

# Shire of Irwin

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## Local Planning Strategy

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Endorsed by the  
Western Australian Planning Commission

August 2017

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# Part 1 Report

## Local Planning Strategy

*July 2017*



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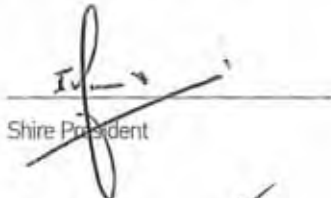


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An officer of the Commission duly authorised by the Commission  
(pursuant to the Planning and Development Act 2005)

## Adopted

The Shire of Irwin hereby adopts the Local Planning Strategy, at the Ordinary meeting of the Council held on the 26  
day of July 2016.



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Shire President



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Chief Executive Officer

## Endorsement

Endorsed by the Western Australian Planning Commission on 03/08/2017



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Date\_\_\_\_\_

# Adopted

The Shire of Irwin hereby adopts the Local Planning Strategy, at the Ordinary meeting of the Council held on the \_\_\_\_\_  
day of \_\_\_\_\_ 20\_\_\_\_.

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Shire President

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Chief Executive Officer

# Endorsement

Endorsed by the Western Australian Planning Commission on

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# 1. Introduction

This Local Planning Strategy for the Shire of Irwin (hereon in referred to as the Strategy) has been prepared to set out the long term planning directions for the Shire and to guide land use planning within the Shire over the next twenty years.

The Strategy will cover the entire municipality, as illustrated in Figure 1 - Study Area.

The Local Planning Strategy comprises two documents:

- Part 1, the Strategy, being this document, which provides a summary of the major characteristics and issues relevant to the future planning and development of the Shire and also establishes the vision, objectives, strategic plan and actions required to implement the Strategy; and
- Part 2, which provides the relevant background and justification to the Strategy, including the State, regional and local planning context, local profile of the community and an analysis of key issues facing the Shire.

This section sets out the statutory context within which this Strategy has been prepared, including its role and purpose and the method of its preparation.

## 1.1 Statutory Context

*The Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations) requires that where a town planning scheme envisages the zoning or classification of land, a scheme report is to be produced in the form of the Strategy, which shall:

- Set out the long term planning directions for local government;
- Apply State and regional planning policies; and
- Provide the rationale for the zones or the provisions of the town planning scheme.

The Strategy provides the framework for local planning in the Shire of Irwin and the strategic basis for the local planning scheme. The Strategy expresses the strategic vision, policies and proposals of the local government that are relevant to the implementation of its scheme. It provides a means to interpret State and regional policies at the local level allowing the implementation of broader objectives relating to urban form and development.

On this basis, the Shire of Irwin is reviewing its Local Planning Scheme No. 5 (LPS No. 5) with a view to implement the relevant strategies and actions that appear in Part 1 of this Strategy.

## 1.2 Role and Purpose

The Strategy sets out the long term planning direction for the Shire of Irwin over the next twenty years and establishes strategies and actions in the context of the State, regional and local planning framework.

The Strategy establishes the rationale for land use, planning and development controls which will inform the review of LPS No. 5. It is intended that this Strategy will be read in conjunction with the Shire's (revised) Local Planning Scheme.

It should be noted that the Strategy holistically looks at long term planning directions and assists in establishing the overall objectives and vision for the Shire. However, the application of the planning initiatives in the Strategy and subsequent Local Planning Scheme will not in isolation deliver wider objectives and the vision for the District.

This will need to be achieved through the application of the Shire's broader Strategic Community Plan using all available mechanisms for delivery across the broad spectrum of local government services and activities, including but not necessarily limited to delivering vital community, recreation, infrastructure and other development initiatives through a capital works program linked to the strategic community plan and also via a supporting local planning policy framework.

## 1.3 Method

This Strategy has been informed by the recent preparation of the Dongara Port Denison District Structure Plan and the Dongara Town Centre Revitalisation Plan, being the two key strategic land use planning documents prepared by the Shire to provide direction for the growth and development of the Dongara Port Denison Urban Area.

In the Strategy, land demand and supply analysis, the local profile, and regional overview of population, economy and employment have been informed by the Land Demand Modelling Paper 2014 (Appendix D). During finalisation of the Strategy, more up to date information on the land capacity of settlements with respect to forecast population has been made available. Land supply information in the Strategy may be superseded by the Department of Planning's Central Regions Land Capacity Analysis for the Shire of Irwin (Appendix F), and is intended to be regularly updated and published on the Department's website (<https://www.planning.wa.gov.au/8268.aspx>).

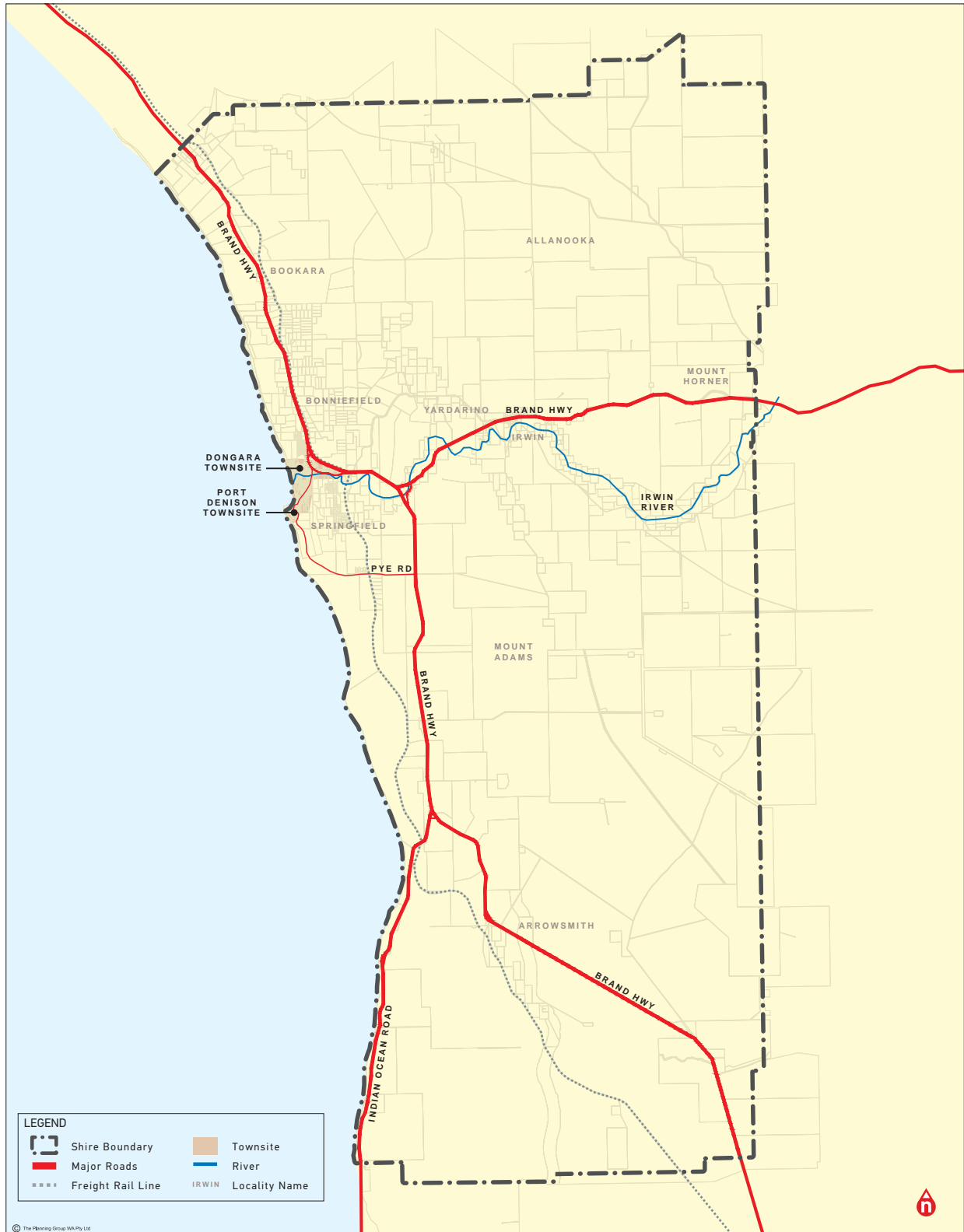


Figure 1 - Study Area

## 1.4 Format of the Strategy

The Strategy comprises:

1. The Strategy Text (this document), which outlines the vision, objectives, strategies and actions for land use and development within the Shire over the next 20 years;
2. The Strategy Plans, which spatially outline the strategies and actions of the document.

This document is supported by the Shire of Irwin Local Planning Strategy Part 2 document, which provides the background research, context and policy framework which supports this Strategy.

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## 2. Vision and Objectives

The community's vision for the Shire's future is articulated in the Shire's Strategic Community Plan prepared in June 2013 which is:

***“A motivated, progressive and friendly community, offering a brilliant blend of opportunity, natural beauty and heritage, with an enviable lifestyle.”***

The vision for the Shire is underpinned by the following objectives:

<b>Economy</b>	'A prosperous, diverse and thriving economy.'
<b>Environment</b>	'To respect and understand our natural and built environment and conserve our heritage.'
<b>Social</b>	A friendly, safe and engaged community enjoying a quality lifestyle and a diverse range of services, programs and facilities.'
<b>Civic Leadership</b>	'A collaborative and forward looking community that is guided by strong leadership.'

