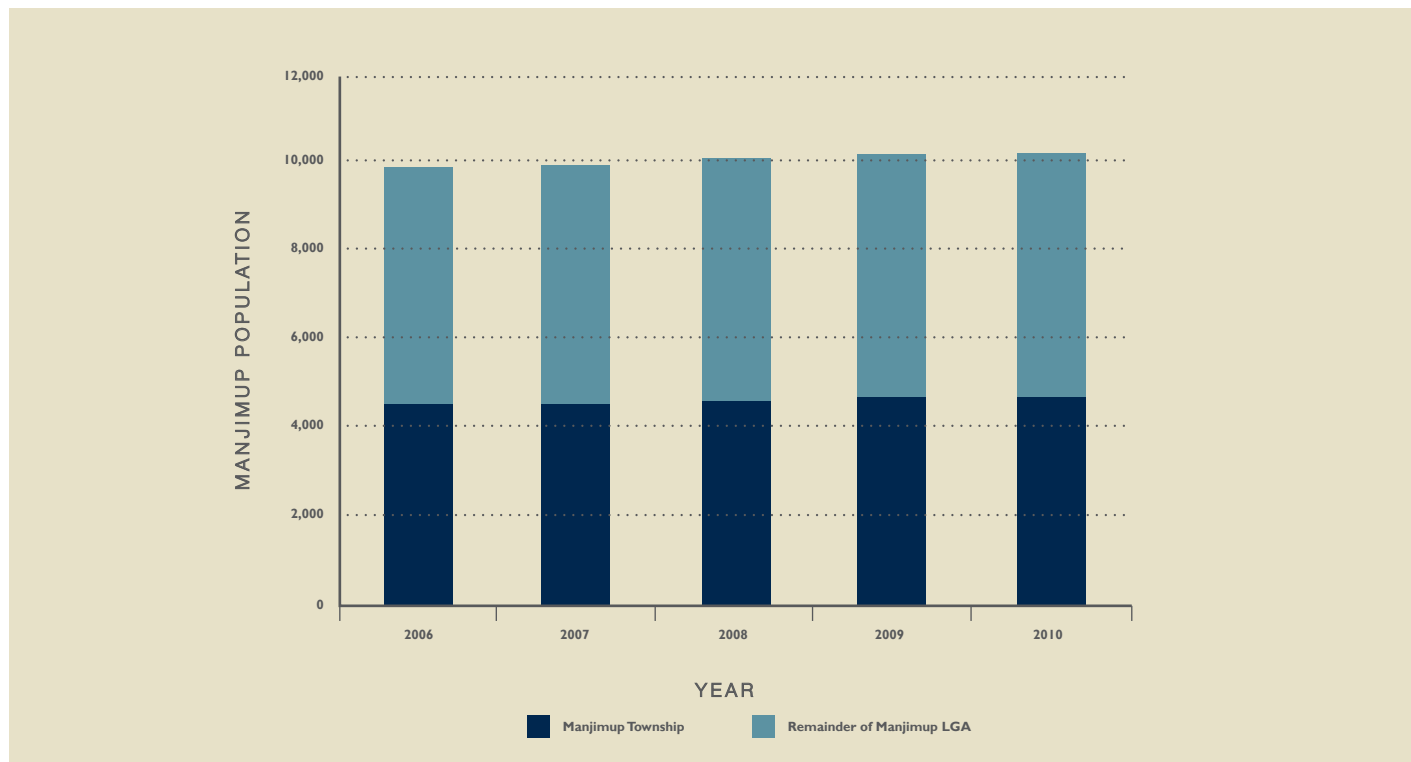


Figure 9 Manjimup LGA Population Growth 2001-2010 (Source: AECgroup)

3.5 / ECONOMY

3.5.1 / Population and Demographics

After experiencing a declining population for many years, Manjimup Town experienced an increase in the population of 0.9% per annum (or 41 persons per annum) to 4,662 persons in 2010 (**Figure 9**). This was in line with the broader Manjimup LGA growth trend, where Manjimup Town makes up 45.8% of the broader population. Manjimup Townsite currently has a population base approximately 5,000 people.

Manjimup Town has a slightly younger population than the surrounding SWDC region, and slightly older than the State. This is in contrast to the broader Manjimup LGA region, which typically has an older population that has been aging at a faster rate than the SWDC and Western Australia averages.

In line with the age profile, the majority of Manjimup's working aged residents have not completed year 12 and a high proportion hold certificate qualifications which is consistent with the skills requirements and Australian

occupational profile of the agriculture and forestry sector but is also reflective of the reliance of the region upon migrants for labour to support this industry. As the next generation of the population is educated it is expected that skills and qualifications of Manjimup's residents will move towards the national average.

The Manjimup LGA occupational profile comprises a high proportion of blue-collar workers, with many of these being labourers. Manjimup Town has a higher concentration of blue-collar and service workers than compared with the surrounding Manjimup LGA. Average incomes in the Manjimup Urban Centre are well below State and SWDC regional averages across all occupational types, however incomes are also generally higher in Manjimup Town than the Manjimup LGA whole of region average. Lower wages generally signal lower median dwelling prices, which is true for Manjimup Town. However, comparison of Manjimup Town's household incomes to median dwelling prices indicate that Manjimup Town's housing affordability is quite poor compared to the broader SWDC region and in line with the average affordability of housing for regional Western Australia - considered to be highly unaffordable benchmark by international standards.

Lower average incomes and relatively unaffordable housing in Manjimup Town will impact future population growth as this is a key consideration by households when moving to an area.

It is noted that preliminary information from the 2011 Census was released during preparation of this Growth Plan. However, an insufficient level of detail was available to allow for the new information to be integrated into the Growth Plan. Once available, it is recommended that the underlying demographic and economic information is updated given the 2011 Census took place immediately prior to the SuperTown initiative being implemented.

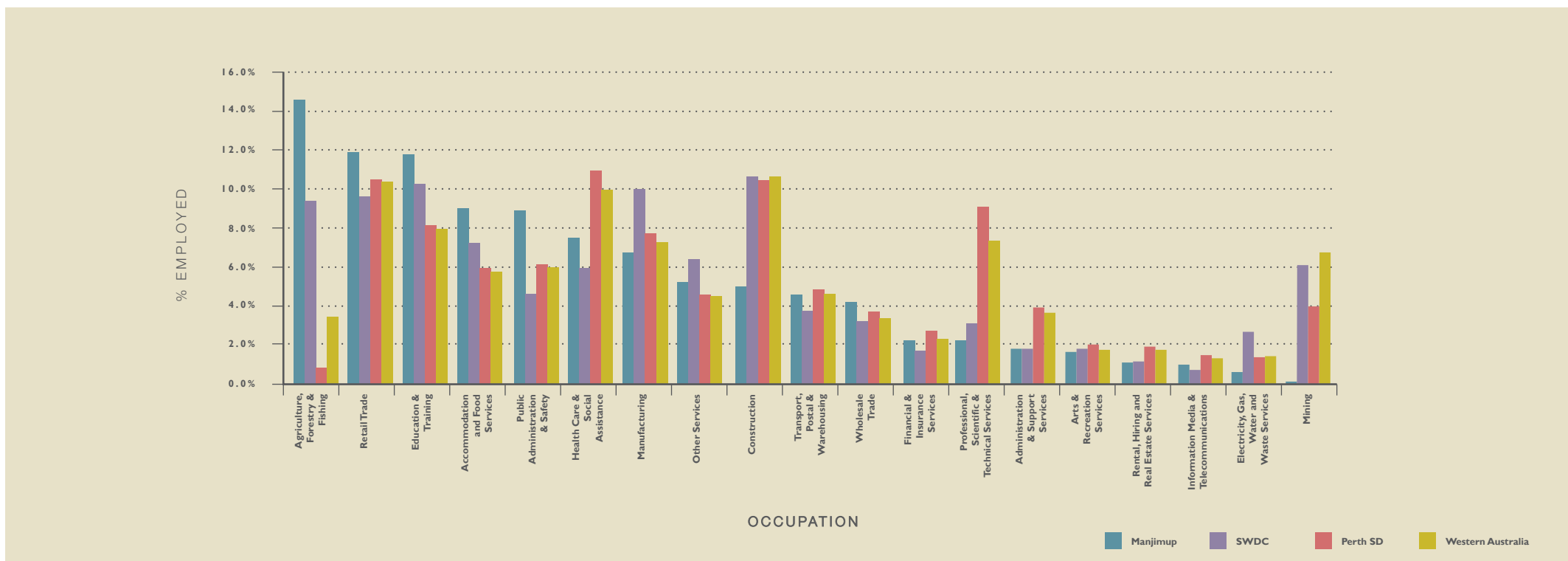


Figure 10 Employment by Industry 2010-2011 (Source: AECgroup)

3.5.2 / Employment and Business Activity

The agriculture and forestry sector is Manjimup LGA's key employment sector (**Figure 10**). Within the Manjimup Town retail trade and manufacturing are also key employers, with 60% of Manjimup Town's manufacturing industry being wood product manufacturing and timber milling, due to the presence of three major timber mills within the Manjimup Town.

Manjimup Town also acts as the regional hub for business, industry and population services. The population service sectors of health care and social assistance, education and training and public administration and safety are also key employers for the Manjimup Town's resident population.

The Manjimup Town's manufacturing sector employment is primarily based on wood product manufacturing (58% of total manufacturing, or 6.6% of total Manjimup Town employment). This is due to the large amount of value adding wood production activity that occurs within the Manjimup Town due to the presence of three major timber mills.

Labour force and employment growth is steady but below regional and State averages, however, recent declines in the timber and logging industry have impacted local unemployment rates which increased in the lead up to and following the closure of major timber milling operations in Manjimup. However, following the announcement of the recent sale of timber assets in Manjimup LGA to Auswest, there is an expectation that unemployment rate trends will turn-around in 2012 due to the creation of an additional 55 timber industry jobs in the local economy.

Not surprisingly, the majority of Manjimup LGA's businesses are in the agriculture and forestry sector and almost 60% of the Manjimup's businesses are non-employing.

3.5.3 / Population Growth Target

Manjimup LGA's estimated Gross Regional Product (GRP) has grown steadily by an average of 6.7% per annum since 2006-07 to over \$527.2 million in 2010-11, although the region's growth was upstaged by the stronger growth of the wider Western Australian economy over the four year period.

The agriculture and forestry industry generated the highest proportion of industry value add for Manjimup in 2010-11, accounting for over 15% of the economies total value-add (**Figure 11**).

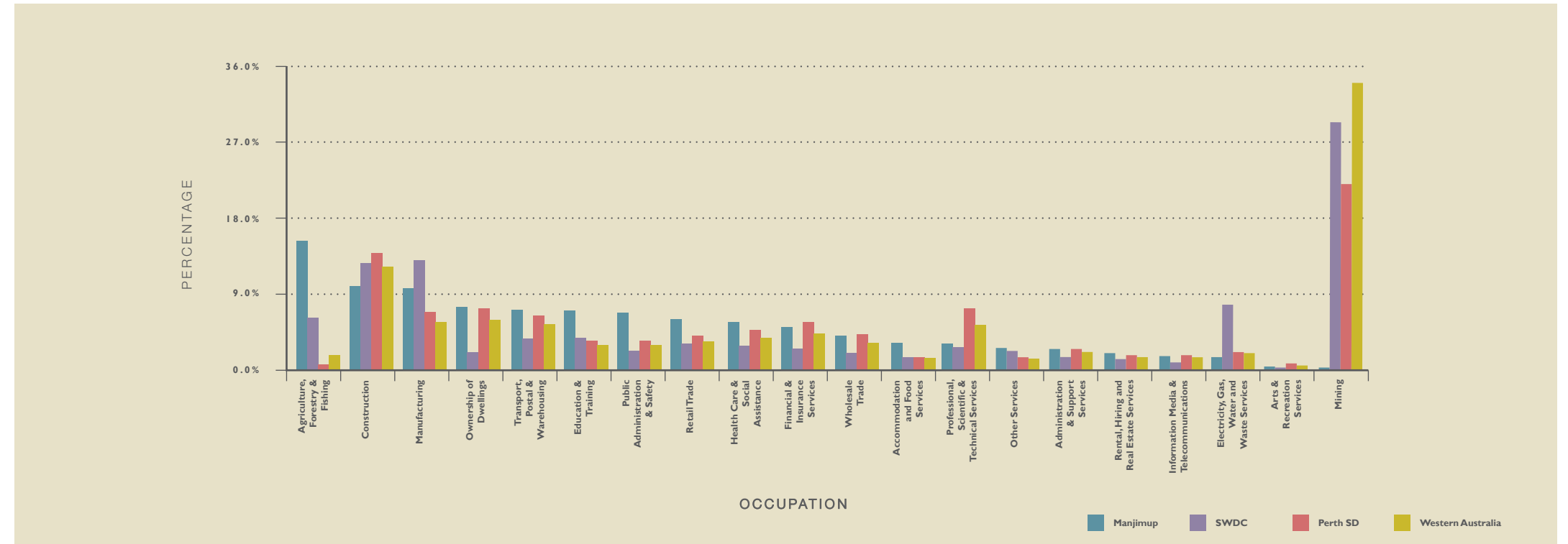


Figure 11 Manjimup GVA by Industry 2010-2011 (Source: AECgroup)

Manjimup LGA's reliance, and subsequently the reliance of Manjimup Town, on the agriculture and forestry poses a potential risk to the sustainability of the Manjimup economy. Such a heavy reliance on individual sectors exposes the wealth and well-being of residents to the volatility of that industry – and in the case of export industries, the volatility of international markets and world prices.

Manjimup Town will need to diversify and broaden its economic base into other industries (or at least new areas within its favoured agricultural, timber and horticultural industry), so as to ensure the region's long term sustainability and reduce its susceptibility to shocks in individual sectors.

This diversification will need to come from leveraging the region's existing strengths in agriculture and forestry to undertake higher value-adding activities. Diversification of industry and job creation outside of these core sectors will also be important for sustaining population growth, as will be the provision of infrastructure and services for the local population.

A number of avenues exist to leverage this industry strength to drive diversification, some of which have been put forward by this report, including the facilitation of FIFO workforce programs, and industry support and marketing of viticulture, green tea and truffle products.

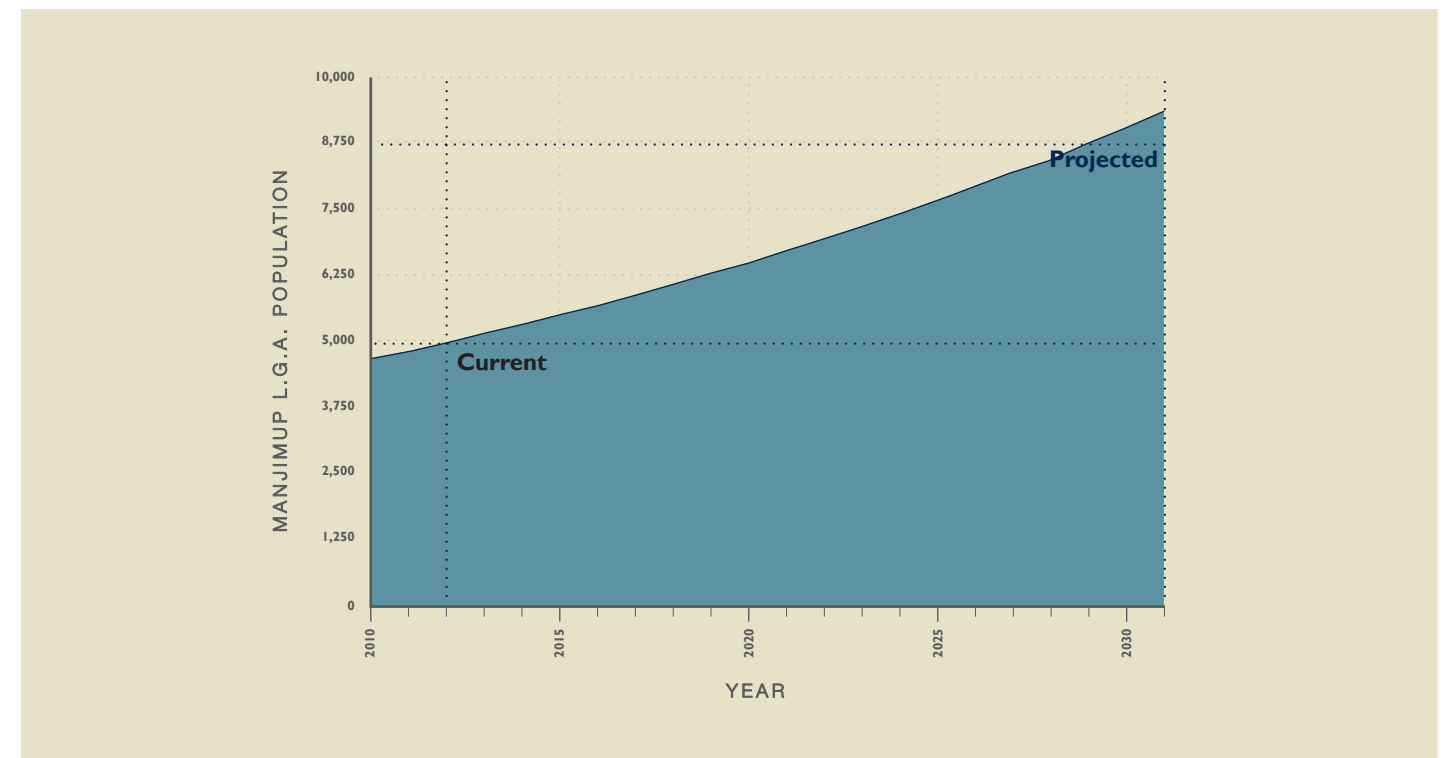


Figure 12 Manjimup LGA Projections 2010-2031 (Source: AECgroup)

Lower average incomes and relatively unaffordable housing in Manjimup will impact future population growth as this is a key consideration by households when moving to an area. Improving housing affordability and/or household incomes will need to be a major focus for the Growth Plan.

3.5.4 / Economic Growth

Under the SuperTown Growth Plan, the aspirational growth target is a doubling of the Town's population by 2031. This will require a growth trend significantly above the 0.9% population growth rate of the Shire since 2006. The Shire of Manjimup population is anticipated to grow as a result to 20,250 (**Figure 12**).

In order for the SuperTown population projection target to be achieved in Manjimup there will need to be a significant shift in the local community and economy in order to facilitate a much more rapid increase in population. Proactive employment generation, planning schemes, infrastructure and community services will be required to support this population growth, which must all be aligned to stronger population growth than then Shire has historically seen. Investment attraction, industry growth and diversification of the economic base will also be critical to support job creation, future population growth and the overarching sustainability of the economy.



3.5.5 / Key Economic Drivers

There are five key economic drivers for Manjimup:

- **Global Food Security:** By some estimates, global food production will have to increase 70% to feed the population of the world in 2050. Some parts of the globe, particularly Southern Asia, have very little land available for future food production and will experience future population growth;
- **Position as a Service Centre:** Manjimup plays a role as a service centre for surrounding areas, providing retail amenity, jobs and other services to the public and businesses around it. The expansion of Manjimup's position as a service centre will place an important role in the economic development of the town;
- **Timber Industry:** The timber industry is an historic and well-established industry in Manjimup, directly employing over 6% of the local workforce and providing a considerable amount of economic activity, particularly for the Town of Manjimup. The timber

industry is expected to remain a core component of the local economy in the future;

- **Climate Change and Carbon:** Climate change is making an impact on the global environment. The enactment of the Carbon Tax in July 2012 will have an impact on the way Australian businesses operate. Changing future regulations may provide opportunities for Manjimup in the future in terms of bio-char, bio-fuels and carbon sequestration; and
- **The Internet:** The internet has changed the way that people work and live as well as the way in which business is conducted. Ensuring that Manjimup can take advantage of the internet through broadband technology will be important for the future economic development of the town.

3.5.6 / Key Economic Challenges and Opportunities

Manjimup benefits from a range of competitive advantages and opportunities, which could underpin strong economic and population growth over the next 20 years. In particular, the concentration of major agricultural and timber related activities, high lifestyle amenity and accessibility to Busselton and Bunbury, all present opportunities to leverage external growth drivers and build greater local economic diversification.

However, there are some areas of weakness which will need to be addressed in order to support desired economic and population growth in Manjimup. These include:

- Lack of skilled labour in the region, particularly in professional services.
- Low population growth and an ageing population demographic.
- Lack of professional service delivery in Manjimup, due to isolation from major service centres and lack of local critical mass.

- Need for enhancements in local urban amenity to supplement natural environment.
- Lack of broadband internet connections and speeds, especially outside of the Manjimup Townsite.

In addition to local advantages and weaknesses, a number of future economic "drivers" will also influence local economic conditions (such as population growth and the State and National outlook). Whilst many of these "drivers" are outside of the control of the Shire of Manjimup, proactively planning for the management of these impacts will be essential to achieving desired future economic and population outcomes.

Population growth and business development, as well as industry diversification, are key to achieving higher economic growth than may otherwise be expected of the future "SuperTown". In order to stimulate business development, proactive and targeted economic development will be required.

Overall, the growth and diversification of the Manjimup economy will require:

- Increased service and product value-added in agriculture and timber production.
- International and export focus of agricultural production, particularly for niche products to South East Asian markets.
- Effective branding and marketing of Manjimup as a quality agricultural and lifestyle region.
- Attraction of fly-in/fly-out (FIFO) workers due to lifestyle and affordability benefits.
- Establishment of health and education service clusters.
- Growth in scale, quality and diversity of retail floorspace.
- Increase in tourism visitation associated with lifestyle and outdoor leisure attractors, facilitated through investment in tourism infrastructure and effective branding and marketing.

In order for the SuperTown population projection target to be achieved in Manjimup there is an immediate need to continue recent population growth trends at a significantly higher rate (where Manjimup is currently attracting an average of 90 residents per year since 2006). Proactive employment generation, planning schemes, infrastructure and community services will be required to support population growth. Investment attraction, industry growth and diversification of the economic base will also be critical to support job creation and the overarching sustainability of the economy.

The economic opportunities identified must be realised if Manjimup is to continue along its growth path to facilitate (at least) a doubling of the population. Focus on these opportunities as part of the Growth Plan, and identifying key projects and initiatives which leverage key drivers and strengths, is critical to ensuring the Manjimup realises the potential for growth.