- Ensuring adequate provision of industrial land to secure long term employment opportunities, including service industry associated within mining, oil and gas;
- Protecting versatile agricultural land for rural and agricultural purposes in the long term to protect the employment associated with this industry;
- Promoting new and diverse tourism opportunities and accommodation within the District;
- Reducing the potential for land use conflict through the identification of buffers and special control areas, where appropriate;
- Addressing and manage hazards associated with coastal processes and the threat of bushfire; and
- Identifying future servicing requirements to support forecast population growth and development.

As an extension to the vision articulated in the Shire's Strategic Community Plan, the Dongara-Port Denison District Structure Plan describes the following long-term aspiration for Dongara-Port Denison:

*“Being the principal centre of growth in the Shire of Irwin, Dongara-Port Denison will be a progressive, sustainable coastal community, offering a brilliant blend of opportunity, natural beauty and cultural heritage with an enviable lifestyle.”*

The Strategy will set the future direction for land use planning and development throughout the District and in this regard establishes strategies around the following themes to address key issues facing the Shire:

- Consolidating the Dongara town centre with a view to improving the vibrancy, attractiveness and functionality of the centre;
- Identifying new urban land to support population growth and development;
- Providing for more diverse housing opportunities to improve housing choice within the District, including the opportunity to 'age in place';
- Continuing to protect and enhance the natural environment which is an asset for the region;

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## 3. Strategic Plan

The Strategic Plan investigates the existing and future population and the current and future supply of different types of zoned land. Using these figures, the Strategy is able to determine potential future demand and supply for each land use whilst considering current opportunities and constraints. The outcomes of the Strategic Plan have informed development of the Strategies and Actions within Section 4.

### 3.1 Population and Housing

The Dongara-Port Denison District Structure Plan (DSP) provides for substantial surplus land to support population growth and the demand for housing to the year 2050 and beyond. The DSP provides for a potential dwelling yield of 8,240 dwellings to accommodate a potential population of around 18,617 people.

The Medium Growth Scenario modelled within Western Australian Planning Commission's document WA Tomorrow (Scenario C) for the Shire of Irwin is as follows:

*Historical and Projected Population, Irwin LGA 2011-2050p (Medium Scenario)*

Catchment	2011	2012	2016	2021	2025	2050	Total Change	Av. Ann. % Growth
Irwin LGA	3,647	3,675	3,991	4,388	4,696	6,884	3,237	1.6%
Central SD	65,283	66,543	70,498	75,694	79,700	107,645	42,362	1.3%
WA	2,353,409	2,432,706	2,624,794	2,845,715	3,026,377	4,422,445	2,069,036	1.6%

The table below illustrates the expected demand for housing by zone within the Shire and compares this against the current potential housing yield based on the availability of existing zoned land within the Shire.

*Expected demand for housing by each zone*

Zone	Expected demand for houses within each zone (No. of houses)			Current potential housing supply (No. of houses)	
	2021	2025	2050	Minimum	Maximum
Residential	1,559	1,616	2,436	2,366	8,324
Special Residential	268	278	419	99	198
Rural Residential	341	355	533	190	760
Rural Smallholdings	170	176	266	654	654
General Farming (Rural)	85	88	133	-	-
Town Centre (Rural Townsite/Centre)	12	13	19	44	44
<b>Expected Demand</b>	<b>2,435</b>	<b>2,526</b>	<b>3,806</b>	<b>3,362</b>	<b>9,980</b>

The data indicates that there is a potential undersupply of 'Special Residential' (2,000m<sup>2</sup> - 1ha) product in the short to medium term, while there is a significant oversupply of housing land within the Residential, Rural Residential and Rural Smallholdings zones. The data indicates that there could be a potential shortfall of between 70 to 169 residential lots of between 2,000m<sup>2</sup> - 1ha by 2021 and a shortfall of up to 151 'Rural Residential' lots by 2021.

This has implications for growth and release of land within the Dongara-Port Denison Urban Area which is discussed further in the following section.

## 3.2 Dongara-Port Denison Urban Area

### 3.2.1 Residential and Special-Residential Growth

The DSP identifies a substantial amount of future urban land to be released for residential purposes as outlined in the following table:

Staging	Precinct	Potential Dwelling Yield	Population Yield
1	St Dominics Precinct	1,061	2,440
2	Race Course Estate Precinct	1,566	3,602
3	Francisco Road North Precinct	2,501	5,753
4	South Port Denison Precinct	452	1,040
<b>TOTAL</b>		<b>5,580</b>	<b>12,835</b>

Given the apparent oversupply of residential land identified by the DSP, the Shire has resolved to re-prioritise the distribution of future residential land on the following basis:

- To not to proceed with the South Port Denison precinct due to significant land constraints associated with the basic raw materials extraction industries currently located to the south-east of Port Denison.
- To not to proceed with the intensification of the Racecourse Estate for residential purposes and instead has resolved to leave this estate for Rural-Residential purposes based on the projected demand for this type of residential product.
- Prioritise the release of the Francisco Road North Precinct on the basis that the area is zoned 'Urban Development' with an approved Structure Plan.
- There is no current interest from the landowners within the St Dominic's Precinct or Race Course Estate precinct to develop the land for residential purposes.
- On this basis, promote the orderly release of land for residential purposes generally as follows:
  - Promote density infill of existing vacant residential zoned land as a priority. Promote the delivery of diversity of lot / dwelling product within these areas;
  - Prioritise the delivery of residential land in close proximity to the town centre and existing services over land identified for future urban;

- Following the infill of existing zoned and serviced land, release future urban land in the following priority order:
  - Dongara North Precinct;
  - St Dominics Precinct.

The Dongara North precinct will provide additional Special Residential (R5) lot product to address the identified shortfall in this residential product.

### 3.2.2 Retail and Commercial Land

The Dongara-Port Denison Urban Area is identified as a sub-regional centre within the Mid-West Planning and Infrastructure Framework and plays a support role to Geraldton Regional City. Therefore, the provision of sufficient commercial land within the urban area is important to ensure Dongara-Port Denison can continue to fulfil its role as a sub-regional centre within the Mid-West region.

The total gross area of existing commercial zoned land within the Dongara-Port Denison Urban Area is identified in the following table with a total of 27 hectares of land zoned for commercial purposes within the Shire.

Zone	Land Area (Hectares)
Town Centre	22.5172 ha
Neighbourhood Commercial	0.5938 ha
Service Commercial	4.0999 ha
<b>Total</b>	<b>27.2109 ha</b>

Much of the existing commercial zoned land is occupied by well-established non-commercial uses and is not required for commercial purposes. There is a clear oversupply of land zoned for commercial purposes when taking into account the demand for commercial land growing from 0.2559 ha in 2016 to 1.793 ha in 2050 as demonstrated in the table below:

Land Type	2016	2021	2025	2050	Current Vacant Zoned Land Under LPS No. 5
Commercial Zoned Land	0.2559 ha	0.4748 ha	0.6326 ha	1.7930 ha	2.2631 ha

It is apparent that there is an oversupply of commercial zoned land to service growth over the next 35 years and it is therefore necessary to consolidate the amount of commercial zoned land as follows:

- Consolidate the Dongara Town Centre zone to correspond with the core retail precinct identified within the Dongara Town Centre Revitalisation Plan.



2. Introduce a new Mixed Use zone to provide a transition between the Town Centre zone and Residential zone.
3. Rezone the Town Centre zone to a Commercial zone consistent with the *Planning and Development (Local Planning Schemes) Regulations 2015*.
4. Rezone the undeveloped land within the existing 'Service Commercial' zoned land on Point Leander Drive to 'Urban Development' zone.

In order to cater for retail and commercial growth within Port Denison, it is proposed to expand the 'Neighbourhood Centre' zone on Point Leander Drive, and rezone to 'Commercial'.

It is also proposed to provide for a new Commercial zone within the Dongara North residential precinct in accordance with the recommendations of the DSP.

### 3.2.3 Mixed Use

The Strategy proposes the creation of a new 'Mixed Use' zone within the Local Planning Scheme to provide a transition between the area identified as 'Regional Centre' (refer DSP) within Dongara and adjacent residential zoned land.

### 3.2.4 Industrial Land

At present two Industrial precincts exist within the Shire. The first is a General Industry zone located off the Brand Highway, at the eastern entrance to the town.

The second is the 'Marine Based Industry' zone in Port Denison in close proximity to the small boat harbour. The intent of this zone is to service the Fishing Industry.

The project demand for industrial land within the Shire compared to the existing provision of vacant zoned land is analysed in the following table:

Land Type	2016	2021	2025	2050	Current Vacant Zoned Land Under LPS No. 5
Industrial Zoned Land	2.9201 ha	5.5650 ha	7.3790 ha	18.6145 ha	5.6282 ha

Based on the above, it is evident there will be a shortfall of 1.7508 ha of industrial land by around the year 2025. It is therefore proposed to explore the provision of additional industrial land as follows:

1. Expand the existing 'General Industrial' estate on Brand Highway further east.
2. Undertake detailed analysis and investigations relating to the creation of a new industrial estate on land located on the south-eastern side of the intersection of Brand Highway and Midlands Road.