3.6 / HOUSING AND LAND SUPPLY

Understanding the growth capacity of the Townsite to accommodate the project population increase is critical in the SuperTown context. Through the spatial land analysis there is a need to establish precincts within the Townsite that are most suited to an increase in residential densities, and retail and industrial expansion whilst ensuring the character and unique natural and built environments are not adversely affected. Detailed below is an analysis of land supply and demand across key land use areas that will inform spatial planning to follow.

3.6.1 / Housing

During the period of 2006 – 2011, a total of 225 lots were approved by the WAPC. Of these approved lots, 35 were created (i.e. Deposited or Strata Plan endorsed).

The 225 lots were zoned as show:

Zone	No. Approved	No. Created
Residential	170	32
Rural Residential	47	0
Rural	8	3
Commercial	0	0
Industrial	0	0

The current status of outstanding subdivision approvals granted between July 2006 and June 2011 is outlined in the following table:

Year Due to Expire	Number of Lots Proposed			
	Residential	Rural Residential	Rural	Total
Expired	13	0	0	13
2012	34	0	2	36
2013	63	45	3	111
2014	10	2	0	12
2015	4	0	0	4

The average number of lots per application was 7.5 over all applications and 6.8 lots for residential subdivisions. The largest single subdivision proposals are summarised as follows:

Address	No Lots Approved	No. Created	Due to Expire
Lot 4 South West Highway (Rural Residential)	45	0	2013
Lot 353 Stokes Street	22	0	2012
Lots 32 & 75 Johnston Street	22	0	2013
Lot 6 Johnston Street	18	12	2014
Lot 71 Stokes Street	14	0	2013
Lot 561 Mottram Street (Fritch Court)	12	12	Completed
Lot 64 Doust Street	10	0	2012
Lot 22 Ward Street	10	0	2013

Vacant Lots as of December 2011

The following table identifies the number of vacant serviced lots for each land use category.

Zone	No. Vacant Lots	No. Lots for Sale
Residential	84	32
Town Centre (Retail)	6	0
Town Centre (Service)	15	0
Industry	20	0
Rural Residential	6	0
Total	131	32

'Vacant lots' relates to lots that are serviced but not developed for housing and does not take into account the availability for purchase. 'Lots for Sale' are vacant lots that are currently available for purchase.

The number of lots for sale was identified by reviewing real estate industry websites, as well as adding the 12 lots currently advertised privately for sale.

The number of vacant lots was established by review of January 2009 aerial photography and taking into account houses that have been built since this date. Approximately 25 of the residential lots currently vacant are of a size and density that could accommodate group housing development. Therefore the total dwelling yield may be slightly higher than the number of vacant lots available.

Rural residential areas have been limited to those zones located either within or immediately adjacent to the gazetted Townsite boundary.



Undeveloped Zoned Land

Undeveloped zoned land relates to land that has not been subdivided and serviced to its intended potential. There is currently no undeveloped area of 'Town Centre' zoned land.

Table 5 below outlines the development potential for the residential areas identified on **Figure 13**.

Table 5: Development Potential for Residential Areas			
Area	Size	Details	Possible Yield (Lots/Units)
Residential Land			
1	29.02ha	R20 density, 4 current parcels, no structure planning completed, assume 10 lots per hectare gross.	290
2	24.65ha	R 20 density, 22 current parcels, draft structure plan prepared by Shire 2011.	276
3	1.87ha	R20 density, no structure planning, assume 10 lots per hectare.	19
4	2.97ha	R12.5 density west of Lintott Street, assume 840m ² lots (17.5m wide).	33
	5.42ha	R20 density south of High School, no structure planning to date, assume 10 lots per hectare.	54
5	2.11ha	R20 density, structure planning completed over entire area.	32
6	0.90ha	R20 density, structure planning completed over Lots 22 and 80.	18
	0.81ha	R20 density, no structure planning over Lot 79, assume same lot yield as Lot 80.	16
7	5.97ha	R20 density, 8 current parcels, no structure planning completed, assume 10 lots per hectare gross.	60
8	2.52ha	R20 density, potential aged persons site (assume R30 using density bonus).	60
9	3.56ha	R20 density, structure planning undertaken over Lots 64, 71, and 353.	46
	1.88ha	R30 density over Lot 365, no structure planning, assume 600sqm lots due to 40m depth of lots.	30
	9.16ha	R20 density, 9 current parcels, no structure planning, assume 10 lots per hectare gross.	91
10	20.67ha	R5 density, 1 current parcel, structure planning being prepared, assume 50 lots.	50
11	9.62ha	R12.5 density, Lots 362 and part Lot 377 have structure planning completed.	72
	1.86ha	R12.5 density on Lot 361, no structure planning but Yate and Wandoo Streets to continue into site. Assume same lot sizes as immediately north of site.	20
12	8.47ha	R12.5 density, two current parcels, structure planning completed.	79
TOTAL	131.46ha		1,246

Where there has been structure planning completed, the number of lots shown on the structure plan has been provided. Where there has been no structure planning to date, an estimate of 10 lots per gross hectare has been employed to take into account the need to provide land for roads, public open space, and services. Location of additional school sites within zoned areas will reduce the number of lots estimated.

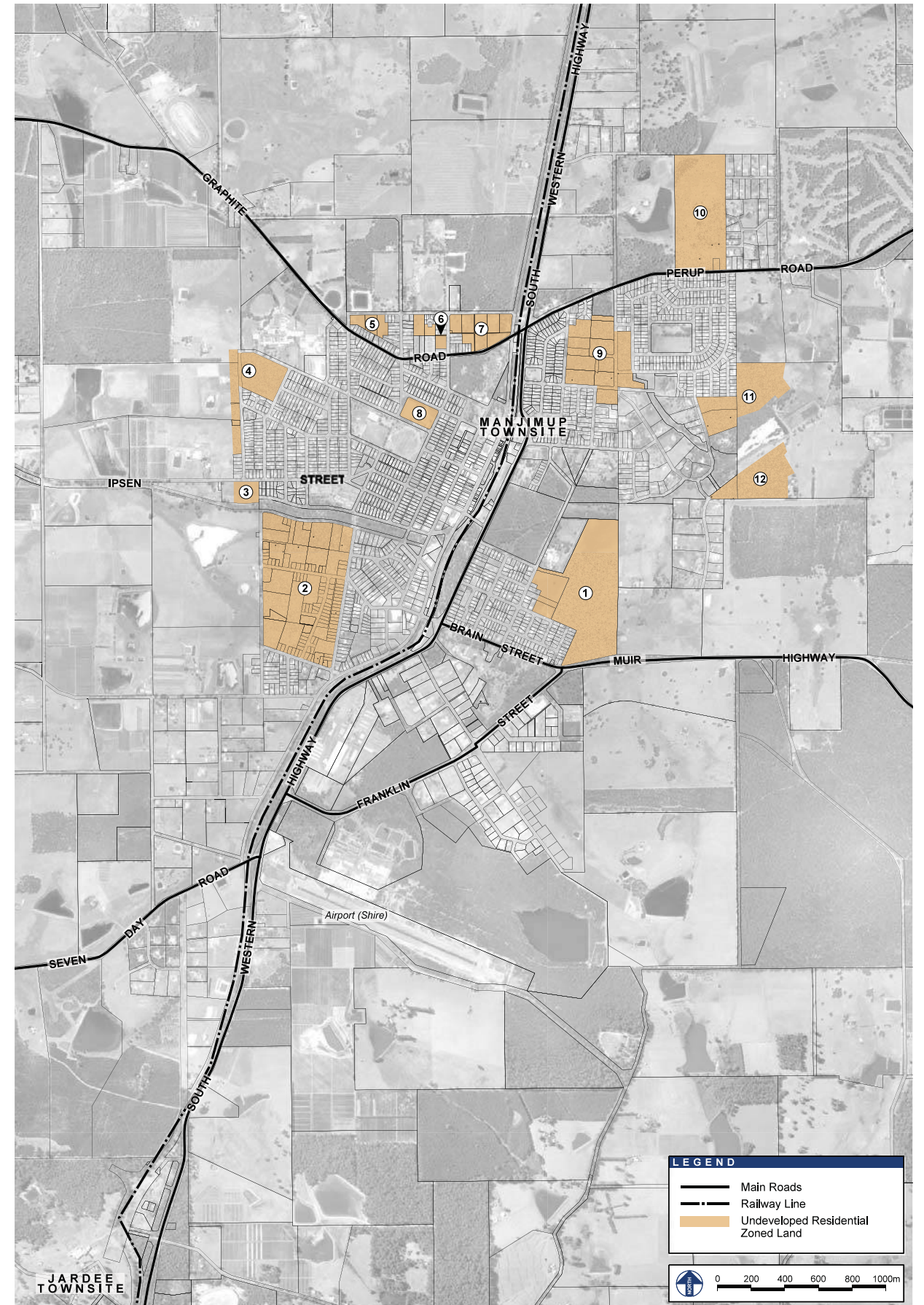


Figure 13 Undeveloped Residential Zoned Land

The calculations in Table 5 are based on land currently zoned by Local Planning Scheme No.4 and does not include Development Investigation Areas (DIA).

SuperTowns provide an appropriate opportunity to review the DIA locations and intended land uses to ensure that land availability reflects the objectives of the Growth Plan.

Table 5 does not take into account any additional lots created as part of consolidation of existing areas. Most lots located within R20 and R30 areas are capable of subdivision. However, take up of this opportunity is expected to be relatively low should ample supplies of greenfield lots be maintained.

The undeveloped zoned land yield of 1246 lots means that an additional 3,115 people (adopting 2.5 persons/ dwelling) could potentially be accommodated within the Townsite representing a 62% increase on the current population, which is almost two-thirds of the population required to double the size of the Townsite.

Manjimup has experienced limited residential development and growth in the past 5 years. There is sufficient capacity to cater for the projected population growth in the medium to long term.

3.6.2 / Housing Affordability

A critical element of the Growth Plan is to ensure the environment is appropriate for the delivery of affordable housing. An initiative to identify solutions to maximising housing affordability is recommended. In Manjimup, house and land packages of up to \$300,000 for a detached family home will provide an attractive point of difference in the south west regional context. Development areas and land development policies should be designed to meet this aspiration.

A fundamental component of achieving housing affordability is limiting development costs. This can be done in a number of ways, including:

- Reduced lot sizes to maximise usage of services and lower per-lot land costs;
- Creating an urban design that reduces earthworks and drainage costs associated with the production of flat, retained lots;
- Promoting alternative house designs that seek to reduce construction and operating costs;

- Ensuring infrastructure headworks are provided in a timely and equitable manner, rather than require the first developer to cover the entire cost of providing services;
- Direct headworks cost offset to reduce servicing costs payable by the developer; and
- State or local government development of land by accepting development risk that would not otherwise attract private development or financial institution support.

In the case of Manjimup, it is likely that a combination of the above measures, plus others not necessarily listed will be necessary. Currently there is an apparent market failure in that the costs associated with development exceed the market value of the finished product. This has increased pressure on the Shire to accept reduced infrastructure standards for roads and drainage or to waive the provision of public open space in order to increase a project's viability to a private developer.

Further increasing pressure on housing affordability in Manjimup is the inability for state or local government to directly intervene in the development market. In many country towns, the main developer of land is the state government through its development agency Landcorp, or the local government itself. In the case of Manjimup, there is a lack of suitable Crown land or Shire-owned land to facilitate this. One option would be for the Shire to purchase land from private ownership and develop it, either directly or in a joint venture with Landcorp or a private entity.

This Growth Plan identifies that in order to achieve the stated SuperTown objectives the reasons for market failure need to be fully understood and strategies identified to remove this. The alternative is to allow market forces to increase land values to the point that the return on investment exceeds the costs of development. However, this is likely to see a worsening of Manjimup's land availability problem and an overall increase in housing costs. This is contrary to the SuperTown objectives, would jeopardise the Town's ability to meet its population targets and does not create an investment-ready climate to attract industry.

The Shire will continue to work with state government to have housing affordability and the related development cost issue addressed appropriately. There may be opportunities for these issues to be considered for all SuperTowns collectively (as contemplated by RDL) or for the South West Region through the upcoming review of the South-West Framework by the Department of Planning or the SWDC South West Regional Investment Blueprint.

3.6.3 / Retail / Commercial Supply and Demand

There is a total of 32,946m² of retail and commercial space in Manjimup. The majority of this space (63%, or 20,764m²) is occupied for various retail purposes while 26% (8,542m²) is office space. The vacancy rate for the combined retail and commercial premises in Manjimup is 11%.

With the exception of some larger retail operations and the Shire's office, the majority of retail and commercial space is small scale, single storey buildings generally ranging between 150-300m². This type of supply is consistent with Towns throughout regional Australia and can generally function as either retail or office premises.

The retail offering in Manjimup includes a Coles, Woolworths, a Target discount department store, furniture retailers, a Retravision store and a couple of larger format hardware stores. The Manjimup Shopping Centre is a 2,300m² centre located within the Township, which is anchored by a 1,800m² Woolworths and comprises 6 specialty shops. There is currently another shopping centre of approximately 5,000m² under construction. Approximately 23% of retail expenditure leaves the area, primarily in large discretionary spend items. This expenditure is likely spent in Bunbury or other surrounding catchments as well as online.

The Shire is the single largest office tenant in the Townsite, occupying 700m² of space. There are an additional 42 tenancies, averaging 200m². The majority (65%) of office users were commercial companies including real estate,

business services, financial services, etc.

Net demand for retail and commercial space (i.e. current and future demand considering existing supply) is presented in Tables 6 and 7.

There is likely a current oversupply of retail and commercial space of 7,218m², which would help to explain the high vacancy rate. Given the fact that commercial office users and retail users can occupy the same space and in consideration of the new shopping centre being built, there is likely to be sufficient supply to cater for growth over the next ten years (to 2021), with an anticipated combined oversupply of commercial and retail space of 2,960m² in 2021. However, new users may not necessarily be able to use existing space, so some expansion of supply might be needed. In total, it is anticipated that an additional 22,162m² of retail and commercial space will be needed in the future. This figure should be used as a guide and estimate as some commercial and retail users require specific types of space (i.e. bulky goods retailers generally require a building footprint of 3,000 - 7,000m² and a larger office user would require a single usable area of 500 - 1,000m²), which may not be available in the existing or future supply.

Table 6: Table: Future Office Floorspace Variance (sqm), Manjimup

Floorspace Supply (GFA Sqm)	2011	2016	2021	2026	2031
Commercial Office	1,145	-512	-2,613	-5,464	-9,337
Government Office	-113	-665	-1,317	-2,086	-2,993
Total Office	1,033	-1,177	-3,930	-7,550	-12,330

Source: AECgroup, Shire of Manjimup

Table 7: Table: Future Retail Floorspace (sqm) Variance, Catchment

Category	2011	2016	2021	2026	2031
Groceries & Specialty Food	766	2474	859	-1,159	-3,682
Food and Liquor Catering	-428	-795	1,603	-2,613	-3,876
Clothing & Accessories	1,259	1,077	678	113	-557
Furniture, Housewares & Appliances	800	1,014	533	-70	-822
Recreation & Entertainment Equipment	1,327	1,008	769	271	-351
Garden & Hardware Goods	1,530	1,968	1,766	1513	1,197
Other Goods & Personal Services	932	601	-13	-780	-1,739
Total	6,185	7,507	2,960	-2,725	-9,832

Source: AECgroup, Shire of Manjimup

3.6.4 / Industry

According to the South West Region Industrial Land Study (SWRILS), there is a total of 350 ha of industrial land in the Shire of Manjimup with approximately two-thirds (234 ha) located in and around the Town of Manjimup. SWRILS identified that out of the total amount of industrial land in the Shire, 70% (247 ha) was occupied. For the industrial land surrounding the Town of Manjimup, 80% (188 ha) of available industrial land was occupied, which certainly includes the major timber operations.

A more recent audit conducted by the Shire identified 147 ha of industrial land in the Town, of which 90.5 ha (or 62%) is occupied. Currently, there are 23 vacant properties as well as 12 serviced and available industrial lots, all of which were less than 1 ha and most ranging between 2,500-5,000 sqm. There are an additional 20 lots (totalling 46 ha) zoned and available but currently unserviced. Most of these lots are smaller ranging between 2,500-5,000 sqm, however there are a few larger blocks of approximately 2 ha and two larger parcels that are each greater than 10 ha.

SWRILS has identified a net decrease in demand for industrial land from 2006 to 2031 of 27ha (Table 8). Embedded in this net decline is an actual increase in demand of 13 ha for manufacturing. It should be noted that the SWRILS analysis does not include the desired goals and aspirations of the

SuperTowns initiative and likely underestimates the demand for industrial land. The principle driver in the modelling of SWRILS is population growth, which historically has been low for Manjimup. Additionally, SWRILS uses a productivity factor, which further reduces the demand for land over time.

Alternative demand projections provided as part of the SuperTown initiative identify demand for an additional 28 ha of industrial land (Table 9). While transport and logistics is the majority demand, there is also demand for additional land for manufacturing uses. This demand is based on the doubling of the population of the Town. Current trends in industrial activities show more and more warehousing activities associated with manufacturing, so there is a blurring of activities across manufacturing, wholesale trade and transport. Additionally, it is important to ensure that supply of industrial land is in excess of demand in order to provide choice and flexibility to investors.

Care should be taken when comparing the figures above as different methodologies and assumptions were used to identify future demand. In terms of the SuperTown initiative, it is anticipated that there is future demand for industrial land to support a 100% growth in the Town's population by 2031. SWILS is likely based on pre-SuperTown population assumptions of a maximum population growth of approximately 20-25% to 2031.

Manjimup	2006	2031	Increase in Demand 2006-2031
Vacant	189		
Other	81	56	-25
Logistics	31	16	-15
Manufacturing	49	62	13
Total	161	134	-27

Source: SWRILS

Manjimup	2011	2016	2021	2026	2031	Increase in Demand 2011-2031
Manufacturing	22	23	24	25	26	4
Wholesale trade	8	10	13	16	20	12
Transportation and Storage	12	14	17	20	24	12
Total	42	47	54	61	70	28

Source: AECgroup

3.6.5 / Capacity of Nearby Towns

Although the SuperTown project is focused primarily upon the Town of Manjimup and its immediate surrounds, it is envisaged that surrounding towns will also benefit. This is due to the existing relationship between Manjimup as the sub-regional centre and its surrounding towns. Existing and expanded regional retail, educational, medical and recreational services and facilities in Manjimup will continue to be accessed by residents of surrounding towns. It is also highly likely that residential demand in the surrounding towns will increase over time, particularly in Bridgetown and Pemberton, which are 20-25 minutes drive from Manjimup and already support a 'commuter' workforce.

Given that the SuperTown project will have an impact upon the future growth of surrounding Towns, the following outlines the capacity of these Towns to accommodate growth.

The anticipated flow on effects to nearby Towns is illustrated as **Figure 14**.

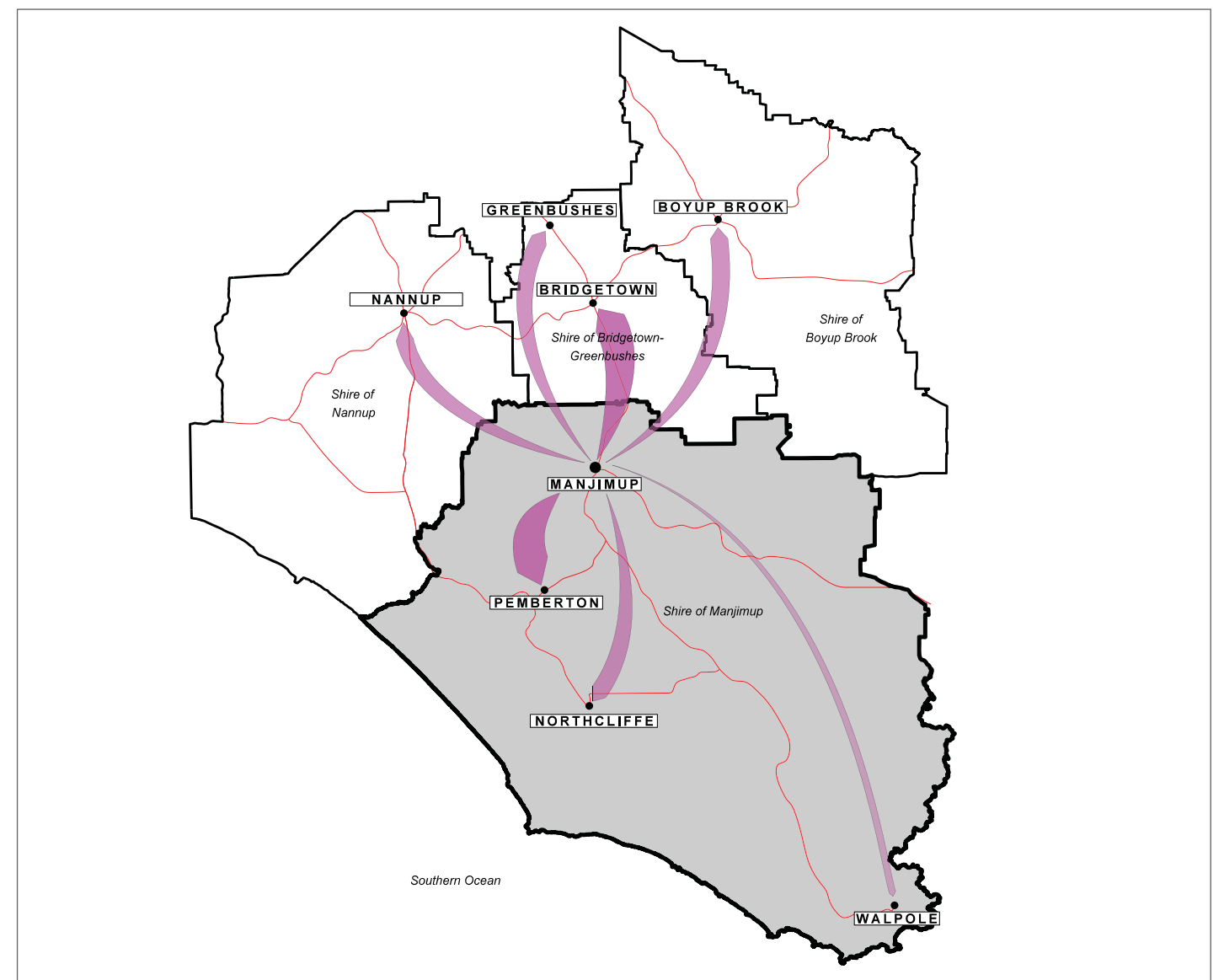


Figure 14 Flow on effects to nearby Towns



Nannup

Nannup is located 58km northwest of Manjimup and is the centre of the Shire of Nannup. The Nannup Townsite had a population of 500-600 persons in 2006 (based upon figures stated in the Shire of Nannup Local Planning Strategy).

As Nannup is roughly equidistant from Manjimup and Busselton, it is assumed that the latter is accessed more frequently by Nannup residents for retail and professional services given it is larger and offers a greater choice. In 2012 arrangements were made for school bus services to be coordinated so that students in Nannup can access Manjimup Senior High School as an alternative to Busselton. The Town also has existing sporting ties with Manjimup, particularly in junior sport.

Given the distance from Manjimup and the gravity effect of Busselton, the SuperTown project can be considered to have a lesser effect on Nannup when compared to other Towns. However, the lifestyle offered in Nannup is sufficiently different to other centres that it may experience an increased rate of growth as a result of employment growth in Manjimup.

It is anticipated that there is sufficient land available for residential and rural residential development in and around Nannup to cater for more than a doubling of the Town's current population. Two proposed developments adjoining the Town propose a total of 550 residential and rural residential lots, catering for a potential population increase of

approximately 1265 persons, which is sufficient to triple the current population of Nannup.

Bridgetown

Located 36km north of Manjimup, Bridgetown is the main centre of the Shire of Bridgetown-Greenbushes. Bridgetown accesses a number of facilities in Manjimup, including the Senior High School, Warren District Hospital and a larger range of retail outlets and professional services. Any investment in regional medical, educational and airport facilities is likely to have a direct benefit to Bridgetown.

The Shire of Bridgetown-Greenbushes has recently prepared a draft Local Planning Strategy to guide its growth and development up to 2035. The Strategy is based upon a growth rate of 1.5% per annum over a 25 year period, with the total Shire population increasing from 3,900 in 2006 to 6,000 by 2035. This growth rate is slightly higher than the current rate of 1.12%. The Strategy assumes that the proportion living in Bridgetown as opposed to the remainder of the Shire would remain at around 60% of the total Shire population. If this assumption holds, the Town's population would increase to approximately 3,500 by 2035, an increase of 1,200 persons (52%) from 2006. The Strategy identifies a need for 900 additional dwellings to cater for the envisaged growth to 2035, with 520 dwellings needed in Bridgetown. The Strategy has been designed to accommodate this number of dwellings by 2035.



In the event that growth in Manjimup leads to an increase in the growth rate of Bridgetown over and above the 1.5% envisaged by the Shire of Bridgetown-Greenbushes, a review of the Strategy may be required. However, as a Local Planning Strategy is normally reviewed every 10 years or so, it is likely that the Shire of Bridgetown-Greenbushes would be in a position to reassess its land requirements prior to a shortage becoming critical.

Greenbushes

Greenbushes is located 54km north of Manjimup in the Shire of Bridgetown-Greenbushes. The draft Local Planning Strategy estimates the population of the Town at 340 persons in 2006. Sufficient land is available to allow for an additional 300 lots in Greenbushes, catering for a population increase of approximately 690.

Greenbushes is the location of large-scale mining activity and is proposed as the southern rail terminal in the event the railway from Picton is reopened. Subject to approvals, there is capacity for North Greenbushes to be developed into a strategic industrial area for the Warren-Blackwood Region. It is likely that employment generated in Greenbushes will have a positive impact on population growth in surrounding Towns, including Manjimup.

Northcliffe

Located 55km south of Manjimup, but within the Manjimup Shire, Northcliffe is home to approximately 250 people, with an additional 350 in the surrounding hinterland. Urban development within the Townsite is limited by the lack of sewerage and available land. Therefore, the bulk of growth in Northcliffe has been attributed to rural residential development to both the south and north of the Town.

Commercial activities are limited to a relatively small Town Centre with businesses servicing local needs, as well as visitors. The Town has a primary school, with secondary students bussed to either Pemberton or Manjimup. Most professional services are accessed in Pemberton and Manjimup.

Sufficient residential zoned land in the Townsite exists to create approximately 80 residential lots, subject to the availability of reticulated sewer. This would increase the Town's population by 184 persons using an average of 2.3 persons for household.

The majority of population growth is anticipated to be in the surrounding rural residential areas. Sufficient land is currently zoned, or within Development Investigation Areas to accommodate approximately 200-250 additional rural residential lots. This would cater for an increase of up to 575 persons.

The existing land use planning for Northcliffe provides sufficient capacity to accommodate more than a doubling of the Town's population. Given the rural residential nature of the majority of the growth and the proximity of the Town to Pemberton and Manjimup, additional commercial or industrial land is not envisaged as necessary at this time.

Pemberton

Located 33km south of Manjimup, but within the Manjimup Shire, Pemberton has historically acted as the second Town within the Shire of Manjimup. In more recent years, the Town has formed the focus for tourism in the Shire. The Town has a compact commercial centre that provides a range of local shopping and tourist-related services. Higher order shopping and professional services are access in Manjimup.

With a current population of around 1,000, Pemberton has relied primarily upon rural residential development to create new residential lots in the last 20-30 years. However, recent development proposals have focussed on the creation of fully-serviced residential lots. The Gloucester Ridge Estate to the east of the Town Centre on Burma Road proposes 155 lots. A mixed low-density residential and rural tourist development is proposed for Golf Links Road north east of the Town. Detailed structure planning for this site has not yet been conducted. However, it is estimated that approximately 250 lots could be yielded, subject to approvals.

Including Gloucester Ridge and Golf Links Road, there is sufficient zoned residential land in Pemberton to cater for approximately 365 lots, or a population increase of 840 based on 2.3 persons per dwelling. Development Investigation Areas on the southern side of the Town could accommodate an additional approximately 150 lots (345 persons). Based on the above assumptions, approximately 515 lots catering for more than a doubling of the population can be accommodated under the existing land use planning arrangements in Pemberton.

In addition to greenfield development sites, there is some potential for consolidation of existing residential areas. However, consolidation is constrained by the topography of many parts of the Town as well as heritage considerations. It is unlikely that large scale consolidation will occur where there is a sufficient supply of greenfield lots.

The main constraint to economic growth in Pemberton is the lack of a suitable light industrial area. The only industrial land is occupied by the Auswest Karri Mill. Combined with Pemberton's constrained Town Centre, there is currently no location in the Town to cater for the light industrial uses



that would normally serve a Town of this size. A future light industrial area has been identified on crown land south of the Pemberton Mill and east of the Pemberton Tramway. Environmental assessment has recently identified no significant environmental constraints. The Shire of Manjimup will progress with rezoning of the site in 2012-13 and will discuss options for delivery of serviced lots with Landcorp once the rezoning is underway.

Boyup Brook

Boyup Brook is located 67km northeast of Manjimup and is the centre of the Shire of Boyup Brook. The Town acts as an agricultural service centre.

Townsite development is currently hampered by a lack of reticulated sewer. Should sewer become available in the future, the Shire's Local Rural Strategy identifies that an additional 156 residential lots could be created within the Townsite. This would be a 54% increase from the 291 dwellings currently in the Town and cater for a population of 360 persons at 2.3 persons per household.

Surrounding the Townsite is a rural residential growth area, currently containing 117 lots with a minimum size of 2ha. Sufficient land is identified to provide a further 154 rural residential lots at 2ha per lot.

In addition to the above residential and rural residential development areas, there has been a long-standing proposal to create low-density residential lots off Arthur River Road

to the north east of the Town. Dependent upon detailed planning, this could produce up to 750 lots with a minimum size of 2,000m². this development could therefore cater for an ultimate population of 1,725 persons at 2.3 persons per household.

The effect of SuperTown development in Manjimup on Boyup Brook is anticipated to be less than for Towns located closer. Further, Boyup Brook is located the same distance from the Collie SuperTown, which provides a similar level of access to services as Manjimup.

Given the above capacity to expand, it is assumed that any increase in growth in Boyup Brook caused by SuperTown development in both Manjimup and Collie can be appropriately accommodated within the existing land use planning arrangements.

Walpole

Located at the eastern edge of the Shire of Manjimup, Walpole is 120km southeast of Manjimup. The Town has expanded in recent decades, primarily based upon its 'tree change' lifestyle and location on the south coast of Western Australia. Walpole is the same distance from Albany as it is to Manjimup and 66km west of Denmark. Therefore, it has less of a dependence upon Manjimup for access to goods and services than other Towns within the Shire of Manjimup.

Townsite expansion is limited due to environmental and topographical constraints. However, there is an ability to

create an approximately 50 additional residential lots, in addition to approximately 30-40 created, but undeveloped lots in Boronia Ridge. Recent density changes and the presence of reticulated sewer will allow for consolidation of the existing Townsite area, with many original 'quarter acre' lots subdividable into 2 or three smaller lots.

In addition to Townsite development, there have been a small number of rural residential developments over the years. A current proposal for Development Investigation Area No.5, if approved, will create an additional 167 rural residential lots on Clarke Road, North Walpole.

Growth attributed directly to the SuperTown project is likely to be limited due to the distance between Manjimup and Walpole not being conducive to commuting. However, should the growth rate in Walpole be accelerated, there is likely to be sufficient capacity in the short-medium terms to accommodate this. The longer-term land use requirements for Walpole will be reviewed by the Shire of Manjimup during its Local Planning Strategy review in 2013-14.

3.7 / ENVIRONMENT

3.7.1 / Natural Constraints

Three significant natural constraints to urban growth of the Town have been identified, namely natural vegetation, drainage and steep slopes (**Figure 15**). These constraints are summarised as follows:

Natural Vegetation

The majority of land space in and surrounding the Manjimup Townsite has been cleared of native vegetation. It is also likely that the remaining areas of native vegetation are regrowth, given the Town's sawmilling history and the uniform level of tree growth seen in these areas.

Remnant vegetation is located on a number of Crown Reserves and a small number of private land parcels. Major areas of remnant vegetation within the Manjimup Townsite are summarised below:

1. Mottram Street Bushland (16.5ha). Comprises Reserves 21374 and 24937 and bounded by Mottram, Young and O'Connor Streets. This is a regrowth area and is subject to ongoing weed and drainage management. The land is reserved in the Local Planning Scheme for Parks and Recreation. Thinning and removal of weeds and extension of streamlining of Manjin Creek may occur over time to allow this area to be used for passive recreation and biodiversity protection;
2. Rear of Warren District Hospital (2.6ha). Comprises a portion of Reserve 20337 and is reserved in the Local Planning Scheme for Public Purposes. Development of this area is unlikely due to the land being steeply sloped;
3. Lot 377 Tobin Road (6ha). Lot 377 has been rezoned to accommodate residential development with the vegetated area contained within a Parks and Recreation Reserve. At this time the land is yet to be vested in the Crown, but this will occur as part of the future subdivision;
4. Rea Park Recreation Grounds, Johnson Street (29ha). Comprising a portion of Reserve 19552, this land is located at the Town's main recreation grounds and may be developed over time for expanded active recreation purposes;
5. Stokes Street / Perup Road Reserve (1.7ha). Comprises

Reserve 19860 and is reserved in the Local Planning Scheme for Parks and Recreation. There are no plans to develop this reserve in the foreseeable future as its recreational benefit is limited by its relatively small size and location on the northern edge of the urban area;

6. Deanmill Heritage Trail (Reserve 34161). The former Manjimup – Deanmill Tramway is reserved by the Local Planning Scheme for Parks and Recreation and forms part of the Munda Biddi Trail. Having closed as an operating tramway in 1966, the alignment has been allowed to regrow and forms a major green corridor on the western side of the Town. There is opportunity to continue this green corridor eastwards towards the King Jarrah picnic site on Perup Road through the Mottram Street Bushland and along Manjin Creek to the south of Anunaka;
7. Lot 5 West Boundary Road (53ha). This land is privately owned and zoned 'Rural Small Holdings'. It is not currently envisaged for urban development;
8. Manjimup Industrial Area. Crown land zoned for industrial development is predominantly vegetated. Clearing permits will be required to allow these areas to develop. Development Investigation Area 15 in the Local Planning Scheme is envisaged for future industrial development. This area is also predominantly vegetated and will require further environmental assessment prior to a decision on rezoning; and
9. Allambie Park (5.5ha). This land comprises Reserve 23915, which is maintained as parkland with large trees and low undergrowth and is a Class A Reserve. Allambie Park abuts the railway corridor, which is vegetated in parts.
10. Timber and Heritage Park (4ha). The western portion of Reserve 26199 is predominantly vegetated and includes a number of paths and interpretation displays within it. It is proposed to expand the interpretation displays to incorporate indigenous culture and food, as well as general environmental and timber industry themes

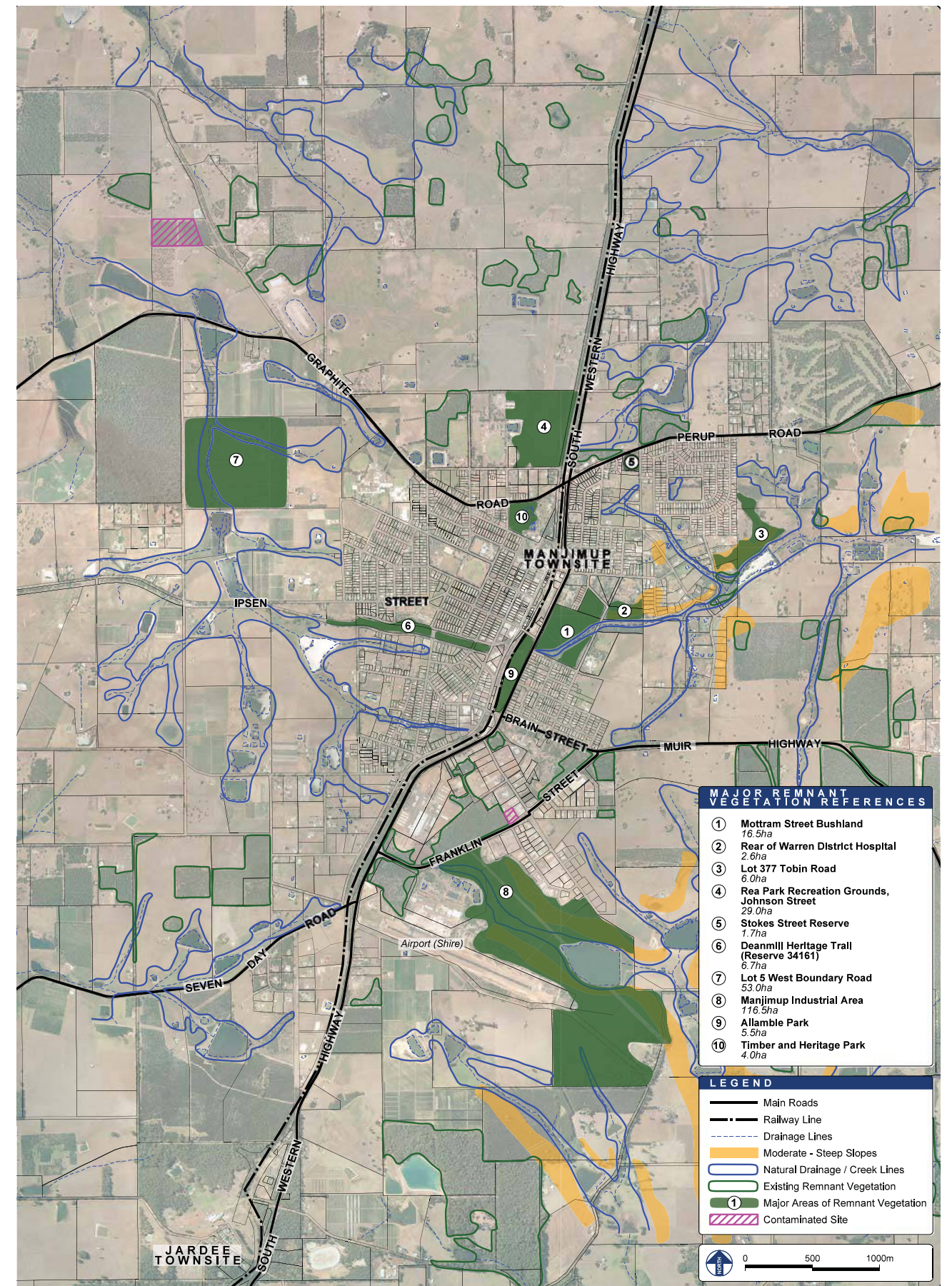


Figure 15 Natural Constraints



In general, the presence of vegetation is a constraint to the expansion of the existing industrial area. Residential growth areas are unlikely to be significantly constrained by vegetation. While the removal of vegetation does not constitute a refusal to the development of land, it is a constraint that will need to be addressed at the detailed planning stage.

It should be noted that the vegetation existing to the north, east and west of the Townsite is heavily fragmented by residential development and farmland. Despite its fragmented nature, the existing vegetation has environmental value and may contain habitat essential to rare, threatened or vulnerable species.

An opportunity exists to develop an east-west green corridor through the Town linking Deanmill to King Jarrah (10km total distance). A north-south green corridor utilising the existing railway alignment may also become available should existing rail infrastructure be removed in the future.

Drainage and Topography

The Townsite of Manjimup is characterised generally by low-lying, flat land to the west and north of the existing urban area. Land located east of the South Western Highway and south of the Town is characterised by undulating hills interspersed by low-lying drainage lines.

The principal environmental constraint for urban growth in Manjimup is drainage and the prevalence of low-lying land on the western and northern edges of the existing Townsite.

Generally-speaking, there are less drainage constraints on the eastern side of the Townsite, where drainage lines are more defined, given the undulating topography. In the western and northern areas, drainage lines are less defined with larger areas of land likely to be waterlogged during winter months. Although there is a lack of defined drainage lines immediately north of the Townsite, the area is relatively flat and appears to retain summer moisture. This area may require the importation of fill in order to accommodate urban development.

Large areas of land to the west of the Townsite that are currently located in Development Investigation Areas for urban and rural residential development are prone to water logging. Development of these areas will require importation of fill given the lack of undulation in the vicinity does not promote cut-to-fill design techniques. The importation of fill will increase development costs, as well as place greater strain on limited basic raw material resources. It will also have

significant impacts on natural drainage flows, which may in turn affect flows into the large dams used for horticulture production in the vicinity.

Slope

Topography of the land located to the South and East of the Townsite is undulating in nature. The slopes in these areas are generally quite gentle. However, there are a number of slopes within these areas which have a moderate gradient (gradients generally ranging from 1:4 to 1:7).

The gradient of the slopes located to the South and East of the Townsite have not restricted development occurring within the area. However, slope must be considered as a constraint when deciding the viability land for residential development.

3.8 / LAND USE CONSTRAINTS

Priority Agriculture

Land designated as Priority Agriculture by the Shire of Manjimup Local Planning Scheme No.4 is essentially protected by State Planning Policy 2.5 Agriculture and Rural Landuse Planning. As such, land designated as Priority Agriculture will effectively constrain future development options (**Figure 16**).

The majority of land zoned Priority Agriculture within the vicinity of the Manjimup Townsite is located to the south, northwest and east. Impact on these areas by urban development is to be avoided.

Conservation Reserves & State Forest

Conservation Reserves and State Forest constitute a significant portion of land located within the Shire of Manjimup. While the clearing of vegetation has been discussed as a constraint within Section 3.5.1, consideration was not given to the clearing of vegetation on State or Crown land for expansion purposes.

Two (2) Conservation Reserves and one (1) area of State Forest exist within the vicinity of the Manjimup Townsite. Details of these three (3) plots of land are summarised below:

1. Lot 5835 West Boundary Road, Conservation Reserve (Faunadale Bushland Reserve), the conservation

reserve covers an area of 85.3ha and is bound to the north by Graphite Road and to the east by West Boundary Road. The site is located directly to the west of the Townsite and is fully covered by remnant bushland;

2. Lot 13268 Perup Road, Conservation Reserve (King Jarrah), the conservation reserve covers an area of 82.4ha and is bound by Perup Road to the North and an unnamed road to the South. The site lies to the east of the Townsite (adjacent to the Manjimup Country Club) and is fully covered by remnant bushland; and
3. The area of State Forest is located to the east of the Townsite and is situated to the north and south of Muir Highway. The State Forest itself covers an area of approximately 159ha.

The identified conservation reserves and state forest are located to the east and west of the Townsite adjacent to the Town's major east/west road connections. While the reserve and state forest cover a relatively small area (326.7ha) they lie adjacent to priority agriculture land located to the east and west of the Town. This effectively decreases the amount of land available for future development within the north western and south eastern quadrants.