3. Rezone the 'Marine Based Industry' zone to 'Light Industry', consistent with the *Planning and Development (Local Planning Schemes) Regulations 2015*.

### 3.2.5 Other Business Growth Potential

The Mid West Development Commission has also identified the potential creation of a new industrial estate within the Shire which leverages the logistics and industrial development opportunities provided by the busy Brand Highway and Midlands Road, adjacent gas production and future power generation facilities, and proximity to the engineering, trades and services facilities of Dongara, as well as high residential amenity of the two townships.

Industrial and business growth would also be best supported by pursuing the provision of NBN across the townsites which could in turn support a business/technology precinct, hub or co-working facility with high speed connectivity within the town centre (Dongara or Denison).

A targeted business attraction plan could also be developed by the Shire to strengthen the trades, engineering and service sectors which support the developing gas, agricultural and marine service industries in conjunction with planned expansion or infill of the existing industrial areas.

### 3.2.6 Rural Residential Land

Existing rural residential areas within the Shire are located at Springfield to the south-east of the town centre and the area known as Race Course Estate (or North Dongara) to the north of the town centre. Whilst both areas have progressively developed during the life of Local Planning Scheme No. 5, significant areas remain undeveloped which suggests the current supply is adequate.

Additional land has been rezoned to Rural Residential at the southern end of Springfield Estate to the south-east of the Port Denison townsite following recommendations contained within the Shire's previous 2007 Local Planning Strategy.

Subdivision of the Springfield Estate has occurred in a disjointed manner due to informal structure planning. As subdivision of the Springfield Estate has not progressed further due to a current lack of demand for this type of lot product, issues relating to access and bushfire management in particular remain an outstanding issue for existing lots and the future planning of the estate.

Further structure planning of the Springfield Estate is being undertaken to address the issues associated with access, road network and bushfire management.

## 3.3 Rural Land

### 3.3.1 Rural Smallholdings

Subdivision within the Rural Smallholdings zone is currently restricted to a minimum lot size of 15 hectares in Policy Area D and 20 hectares in Policy Area G. There are a number of issues and considerations relating to land located within the Rural Smallholdings zone, as follows:

1. An apparent lack of demand for further lifestyle rural lots within the Shire due to the prevalence of a large supply of existing smaller rural lots combined with a substantial oversupply of urban zoned land for residential purposes.
2. Significant existing supply of lots within the 15 to 20 hectare range on the fringe of the Urban Area.
3. The potential for further fragmentation of areas zoned 'Rural Smallholdings' to compromise the future ability for the land to accommodate a range of agricultural activity and thus having an impact on the agricultural viability of the land.
4. Difficulty in obtaining finance to purchase a large lifestyle lot of 15 to 20 hectares.
5. Maintenance burden associated with maintaining a lot of 15 to 20 hectares as a lifestyle lot.
6. Difficulty in servicing resultant lots due to distance from the Dongara Denison Urban Area.
7. Land use conflict between rural land uses and dwellings/lifestyle lots.

Based on the above, there is a presumption against further expansion of the Rural Smallholdings zone within the Shire.

### 3.3.2 General Farming (Rural Land)

The Department of Agriculture and Food's (DAFWA) agricultural mapping for the Irwin region identifies land along the Irwin River as having the greatest versatility (see Figure 10). This land is contained within Policy Area C that does not support subdivision of agricultural land. This position is in line with State Planning Policy 2.5 - Rural Planning.

This mapping has been taken into account in preparing this Strategy. The 'General Farming' zone is contained within LPS No. 5 will be identified as 'Rural' in the scheme review, with the general presumption against subdivision in the 'Rural' and 'Rural Smallholdings' zones. In addition, it will provide opportunities for tree farms on lower versatility land.

Refer to Figure 10 - Agricultural Versatility Mapping

## 3.4 Basic Raw Materials

Basic raw materials (BRM) extraction plays a significant role in the local economy. Strategic mineral protection areas have been identified following consultation with the Department of Mines and Petroleum. The Regionally Significant Basic Raw Materials (BRM) mapping (Figure 11) has been compiled by Department of Mines and Petroleum from existing BRM information. Areas with the largest potentially available and extractable quantities of sand, gravel, limestone, limesand and rock aggregate have been identified taking into account depth to water table, mining constraints, and a range of high level planning constraints such as local planning scheme residential, rural residential, rural small holding, special use zones, commercial and public purposes. Figure 11 may also assist the identification and protection of Significant Supply Nodes (SGS) by the Shire of Irwin as supported within State Planning Policy 2.5 Rural Land Use Planning.

Refer to Figure 11 - Regionally Significant Basic Raw Materials

There is a total of thirteen BRM quarries and deposits within the Shire (Appendix B) for limesand, limestone, sand and clay. Four limesand quarries are classified as 'Operating', four are 'Proposed' for limesand associated with mobile dunes along the coast south of Dongara, one is 'Proposed' for sand at Wye Farm Road, and four quarries for limesand, sand and clay are classified 'Shut'.

There are currently six Extractive Industry Licences for sand and three licences for limesand. Thirteen Crown reserves are used for the purpose of BRM.

Separation distances to existing Basic Raw Materials (BRM) operations in proximity to sensitive land uses have been identified on the Strategy maps to ensure basic raw materials extraction operations are protected and land use conflicts minimised.

## 3.5 Oil and Gas

Onshore oil and gas opportunities exist within the Waitsia field of the Perth Basin and this source is located east of the Dongara townsite.

Employment opportunities may be generated from the oil and gas industry in the longer term. While on-shore oil and gas projects are yet to receive the necessary approvals, the Shire may need to consider if petroleum exploration and operations should be formalised in LPS No. 5 in terms of definitions, scheme provisions and associated guidance material. If required, the Shire can undertake a scheme amendment to update to incorporate these considerations.

## 3.6 Tourism Planning

Tourism is a significant opportunity for the Shire given its coastal location, access to natural amenity and due to its proximity to Perth and Geraldton.

According to the DSP, there is an identified need to provide high end tourist accommodation within Dongara-Port Denison.

A number of minor modifications introducing new tourist accommodation use classifications into the Local Planning Scheme are recommended to provide greater flexibility for the Scheme to respond to new tourism opportunities as and when they arrive.

Coastal nodes have also been identified on the Strategy maps in accordance with that identified within the Shire of Irwin Coastal Development Strategy 2000. A range of actions have been identified for each coastal node, ranging from rehabilitation programs and closing unnecessary tracks through to designating camping sites and provision of additional tourism infrastructure.

## 3.7 Biodiversity and Natural Areas

The Shire of Irwin is known to contain a number of significant flora, vegetation and fauna values that are identified under both state and federal legislation and policy, with the Shire of Irwin considered to contain high levels of species diversity.

To date, the Shire does not have a Local Biodiversity Strategy, and it is recommended that one be prepared for the District in order to ensure appropriate measures are incorporated within the Local Planning Scheme to ensure the retention and protection of significant flora, vegetation and fauna values.

## 3.8 Coastal Planning and Management

The coastline is a significant asset to the Shire of Irwin and forms an important part of the community: socially, environmentally and economically. It is subject to constant change through a variety of mechanisms, both natural and man-made.

The coastline experiences significant development pressure and there needs to be a greater understanding of the coastal processes and storm surge impacts along this section of the coastline in order to comprehensively plan for growth and activity in proximity to the coast.

A Coastal Hazard Risk Management Adaptation Plan (CHRMAP) has been prepared in accordance with the requirements of State Planning Policy 2.6, in order to identify risks to economic, environmental and social assets to coastal processes, and appropriate adaptation responses to manage these risks over the planning timeframe. The

CHRMAP identifies the need to undertake the following key actions within the Shire:

- the need to investigate potential inundation impacts and viability for improving the resilience of public infrastructure in the coastal zones of Port Denison, Granny's Beach and Surf Beach;
- investigate the need for coastal protection structure to protect assets from the risk of coastal erosion in the coastal zones of Port Denison, Granny's Beach and Surf Beach;
- educate the public about natural communities and areas sensitive to coastal processes and encourage environmentally sensitive enjoyment of the coast;
- monitor and allow natural processes to occur, and ensure the public are kept informed of the outcomes; and
- plan for the movement of public and private infrastructure when threats materialise.

## 3.9 Water Management

The Shire of Irwin is located within two surface drainage systems, namely the Greenough Drainage Basin in the northern portion of the shire and the Arrowsmith Drainage Basin within the southern portion.

A District Water Management Strategy has been prepared to support the implementation of the Dongara-Port Denison District Structure Plan.

The Irwin River is subject to flooding, and the flood mapping has recently been undertaken by the Department of Water. It is recommended that a Special Control Area be introduced to provide appropriate development controls within the Irwin river flood-way and flood plain.

It is also recommended that the existing Public Drinking Water Source Special Control Area be maintained and reviewed to ensure the ongoing management and protection of this important regional water source.

## 3.10 Bushfire Management

In the Geraldton Sandplains region of Western Australia, the bushfire risk is greatest from November through to April, when moisture content of vegetation is low. Fires can be destructive to both lives and property, and can have detrimental impacts on biodiversity.