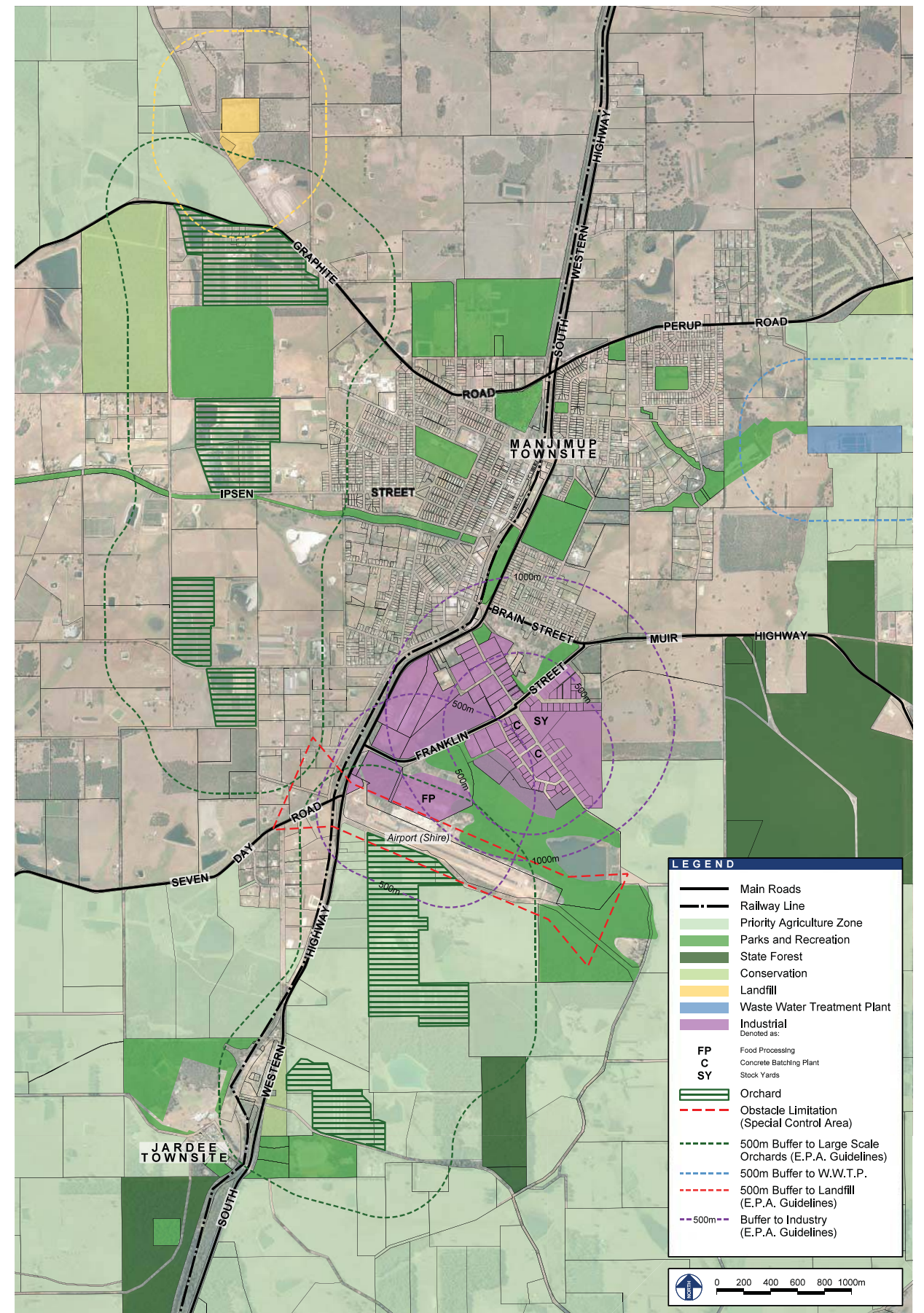


Figure 16 Land Use Constraints

Separation Distances between Industrial and Sensitive Landuses

The land surrounding the Manjimup Townsite consists of a range of landuses. Of specific note are industrial and agricultural uses and municipal infrastructure. Environmental Protection Authority Guidance Statement No. 3 provides recommendations on separation distances for industrial and sensitive landuses.

The location and recommended separation buffer distances are identified in Table 10.

As demonstrated within **Figure 16** (page 23), the recommended buffer zones suggested by Guidance Statement No.3 provide a significant constraint to development of future expansion areas. These constraints are primarily focused to the south and west of Town, situated over the identified agricultural and industrial areas and the Regional Landfill site.

The only significant constraint located to the east of the Townsite is the Town's Waste Water Treatment Plant. However, the Water Corporation has recently advised that a planning review of this facility is underway and it is possible that the WWTP could be relocated in the medium-long term and replaced with a transfer pump station to a new plant further to the east thereby reducing the current constraint to future expansion.

Of specific importance are the recommended buffer distances relating to large scale orchards, which play an

important role in the Shire's economy (38.9% of the Shire's total employment). The Townsite Growth Plan will need to avoid encroaching upon established agriculture activities, ensuring impacts to the productivity and economic viability of agricultural pursuits are minimised.

Contaminated Land

There are two (2) land parcels within the immediate vicinity of the Townsite that are included within the Department of Environment and Conservation's Contaminated Land Register. The contaminated sites are summarised as follows:

1. Lot 585 P55829 Franklin Street. The site is located to the south east of the Township within the Industrial Estate. Further investigations are required to confirm the presence of the contaminants onsite; and
2. Lot 12623 Ralston Road, Ringbark (Reserve# 25706). The land parcel constitutes a section of the Township's current landfill, which is located to the North-West of the Townsite.

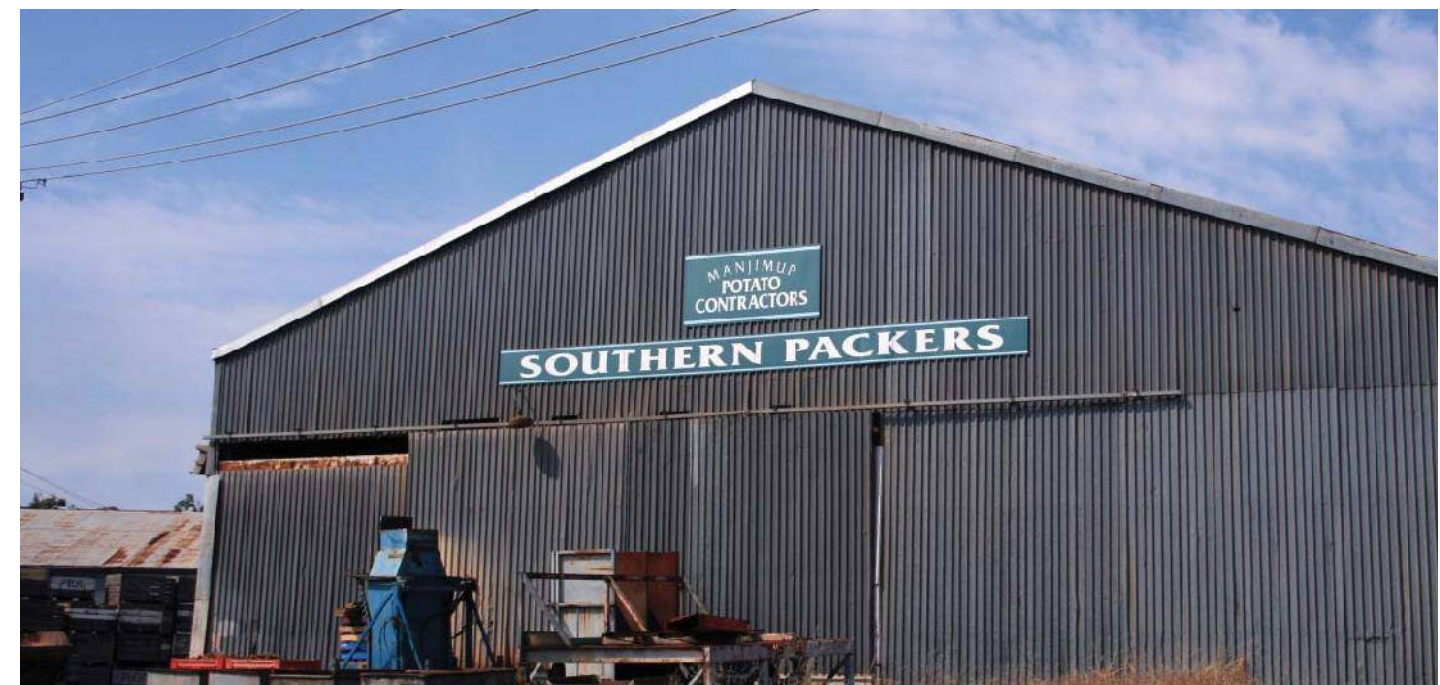
Table 10: Recommended Separation Distances for Industrial and Sensitive Landuses

Operation	Location	Separation Buffer Distance
Concrete Batching Plant	Lots 656, 660 and 661 Wetherell Street	300-500m
Livestock saleyard or holding pen (Stockyard)	Lot 1 Wetherell Street	At least 1000m (depending on size)
Food Processing Plant	Lot 689 Franklin Street	200-500m for fruit and vegetables
Large Scale Orchards	Various Lots (west and southeast of Townsite)	500m
Landfill	Lot 12617 Ralston Road	150-500m (depending on sensitivity of adjoining use)
Waste Water Treatment Plant	Lot 13169 East of Anunaka	500m (generic WWTP buffer)

There are several key natural and landuse constraints that will have significant influence on the spatial approach to growth for the Townsite. These include:

- *Low-lying land to the west;*
- *Presence of large orchard operations in vicinity of the Town;*
- *Existing and future industrial expansion;*
- *Existing WWTP to the east.*

The areas identified for future urban expansion in the current Local Planning Strategy will need to be reviewed in the context of these constraints to reflect the recommended land use outcomes of the preferred spatial Growth Plan.



3.9 / BUILT ENVIRONMENT AND PUBLIC REALM

The Town site layout has evolved as a product of its history and association with the timber industry. The structure of the Town to the west of the South West Highway (Mottram Street) has largely developed on a grid pattern that allows generally high permeability and good access to most parts of the Town. Development to the east has evolved more organically in a manner where there is greater emphasis on environmental aspects, walkable neighbourhoods and interconnected street patterns to facilitate movement. This site responsive trend in neighbourhood design will continue to be developed as the population grows and demand for housing and associated facilities increases.

Improving the connection between the eastern and western residential catchments, as well as improving the orientation for visitors to Town, has been identified as critical components to the growth of the Townsite. This improvement particularly relies on the existing railway corridor being removed and the land being integrated into the Town Centre to improve accessibility and the built environment and public realm outcomes.

Housing

Housing within Manjimup consists primarily of low density single detached dwellings. In the central parts of Town there is very little diversity in the original size of the dwelling lots. All of the single residential lots are approximately 1,000m² – 1,500m², with similar housing stock. Similar lot sizes exist immediately to the east of Mottram Street but decrease in size to around 800m² in the more recently developed areas to meet market demand.

Special Rural and Special Residential lots are also located in close proximity to the Town Centre providing an alternative lifestyle to single residential lots.

Public Realm

Manjimup Town site suffers a significant lack of quality in its public realm primarily due to the existence of the railway corridor and associated infrastructure running through the centre of Town. The approach to the Townsite along the South-West Highway is also currently underwhelming. The notion of a 'sense of arrival' into Manjimup can be created through enhancement of the existing timber entry arches, bold street tree planting using local vegetation and materials, artwork, lighting, and individual paving designs to announce the entry as a statement.

Many parts of the Town are 'tired' and present poorly to potential new developers and residents. In particular, the entrance to Town does little to invite visitors, and prospective new residents into the Town itself. Also, the traditional residential areas are typified by wide streets with differing kerb standards, little in the way of managed street trees and generally poorly managed verges. Notable projects include removal of the railway reserve and integration with the Town Centre, Timber and Heritage Park, Manjin Park precinct, Brockman Street and Mottram Street appearance (arch to arch).

The lack of diversity in housing product combined with an ageing population, below average incomes and high housing prices in recent times provides an opportunity to create an affordable alternative through a range of housing typologies with the added benefit of a south-west lifestyle. However, it is important to understand the market and determine the development incentives to provide such housing.

The opportunity exists to undertake detailed site planning and design of specific precincts in and around the Townsite to improve the functionality and aesthetic appearance of spaces.

Creating a 'Sense of Place'

The Manjimup Town Centre Revitalisation Project outlined in Chapter 6 seeks to create a 'sense of place' within the central heart of Manjimup. A 'sense of place' are those characteristics that make a place special or unique and foster attachment and belonging. It is planned that the natural, cultural and architectural story of Manjimup be reflected in its public spaces.

The revitalisation concepts contained in Chapter 6 attempt to build on Manjimup's natural and built attributes and create identifiable themes within the Town Centre. Core elements of this are the creation of a 'town square'-like space in Brockman Street and linking this to the Linear Park in a manner that seeks to link the two sides of the Town Centre. Manjimup's culture, heritage and history will be interpreted along the Linear Park and in the key drawcard of the Timber and Heritage Park. The Park will be expanded to accommodate a wide range of community spaces including a children's adventure playground and nature-play areas, community garden, History House and Men's Shed. The intent is to allow the Park to become a place where a variety of age groups and interests come together.

The concept designs seek to create a forest-like streetscape along Mottram Street and South Western Highway by removing overhead power lines and allowing the street to become tree lined. Manjimup's indigenous history and culture will be showcased in natural areas, such as the Timber and Heritage Park and potentially the Mottram Street bushland. Manjimup's current and future importance as a premium food producer will be encouraged and promoted throughout the Town Centre with initiatives such as alfresco spaces and ensuring the Food Council has a presence in the Timber and Heritage Park.



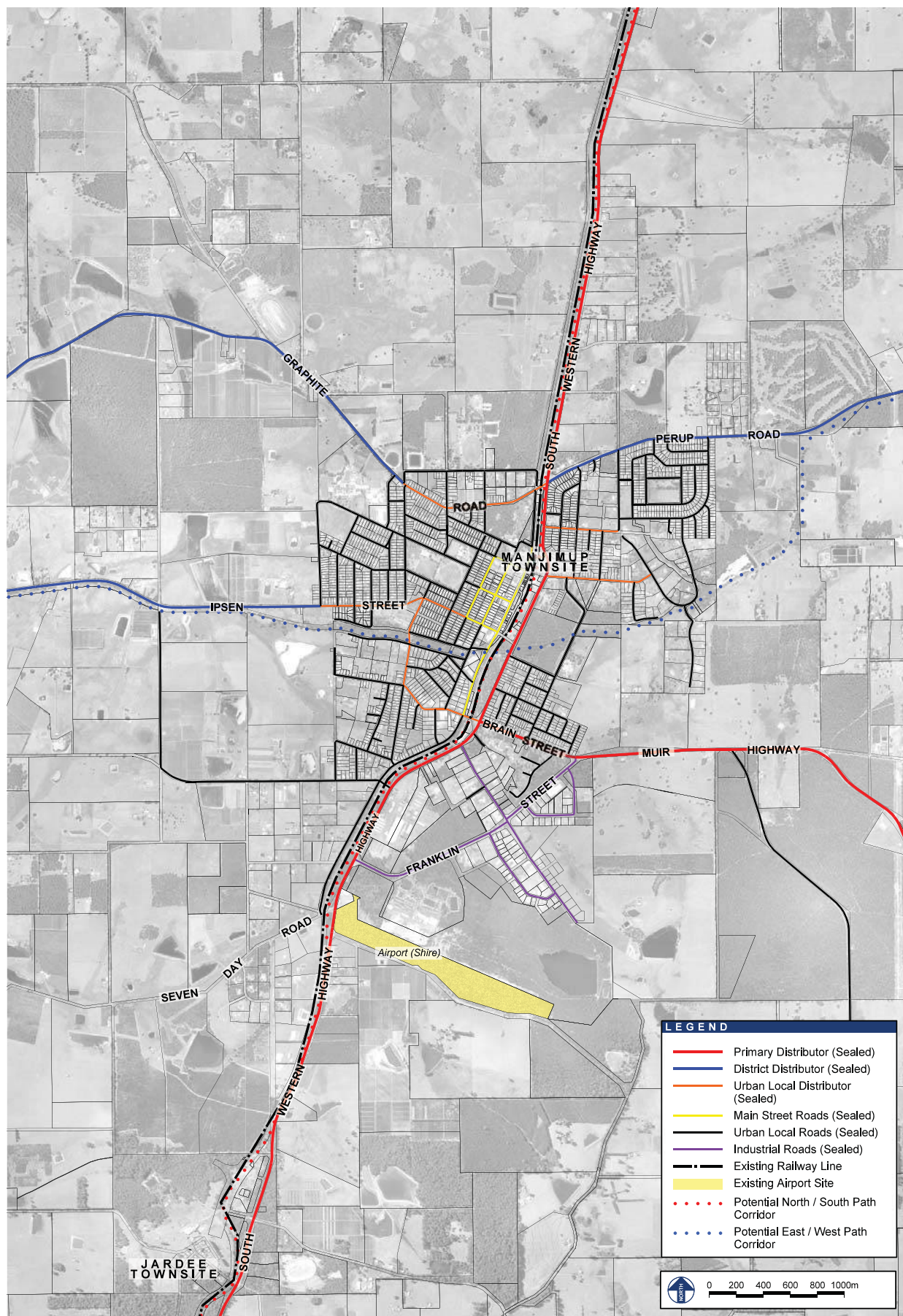


Figure 17 Traffic and Transport Plan

3.10 / TRAFFIC AND TRANSPORT

3.10.1 / Road Network

Manjimup's existing road hierarchy is illustrated in **Figure 17**.

3.10.1.1 / Highway Network

Current Situation

Manjimup is currently serviced by the South Western Highway, which links the Town to Bunbury and Perth to the north and Albany (via Walpole) to the south. This highway is known as Mottram Street within part of the Townsite area. The highway is under the control of Main Roads WA and forms part of National Highway Number 1.

Muir Highway (known as Brain Street within the Townsite) starts at its intersection with Mottram Street and links Manjimup with Mt Barker and Albany Highway. This road is also controlled by Main Roads.

Although not a gazetted highway, Graphite Road acts as a regional connector west of Manjimup linking to Nannup, Margaret River and Busselton. This road is controlled by the Shire of Manjimup.

Upgrading Works

South Western Highway has recently been reconstructed between Manjimup and Vasse Highway (16km). The reconstruction increased the width of seal from 6.8m to 9.0m and an overall road formation width of 11m. There are currently no overtaking lanes between Bridgetown and Walpole (distance of 155km). The width of the road and alignment of the highway particularly south of Vasse Highway provides limited overtaking opportunities, which can cause delay and dangerous overtaking manoeuvres given the amount of caravan traffic on this major tourist route. An increase in population in and around Manjimup will lead to additional demand for overtaking lanes South Western Highway in particular to cater for regular and tourist traffic.

Reconstruction of remaining single-lane portions of Muir Highway have recently been completed, with a dual-lane seal now complete between Manjimup and Mt Barker. Works on South Western Highway south of Vasse Highway are likely to be limited to removal of trees located close to the edge of the road. No seal widening of this section is planned at this time.

3.10.1.2 / Townsite Road Network

The Townsite is serviced by the following road hierarchy:

Primary Distributors

The Townsite is serviced by two (2) primary distributors in the form of South Western Highway and Muir Highway.

Statistics derived from Main Roads Western Australia South West indicate that within the Townsite (to the south of Graphite Road) the Highway conveys 3240 vehicles per day (VPD) of which 12.5% are heavy vehicles. And numbers are steadily increasing. A recent Shire traffic count identified an average weekday volume of 1872 and 12% heavy vehicles on South Western Highway immediately north of the northern timber arch. The average weekday volume at the southern arch was identified as 2062, again with heavy vehicles comprising 12%.

The Muir Highway is not as heavily utilised as the South Western Highway, with records indicating that the Muir Highway (east of Franklin Street) conveys 630 VPD.

It is noted that street lighting along South Western Highway / Mottram Street is currently not at a standard normally acceptable for highways of this type. Upgrading of street lighting along this route is seen as an important safety and amenity issue.

District Distributors

The Manjimup Townsite is serviced by two (2) District Distributors in the form of Graphite Road and Perup Road.

Graphite Road performs an important role within the Manjimup Road Network. The road acts as a major east/west link, between Manjimup, Nannup, Busselton and Margaret River. Current average weekday volumes on Graphite Road range from approximately 2173 west of Graphite Road and 1654 at the western entrance into Town. The proportion of heavy vehicle traffic is 10-12% of average weekday flows.

Perup Road performs a similar role to that of Graphite Road, acting as a major East/West road link. It forms a major section of road which connects the South West Highway to the Albany Highway to the East in the Shire of Plantagenet. Perup Road also provides a major link to residential areas in the east side of Manjimup. Current average weekday volume on Perup Road east of Mottram Street is 2073, with heavy vehicles comprising 6%.

Urban Local Distributors

Ipsen Street forms an east/west connection, providing the major road link between Manjimup and the settlement of Deanmill. The road also services a number of larger rural properties and provides a link to smaller local roads. Current average weekday volumes on Ipsen Street are 1902 opposite Kearnan College and 2003 between Rose and Giblett Streets.

Hospital Avenue provides a major connection between the South Western Highway and residential subdivisions located to the east of the Townsite. The road also services the Town's health precinct. Average weekday volumes of 1227 vehicles east of Mottram Street are seen, with heavy vehicles comprising 3% of total volume.

Pritchard Street serves western Manjimup, connecting Ipsen Street to Mottram Street and the Muir Highway. It provides access from the Mottram Street/Muir Highway to a number of local streets within the residential area to the south of the Townsite.

Blechynden Street provides an east/west link from the South Western Highway to Anunaka, a locality east of the Townsite.

Main Street Roads

Within the Town Centre zone there are seven (7) main road streets. These streets include: Ipsen Street (Eastern Arm); Brockman Street; Mount Street; Bath Street; Giblett Street; Rose Street; and Ralston Street.

All streets located within the Town Centre zone convey two-way traffic. The only exception being a portion of Brockman Street, which carries traffic in an east to west flow between Giblett and Rose Streets. Average weekday volumes on the Town Centre streets are relatively uniform at between 2000 and 2100 vehicles per day the proportion of heavy vehicles being relatively low at 4-5%.

Opportunities relating to the configuration of roads within the Town Centre to improve access and circulation are discussed in Section 6.4.

3.10.2 / Rail Network

Manjimup was connected to the state railway system in 1911. The line was later extended to Pemberton (1914) and Northcliffe (1933). Passenger trains ceased in circa 1960 and were replaced by a road coach service. General freight services continued until the early 1990's after which the line

was solely used for the transport of woodchips from Diamond Mill to the Port of Bunbury. This service was maintained until March 2005 when all services between Picton and Lambert (Diamond Mill) ceased and the line closed in its entirety. The line south of Lambert had been closed earlier and is currently leased by the Pemberton Tramway Company. This company operates tourist tram services between Pemberton and Warren River Bridge with the remainder of the leased track non-operational at this time.

The line between Picton and Lambert is currently in a 'mothballed' state with maintenance limited to weed and fire management.

Closure of the line coincided with a contraction in the native timber industry. The last rail user in the Manjimup area, Diamond Mill, no longer produces sufficient material to warrant rail haulage without there being other users to offset costs and share services.