In order to clearly define bushfire prone areas throughout the Shire to inform future decision making at a strategic level, the Strategy recognises the need for the Shire to undertake the preparation of bushfire prone mapping in accordance with State Planning Policy 3.7 to spatially map bushfire prone areas throughout the Shire. The resultant bushfire prone mapping would then be adopted within the Local Planning Scheme to designate low, medium, high and extreme bushfire prone areas.

## 3.11 Traffic and Transport

### 3.11.1 Road Network

The Strategy acknowledges that as the Dongara-Port Denison Urban Area develops, there will be additional pressures placed on the road network.

The road network hierarchy includes Brand Highway, Indian Ocean Drive and Midlands Road as primary distributors. These roads are the responsibility of Main Roads WA (MRWA) with the Shire having responsibility for other distributor roads.

MRWA have advised that there are two significant road upgrades planned for within the Shire, including:

1. The Brand Highway bypass of the Dongara townsite. This bypass is planned to occur outside the next ten year horizon.
2. The intersection of Brand Highway and Midlands Road. This intersection upgrade is considered important to MRWA and upgrading is likely to occur within the next ten year horizon.

The Shire of Irwin will also need to plan for upgrades to the local road network to accommodate growth projected under the ultimate / 2050 development scenario contained within the Dongara-Port Denison DSP. These are documented within the Strategy report.

There is also an identified need for a safer truck breakdown area outside of the Dongara townsite.

### 3.11.2 Rail Network

There are two railway lines that pass through the Shire, being the Perth to Mingenew to Dongara to Geraldine narrow gauge line and the Dongara to Eneabba narrow gauge line.

There are no planned upgrades to any rail infrastructure within the Shire.

### 3.11.3 Airstrip

The Strategy recognises the important role that the airstrip has in servicing the Irwin region, in particular its role in servicing the farming and mining industries and accommodation of emergency services.

There are no plans to upgrade the airstrip in the immediate future, however, in order to service a population of 22,000 envisaged as an ultimate scenario under the Dongara-Port Denison District Structure Plan, the airstrip would require additional upgrades to reach Registered Aerodrome Status.

In order to support longer term growth of the Dongara-Port Denison Urban Area, it is recommended that investigations be undertaken to identify suitable areas to relocate the airstrip. The relocation of the airstrip would then allow for future urban land south of Port Denison.

### 3.11.4 Port

The Port is primarily used by the commercial fishing industry and therefore plays an important role in the local and regional economy. The Port is controlled by the Department of Transport, which has plans to expand the capacity of both the refuelling areas and the number of berths available.

## 3.12 Infrastructure and Utilities

The Strategy acknowledges the need to protect existing infrastructure through the identification of land use buffers to the Waste Water Treatment Plant and landfill site and also to adequately plan for future infrastructure required to service growth within the Shire, particularly within the Dongara-Port Denison Urban Area.

The Strategy identifies required upgrades and extension to the infrastructure network, including reticulated water supply, sewer infrastructure, power supply, telecommunications, NBN roll-out, gas and drainage in order to support growth envisaged by the Dongara-Port Denison District Structure Plan.

The Strategy also identifies a need to identify a new site for a Waste Transfer Station in accordance with the Waste Transfer Station Site Selection Study previously commissioned by the Shire.

Special Control Areas are also recommended to protect public drinking water source areas key transmission line infrastructure, and the Dampier to Bunbury Natural Gas Pipeline Corridor.

## 3.13 Social Infrastructure

Improvements to the following social infrastructure has been identified as being important to supporting further growth and development of the Shire.

### 3.13.1 Aged Care

There is an identified need for additional aged person's accommodation in order to cater for the ageing population. It is acknowledged however that there is a preference to provide for ageing in place services within regional communities, and it is expected that this trend will continue within the lifespan of this Strategy.

### 3.13.2 Health Facilities

The community has identified the need to improve access to a general practitioner outside of normal business hours and on weekends. Access to dental services is also limited. Improving the range of services and infrastructure in the region will play a role in attracting and retaining key medical staff in the region.

### 3.13.3 Recreation Facilities

The Shire has completed a number of strategies and studies which identify the need for social and recreational infrastructure to support future growth within the region. The Shire will need to ensure appropriate land is set aside for community infrastructure in accordance with the recommendations of the Shire's Community Development Plan, Irwin Bicycle Plan, Recreation Needs Analysis Report and Tourism Development Plan.

### 3.13.4 Education

As in most regional areas, access to education facilities is a key issue, given education services are typically provided on a population driven basis. Schooling is only available from kindergarten through to Year 10, with older students required to travel to either Geraldton or Perth. This leads to population leakage as a result of youth leaving the community as opportunities within the Shire remain limited.

There are opportunities to establish tertiary level education services and programs within the Shire through partnerships and based on existing assets such as the Port.

It will also be necessary to plan for and reserve land to accommodate future schools to support population growth.

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# 4. Strategies and Actions

## 4.1 Economy

Issue: Tourism Industry		
No.	Strategies	Actions
Ec1.1	Proactively plan for the retention and promotion of tourism in the planning framework.	<p>1.1.1 Develop and implement a Local Tourism Planning Strategy for the Shire.</p> <p>1.1.2 Include 'Holiday Accommodation' as an 'A' use within the 'Rural Smallholdings' zone.</p> <p>1.1.3 Include 'Holiday House' as a definition within LPS No. 5 as defined in <i>Regulations 2015</i> and be listed as a 'D' use against the 'Residential', 'Rural Residential' and 'Rural Smallholdings' zones.</p> <p>1.1.4 Undertake a feasibility and GAP analysis to identify shortfall in tourism accommodation within the Shire.</p> <p>1.1.5 Prepare Design Guidelines for the 'Special Use 28' site at the corner of Point Leander Drive and Samuel Street to provide guidance on how the site can be developed for hotel/motel purposes.</p>
Ec1.2	Promote the diversification of tourist activities on offer within the Shire.	<p>1.2.1 Consider zoning requirements relating to a RV and caravan park site near Irwin Crescent, as provided for in the Shire's Tourism Plan 2013-2018.</p> <p>1.2.2 Undertake a feasibility assessment to re-use the Fisherman's Co-Operative building in Port Denison for a specific tourism oriented use.</p> <p>1.2.3 In accordance with the CHRMAP, prepare a detailed Coastal Management Plan for the Irwin Coastline in order to provide a framework for the coordination of activities along this section of the coast.</p> <p>1.2.4 Facilitate the creation of a cultural precinct on the South-West of Moreton Terrace and Waldeck Street in accordance with the recommendations of the Dongara Town Centre Revitalisation Plan.</p>

Issue: Agricultural Land Use Planning		
No.	Strategies	Actions
Ec1.3	Protect viable agricultural land for general farming purposes.	<p>1.3.1 Maintain a general presumption against the further fragmentation of rural land within the 'Rural' zone.</p> <p>1.3.2 Maintain a general presumption against the further expansion of the Rural Smallholdings zone.</p>
Ec1.4	Provide opportunities for tree farming and carbon plantations, where appropriate.	<p>1.4.1 Provide support for tree plantations and carbon crops on less versatile agricultural land.</p> <p>1.4.2 Generally not support tree farming and carbon plantations on agricultural land of 'High' to 'Greatest' versatility.</p> <p>1.4.3 Include 'Tree farm' and 'Tree farm – carbon sequestration' as defined by SPP 2.5 as use classes within the Local Planning Scheme and list it as a 'D' use within the 'Rural' zone.</p>

**Issue: Mineral and Petroleum Mining and Basic Raw Material Extraction**

No.	Strategies	Actions
Ec1.5	Recognise and protect mineral resources, operating mines and quarries.	<p>1.5.1 Ensure that mineral resources are afforded adequate recognition and protection within LPS No. 5, via appropriate definitions and provisions.</p> <p>1.5.2 Operating mines and quarries as identified within this Strategy should be protected from sterilisation or hindrance by encroachment of incompatible development through measures such as Special Control Areas, separation distances and/or buffers.</p> <p>1.5.3 Significant geological supplies and basic raw materials are to be identified in the Strategy and Scheme with relevant provisions for their protection.</p> <p>1.5.4 Work with the Department of Mines and Petroleum (DMP) to ensure that impacts on groundwater and agricultural activity are taken into account when considering the granting of any exploration or extraction permits for hydraulic fracturing (or "fracking") resource activity.</p> <p>1.5.5 If required, work with the Department of Planning to update LPS No. 5 to incorporate Scheme definitions and provisions for petroleum exploration and operations.</p> <p>1.5.6 Prepare a new Local Planning Policy on extractive industry to replace the existing Local Law. Incorporate relevant provisions into the new Local Planning Scheme.</p>

## 4.2 Environment

**Issue: Coastal Assets**

No.	Strategies	Actions
En1.1	Manage and protect the coastal assets of the Shire while also ensuring adequate protection for development against coastal processes.	1.1.1 Implement actions identified from the Coastal Hazard Risk Management Adaptation Plan (CHRMAP) for the Shire of Irwin coastline.