3.10.3 / Long Term Transport Initiatives

As the Town grows to its target population and beyond, two long-term transport initiatives may become necessary to cater for increased traffic whilst protecting the amenity and functionality of the Town. These initiatives have been identified as:

- Creation of a north-south transport corridor to act as a rail and heavy vehicle bypass of the Town, with a heavy vehicle link to Muir Highway. This corridor may also be suitable for other utilities, such as gas, water and telecommunications; and
- Establishment of a regional airport on a green field site further away from the Town.

The above initiatives are considered longer-term projects with the exact timing of delivery depend upon demand. Notwithstanding this, the opportunity has been taken to identify a preliminary transport corridor and airport site so that more detailed planning can be undertaken in the future. This also allows for the future development of Manjimup to take into account the likely corridor alignment and airport site so that should these be needed in the future earlier planning decisions have not jeopardised the initiative by placing incompatible develop on or near the corridor or airport site.

3.10.3.1 / Future Transport Corridor

The existing highway and rail corridor alignment effectively divides the Manjimup Townsite. To allow better connectivity within the Town in the long term, it has been identified that the road and rail corridor should be realigned to divert around the Townsite. Numerous alignment options have been investigated as part of the SuperTown initiative. These options are discussed below and are illustrated as **Figure 18**.

Upgrade or Removal of Rail Infrastructure

The existing rail corridor acts as a physical barrier which effectively divides the Town, restricting pedestrian and vehicular access between the eastern and western extents of the Town. While the rail infrastructure is viewed by the State Government, Shire and the local community as an asset, its current alignment is problematic.

Current regional freight planning identifies the railway between Picton and Greenbushes being upgraded and reopened in the short-medium term. Reopening of the railway south of Greenbushes to Manjimup is not considered viable by the Department of Transport due to alignment and demand limitations. The Growth Plan process identifies that rail infrastructure located within the Townsite will be removed. The removal of rail infrastructure from the Townsite will create opportunities for the improvement of pedestrian and vehicular movement networks. In the event that rail services through Manjimup become viable in the longer term, the Growth Plan has identified a transport corridor west of the Town for further investigation.

In addition to the removal of existing rail infrastructure within the Town Centre, it is understood that rail infrastructure to the North and South of Manjimup will require future upgrading in the event services are restored. The upgrade will be required to bring the existing rail infrastructure into line with current rail standards.

Upgrade of Highway and Potential Decommissioning to Local Roads

The current Southern Western Highway alignment runs through the centre of the Manjimup Townsite. This section of the Highway (known in part as Mottram Street) divides the Town in a similar fashion to the current rail alignment, and particularly affects pedestrian accessibility.

The Future Transport Corridor Alignment Options Map allows for heavy vehicles to be diverted around the Town, bypassing

the Town Centre in the long-term, if this is considered necessary to the continued growth and development of Manjimup in the future.

Muir Highway Realignment

Muir Highway constitutes one of Manjimup's major east/west links, connecting the Town to Mount Barker and the Albany Highway. The realignment of Muir Highway would see the current route directed along Franklin Street and westwards to the future transport corridor (see Options B-D below).

This option would remove heavy vehicles using Muir Highway from Brain Street, which is essentially a local connector road that services the residential area located to the east of Mottram Street. The realignment through the industrial estate would allow Muir Highway to link directly with a future north-south Transport Corridor (discussed below).

Transport Corridor Alignment Options

A total of 4 alignment options have been considered by desktop analysis. The options are shown on the Future Transport Corridor Alignment Options Map. Potential alignments to the east of the Town have not been considered due to topography in this area being less capable as a railway alignment.

Option A is an alternate transport corridor catering for road traffic only. Options B, C, and D allow for both road and rail traffic. These alignment options may also be suitable for other utilities, such as gas, water and telecommunications. The alignment will effectively remove through traffic from Mottram Street, diverting it around the Town Centre.

Option A is unsuitable as a rail corridor due to insufficient horizontal geometry and its close proximity to residential areas. The total length of the Option A alignment is 5.9km. The additional point-point distance compared to the existing alignment is approximately 2km.

The preferred Option C alignment is approximately 14.5km long and will increase the point-point distance by approximately 1.5km. The exact alignment will be subject to further investigations, but is favoured as it will avoid the Townsite and rural residential areas and be suitable for rail, road and a range of utilities.

Options B and D are variations on the preferred Option C alignment. Option B is shorter at approximately 10.5km, but will require resumption of some rural residential land. It will

also be much closer to rural residential areas than preferred Option C. Option D is longer than preferred Option C at approximately 15.5km. This option is not preferred as it diverts traffic further west than necessary.

Each of the alignment options will require private land to be purchased. A detailed alignment study will be required to resolve any environmental issues, land requirements, road and rail engineering requirements and likely costs of construction.

Creation of the transport corridor will be necessary in order to allow the existing railway corridor through the Town to be relinquished. In the shorter term, it is envisaged that the existing railway corridor within the Town will be leased to the Shire of Manjimup to allow for development of the Linear Park and additional crossing points. The lease would include the ability for the corridor to be resumed for rail purposes if required prior to establishment of the future transport corridor.

When designing the transport corridor, consideration will need to be given to avoiding the negative impacts that a bypass road may create. This will include careful intersection design bolstered by making Manjimup a place people want to visit, either as a stop or a destination.

Timing of Transport Corridor

The exact timing of a future Transport Corridor will be dependent upon traffic demand (both rail and road). Potential trigger points for the corridor are:

- Resumption of rail traffic to the south of Manjimup. Any reopening of the line to a point north of the Town can be catered for within the existing corridor, but may require additional land for yard and loading facilities;
- Growth in heavy vehicle traffic volumes along South Western and Muir Highways; and
- Population growth in Manjimup which leads to greater conflict between local and regional traffic movements.

The community is generally supportive of the need for some form of heavy haulage deviation in the longer term. The removal of heavy haulage from the centre of Town is seen as important for amenity outcomes as it currently affects visitor experience and is limiting the options available for Council to improve the amenity with streetscaping and traffic management. A reduction in the movement of trucks and the implementation of a bypass would mean that Mottram Street will be safer for passenger vehicles and pedestrians and can be better integrated with the Town Centre. Additionally, it will be more in keeping with the look and feel of a country Town.

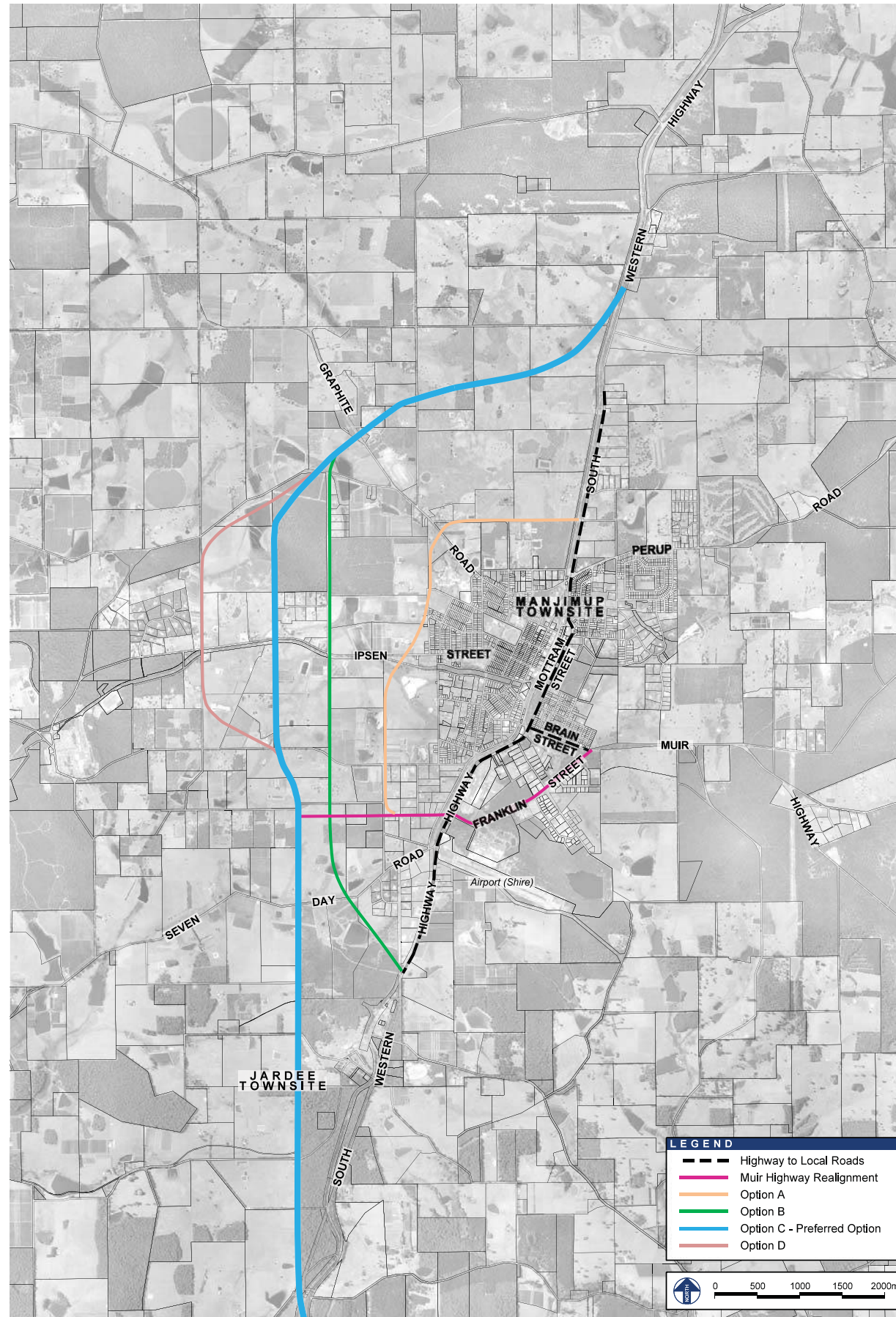


Figure 18 Potential Road / Rail Corridor Relocation

3.10.3.2 / Manjimup Airport

Current Situation

The Manjimup Airport at Dawn Road was originally developed with private resources to service the then-operator of the adjoining cannery. The Airport was progressively expanded and improved through strong community support and government funding. The Airport was recently 'registered' by the Civil Aviation Safety Authority and contains the second-longest runway in the South West after Busselton.

The airport in its current state caters for light aircraft, which are used primarily for the flying doctor service, recreational and agricultural support purposes. It is also used as a base for DEC fire fighting water bombers during the fire season. Operations are currently limited to a maximum of 40-seater aircraft.

The Manjimup Airport is the only sealed landing area between Bunbury/Busselton and Albany, being a key diversion location, and also an aeronautical base for a significant area of coverage. The airport facilities include a non-directional beacon ('NDB'), providing a key navigational aid in the lower south west of the State, as well as an aid to accessing this part of the State in poor weather. The relevance of the location of the Manjimup Airport and the NDB is increased with the recent commencement of the Busselton to Albany Skywest route.

During 2011, the opportunity for Manjimup to be a base for Fly-In-Fly-Out (FIFO) workers was discussed with Rio Tinto. In order to allow for Manjimup to be a base for a full roster, the ability to cater for jets with a minimum 100-seat capacity is required. An ultimate target was identified of 2 flights per week catering for a locally-based FIFO workforce of 400.

In 2011 Rehbein Airport Consulting were engaged by the Shire of Manjimup to investigate the ability to expand the existing airport to cater for larger jet aircraft. The current runway has a sealed length and width of 1,224m and 18m respectively. A runway of 1,800-2,000m length and 30m width would be required to cater for 100-seater jet aircraft with sufficient range to fly directly to mine sites in the north of the state without refuelling en route. Rehbein found that extension of the existing runway was limited due to the proximity of South Western Highway to the west, Starkies Road to the south, topographical difficulties to the east and proximity to urban areas.

The consultants have concluded that extension of the existing 1,224m runway to 1,800m would cost approximately \$34.5 million, with upgrade to airport facilities estimated at \$5.5 million (\$40 million total). Construction of a new airport on a

flatter site was estimated at \$21 million, plus \$13 million for new airport facilities (total \$34 million plus land costs).

Proposed New Airport Site

As a result of the above findings, an investigation into three alternative airport sites was conducted by Cardno. The study investigated preliminary site parameters, geotechnical conditions, environmental constraints and engineering requirements on three sites as shown on **Figure 19**. This study identified the most suitable site for a new airport to be near Palgarup. Further detailed investigations will be required to finalise the location of a future runway and cross strip in this locality. Location of a new airport at Palgarup is supported by the Growth Plan on the grounds that the existing site is located too close to urban areas and is too constrained to be feasibly expanded as demand increases.

Relocation of the airport to the proposed new site would be driven by the following economic drivers:

- Use of the facility to support fly-in-fly-out operations;
- The potential for the transport of fresh produce such as truffles, marron and other products direct to markets;
- The potential for regular passenger transport;
- Possible charter operations;
- Flight training displaced from other airports and airspace;
- Demand for private hangar space;
- Potential for future military use; and
- Supporting aeronautical industries (aviation mechanics).

In addition to the high costs associated with extension of the existing airport, there are a number of other factors that affect the desirability of maintaining the existing airport in the long-term:

- Relatively small site that precludes easy expansion of facilities;
- Likely maximum runway length of 1,800m, which will preclude extensions in the future to cater for larger aircraft;
- No ability to have a cross strip which reduces the operational flexibility of the airport;
- Close proximity to residential areas;
- The orientation of the runway is not conducive to the landing of light aircraft in many wind directions and speeds; and
- The flight path of most traffic is over the Town.

The Growth Plan recognises that the existing site has limited potential for expansion. The Growth Plan assumes that in the longer term a relocated regional airport is considered necessary to address the above issues and to cater for an expanded population. In the short to medium term, the Shire will need to seriously consider if resources should continue to be invested in the current site or works deferred and finances directed to completing detailed assessments and feasibilities of the new site. The preferred airport site will be identified in the Shire's Local Planning Strategy. Any development of the site will need to be supported by further community consultation and a comprehensive environmental assessment process, as well as rezoning of the land in the local planning scheme.

The current airport site has limitations with respect to topography and future operational requirements for it to have any long-term economic benefit to the Town. The construction of a new airport facility will open up opportunities for aviation related business, increase agricultural exposure to interstate and overseas markets and has the potential to create jobs in the mining sector with a view to attracting mining FIFO workers to reside in Manjimup. Manjimup's appeal to FIFO workers of Manjimup will lie in the green-change, natural amenity of the region and the relative affordability of housing however, it will invariably experience strong competition from other high amenity regions of the South West, particularly those in coastal locations. The creation of mining jobs and the equivalent number of families over the longer-term will contribute to the Town's population, incomes and local expenditure providing significant economic impact impetus.

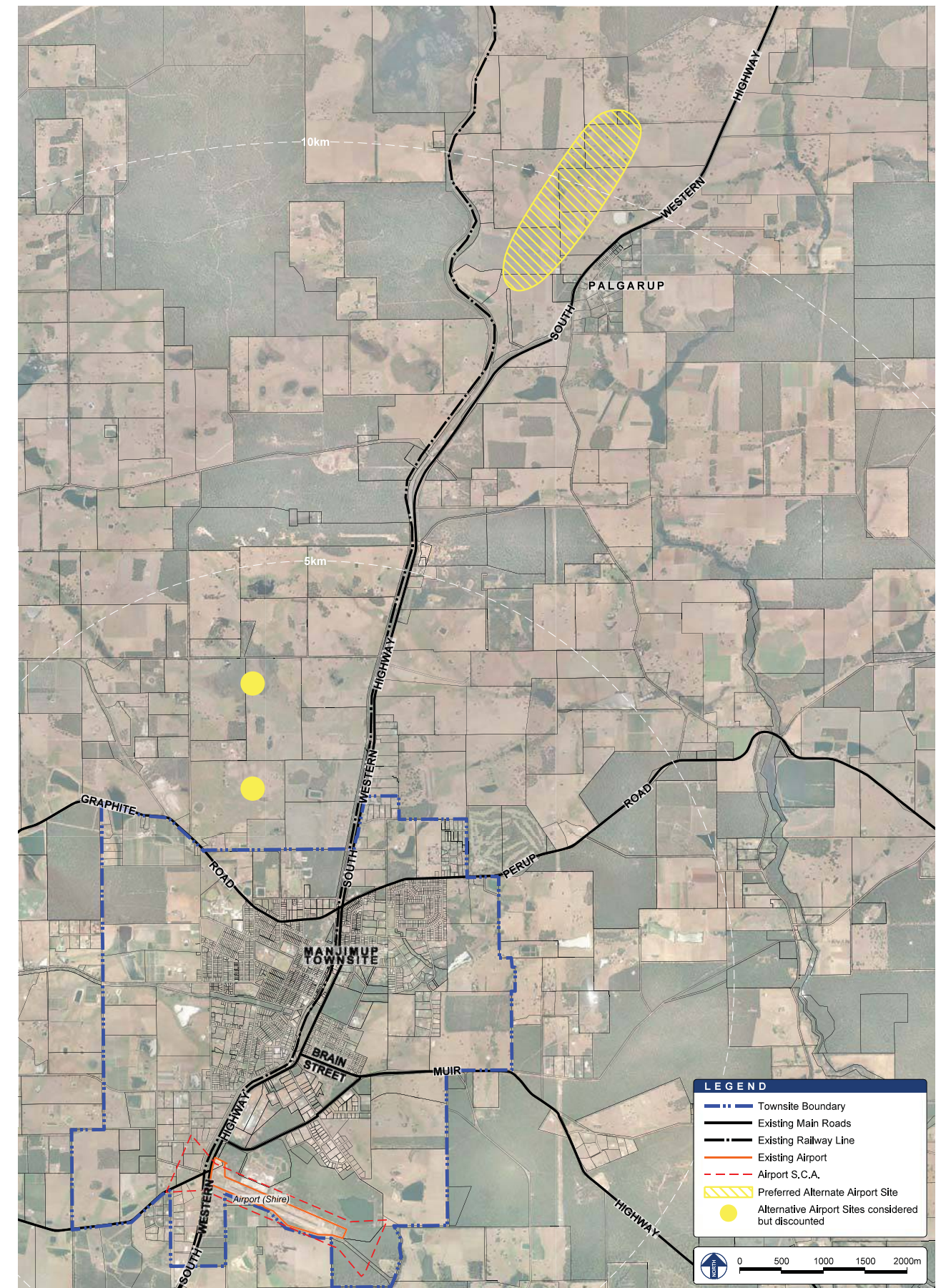


Figure 19 Preferred Airport Site

3.10.4 / Public Transport

Public transport in Manjimup is currently limited to the TransWA road coach service. There are currently 11 southbound and 10 northbound services per week respectively. Manjimup forms a meal stop of the Perth-Albany via Walpole route, which services the Town daily, with an additional trip to Albany on Fridays. In addition to the daily service, an additional 3 services per week operate between Perth and Pemberton. The Perth-Albany service currently utilises the Australind rail service north of Bunbury, except for the additional Friday trip.

Due to the relatively small size of the Town, there is currently no intra-Town public transport service. School bus services from surrounding Towns and areas to school in Manjimup are currently provided.

Improved public transport throughout the Shire has been identified in the Shire's Active Aging Strategy, Disability Access and Inclusion Plan and Youth Strategy. Into the future, opportunities for additional TransWA road coach services should be explored, particularly in the event that a fast rail service between Perth and Bunbury is established.

A potential public transport link to Busselton may have benefits in allowing local residents to access FIFO flights that are centred on Busselton Regional Airport. This service could take the form of a private charter service for FIFO workers only or be expanded into a regular public transport service linking Manjimup to Busselton via Nannup.

Recommencement of rail services is not considered feasible within the planning horizon of this Growth Plan. However, provision has been made for a rail corridor around the Town, which would allow for rail services in the very long term.

3.10.5 / Pedestrian and Cycle Network

The entirety of the Town Centre is serviced by the existing pathway network and extends to the fringes of the Townsite, traversing a large portion of the surrounding residential areas.

Options for the expansion of the pedestrian and cycle network within the Townsite have been investigated by the Shire. These options include the establishment of 'green links' in East/West and North/South directions. **Figure 20** depicts the possible North/South and East/West corridors.

The identified east and west pathway corridor will connect Deanmill to the King Jarrah Reserve, located off Perup Road

(adjacent to the Manjimup Country Club). The corridor will use the defunct Deanmill to Manjimup rail corridor to the west of the South West Highway. On the eastern side of the Highway, the pathway follow the Manjin Creek stream channel, passing through a Council reserve and a number of privately owned lots. The eastern leg is considered a long-term project given the need for land abutting it to be developed so that the corridor is given up as public open space.

The potential North to South pathway will utilise the existing rail corridor. The corridor would provide pedestrian access to residents located to the north and south of the Townsite. Ultimately, a shared pathway linking Palgarup, Manjimup and Jardee is envisaged. This could be extended both north and south to link to Bridgetown and Pemberton respectively in the future should this be considered practicable and desirable.

The Town is well placed to expand the facilities offered for the Bibbulmun Track and Munda Biddi Trail. The future walking and cycling routes inside the Town and end-of-trip facilities should seek to take advantage of these two major recreational routes.

Initiatives outlined above serve to offer higher levels of passive recreation facilities as part of the suite of improvements identified for the Town.

Due to the relatively small target population, it is likely that greater emphasis will be placed on walking and cycling as alternatives to intra-Town car trips when compared to public bus services.

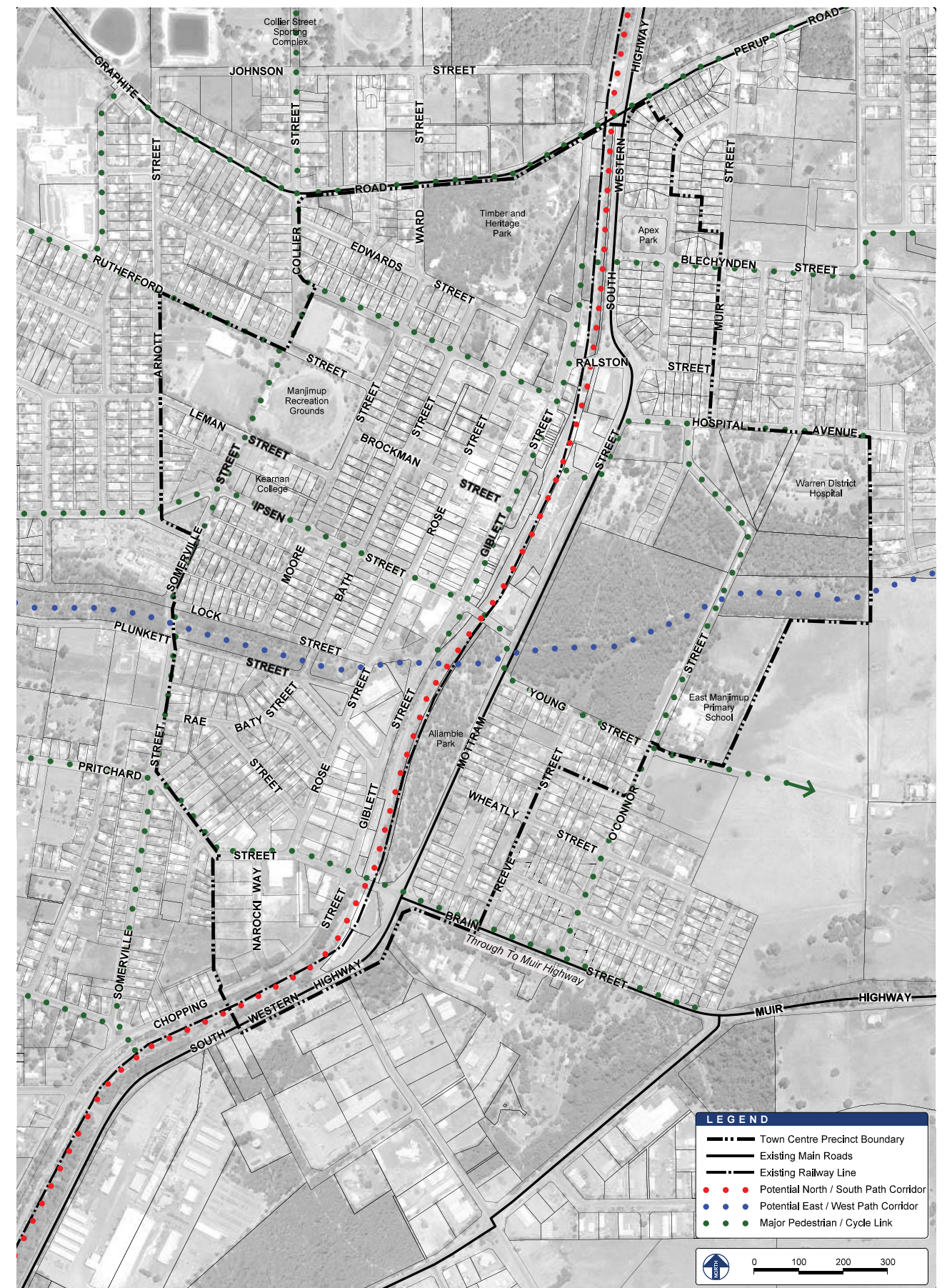


Figure 20 Pedestrian and Cycle Network Plan

3.11 / ESSENTIAL INFRASTRUCTURE

3.11.1 / Water Supply

The Manjimup Town water system has an abstraction licence of 894 ML/yr. The storage is made up from two surface water sources – Phillips Creek Dam and Scabby Gully Dam. Storage capacity of the two dams is approximately 1,870 ML and annual consumption is 730 ML.

75% of source allocation is used on average but availability is subject to seasonal variations - a dry year will result in less availability. The mean annual flow (MAF) into Phillips Creek Dam and Manjimup Dam has declined markedly over recent decades and as a result the shortfall supply has been supplemented by pumping water from secondary sources such as Four Mile Brook and private dams.

In regards to future capacity, there are no identified preferred future water sources, however Water Corporation have advised that there is a planning review currently being undertaken to establish supply sources to satisfy SuperTown growth projections. This planning is assessing both a surface water source and a groundwater source and will also include the supply of the Towns of Pemberton, Quinnyup and Northcliffe, but not Bridgetown. These proposed sources are:

Surface Water

Proposed to be sourced from an area to the south west on the Manjimup Townsite in a forested area in the catchment of Record Brook by means of a pipehead dam and a pipeline to the Scabby Gully dam. Surface water gauging is currently being undertaken but may not be adequate for the population projections. No environmental assessment or costs have been undertaken.

Ground Water

Proposed to be sourced from the southern area of the Yarragadee aquifer located in the Perth Basin to the west of the Manjimup Townsite and transferred by pipeline to the Scabby Gully dam.

3.11.2 / Wastewater

Recent sewer infill programs have focused on ensuring all residential areas within Manjimup are sewered. This objective has now been accomplished. The Manjimup Industrial Area is currently unsewered. The extent of the Townsite that currently has access to deep sewer and reticulated water is illustrated on **Figure 21**.

The Manjimup WWTP has a licensed treatment capacity of 1,100 kL/ day. It is currently operating at 88% of its capacity.

The anticipated growth in Manjimup resulting from the SuperTown impetus will trigger a planning review of the Manjimup Wastewater System by the Water Corporation. Preliminary discussions with the Water Corporation have confirmed that it is their intention to commence planning for the future of the Manjimup WWTP in the coming year. The options and the feasibility around the various concepts require further investigation and discussion with the relevant stakeholders to examine the issues in more detail.

The relocation of the existing WWTP is critical to the Shire's long-term growth ambitions to expand residential development to the east of the Townsite. While a final location has not been identified, there is significant merit in relocating the facility, which is supported by officer advice, and it is an aspiration of the growth plan that the facility be relocated to the wood lot.

The Water Corporation is exploring ways to increase water recycling generally and it's an initiative that is recommended be explored and strategy implemented for Manjimup to assist in the delivery of recycled water for existing and new industry, new subdivision, construction and dust suppression and the irrigation of open space areas. Potentially, it could also assist with the irrigation of food and non-food crops.

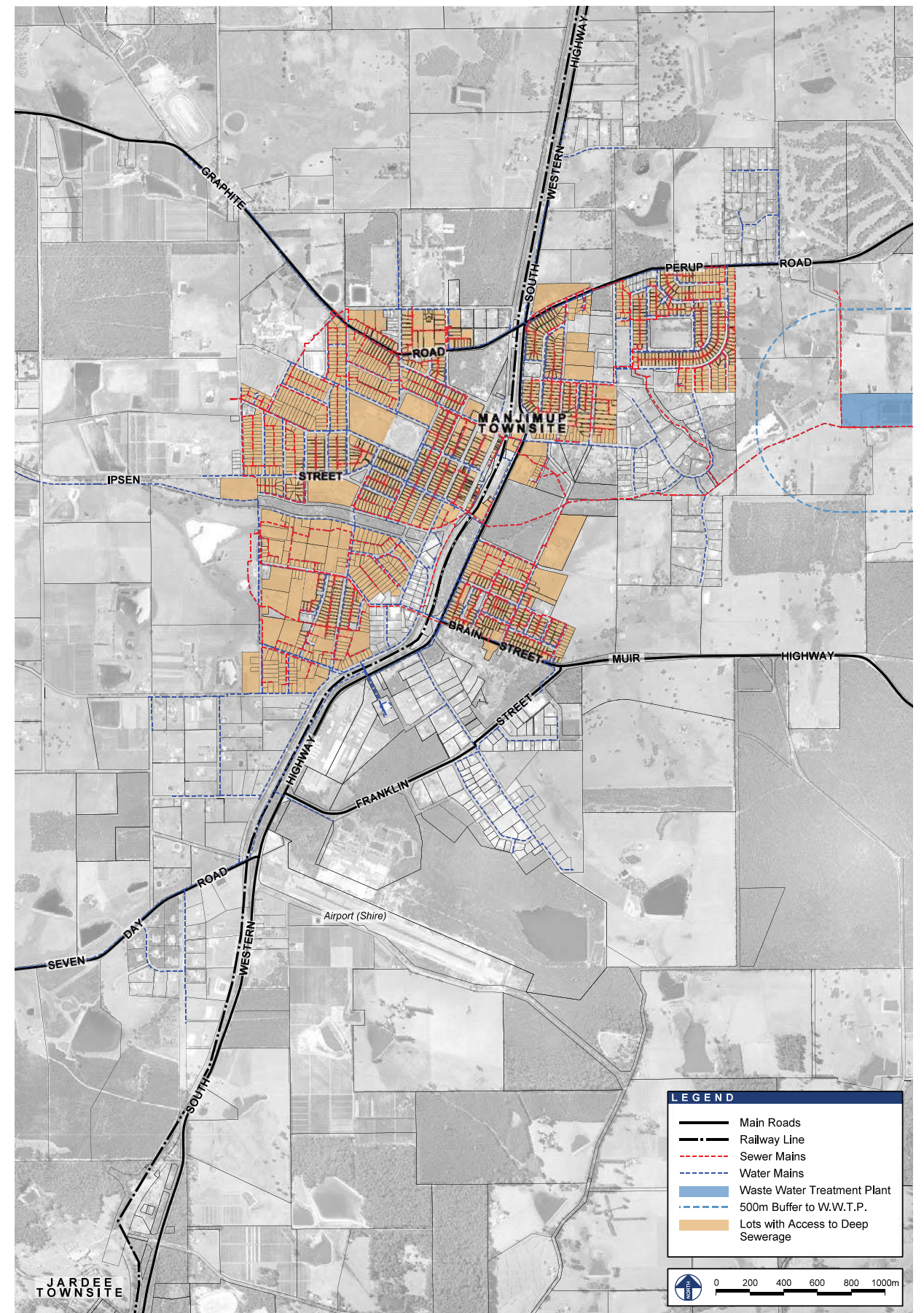


Figure 21 Extent of Existing Water Supply and Deep Sewerage

3.11.3 / Waste Management

The future waste infrastructure required for an increase in population is detailed below.

Domestic Waste Collection

To accommodate the anticipated population growth the present collection system would only require an increase in the number of collection vehicles, the number of waste receptacles and the expansion of the service area. The current depot maintenance structure would also be able to accommodate the extra activity and that their recycling Material Recovery Facility would be able to process the extra volume of the current type of collected recyclables. The present recycling processing facility is grossly underused.

To extend the landfill life, additional collection services, such as an organic (food scrap, green waste collection service) may be required. This separate collection would provide a clean feedstock for any additional process that would divert this waste from landfill. This additional collection would require additional containers. This service is currently being offered in most capital cities.

Commercial Waste Collections

Present commercial waste collection companies state that they could easily accommodate a doubling of the Town's population.

Future waste management projects and operating expenses that will be required to support the expansion of the Townsite include:

- Building capacity in the existing disposal system to prolong the life of the existing disposal system and the purchase of new equipment;
- The installation of a weighbridge at the main landfill site will be essential for ongoing present operations and any future expansion of the site;
- Relocation and set up of Depot Office Block at Ralston Road, including road, earthworks and plumbing required;
- Investigation into a suitable system to process the organic component of the shire's waste stream to prolong the landfill life, provide local employment and provide valuable by products i.e. compost, worm castings and carbon credits etc;
- Comprehensive waste audits of both domestic and

recycling waste are to determine exactly what the composition of waste is in this Shire. The information from an audit would be used to supply ever increasing demands for detailed reporting requirements from the DEC, supporting information for any recycling rebates claims (especially if a Container Deposit Scheme is introduced) and information to determine the type of processing suitable to handle various waste streams (i.e. organic waste processing);

- Final post closure for the current tipping area at Ralston Road;
- Relocation of the Septage Pit from Kurandra Road to Ralston Road;
- Processing of Construction and Demolition Waste;
- Public and School Waste Education Programs;
- Construction of a New Tipping Cell at Ralston Road;
- Consideration should be given to locating a new landfill site in the medium term given that the present site may reach capacity in the next 25 years and with doubling of the population that site may pose a visual and environmental impediment on encroaching residential development.

Present and future waste management projects and associated costs are outlined in Table 11.

Table 11: Waste Management Projects and Costs

Projects	Suggested Implementation/ Construction Time	Approximate Cost
Weighbridge- plus Software/earthworks	2012	\$130,000
Relocation of Office	2012	\$5,000
Ralston Road regional landfill development (design, fencing, earth works, roads)	2012	\$50,000
Transfer Station at Windy Harbour- Rehabilitation of site	2012	\$80,000
Relocation of septage pit	2012	\$20,000
Waste Audit - domestic and recycling	2012	\$30,000
Waste Education Programs	2012	\$10,000
Monitoring bores	2013	\$6,000
Investigation of alternate processing system for organic and construction and demolition waste	2013	\$20,000
New waste compactor Walpole	2014	\$80,000
New waste compactor Pemberton	2016	\$80,000
Purchase of additional bulk bins	2020	\$60,000
Development of new burial cell(lined) Ralston Road	2020	\$100,000
Investigation for a new Landfill site	2020	\$200,000



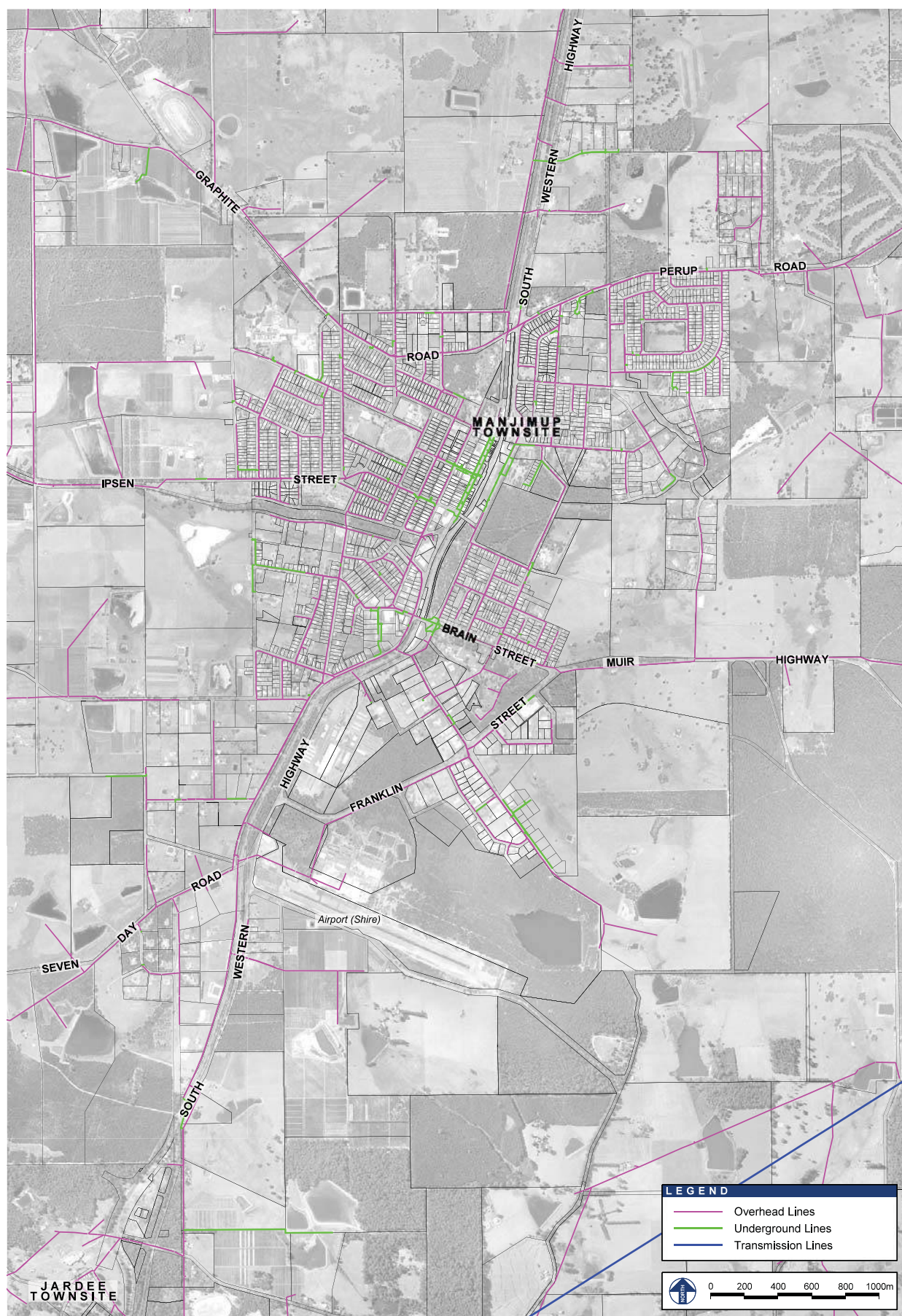


Figure 22 Western Power Services

3.11.4 / Power

There is sufficient capacity in the Manjimup Zone Substation to cater for the projected population however, future urban expansion areas will very likely need new 22kV feeders to be extended from the Manjimup Zone Substation. This will have a large cost associated with the installation of the new feeders due to the distances involved, albeit it could be done in stages subject to available capacity on the existing feeders (**Figure 22**).

Alternative power generation, particularly using renewable resources should be promoted to reduce Manjimup's reliance on the conventional grid system over time. There is currently planning approval in place for Biomass Electricity Generation at Diamond Mill. This has the capacity to generate up to a nominal 40 mega watts of electricity for feeding into the South West Interconnected System. The current planning approval is valid until April 2014.

3.11.5 / Gas Supply

There is currently no gas pipeline servicing Manjimup however, it is planned that the proposed Bunbury – Albany Gas Pipeline will service Manjimup, when constructed.

Of critical importance is the potential a reticulated natural gas supply will have for reducing energy costs associated with food processing. Current operations are at a disadvantage compared to other states and countries where similar operations have access to reticulated gas. The potential delivery of natural gas to Manjimup should be considered in the context of making current and future food-related operations as competitive as possible.

A reticulated gas supply will provide residents and business with the opportunity to use natural gas in their homes at a competitive price providing similar energy options as people living in major coastal regional centres. It will also build capacity in the Town to service existing business and attract new industry, which is seen as a key economic driver for Manjimup.

3.11.6 / Telecommunications

Telstra provides copper land line telephone to all premises in and around Manjimup. The main exchange is located in Giblett Street adjacent to the Manjimup Post Office. The

exchange is connected to Telstra's fibre optic network.

Land Line Internet (ADSL) services are also available to the Manjimup Townsite (i.e. within 5km of the Manjimup exchange). ADSL 2+ services are not currently provided by any provider to Manjimup. They are also not planned for installation at this time. It is likely that ADSL 2+ will not be installed given the planned introduction of National Broadband Network "fibre to the home" technology at some point beyond 2015.

The Townsite and surrounding areas receive adequate mobile coverage from various telecommunication providers.

Manjimup is provided with terrestrial analogue and digital TV coverage via a re-transmitter and analogue radio stations are currently broadcasting from Manjimup or Bridgetown.

National Broadband Network (NBN)

Manjimup is currently scheduled to commence N.B.N. roll out in December 2014. The key industries represented in the region expected to be covered by the NBN are construction, property and business services, accommodation, cafés and restaurants, and agriculture, forestry and mining.

Internet infrastructure and access to broadband internet for Manjimup and the surrounding area will be critical for the future. Use of the internet has infiltrated most aspects of day to day living as well as business operations. Access to broadband internet will be a key infrastructure development that will drive economic growth and increasing residential amenity across the Shire. Key economic and social benefits are likely to include:

- The ability to undertake business processes more efficiently to maximise overall competitiveness, grow revenues and increase productivity;
- Encourage new business processes and innovations that can generate economic growth;
- It may encourage some residents back into the labour market, such as the physically disabled, carers (who might work outside normal work hours) and those who live in remote areas;
- Enables easier access to educational information over the internet could improve the retention rate of students in the region;
- Improving social isolation; and
- The provision of healthcare ('telehealth'), online medical advice and access to GPs could also improve.

3.11.7 / Stormwater

Through a recent study undertaken by engineering consultants defined solutions are available for stormwater drainage infrastructure upgrade within the current Town boundary.

As part of the Shire 'Road Hierarchy Policy' stormwater drainage in all urban expansion areas can be accommodated.

As part of State policy and regulation stormwater management infrastructure will be required of development where land is low lying and/ or has the potential for flood risk. Those areas are limited within the Township of Manjimup. There is potential through multi-functional 'Public Open Space' (via the require 10% of land be made available for POS) and drainage corridors (creek and overland flow lines) to accommodate stormwater management systems within the Town site to accommodate the additional growth requirements.

There are currently no major stormwater management infrastructure projects planned by the Shire for the Town of Manjimup. A doubling of the population will have an impact, but until concrete development plans are proposed, it is difficult to determine the change impact.

3.11.8 / Infrastructure Challenges and Opportunities

Water supply for fire fighting purposes in the Manjimup industrial area

Industrial and commercial developments that exceed a non-compartmentalised floor area of 500m² are required to meet the fire fighting water requirements of the Building Code of Australia.

In most circumstances, this requires the premises to be serviced by a fire hydrant with a water supply pressurised to 200kpa at 20lt per second. The current mains supply had a pressure of 60kpa at 20lt per second and is not considered by FESA as being adequate to meet the BCA requirements.

The Water Corporation's mandate is the supply of potable water and does not include supply at a pressure sufficient for fire fighting purposes, despite the inclusion of fire hydrants in the reticulation system.

This shortfall in pressure is addressed through a number of solutions by individual developers, including site storage tanks and/or hydrant boosters, which are common. However, these can be relatively expensive at approximately \$200,000 per site, depending on size.



The ability to provide a fire hydrant system in the Manjimup Industrial Area that meets BCA requirements and allows for individual developers to avoid costly site-by-site solutions is an opportunity in the SuperTown context. Currently, it acts as a financial disincentive to development of larger industrial buildings in Manjimup. A cost-effective solution could stimulate development and enable Manjimup to offer a "point of difference" to other Towns for larger industrial users.

An investigation into the gap and opportunity analysis shows that a potential cost effective solution exists that will provide a high degree of certainty that there will be adequate pressure and flows into the Manjimup Industrial Area. That solution requires the construction of booster pump station and emergency power supply at the Water Corporation water supply complex in Mottram Street. Also required will be the construction of an approximately 500m long pressure main (150mm diameter) to connect into the existing water reticulation system within the Industrial Area. The estimated cost of this system is \$180,000. Replacement of any sub-standard cement reticulation pipes may be necessary at additional cost.