**Issue: Biodiversity and Natural Areas**

No.	Strategies	Actions
En1.2	Protect biodiversity within Shire, particularly with respect to declared rare flora and fauna, threatened ecological communities and regionally significant vegetation complexes.	<p>1.2.1 The Shire to prepare a Local Biodiversity Strategy for the District.</p> <p>1.2.2 Following the preparation of a Local Biodiversity Strategy, ensure appropriate measures are incorporated within the Local Planning Scheme requiring the retention of remnant vegetation and protection of significant vegetation.</p>

**Issue: Stormwater Management**

No.	Strategies	Actions
En1.3	Ensure appropriate stormwater management for the Dongara-Port Denison Urban Area.	<p>1.3.1 Implement the requirements of the District Water Management Strategy and require the preparation of Local Water Management Strategies and Urban Water Management Plans for new structure planning, subdivision and development, in accordance with the Shire's Local Planning Policy on Water Sensitive Urban Design.</p> <p>1.3.2 Incorporate relevant provisions of the Shire's Local Planning Policy on Water Sensitive Urban Design into the new Local Planning Scheme.</p>



<b>Issue: Irwin River</b>		
No.	Strategies	Actions
En1.4	Provide appropriate land use and development controls within the Irwin flood-way and floodplain development control area.	1.4.1 Introduce a Special Control Area in the Local Planning Scheme to provide development controls in relation to the Irwin River flood-way and floodplain development control area.

<b>Issue: Water Supply</b>		
No.	Strategies	Actions
En1.5	Provide appropriate land use controls to protect the Public Drinking Water Source Areas within the Shire.	1.5.1 Introduce a Special Control Area in relation to Public Drinking Water Source Protection Areas within the Local Planning Scheme to ensure appropriate protection against land uses that may potentially have a detrimental impact on the quality and quantity of public drinking water supplies.

<b>Issue: Bushfire</b>		
No.	Strategies	Actions
En1.6	Ensure bushfire risk is managed in accordance with the requirements of State Planning Policy 3.7 - Planning in Bushfire Prone Areas (SPP 3.7) and associated guidelines.	1.6.1 Undertake Bushfire Hazard Level Mapping for the Shire of Irwin, in accordance with the Methodology outlined in SPP 3.7.

<b>Issue: Land Use Buffers</b>		
No.	Strategies	Actions
En1.7	Maintain a suitable buffer from the Water Corporation's Wastewater treatment facility to sensitive land uses.	1.7.1 Maintain a buffer to the wastewater treatment facility in accordance with the separation distance outlined on the Strategy Maps.
		1.7.2 Encourage Water Corporation to implement best practice to contain odours in order to minimise land constrained by the buffer.
En1.8	Maintain a suitable buffer from the Shire's waste transfer station to sensitive land uses.	1.8.1 Maintain a 200m separation distance to the facility as outlined on the Strategy Maps.
		1.8.2 Shire to determine the location for a Regional Waste Transfer Station which will not constrain future expansion of the Dongara-Port Denison Urban Area.
En1.9	Determine appropriate separation distances to industrial development.	1.9.1 Determine appropriate separation distances to industrial development in accordance with the document Guidance for the Assessment of Environmental Factors Separation; Distances between Industrial and Sensitive Land Uses No. 3 as required.
En1.10	Maintain a suitable buffer to the Cockburn Cement operations during the life of the use.	1.10.1 Maintain a 1,250 metre separation distance to the Cockburn Cement facility as outlined on the Strategy Maps.
En1.11	Maintain a suitable buffer to existing and future extractive industry operations.	1.11.1 Maintain appropriate separation distances to existing extractive industries and ensure separation distances are taken into consideration in the planning for any new extractive industries.

<b>Issue: Squatter Shacks</b>		
No.	Strategies	Actions
En1.12	Address the issue of Squatter Shacks within Policy Area H.	1.12.1 Progressively address the squatter shack issue in accordance with the State Government Squatter Policy and State Planning Policy 2.6 - State Coastal Planning Policy.

Issue: Green Infrastructure		
No.	Strategies	Actions
En1.13	Provide a planning framework which supports the development of Green Infrastructure.	1.13.1 Consider developing a green infrastructure / sustainable design policy to implement sustainable design measures as part of significant development proposals and/or subdivision. 1.13.2 Include a Land Use definition of 'Wind farm' within LPS No.5. 1.13.3 Incorporate relevant provisions of the Shire's Local Planning Policy on wind turbines within the new Local Planning Scheme.

## 4.3 Social

Issue: Green Infrastructure		
No.	Strategies	Actions
So1.1	Provide an appropriate level of aged care services within the region.	1.1.1 Identify site and dwelling requirements for the provision of aged persons accommodation within the District and ensure appropriate zoning and development provisions are incorporated into the Local Planning Scheme to encourage provision of these services.

Issue: Access to Education		
No.	Strategies	Actions
So1.2	Increase access to education.	1.2.1 Identify and zone new school sites to cater for population growth within future local structure plans as required.

Issue: Plan for Community Infrastructure		
No.	Strategies	Actions
So1.3	Plan for adequate community infrastructure to support population growth.	1.3.1 Progressively implement the Port Denison Foreshore Master Plan to diversify recreation and tourist activities on the coast. 1.3.2 Plan for and reserve land within the Local Planning Scheme to facilitate the delivery of necessary community infrastructure in accordance with the recommendations of the Shire's Community Development Plan, Irwin Bicycle Plan, Recreation Needs Analysis Report and Tourism Development Plan.
So1.4	Maximise access to health services for the community.	1.4.1 Plan for sufficient reserved land within the Local Planning Scheme to accommodate additional required health facilities to service future population.

## 4.4 Built Environment

Issue: Housing Diversity		
No.	Strategies	Actions
BE1.1	Improve housing diversity and choice within Dongara Port Denison.	1.1.1 Rezone existing residential areas to R30/R40 on the periphery of the Dongara Regional Centre in accordance with the recommendations of the Dongara-Port Denison District Structure Plan to facilitate higher density residential outcomes.
BE1.2	Release residential land as required based on the Shire's Housing Land Audit and guidance from local structure planning.	1.2.1 The Shire's Housing Land Audit will be updated annually, with a full audit and the Housing Market Analysis being carried out every 3-5 years or sooner when significant market impacts are observed, in order to monitor the demand for and supply of residential land.

Issue: Retail and Commercial Land Supply		
No.	Strategies	Actions
BE1.3	Recognise the regional significance of the Dongara Town Centre in servicing the region.	<p>1.3.1 Introduce a new 'Commercial' zone within LPS No. 5.</p> <p>1.3.2 Rezone the Dongara town centre 'Town Centre' zone from 'Local Centre' to a new 'Commercial' zone in recognition of the role the centre has in servicing the region.</p>
BE1.4	Zone sufficient land for retail and commercial land uses to service projected population growth.	<p>1.4.1 Consolidate the Dongara Regional Centre precinct to correspond with the core retail/commercial precinct as identified within the Draft Dongara Town Centre Revitalisation Plan.</p> <p>1.4.2 Introduce a new 'Mixed Use' zone to provide a transition between the new 'Commercial' zoned land and the residential hinterland.</p> <p>1.4.3 Rezone the existing 'Service Commercial' zone on Point Leander Drive to 'Urban Development' zone for residential purposes in order to consolidate the Dongara Commercial centre and focus retail and commercial growth around the existing town centre.</p> <p>1.4.4 Extend the 'Commercial' zone within Port Denison in accordance with the Dongara-Port Denison District Structure Plan as required to anticipate future demand.</p>
BE1.5	Promote new business development opportunities.	<p>1.5.1 Develop a targeted business attraction plan with a view to strengthening the trades, engineering, and service sectors which support the developing gas, agricultural and marine service industries.</p> <p>1.5.2 Investigate the potential to support a business / technology precinct, hub or co-working facility within the Dongara-Port Denison Urban Area</p>

Issue: Industrial Land Supply		
No.	Strategies	Actions
BE1.6	Zone sufficient land for industrial uses to service projected demand.	<p>1.6.1 Retain the existing land zoned for 'General Industrial' and 'Light Industrial' for their intended purposes (rezone to 'General Industry' and 'Light Industry' in line with the <i>Planning and Development (Local Planning Schemes) Regulations 2015</i>).</p> <p>1.6.2 Rezone the Marine Based Industry zone to 'Light Industry' in line with the <i>Planning and Development (Local Planning Schemes) Regulations 2015</i>.</p> <p>1.6.3 Rezone the lots located to the east of the 'General Industrial' estate on Brand Highway from 'General Farming' to 'General Industry' to extend the 'General Industry' estate in line with the recommendation of the Dongara-Port Denison District Structure Plan.</p> <p>1.6.4 Undertake detailed analysis and investigations relating to the creation of a new industrial estate on land located on the south-eastern side of the intersection of Brand Highway and Midlands Road.</p> <p>1.6.5 Where structure planning, rezoning, subdivision or development could have an impact on the Brand Highway, Midlands Road or the proposed Brand Highway Bypass, applications are to be accompanied with a Traffic Statement or Assessment (as appropriate), produce in accordance with the WAPC's Transport Assessment Guidelines for Developments.</p>