Further information on the water pressure solution can be found in **Water and Wastewater Infrastructure for Industrial and Commercial Precincts** prepared by Opus International Consultants in June 2012.

Potential relocation of the Manjimup Wastewater Treatment Plan (WWTP)

The current WWTP site for Manjimup is located on Reserve

38182 and is currently operating at near capacity. It is situated approximately 600m east of the current eastern extremity of residential development in Manjimup (Anunaka Estate).

Eastwards expansion of the Townsite is the preferred approach to growth that allows for development to be located on undulating land that will not require significant filling and drainage. Development in the vicinity of the WWTP also provides the most cost-effective development potential coinciding with being more visually attractive to residents. To this end, the WWTP is not in the most appropriate location to allow for the long-term expansion of the Townsite and it will be necessary to relocate the existing WWTP in the medium to long term.

Preliminary discussions with the Water Corporation have confirmed that it is their intention to commence planning for the future of the Manjimup WWTP in the coming year. Water Corporation has advised that it has suitable reuse and storage options at the current site that may facilitate expansion however, its dependent upon the capability of the woodlot to take additional treated wastewater. The options and the feasibility around the various concepts require further investigation.

Developer Incentives Planning

One of the key disincentives to development of land in Manjimup is the relatively low return on investment that is cost of servicing versus return. The fundamental issue is the need to minimise upfront development costs and create certainty around developer contributions for land and

housing to be delivered more affordably. A key initiative will be to engage with all stakeholders and industry representatives to inquire into the current methodology applied to developer contributions, State and local government taxes, levies and other contributions to infrastructure and service costs to both public and private sectors for new development specific to Manjimup to facilitate a more orderly and affordable land release programme.

Innovation should also be rewarded with consideration given to providing discounts to developments that provide diversity and make good use of developable land while minimising the impact on trunk infrastructure such as water, sewerage and roads. Further investigation is required in this area.

Sewerage to Industrial Area

The Manjimup Industrial Area is currently unsewered. Recent infill programs have focused on ensuring all residential areas within Manjimup are seweraged, an objective that has now been accomplished.

Currently effluent disposal for food processors and packers, such as WA Chip and Newton Brothers Orchards is undertaken on site. High water users are limited to the capacity of their own treatment ponds. There have also been instances of spillages and the need to wind back operations due to the capacity of individual wastewater systems having been exceeded. WA Chip / Bendotti's Exporters currently has a large on site treatment and disposal system but it is understood that not enough effluent is being generated for the system to work effectively. Due to the location and size of this facility it is possible that industry in the near vicinity may be able to cost effectively discharge to it, however as it is a private system there are substantial constraints that would need to be investigated and overcome.

Opus International Consultants have conducted a preliminary feasibility review of extending the Water Corporation sewer to serve the Manjimup Industrial Area. This report found that there are two components that need to be considered in implementing sewer in the industrial area:

- The reticulation system that will collect the wastewater from properties and deliver it to the wastewater treatment plant; and
- The wastewater treatment plan itself.

With respect to the reticulation system, potential exists for the implementation of a network of gravity wastewater pipes that flow to a pump station located in the south eastern corner of the expanded industrial area. This pump station will require a pressure main along Wetherell Street. This will

discharge into a gravity main near Franklin Street, which will feed down to the existing sewer system at Blackberry retreat.

Indicative costs for construction of the reticulation system and pump station is \$2.5 million. Funding of the project is likely to be required by developer contributions as and when future expansion of the industrial area occurs.

Upgrading or relocation of the wastewater treatment plant will be required to support the Growth Plan population objectives irrespective of extension of sewer to the industrial area. Funding of this would occur through the normal Water Corporation funding and construction process, including the headworks contributions on new lots

The capacity issues with respect to long-term water supply and wastewater treatment have been confirmed by the Water Corporation. Infrastructure planning in the past has been lacking but the impetus of the SuperTown process has triggered an opportunity for all servicing authorities to cast a critical eye over the essential infrastructure items in a manner that will build capacity in the economy.

The water pressure and lack of sewer in the industrial estate is not uncommon. However a study has found that a cost-effective solution can be found to the water pressure issue suffered in the Manjimup Industrial Area. Further, extension of the Water Corporation sewer to service the industrial area is possible at an estimated cost of \$2.5 million.

3.11.9 / Community Infrastructure

Figure 23 identifies the existing provision of Community Infrastructure in Manjimup.

A Community Infrastructure Feasibility Study has been conducted by TME Town Planning Management Engineering to inform the Growth Plan. The Study gives direction to the Growth Plan for the development of new facilities, upgrading existing facilities and addressing issues of access and equity for the community.

A stakeholder workshop and subsequent survey was carried out to understand community perceptions of facility provision

and future needs. This information was used to further inform the information already collected or included in existing policies and documents to identify future needs.

Many current community facilities are considered adequate and most are well utilised. The stakeholder groups through the consultation process have suggested that there are some unmet needs with regard to the provision community facilities including lack of aged housing and seniors care, spaces for the youth to utilise and be entertained and areas for the community and community groups to use.

The Study identifies the following community infrastructure will be required over time to facilitate the growth of the Town:

- A new library be constructed on the reserve across the road from its existing location in conjunction with a performing arts centre;
- The Community Centre then be expanded to utilise the space left by the relocation of the library facilities;
- Expansion of the existing Childcare Centre /Playgroup be considered, as well as the incorporation of additional child care centres to be located in the proposed urban expansion areas surrounding the Manjimup Townsite;
- Shire liaise with the relevant Government Agencies in the hope to relocate the Department for Child Protection office to a more central and accessible location;
- The establishment of the proposed Wellness and Lifestyle Centre be achieved, which is situated in an ideal location, close to the shopping precinct, health services and Timber and Heritage Park;
- Provision for a Youth Space to be located in the proposed Manjin Park Precinct; and
- Public Transport option investigation and creation of pedestrian linkages throughout the Townsite.

Additional community facilities that are required to service the needs of the projected population are further discussed in Chapter 7.

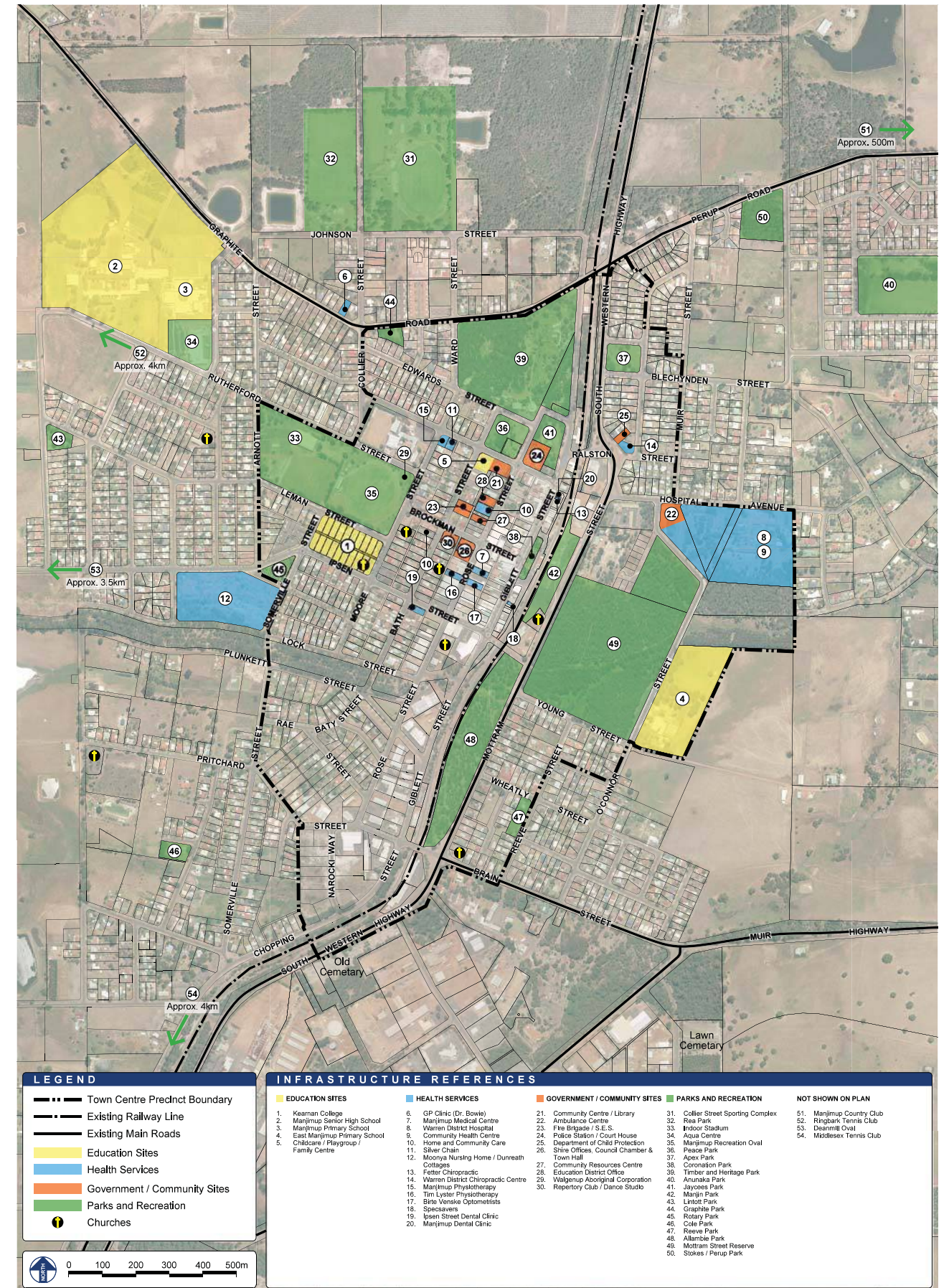


Figure 23 Community Infrastructure Locality Plan

3.11.10 / Arts and Culture

Performing Arts in Manjimup is currently served by the 142-seat Repertory Club on the corner of Brockman and Bath Streets. Venues such as the Town Hall, Roundhouse and the grounds of the Timber and Heritage Park are used for occasional concerts and other theatrical events.

The Shire has a valuable art collection but is currently limited to display in secure areas such as the Shire office and Council Chambers as there is no dedicated public gallery.

The Shire is currently drafting an Arts and Culture Strategy, which will inform future decision-making. A current gap in the Shire's social infrastructure is a Performing Arts Centre. Peter Alexander was engaged to conduct a pre-feasibility of a Performing Arts Centre in Manjimup as part of the Growth Plan process. This study identified the preferred model for a Performing Arts Centre in Manjimup would be essentially a "black box" configuration with retractable seating for 250-300, flexible stage design, occasional school/education/lectures,

cinema capacity, kitchen catering, and additional break-out small performance and room capacity, and simulcast capacity. The indicative cost of such a facility is estimated at \$16 million.

The Study benchmarked the size and catchment population of Performing Arts Centres in other areas of Western Australia and found that a population of over 10-13,000 is considered the minimum population needed to support a 250-300 seat centre. Even with a population of this size, the centre will still require subsidy to operate in the same manner as other community assets. A Performing Facility could suitably be designed to be collocated with a new library and gallery, alternatively such a facility could be collocated with the development of a performing arts facility at the Manjimup Senior High School. The operational cost of a Performing Arts Centre suggests that a strong multifunctional partnership base for any future development would be prudent.



3.11.11 / Sport and Recreation

A Recreation Infrastructure Feasibility Study was prepared by ABV Leisure Consultancy Services to inform the Growth Plan. The Study included extensive consultation to identify the Town's future sports and recreation requirements. The key findings of the consultation were:

- Manjimup has a very strong football culture and has three clubs, each with senior and junior teams. Other sports work around football training and game times to ensure sufficient players and volunteers are available. This affects the days that are viable for conducting training and competition for some other sports, particularly basketball and netball where many of the female participants provide voluntary support for football;
- Basketball and Netball are seeking additional courts at the Recreation Centre to enable them to increase the number of teams that can play on their competition nights, as well as accommodate other user groups. They are also seeking a major upgrade of the supporting facilities to better accommodate players and spectators for multiple user groups;
- There is a need for improved supporting amenities including toilets, change rooms, social and spectator facilities across Manjimup's sporting infrastructure to bring them up to a modern standard and provide accessibility for all;
- The Collier Street Pavilion is in need of replacement. Whilst the hall floor surface is in good condition, the building itself is in a relatively poor state of repair and it has poor supporting amenities including an inadequate kitchen, toilets and change rooms. This affects all the current user groups including soccer, cricket, hockey and karate;
- There is willingness across most of the Town's sporting organisations to share facilities;
- The Ringbark Tennis Club is willing to negotiate relocation to a facility in the Manjimup town-site;
- Soccer is seeking a permanent home ground facility for year round use. Currently a single field is used at Collier Street Reserve in winter by seniors, and the Rea Park Oval is used during the summer by juniors;
- The recently formed Southern Forest BMX, Skate and Scoot Association is seeking a venue for a new competition facility. It has identified a potential location to the east of Rea Park Oval;

- There is a need for a purpose built dry recreation facility for activities such as martial arts and dancing as the current facilities are 'make do' solutions (churches, shops etc) that may not always be available in the future;
- The facilities at the Manjimup Recreation Grounds (MRG) are in a good central location for schools to utilise including the Manjimup SHS. Kearnan College also makes regular use of the MRG Oval and would require greater access to the oval if it were to increase its number of classes in the future, thereby constructing more buildings on its own playing fields;
- The AquaCentre is running at a significant operating financial loss due to increasing operations costs. The Shire has been investigating the development of additional facilities that would help increase revenue; and
- Manjimup's climate is a key consideration for sporting activities. Manjimup is a cold and wet area for much of the year. Good provision of indoors/under cover facilities are of high importance. Access to sheltered spectator areas at sporting ovals is also rated as highly important by relevant sporting groups.

Additional sporting and recreation facilities that are required to service the needs of the projected population are further discussed in Chapter 7.

3.11.12 / Emergency Services

Manjimup is served by the full range of emergency services, namely police station, transport licensing and courthouse, Fire and Rescue Service, State Emergency Service and St John's Ambulance Service. In addition to these services, Manjimup airport is accessed by the Royal Flying Doctor Service and DEC fire fighting aircraft, which service the wider region rather than simply Manjimup. The surrounding rural areas are covered by a series of Volunteer Bush Fire Brigades. The Lower South West Region Headquarters of the Fire and Emergency Services Authority is based in Manjimup.

Fire and Rescue, Bushfire, Ambulance and SES all rely heavily on volunteers to provide adequate coverage. This is likely to remain the case into the future. However, full-time positions may need to be created or existing positions augmented if demand caused by a larger population creates difficulty in volunteer coverage.

3.11.13 / Health Services

Manjimup is serviced by a range of health care services with the Warren District Hospital currently the focus for primary care, general and emergency procedures and maternity services. The facility is supported by a range of allied health services (based on the same site) such as physiotherapy, social work, occupation therapy, child health and speech pathology amongst others.

Discussions with the WA Country Health Service has confirmed that the Manjimup Hospital has been the recipient of funding as part of a recent State Government recent announcement of the Southern Inland Health Initiative (under the Royalties for Regions program) to reform and improve access to health care for all residents of the Southern Inland area of Western Australia.

The aim of the initiative is to:

- Deliver safe and effective emergency services and good access to general practice;
- Put private GPs back into country Towns, supported by visiting specialists and health practitioners backed up by “e-technology” such as telehealth; and
- Provide better support to nurses who, due to the lack of doctors in this region, carry greater responsibilities.

The Warren District Hospital currently has 22 inpatient beds and 5 emergency department bays. In the year 2010/11 only around 50% of beds were used on average at any time so there is sufficient capacity for Manjimup Hospital to increase its activity should the population increase over the next 20 years.

Broadly, the key aspects that are required to improve Manjimup health and hospital services and the health of the local population are:

- Sustainable medical coverage for emergency cases and improved emergency services roster and services;
- Enhanced access to GP and non GP primary health care services including co-located ambulatory and primary health care services on site (incorporating new GP clinic);
- Upgrade engineering and site infrastructure (Building condition audit being undertaken);
- Refurbished Emergency Department;
- New or refurbished high care nursing home;
- Refurbished clinical and non-clinical services including

the mental health clinic;

- Incorporation of rooms and facilities for ‘Telehealth’ in order to establish the broader networked services for the catchment area;
- Student / resident training facility;
- Short term staff accommodation;
- General Practitioner (GP) accommodation; and
- Patient transport services.

Improvements to the hospital will need to occur in a phased way. The \$14.9M Southern Inland Health Initiative (SIHI) nominal allocation for refurbishment works at Manjimup hospital will fund phase 1 of the redevelopment works. However, through the impetus of the SuperTown Growth Plan process an opportunity exists to partner for additional health projects such as GP/ staff accommodation, patient transport, GP clinic etc.

Detailed planning is currently underway to determine the longer term health needs of Manjimup with a view to developing a new model for medical services in the region.

Existing health facilities appear to be operating adequately for the population of Manjimup but there is an opportunity to improve the services to the community through detailed health planning and design. Attracting GPs to the Town in the past has been a challenge and is a critical issue to be addressed in the future. The creation of a GP super-clinic on the existing Warren District Hospital site encompassing the full suite of medical and allied health services could provide significant impetus for the Town as an attractor to not only medical specialists but also future residents. Another opportunity to be considered further is establishment of a high care aged care facility on the site. There are a number of advantages to this including co-location of ancillary facilities with the hospital, access to medical care and providing extra capacity in the aged care sector in the Town. Further investigation of the feasibility of establishing high dependency aged care of the site will be needed in consultation with the Department of Health.

3.11.14 / Active Aging and an Age-Friendly Town

The Growth Plan identifies a strategic opportunity for Manjimup to become an ‘age-friendly Town’. This will require delivery of new age-appropriate infrastructure that will develop and promote Manjimup as a Town that is age-friendly and a Town where people can actively age in place.



The objectives of this Project are to:

- Embrace the opportunities that an ageing demographic presents to Manjimup, seizing the opportunity to address the existing and well documented challenges of the local ageing and broader demographic;
- Retain existing seniors in the district to strengthen local families and community;
- Ensure Manjimup is well placed to attract target group migration;
- Improve health benefits for the broader Manjimup community through more GP's and better access to health and support services at the local level;
- Retain a skilled labour workforce and volunteers;
- Provide a range of new jobs in the health care sector, assisting in diversifying the economy and providing

greater employment opportunities for locals;

- Develop a lifestyle and amenity that supports ‘active ageing’ for all;
- Provide for a continuum of aged appropriate housing and accommodation options at the local level opportunities for individual to ‘age in place’; and
- Maximise coordination and collaboration across the three levels of government, community, not for profit and private sector, with a wide range of targeted investments and regional partnership arrangements.

3.11.15 / Education

Manjimup has a strong reputation for the delivery of quality education, which draws students from outside the Shire boundaries. There are currently two (2) government primary schools (K-7), a government senior high school (8-12), a government education support centre and a Catholic College (K-12). Tertiary education is provided by the Manjimup Campus of the South West Institute of Technology (SWIT). The Town also houses a district office of the Department of Education.

The current and projected capacity for each of the facilities is outlined below.

Manjimup Primary School, Finch Street

Manjimup Primary School is the newest facility in Manjimup, having been constructed in 2006. The 2011 student population was 340, utilising 13 classrooms. Three extra classrooms are available on site to accommodate an increase in student population to 425. Based on a projected growth of 3% per annum, the existing number of classrooms will remain adequate until 2021, when one extra classroom will be required. The extra number of classrooms required by 2031 will be 5, with a total student population of 550. The school site is adequate to support the additional growth projected.

East Manjimup Primary School, O'Connor Street

East Manjimup Primary School was first opened in 1971 and supported a 2011 student population of 320 in 12 classrooms. The current maximum capacity of the school is 380 students in 14 classrooms. Based on a 3% population growth, the existing number of classrooms would remain adequate until 2017 when one additional classroom will be required. By 2031, a total of 8 additional classrooms will be required to support 580 students.

Although the school has been improved over time, its administration block is currently inadequate and is on the Department of Education replacement list.

Manjimup Senior High School, Rutherford Street

Manjimup Senior High School was opened in 1957 and is currently the only government Years 8-12 school in the Warren Blackwood Region. Due to this, its student catchment is much larger than just residents of Manjimup with school bus services linking to surrounding towns and Shires. The school had 570 students enrolled in 2011, having reached a



peak enrolment level of 710 in 2007. Numbers are expected to normalise at around 680 students by 2015. The current maximum capacity of the school is around 700 students.

The high school is regarded as a school of excellence, with a strong record of consistent outcomes of high achievement and annual ratings. Given this record, the school has continued to attract lower school students from surrounding towns and Shires. Over time this may affect the range of subjects offered by district high schools located in these areas.

A \$5.5 million Trades Training Centre has recently been constructed at the School through Federal Government funding. Additional facilities will be required over time to accommodate the projected growth in the student population. The construction of supported student housing in Manjimup is seen as a key opportunity. This will allow students from outlying towns to access supervised housing in Manjimup and avoid lengthy daily bus travel. The School has also identified the need for a student services block to incorporate a range of health, counselling, pastoral care and youth support services. Ultimately a performing arts / lecture theatre will be required to support the school's curriculum.

Kearnan Catholic College, Moore Street

Kearnan College was established in 1925 as St Josephs. The College is a Catholic co-educational school catering for primary and secondary students (K-12). Approximately 365 students were enrolled at the school in 2011. The school

is currently experiencing full classes in some years, with additional students for these classes being placed on a waiting list. The maximum capacity of the school is currently 444, with this expected to occur in 2019 based on current growth trends and not taking into account any additional increase caused by SuperTowns.

Unlike the government schools, the capacity of the Kearnan College site to expand is limited due to being located on a relatively small parcel of land and surrounded by roads on each side. The Shire and Kearnan College have previously investigated the potential of incorporating Leman Street into the school. This would provide additional space for new infrastructure, as well as allow for shared use of the Manjimup Recreation Grounds. This option is still available, but will require the extension of Somerville Street through the Recreation Grounds to mitigate traffic impacts.