Issue: Rural Residential Land		
No.	Strategies	Actions
BE1.7	To establish a framework to deliver a coordinated approach to the subdivision of land zoned for Rural- Residential purposes.	<p>1.7.1 Amend the provisions relating to the Rural Residential zone within LPS No. 5 to require the preparation of detailed structure plans prior to subdivision and development to ensure a coordinated approach to subdivision and development in relation to 'Rural Residential' zoned land.</p> <p>1.7.2 Require the preparation and adoption of a structure plan for the Springfield Estate and surrounding land zoned 'Rural Residential' to address the following issues:</p> <ul style="list-style-type: none"> <li>• Coordination of access (road, shared paths, horse trails, emergency vehicles);</li> <li>• Lot sizes;</li> <li>• Environmental constraints;</li> <li>• Public open space and facilities;</li> <li>• Servicing;</li> <li>• Infrastructure contributions;</li> <li>• Bushfire hazard planning;</li> <li>• Preparation of Local Water Management Strategies and Urban Water Management Plans;</li> <li>• Staging of the delivery of land in a logical manner.</li> </ul> <p>1.7.3 Require the preparation and adoption of a structure plan for Racecourse Estate to address the following issues:</p> <ul style="list-style-type: none"> <li>• Coordination of access (road, shared paths, horse trails, emergency vehicles);</li> <li>• Density Infill Opportunities;</li> <li>• Lot sizes;</li> <li>• Environmental constraints;</li> <li>• Public open space and facilities;</li> <li>• Servicing;</li> <li>• Infrastructure contributions;</li> <li>• Bushfire hazard planning;</li> <li>• Preparation of Local Water Management Strategies and Urban Water Management Plans;</li> <li>• Staging of the delivery of land in a logical manner.</li> </ul>

Issue: Public Purpose Sites		
No.	Strategies	Actions
BE1.8	Identify and reserve adequate land to accommodate public purpose facilities.	<p>1.8.1 Undertake a site selection study to identify future site/s for cemetery use, and following this, amend the Local Planning Scheme to reserve the site/s for that purpose.</p> <p>1.8.2 Undertake a site selection study to identify future sites for re-location of the pistol club, and following this, amend the Local Planning Scheme to reserve the site for that purpose.</p> <p>1.8.3 Continue to monitor the needs of the Dongara airstrip and liaise with the Department of Transport and other relevant agencies in relation to future land/ locational requirements.</p>

Issue: Heritage		
No.	Strategies	Actions
BE1.9	Maintain an up-to-date heritage inventory to ensure adequate recognition, management and protection of the Shire's heritage assets is observed.	1.9.1 Undertake a comprehensive review of the Shire of Irwin's Heritage Inventory. 1.9.2 Prepare a Local Planning Policy to protect recognised Heritage Places and incorporate relevant provisions within the new Local Planning Scheme.

Issue: Water Supply		
No.	Strategies	Actions
BE1.10	Ensure potable water supply is adequate to enable population growth and development.	1.10.1 New subdivisions are required to have a suitable potable water supply and connect to the Water Corporation's infrastructure, where appropriate.

Issue: Sewer Infrastructure		
No.	Strategies	Actions
BE1.11	Ensure the sewerage infrastructure network is adequate to service future population growth and development.	1.11.1 Ensure the continued implementation of the Water Corporation's Sewer Infill Program. 1.11.2 Progress the following planned upgrades with the Water Corporation: <ul style="list-style-type: none"> <li>• St Dominics Precinct has Water Corporation pressure mains planned to be constructed through the site. This will need to be allowed for within any future plans for development.</li> <li>• The Race Course Estate Precinct will require an additional three pump stations to service the Precinct.</li> <li>• Pressure main upgrade will be required for the proposed residential development north of Brand Highway.</li> <li>• Pump station 6 at Clarkson Street is planned to be decommissioned and a new pump station constructed on the Department of Lands site at 96 Clarkson Street.</li> </ul>

Issue: Power Supply		
No.	Strategies	Actions
BE1.12	Ensure adequate and reliable power supply to support future population growth and development.	1.12.1 Progress the following planned upgrades with Western Power: <ul style="list-style-type: none"> <li>• Mid-West Energy Project – Southern Section Stage 1 – Construction has commenced.</li> <li>• Mid-West Energy Project – Northern Section – no plans to commence construction within the next 10 years unless demand requires.</li> <li>• Three Springs substation upgrade (busbar reinforcement), expected to commence construction in the summer of 2017/18.</li> <li>• Eneabba 330KV terminal expected commencing construction in the summer of 2017/18.</li> </ul> 1.12.2 Note and follow up on progress of alternative power source projects as follows: <ul style="list-style-type: none"> <li>• ERM Power Limited has all required approvals for the construction of a gas fired power station east of the Three Springs town site. The proposed power station is planned to produce an estimated 330 megawatts and connect into the recently constructed Three Springs 330kV terminal.</li> <li>• Eneabba Gas Limited has all required approvals for the construction of a gas-fired power station approximately 8km east of the Dongara town site. The proposed power station is planned to have a base capacity of 168 megawatts and an overall capacity of 399 megawatts.</li> </ul>

<b>Issue: Drainage</b>		
No.	Strategies	Actions
BE1.13	Recognise and protect the Dampier to Bunbury Natural Gas Pipeline in future planning and decision making.	1.13.1 Recognise and protect the Dampier to Bunbury Natural Gas Pipeline corridor on the Strategy Maps.
BE1.14	Provide an integrated approach to drainage throughout the Shire with a particular focus on the Dongara Port-Denison Urban Area.	1.14.1 Progress the recommendations of the Dongara- Port Denison District Water Management Strategy. 1.14.2 Require the preparation of Local Water Management Strategies and Urban Water Management Plans in accordance with the WAPC's Better Urban Water Management guidelines. 1.14.3 Consider the preparation of a Development Contribution Plan and associated implementation framework to allow for the equitable coordination and provision of district level drainage infrastructure. 1.14.4 Determine new land use controls for flood plain management following completion of the Shire of Irwin Flood Study.

<b>Issue: Road Network</b>		
No.	Strategies	Actions
BE1.15	Provide a safe and functional road network.	1.15.1 Commission a detailed investigation and intersection modelling for key intersections in the Dongara Denison Urban Area. 1.15.2 The Shire to investigate a permanent formal site for a truck breakdown area within proximity to the Dongara-Port Denison Urban Centre.

<b>Issue: Airport</b>		
No.	Strategies	Actions
BE1.16	Support the current airfield operation and plan for longer term operational and locational requirements.	1.16.1 Undertake a due diligence assessment to identify alternative sites for a relocated airfield to allow for the extension of urban land further south of Port Denison in the longer term if and when required.

<b>Issue: Landfill</b>		
No.	Strategies	Actions
BE1.17	Identify a site for a new modern waste management facility.	1.17.1 Undertake preliminary investigations in relation to a new waste management facility site in accordance with the recommendations of the Site Selection Study. 1.17.2 Ensure the selected site is appropriately zoned, and buffers determined for inclusion in the Local Planning Scheme.

<b>Issue: Signage</b>		
No.	Strategies	Actions
BE1.18	Ensure adequate provisions are in place to control signage.	1.18.1 Incorporate relevant provisions of the Shire's Local Planning Policy on signage within the new Local Planning Scheme.

<b>Issue: Car Parking</b>		
No.	Strategies	Actions
BE1.19	Ensure the Local Planning Scheme contains current provision relating to car parking.	1.19.1 Undertake a review of car parking standards contained within LPS No.5, to ensure minimum car parking standard reflect current standards.
BE1.20	Promote improved communications to support the community and business growth.	1.20.1 Promote the roll-out of the National Broadband Network (NBN) within the Dongara-Port Denison Urban Area.

## 4.5 Policy Areas

### 4.5.1 4.5.1 Policy Area A

Aims: To preserve and protect the major areas of Crown Reservation and Vacant Crown Land within this policy area in its natural state. To support the continued sustainable use of privately held land for agricultural activity. Where consistent with these aims, encourage the exploration for and development of mineral resources.

No.	Strategies	Actions
PA1.1	Identify and protect productive agricultural land.	<p>1.1.1 Retain existing agricultural areas in the 'General Farming' zone of the Local Planning Scheme through a 'Rural' zone in line with the <i>Planning and Development (Local Planning Schemes) Regulations 2015</i>.</p> <p>1.1.2 Continued support for boundary rationalisation only for the purposes of farm management, consolidation and/or boundary realignment in accordance with State Planning Policy.</p>
PA1.2	Encourage the retention of Crown land and reservations within the policy area to protect the physical environment and enhance tourism and recreational activities.	<p>1.2.1 Maintain reserves within the Local Planning Scheme.</p> <p>1.2.2 Recognise the conservation value of all reserves, particularly Beekeepers Nature Reserve, in assessing planning proposals within or adjacent to Beekeepers Nature Reserve.</p>
PA1.3	Co-ordinated management and appropriate use of the fragile coastline.	1.3.1 Coordinate the preparation of a detailed Coastal Management Plan in conjunction with Policy Area E to coordinate management and appropriate use of the coastal nodes along the Irwin coastline.
PA1.4	Minimise conflicts between mining activity and conservation values.	<p>1.4.1 Ensure planning determinations do not compromise access to resources.</p> <p>1.4.2 Introduce a new clause within the Local Planning Scheme to clarify responsibilities and requirements in relation to Section 120 (2)(b) of the <i>Mining Act 1978</i>.</p>

### 4.5.2 Policy Area B

Aims: To concentrate urban development within a single urban area at Dongara/Port Denison to provide an efficient, sustainable settlement pattern within the Shire. To ensure the provision of adequate residential land within the future urban areas that incorporates a range of housing and lifestyle options, whilst making adequate provision for commercial, industrial, recreation and other land to meet the needs of residents, visitors and industry.

No.	Strategies	Actions
PB1.1	Provide adequate land to accommodate urban expansion over the lifetime of this Strategy.	<p>1.1.1 The Shire shall not support the release of new housing land within the:</p> <ol style="list-style-type: none"> <li>1. Residential zone, by way of Local Structure Plans; or</li> <li>2. Rural Residential and Rural Smallholdings by way of rezoning; unless the demand for housing is adequately aligned with the supply of housing land within these zones, after consideration of the Shire's Housing Land Audit and Market Analysis.</li> </ol> <p>1.1.2 Promote the orderly release of land for residential purposes generally on the following basis:</p> <ol style="list-style-type: none"> <li>1. Promote density infill of existing vacant residential zoned land as a priority in accordance with the Dongara Port Denison District Structure Plan. Promote the delivery of diversity of lot / dwelling product within these areas;</li> <li>2. Prioritise the delivery of residential land in close proximity to the town centre and existing services over land identified for future urban;</li> <li>3. Following the infill of existing zoned and serviced land, release future urban land in the following priority order:               <ol style="list-style-type: none"> <li>i. Dongara North Precinct;</li> <li>ii. St Dominics Precinct.</li> </ol> </li> <li>4. Subdivision of land within the Rural Residential zone that is not serviced by reticulated services will not be supported.</li> </ol> <p>1.1.3 New urban land is to be rezoned to a 'Urban Development' zone to require the preparation of a structure plan prior to subdivision and development.</p> <p>1.1.4 Specifically rezone Lot 250 Oceanside Boulevard to 'Development' zone to facilitate structure planning to achieve a varied lot mix within the parameters of Special Residential and Residential R12.5.</p> <p>1.1.5 Rezone the former Shell Roadhouse site at 30183 Brand Highway, Dongara from 'Special Use' to 'Rural Residential' to integrate the site with the zoning of surrounding land.</p> <p>1.1.6 30377 Brand Highway, Dongara is identified as potentially being suitable for additional land uses such as a caravan park, aged care services and/or residential development. Any proposal would need to be progressed by the landowner and will be assessed on its individual merits.</p>
PB1.2	Identify and secure sufficient land for industrial purposes to cater for business and industry growth.	<p>1.2.1 Expand the existing 'General Industrial' zone located on Brand Highway eastwards in accordance with the DSP.</p>
PB1.3	Ensure the equitable provision of key infrastructure required to support future growth.	<p>1.3.1 Introduce Development Contribution Areas by way of Special Control Areas within the Local Planning Scheme to establish the statutory requirement for development contributions.</p> <p>1.3.2 Develop a Development Contribution Plan and cost schedule to provide a framework for the collection of developer contributions towards key infrastructure.</p>



No.	Strategies	Actions
PB1.4	Ensure adequate commercial zoned land which facilitates the development of one Regional Centre and provision of neighbourhood centres as required.	<p>1.4.1 Consolidate the new 'Commercial' zone by rezoning surplus commercial land to 'Mixed Use' generally in accordance with the recommendations of the Dongara Town Centre Revitalisation Plan.</p> <p>1.4.2 Undertake a detailed review of the 2009 Town Centre Precinct plan in light of the recommendations contained in the Town Centre Revitalisation Plan to ensure appropriate use and development outcomes are achieved and incorporated into the Local Planning Scheme.</p> <p>1.4.3 Rezone the existing 'Service Commercial' zoned land on Point Leander Drive to a 'Urban Development' zone for residential purposes so that key retail tenancies are not 'pulled' from the existing core town centre area.</p> <p>1.4.4 Undertake a feasibility analysis to explore options for location of a larger supermarket site to support the district. This analysis should examine issues around site area requirements, land tenure issues, landowner intentions, site selection criteria with a view to protecting the viability of the existing town centre and other matters.</p> <p>1.4.5 Expand the 'Commercial' zone to support future commercial growth in Port Denison in accordance with the recommendation of the Dongara-Port Denison District Structure Plan.</p>
PB1.5	Maximise the opportunities of the Shire's freehold land assets.	1.5.1 Undertake a Land Audit of the Shire's assets and determine recommendations for development/lease/sale of excess land.
PB1.6	Plan for and set aside land as reserves for public purposes.	<p>1.6.1 Undertake the recommendations of the Site Selection Study in relation to identifying a site for a new Waste Management Facility.</p> <p>1.6.2 Undertake a site selection study to identify future sites for cemetery use.</p> <p>1.6.3 Undertake a site selection study to identify future sites for re-location of the pistol club.</p>
PB1.7	Ensure future development contributes in a positive way to key tourist locations on the foreshore.	1.7.1 Prepare a set of Design Guidelines for lots along Point Leander Drive located adjacent to the foreshore to ensure objectives relating to character, amenity and a positive aesthetic contribution to the adjacent public realm are met.

#### 4.5.3 4.5.3 Policy Area C

Aims: To preserve and protect the viability of agricultural land in this precinct as a priority for continued sustainable agricultural activity whilst also recognising the Public Drinking Water Source Areas which exist in the policy area.

No.	Strategies	Actions
PC1.1	Encourage and protect productive agricultural land.	<p>1.1.1 Retain existing agricultural areas in the 'General Farming' zone of the Local Planning Scheme through a 'Rural' zone in line with the <i>Planning and Development (Local Planning Schemes) Regulations 2015</i>.</p> <p>1.1.2 Continued support for boundary rationalisation only for the purposes of farm management, consolidation and/or boundary realignment in accordance with State Planning Policy.</p>

No.	Strategies	Actions
PC1.2	Recognise the regional importance of the Public Drinking Water Source Areas and the need for protection of the resource.	<p>1.2.1 All priority water source protection areas should be included within a special control area in the Local Planning Scheme in accordance with the recommendations of any relevant Land Use and Water Management Strategy published by the WAPC, or any water source protection plan approved by the Department of Water.</p> <p>1.2.2 Review and reword the provisions for Special Control Areas for Public Drinking Water Source Protection Areas in the Local Planning Scheme to ensure consistency with State Planning Policy.</p>
PC1.3	Recognise the need to protect transmission line corridors of regional importance.	1.3.1 Introduce a Special Control Area buffer for power infrastructure into the Local Planning Scheme to protect transmission line corridors of regional significance.
PC1.4	Protect and enhance the Irwin River.	1.4.1 In conjunction with the Department of Environment, undertake a study of the Irwin River and its catchment area to address issues including salinity, floodplain identification and management, foreshore reserve definition, access, appropriate uses and development and rehabilitation, and adopt the management provisions as policy.
PC1.5	Protect major sources of basic raw materials.	1.5.1 Consider introducing a Basic Raw Materials Special Control Area or Special Purpose Reserve into the Local Planning Scheme to protect mineral resources.
PC1.6	Provide appropriate development control along Indian Ocean Drive.	<p>1.6.1 Prepare a Local Planning Policy to control development and land use abutting Indian Ocean Drive in accordance with the recommendations of the Indian Ocean Drive Planning Guideline 2014 (WAPC).</p> <p>1.6.2 Identify potential locations for a roadhouse and / or tourist accommodation site in accordance with the recommendations of the Indian Ocean Drive Planning Guideline.</p>
PC1.7	Seek to minimise conflict between rural and sensitive land uses.	<p>1.7.1 Retain the 'Rural Smallholdings' zone over the Irwin townsite.</p> <p>1.7.2 Any future applications for intensive land uses in proximity to existing Rural Smallholding lots will need to be assessed on a case by case basis to ensure appropriate land use controls and/or separation distances are applied to prevent conflict between rural and sensitive land uses.</p>
PC1.8	Identify and secure sufficient land for industrial purposes to cater for business and industry growth.	<p>1.8.1 Undertake detailed analysis and investigations relating to the creation of a new industrial estate on land located on the south-eastern side of the intersection of Brand Highway and Midlands Road.</p> <p>1.8.2 If appropriate, consider rezoning the new industrial estate at Lot 353 Midland Road to an 'Industrial Development' zone to allow for industrial structure planning in the future.</p>

#### 4.5.4 Policy Area D

Aim: The continued support for planned subdivision and development within the policy area for rural smallholdings where the integrity of the natural landscape is protected and enhanced.

No.	Strategies	Actions
PD1.1	Provide sufficient land for rural smallholdings development over the life of the Local Planning Strategy.	1.1.1 For land already zoned 'Rural Smallholdings', require structure planning to be undertaken as a pre-requisite to any further subdivision approval to ensure a coordinated approach to subdivision and development.
PD1.2	Encourage an efficient settlement pattern and retention of agricultural land by limiting expansion of Policy Area D.	<p>1.2.1 No further extension to the policy area as identified in the Local Planning Strategy.</p> <p>1.2.2 No additional land is to be rezoned to Rural Smallholdings, unless the demand for housing is adequately aligned with the supply of housing land within these zones, after consideration of the Shire's Housing Land Audit and Market Analysis.</p> <p>1.2.3 Maintain the existing minimum lot area of 15 hectares and have regard to the recommendations and requirements of State planning policy.</p>
PD1.3	Protection and enhancement of the landscape quality of the policy area.	1.3.1 Imposition of development and land management provisions contained in LPS No. 5, at the time of subdivision/development approval.