Kearnan College has identified the need for a new kindergarten, canteen and extra toilets in the short term. Additional classrooms will be required if the College is to increase its maximum number of students beyond 444. As a private school, the College itself must organise and fund new facilities.

Manjimup Education Support Centre

The Manjimup Educational Support Centre caters for students with an intellectual disability in Years 1 to 12. The centre is a separate school with its own resourcing and staffing but is located on the same campus as Manjimup

Primary and Senior High Schools to allow for inclusion in some mainstream classes and events. Current enrolment is 16 students, with this having fallen from 39 students in 2008. As the Education Support Centre is co-located and works closely with Manjimup Primary and Senior High Schools, it is able to more easily access additional facilities and cater for fluctuating demand.

South West Institute of Technology, Graphite Road

Located on the same campus as Manjimup Primary and Secondary Schools, is the Manjimup Campus of SWIT. Courses in the following study areas are available at this Campus:

- General Education
- Aged Care
- Childcare
- Conservation and Land Management
- Horticulture
- Information Technology
- Office Administration
- MYOB
- Visual Art
- Teacher's Assistant
- Special Needs Assistant

Short courses are also offered throughout the year at the Manjimup Campus including forklift, Chainsaw, Tractor and Chemcert courses.

Potential impact of change to Year 7 education

During the course of preparing this Growth Plan, the state government announced that Year 7 students will be accommodated at government secondary schools from 2015. This is likely to see a reduction in the number of enrolments at the two government primary schools with an increase in numbers at Manjimup Senior High School. This is likely to impact on the overall projections of the number of students and classrooms required by approximately 10%. This announcement does not affect Kearnan College.

Additional Education Facilities

The need for additional schools and educational facilities to support the projected growth is discussed in Chapters 6 and 7.

3.12 / FORESTRY AND TIMBER INDUSTRY

The native forest resources of the South West region can be broadly grouped into two distinct types, the drier Jarrah (*Eucalyptus marginata*) forest and the moister Karri (*Eucalyptus diversicolor*) forest (FPC 2010). These species are unique to the South West and do not occur naturally anywhere else. The South West region also includes some significant hardwood (mainly Tasmanian Blue Gums) and softwood (mainly Radiata pine) plantations.

Manjimup has a long association with the timber industry dating back to 1911 with activity peaking in the 1950s and 1960s. Over the past century, the timber industry has undergone several major restructuring occurrences, the most recent being the introduction of the Regional Forest Agreements (RFAs) in 1996 and the subsequent abandonment of “old growth” logging and scaling back of native timber harvesting from 2001.

Despite such reductions, the Manjimup region retains a strong, albeit reduced, association with the timber industry, including the largest hardwood sawmill in the southern hemisphere at Pemberton.

The 2008 CRC Forest Industry Survey identified that the Shire of Manjimup and other local governments within the South West region suffered significant reductions in the timber industry following restrictions on activity within native forests. Between 2001 and 2006, persons employed in the agriculture, forestry and fishing sector fell from 1,224 to 797 (427 or 35%), with the sector which had accounted for 26% of employment in 2001 accounting for 19% in 2006 (Manjimup Regional Profile 2007). The Forest Industry Survey estimated that in 2005-06, the Shire of Manjimup had 52 forestry related businesses, dominated by contractors and consultants although the majority of employment centred on the growing and processing sectors (CRC 2008). It is estimated that the timber industry currently accounts for approximately 27% of the Shire of Manjimup’s economic output.

Major current processing operations in the area are summarised in Table 12.

The 1990s and 2000s saw a ‘boom’ in timber plantation establishment throughout the South West, including in Manjimup. The sudden increase in plantations was driven by a number of large Managed Investment Schemes (MIS). However, oversupply of plantation product, diminishing market prices for woodchip and the failure of several large MIS promoters in recent year’s means that the long term future of the plantation industry remains unclear.



Company	Location
Appadene Timbers	Deanmill
Auswest Timbers™	Deanmill, Manjimup and Pemberton
Australian Craftwood and Timbers	Palgarup
Middlesex Sawmill	Middlesex
Shaw Milling	Palgarup
Rockbridge Milling	Manjimup
WA Plantation Resources	Diamond

Source: Sandalwood Foresters 2010

3.12.1 / Review of the Forest Management Plan

The harvesting of native timber in the region is governed by the Forest Management Plan 2004-2013 (FMP). A draft FMP for 2014-2023 is due to be released for public consultation in later 2012 and will become operational on 1 January 2014. The imminent ending of the current FMP has led to a high degree of uncertainty over the short term future of the native timber industry in the region. It is likely that the new FMP will have significant implications for the industry in Manjimup. The impact of the new FMP on the local industry will become apparent during 2013 as the new FMP is finalised and industry players respond to any changing conditions.

3.12.2 / Timber Opportunities

During 2010 and 2011, the Shire and SWDC engaged AEC Group to undertake a study into the options for the future development of the timber industry in the Shire. This study investigated a range of opportunities both within existing markets and in new or developing markets for diversifying the timber industry. The opportunities within established markets investigated by the study included increasing use of hardwood sawnwood, pallet and packaging manufacture and engineered wood products. The opportunities within new or developing markets included biofuels, biochar and other carbon-related opportunities. The study found:

- A wide range of existing timber industry participants are currently operating successfully, at a variety of

scales, in the Manjimup Shire from the Pemberton Sawmill to owner operator ventures and these should continue to be supported;

- None of the identified development opportunities are considered to be viable within the current operating conditions or in the short term. However, there remains an opportunity for governments to address many of the issues which currently hamper greater investment in the long-term future of the industry, namely the issues around resource allocation. Addressing these issues would improve the viability of many of the identified opportunities;
- Other than the impact of planning controls over the establishment of plantations, the current operating conditions are beyond the direct control of Manjimup Shire;
- Several current operating conditions, in particular relating to hardwood resources, are the result of State Government policy over the last fifteen years. Addressing these conditions would require significant political will and would need to be founded upon a clear statement of the State Government’s long-term commitment to a viable timber industry. This statement would impact throughout the industry, encouraging skills development and training as well as investment in new technology and products;
- The statement of long-term support should be used as the foundation for reform of the current Forest Management Planning process. A new approach is needed which provides a rolling resource allocation. Stakeholders frequently cited greater security for resource supply as a key factor in maintaining a viable timber industry. The current situation where the available resources after 2013 are incredibly uncertain, irrespective of the Investment Security Guarantee, is an unnecessary impediment to investment in the industry;
- As well as resource security, several stakeholders raised the need for greater availability of higher quality inputs. This will be hard to achieve within the agreed sustainable harvest limits but as an initial response all harvested hardwood (including that cleared from mine sites) should be made available to the processing industry;
- There are opportunities for the Shire of Manjimup to host pilot programs for emerging technologies in high value sectors including bio-fuels and bio-char. These programs would need public support in order to become established but offer the potential of a

significant return on that investment if the technology is refined to the point of commercialisation;

- The timber industry has made significant improvements to its environmental management practices and there are also significant potential positive environmental impacts associated with new developments such as biochar as well as the role of forests in carbon sequestration. These positive messages should be promoted to increase public awareness of the actual impacts of the industry; and
- The current operating conditions are dynamic and the industry should continue to monitor these to identify and then respond to emerging opportunities. The establishment of a carbon market which included the timber sector would significantly change the market position of timber products and substitute goods. It might also open up opportunities in the establishment of plantations and other carbon related markets.

Notwithstanding the current uncertainty over the new FMP, timber will likely continue to play a critical role Manjimup's local economic structure. Value-adding opportunities such as engineered wood products, wood flooring, wood veneer, lamination, timber processing and Climate change opportunities i.e. bio-char, bio-fuels, carbon capture are seen as key economic opportunities for the Town.

A key initiative will be to establish a value-adding timber industry and attracting suitable private investors willing and capable of pursuing identified opportunities. A further key action will be to influence policy to improve the security of

resource necessary to motivate industry investment.

The following vision for the industry has been developed. The vision is used to frame the most appropriate development opportunities for the industry. Only those which meet the identified criteria are considered appropriate for further analysis.

The timber industry based in the Shire of Manjimup is forward thinking, technologically advanced and transitioning in response to change. The industry is recognised as delivering sustainable and environmentally responsible economic and social value to the community.

3.12.3 / Deanmill Settlement

One matter related to the timber industry is the future tenure of the Deanmill housing settlement. Due to its close proximity to Manjimup and its lack of commercial and community services, Deanmill is considered an extension of the residential area of Manjimup.

Currently this settlement is located on the Deanmill mill site lease and managed by Auswest Timbers as the leaseholder. Options for removal of the residential portion from the mill site portion of the lease and eventual normalising of the settlement are currently being considered by Auswest and state government. Conversion to freehold title and subdivision of the settlement was endorsed by the Shire of



Manjimup in November 2010. Conversion of Deanmill to a normalised Townsite will have implications for the Shire and the local Deanmill Community that will need to be considered as part of this process. Of critical concern will be ensuring that there are sufficient controls in place to manage potential resident conflict due to noise from the mill and to ensure there is a suitable standard of service and amenity to the settlement.

3.13 / TOURISM

Tourism is increasingly important to the Shire's future and indicators over recent years have shown a trend of solid growth. It is expected tourism will continue to develop as a major contributor to the region's economy as visitors are increasingly attracted to the unique South West lifestyle. Nature based or eco-tourism is emerging as an area due to the natural amenity of the region with significant potential for growth that Manjimup is well placed to capitalise on.

Manjimup is in close proximity to the recognised tourist destinations of Bridgetown, Pemberton, Walpole and Windy Harbour. Other attractions include:

- the botanically significant D'Entrecasteaux and Shannon National Parks;
- the Karri Forest Explorer tourist drive centred on Pemberton;
- Lake Muir RAMSAR Wetlands;
- Bicentennial, Gloucester and Diamond Tree lookouts;

- Walpole Wilderness and Marine Parks;
- Jarrah, Karri and Tingle forests;
- Bibbulman Track (hiking) and Munda Biddi Trail (cycling).

Together, these places attract over 200,000 tourists annually.

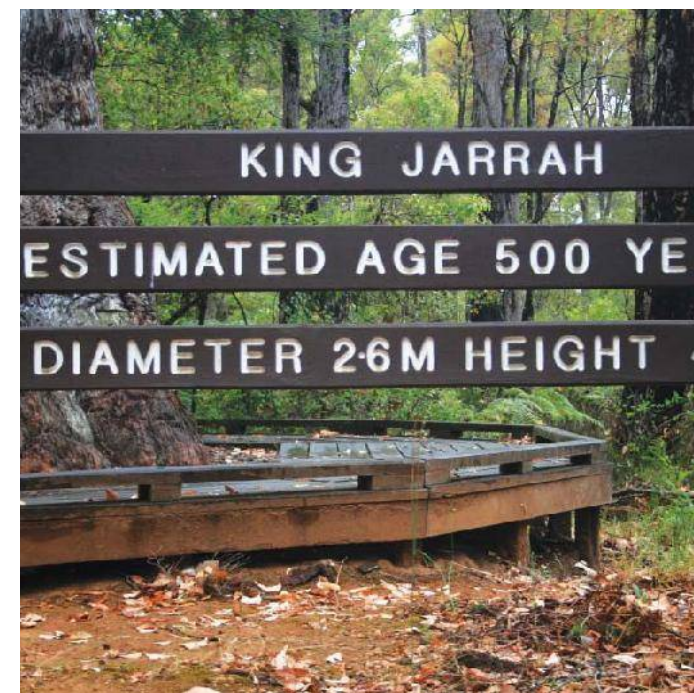
Within a short drive of the Town tourists can visit King Jarrah, Diamond Tree Lookout Tower and visit the Four Aces. Water attractions include historic Fonty's Pool, Big Brook Dam, the Donnelly River and Glenoran Pool. Other local attractions include the Timber and Heritage Park, incorporating the State Timber Museum, the historical Hamlet, which contains many relocated (for preservation) buildings from within the shire, the Age of Steam exhibit, a blacksmith's forge and a craft and coffee shop. The Timber and Heritage Park is well-placed to accommodate additional exhibits and facilities including indigenous heritage and culture displays and the energy exhibits of the state government.

The Shire's natural, indigenous, timber and agricultural heritage provides a unique mix of 'stories' on which to build places of tourist interest and for residents to value. Within the Town, the Timber and Heritage Park will be the major visitor drawcard, based predominantly on a number of heritage themes. This will be linked to other places of interest via the Linear Park along the rail corridor, which in turn will link with the Shire-wide Heritage Icon Trail.

Key local festivals and events in and around the Town include, but are not limited to, the following:

- Manjimup Farmer's Market once per month;
- Warren Agricultural Show each March;
- Targa South West bitumen road rally each May;
- Manjimup 15000 motocross each June
- Truffle Kerfuffle each June
- JB Ipsen Golf Tournament each October; and
- Cherry Harmony Festival each December

The variety of accommodation available reflects the diversity of the area. There are a number of caravan parks, hotel and motels, bed and breakfast facilities, guesthouses, chalets, cottages and villages as well as backpacker accommodation in and around the Townsite and Shire. However, quality short-stay accommodation geared towards the business traveller or tourists has been identified as a major shortcoming within the Manjimup Townsite. There are currently limited options available and the quality of the accommodation is such



that many visitors choose to stay in nearby towns (such as Pemberton and Bridgetown) and drive to Manjimup.

While the tourism sector is currently subdued, Manjimup's ability to grow in the tourism market in the future may be significantly constrained by the lack of improved tourist accommodation options. The delivery of a quality short-stay facility (potentially combined with conferencing facilities) is essential to not only to address the current undersupply but also to facilitate a diversification of local economic activity.

A suitable site for this accommodation facility has been identified at Jaycees Park and is proposed to be developed in conjunction with the redevelopment of Timber and Heritage Park immediately adjacent. Good quality cafes and restaurants are also limited and are seen as high value-adding opportunity for visitor and local expenditure.

Marketing of the District's tourism attractions is likely to work in conjunction with the agriculture, food and wine marketing that the Food Council will conduct with assistance from SuperTown funding. The District's main tourism themes of forest, food and heritage will complement the Food Council's marketing of the District's produce on the domestic and international markets. Given this close association, it is planned that the Food Council will have a presence in the Timber and Heritage Park and linkages to tourist operators in the food and wine sectors.

A major issue facing Manjimup is the relatively high 'drive through' rate of visitors to the region. The SuperTown Town

Centre Revitalisation Project includes a number of initiatives to attract visitors to stop in Manjimup. These initiatives include creating better linkages between the Highway and Town Centre and establishing the Timber and Heritage Park as a 'must see' attraction in the region. The proposed accommodation facility is strategically located between the Town Centre and Timber and Heritage Park on Giblett Street to strengthen the attraction of visitors from the Highway. It is also envisaged that over time, the Town Centre is made for conducive for residents and visitors alike to enjoy the District's food produce by promoting alfresco areas and farmer's markets amongst other initiatives.

Promotion of the Town as a place to visit will also bring improvements that local residents will enjoy on an everyday basis. Manjimup has a very good level of service given its regional centre status. However, what it lacks is the attractiveness and refinement that people associate with a growing and vibrant town. This is needed to attract visitors and new residents and investment to the Town



3.14 / AGRICULTURE

The Shire of Manjimup is highly productive in terms of agriculture and is a major contributor to the development of the State and local economy.

An agricultural overview for the Shire of Manjimup using statistics from the 2006 Census estimates the gross value of agricultural production within the local authority at approximately \$96 million and is apportioned as shown in Table 13. The 2001 Census was conducted during the period this Growth Plan was prepared. However, insufficient detail on the results was available for inclusion in this report.

Vegetable production is the most important agricultural enterprise and constituted 28.5% (\$27.4M) of all farm outputs. Other important industries include fruit (\$26M), beef (\$20M), milk (\$9M) and floriculture and nurseries (\$6M).

Agricultural production is continually expanding, and the availability of quality soils and the management of water supplies should provide considerable future opportunities in agriculture. Opportunities for expansion of the local horticultural market are seen as only marginal, but the export market potential, especially in South-East Asia, is significant. Further, the increased production and diversification offer greater opportunities for downstream processing and value-adding in the region.

The protection of the productive capacity of the priority agricultural land against inappropriate subdivision, zoning,

development and uses is critical and the need for water supply security for irrigated agriculture is fundamental to expanding the industry in the region. Priority Agriculture land will be considered as part of the approach to growth for Manjimup.

Marketing of the region through the development of a local Food Council and establishing relationships with emerging markets will be important to the success of the industry. There has also been a very noticeable decline in the agricultural research resources, which historically contributed to the expansion and success of agriculture in the district (such as the 'pink lady' apple). SuperTowns presents an opportunity to reverse this trend, to develop a holistic approach to agriculture/horticulture/aquaculture research and training and to foster small businesses seeking to value-add agricultural product. Manjimup has a reputable education system that should be utilised for this opportunity.

Agriculture will continue to be the mainstay of the Shire and local Manjimup economy. With proximity to South-East Asian markets and global food security becoming increasingly important, Manjimup is well placed to benefit from the economic opportunities in this sector.

Table 13: ABS Agricultural Commodities: Small Area Data, 2006

	Agric total GVAP (\$) approx*	Fruit - total value (\$)	Vegetables - total value (\$)	Nurseries, cut flowers and cultivated turf - total value (\$)	Livestock products - total value (\$)	Livestock slaughterings - total value (\$)	Pasture, cereal and other crops cut for hay - value (\$)	Legumes for grain - total value (\$)	Grain - total value (\$)
		Gross value	Gross value	Gross value	Gross value	Gross value	Gross value	Gross value	Gross value
Western Australia	8,136,830,065	261,650,155	292,398,834	190,988,933	649,610,127	1,213,352,135	162,294,080	223,588,269	5,142,947,532
South West	589,548,282	105,181,883	86,156,113	23,805,191	127,118,582	190,033,414	36,521,456	259,980	20,471,663
Manjimup (S)	96,000,000*	26,320,456	27,421,774	6,825,224	9,410,115	20,349,200	4,627,868	1,979	32,866
Total Selected LGA	96,000,000*	26,320,456	27,421,774	6,825,224	9,410,115	20,349,200	4,627,868	1,979	32,866
% of South West	16.3%	25.0%	31.8%	28.7%	7.4%	10.7%	12.7%	0.8%	0.2%
% of Western Australia	1.2%	10.1%	9.4%	3.6%	1.4%	1.7%	2.9%	0.0%	0.0%



3.14.1 / Water Security

Water availability is a limiting factor in the ability to expand and compete in a national market place and may determine if agriculture remains a viable industry in the region in the longer term. Farm amalgamation, diversification and changes in crop types will shape the future agricultural demand for water. With greater agribusiness or corporate farming investment the long-term reliability of water abstraction must be maintained in catchments that are important for irrigated agriculture.

Innovative methods need to be developed to enable businesses to expand or ensure that farmers and irrigators have sufficient capacity to capture water to maintain viable businesses in the face of a drying climate and increased demand for water. Current winter dry season conditions where water supplies may not be sufficient to meet agriculture and industry demands are highlighting the importance of water security and certainty in regional development.

Discussions with Department of Water have indicated that further work is required in this area is required to develop innovative methods for greater farm scale capture of water and to scope an integrated water management strategy to help secure the horticultural development potential of the Warren Donnelly region.

A water management strategy will determine the most appropriate way to secure water into the future. The strategy would identify potential solution/s, the policy and regulatory

settings required, opportunities for private investment, cost recovery mechanisms for service delivery and clarity of risk allocation.

The development of large scale infrastructure such as a large dam and cross-catchment distribution networks may provide opportunities for access to additional water. This might be necessary to supply more water to areas where further small-scale dams cannot be licensed. Distribution of water from a large dam and pipe network could potentially be managed through an irrigation cooperative.

The development of an integrated water management strategy for the region will involve a systematic and coordinated program of work and include developing scenarios for water management in a 10 year timeframe so that the water needs of irrigation and industry can be planned and met in a sustainable manner.



By improving the security of water for the irrigation industry, it will in turn attract additional investment in the region by:

- Building capacity in regional communities: by optimising the management and sustainability of water supplies to support current and future industries in the region, the capacity of those regional industries and communities to manage their water resource will be enhanced.
- Retaining benefits in regional communities: the development of a long term water security plan will ensure that the management of water supply and demand will benefit existing and potential users in the region.
- Improving services to regional communities: working towards ensuring security of water supplies to regional industry and the environment, will assist relevant bodies to plan the maintenance and improvement of services related to industry, tourism and recreation.

A reliable supply of water for irrigation purposes underpins the success of the agricultural sector in the Shire and the broader South-West region. Therefore, it's critical that a long-term strategy be investigated and formulated to secure water into the future, maximise the agricultural potential of the area and build capacity in the local economy.

3.15 / BAUXITE MINING

Bauxite Resources Limited (BRL) has a large area of the south west land division under exploration tenements. The area extends north to Bindoon / Gingin, east to Katanning and South to Manjimup, with the exception of the portion of the Darling Scarp leased to Alcoa and BHP Alumina (Worsley).

Exploration to date has focused on the tenements north of Perth. A trial mining project was conducted at Bindoon, which has since expanded into a formal mining proposal to extract 2 million tonnes per annum in North Bindoon, subject to State and Federal environmental assessment.

Test drilling in the Warren-Blackwood region has begun in recent months and will continue through 2012. At the time of writing this Growth Plan, there was insufficient information available from BRL on the quality or quantity of bauxite within the region to make a comment on whether it is commercially viable.

Whilst the introduction of mining activity (and associated service industry) could lead to significant economic impetus and employment opportunity within the Shire, there is no guarantee that large-scale bauxite mining will occur in the Manjimup region.

Related to bauxite mining is the potential for an alumina refinery to be constructed in the region by Bauxite Alumina Joint Venture (BAJV). It is understood that any future refinery will require 90 million tonnes of bauxite resource to support it. As the extent and quality of bauxite resources in the region is currently unknown, no decisions can be made on either the likely location or the viability of a refinery in the region. There will also be a range of environmental, economic and social criteria against any future refinery proposal will be assessed. Given the high degree of uncertainty over the project, the Growth Plan does not anticipate a refinery being located near Manjimup at this time.