### 4.5.5 Policy Area E

Aim: To protect the fragile coastal dunal system from degradation through indiscriminate access and inappropriate use whilst enabling access to the coast and tourism development in appropriate locations and allowing for rural smallholdings development in the more stable cleared areas outside of the dunal system where associated with a development of tourism significance.

No.	Strategies	Actions
PE1.1	Protect and manage the dune environment.	<p>1.1.1 Implement relevant actions from the Coastal Hazard Risk Management Adaptation Plan (CHRMAP) to guide the future use, development and protection of this section of coastline.</p> <p>1.1.2 Require a foreshore reserve to be defined and ceded as a condition of approval to any rezoning or subdivision of land.</p> <p>1.1.3 Retain the dune system within the 'General Farming' (Rural) zone where there is a general presumption against subdivision except where land is first reclassified to 'Special Use' to facilitate a project of tourist significance.</p> <p>1.1.4 Require rezoning for subdivision and/or development, to have regard to the recommendations of relevant strategic planning documents, particularly in relation to development and access to the coast and Brand Highway, and any other management plan prepared for the coastal strip.</p> <p>1.1.5 Support the undertaking of a Coastal Management Strategy for the coast north of Dongara, including this policy area, and consider adoption of its recommendations once complete.</p> <p>1.1.6 Support the implementation of a fire management plan for the coastal dune area in conjunction with the relevant authorities.</p>

### 4.5.6 4.5.6 Policy Area F

Aim: To continue support of planned subdivision and development within the Rural Residential zoned areas of the Policy Area. Planning for such subdivision and development shall seek to minimise the potential for land use conflict between resource extraction and processing operations, the Waste Water Treatment Plant and new development, protect the integrity of the natural landscape and ensure development of an efficient road network.

No.	Strategies	Actions
PF1.1	Require Structure Planning in the Springfield Estate.	1.1.1 Subdivision and development within the Springfield Estate requires structure planning.
PF1.2	Ensure WWTP does not impinge on public health, amenity or the environment.	1.2.1 Maintain a buffer around the WWTP in accordance with the Water Corporation site specific investigations. 1.2.2 Undertake regular review of the buffer requirements and identify technology improvements to reduce the buffer where possible.
PF1.3	Minimise the potential for land use conflict between Cockburn Cement's mining operation and plant and future rural residential development while avoiding wherever possible, impacts on the approved development potential of surrounding properties.	1.3.1 No development being supported within a 500m radius of the mobile dune toe over Reserve 22459 (refer to attached plan) until the mobile dune is stabilised to the satisfaction of DoIR and there are no potential impacts from mining. 1.3.2 Subdivision of land within a 1.5km buffer of Cockburn Cement's plant as indicated on the Strategy Maps is not permitted until such time as the Cockburn Cement operations cease. 1.3.3 The local government will recommend that all new lots within 500m of the boundary of Reserve 22459 be subject to a notification on title relating to the presence of the mobile dune which is a natural feature and of the mining operations. This is an interim measure until such time as the mobile sand is mined and the area vegetated. The notification to state as follows: <i>"This lot is adjacent to a naturally occurring mobile sand dune that is subject to quarrying operation and the use and enjoyment of the land may be affected by natural dune movement as well as by the quarrying or factors related to the quarrying."</i> 1.3.4 No development being supported within 1.25km of Cockburn Cement's Lime Sand processing Plant on Kailis Drive (Refer to Plan). 1.3.5 The local government will recommend that all new lots created within 2km of Cockburn Cements Lime Sand process plant be subject to a notification on title informing prospective purchasers of those operations. The notification to state as follows: <i>"This lot is near an operating lime sand processing plant and the use and enjoyment of this land may be affected by those operations or other factors relating to those operations."</i>
PF1.4	Update Scheme Maps to reflect current buffer requirements.	1.4.1 Amend the LPS No. 5 scheme maps to reflect current buffer requirements in relation to the WWTP and other identified sites.
PF1.5	Provide a framework to resolve current access issues and coordinate future subdivision and development.	1.5.1 Amend LPS No. 5 to require the preparation of structure plans for areas zoned 'Rural Residential' prior to subdivision. 1.5.2 Require Springfield Estate to be subject to comprehensive structure planning to coordinate issues relating to access, servicing, infrastructure, environment issues, bushfire planning and other matters prior to supporting further subdivision.
PF1.6	Release sufficient land for Rural-Residential purposes in a logical and staged approach.	1.6.1 No more land is to be rezoned to Rural Residential, unless the demand for rural residential land is adequately aligned with the supply of land within this zone, after consideration of the Shire's Housing Land Audit and Market Analysis.

### 4.5.7 Policy Area G

Aim: To promote the potential for staged rural smallholdings development in closer proximity to the urban area and the conservation of the substantial uncleared land existing within the policy area.

No.	Strategies	Actions
PG1.1	Provide sufficient land for rural smallholdings development.	<p>1.1.1 Retain the 'Rural Smallholdings' zone within LSP No. 5 with a presumption against further expansion of this zone and a presumption against further decrease in the recommended minimum lot sizes already contained within LPS No. 5.</p> <p>1.1.2 Maintain the existing minimum lot area of 20 ha and have regard for the provisions of LPS No. 5, State Planning Policy 2.5 and Development Control Policy 3.4.</p> <p>1.1.3 Utilisation of LPS No. 5 provisions at the time of subdivision/development to ensure the protection and rehabilitation of landform, the visual landscape and adequate foreshore reserves.</p>
PG1.2	Encourage an efficient settlement pattern and retention of agricultural land by limiting expansion of Policy Area G.	<p>1.2.1 No further extension to the policy area as identified in the Local Planning Strategy.</p> <p>1.2.2 No more land is to be rezoned to Rural Smallholdings, unless the demand for Rural Smallholdings land is adequately aligned with the supply of land within this zone, after consideration of the Shire's Housing Land Audit and Market Analysis.</p>
PG1.3	Recognise the importance of structure planning for areas identified for Rural Smallholdings within this policy area.	1.3.1 Require and/or undertake structure planning in conjunction with landowners to ensure a coordinated approach to development. Such structure planning should be a prerequisite to subdivision. Special attention should be paid to rectifying limited access to the policy area from the urban area, delineation of suitable rail crossings, road network, servicing and bushfire hazard planning and management.
PG1.4	Ensure consideration is given to the Irwin River floodway and floodplain in the assessment of any development or subdivision proposal.	<p>1.4.1 Protection of the floodway and floodplain within a Special Control Area to manage land use and development along the Irwin river.</p> <p>1.4.2 Pursue the acquisition of a river reservation both sides of the Irwin River through the subdivision vesting process.</p>

### 4.5.8 Policy Area H

Aim: Provide for a range of coastal pursuits in accordance with a detailed Coastal Management Plan while ensuring the protection of the fragile nature of the coastline and allow the continuation of other pursuits such as agriculture away from the coastal areas.

No.	Strategies	Actions
PH1.1	Provide for equitable use and access of the coast by addressing issues relating to squatter shacks.	1.1.1 Support the removal of existing unlawful squatter shacks on coastal Crown land as per the State Government Squatter Policy (July 1989 and January 1999). 1.1.2 Investigate the formalisation of leasehold tenure for fishers' shacks only in the circumstance that the use of the shack is in conjunction with fishing licenses issued by the Department of Fisheries and subject to negotiation between local authorities and the Department of Lands.
PH1.2	Provide for tourism facilities in appropriate locations which respond to the sensitive dune system.	1.2.1 Further investigations in consideration of the character and environmental values of the natural area to be undertaken by the landowner/s to justify any development of tourist traveller facilities and appropriate ancillary uses.

# 5. Implementation, Monitoring and Review

## 5.1 Implementation

The Local Planning Strategy for the Shire of Irwin is to be used as a strategic planning tool to assist the Shire, the State Government, service authorities and the local community in making decisions regarding future development, land use and infrastructure within the Shire.

This Local Planning Strategy has been prepared based on a review of the Shire's 2007 Local Planning Strategy. This Local Planning Strategy document should inform a review of the Shire's Local Planning Scheme No. 5 and associated policy framework.

Table 1 below identifies the proposed amendments to the Local Planning Scheme and associated local policy framework.

Table 1: Proposed amendments to the Local Planning Scheme

New zone category
<ul style="list-style-type: none"> <li>• Council to consider introducing a new Special Control Area or Special Purpose Reserve into the Scheme to protect Significant Geological Supplies and Basic Raw Materials.</li> <li>• Council to consider introducing a new Commercial zone within the Local Planning Scheme.</li> <li>• Council to consider introducing a new Mixed Use zone within the Local Planning Scheme.</li> <li>• Update Scheme zones in accordance with the <i>Planning and Development (Local Planning Schemes) Regulations 2015</i>.</li> </ul>
New or amended provisions
<ul style="list-style-type: none"> <li>• Amend Local Planning Scheme to reflect the <i>Planning and Development (Local Planning Schemes) Regulations 2015</i>.</li> <li>• Amend the provisions relating to the Rural Smallholding zone to require the preparation of detailed structure plans prior to subdivision.</li> <li>• Introduce provisions relating to the preparation of Developer Contributions Plans.</li> <li>• Identify site and dwelling requirements for the provision of aged persons accommodation and incorporate appropriate provisions within the Local Planning Scheme.</li> <li>• Include a definition for mining operations as follows: <i>"mining operations" means premises where mining operations, as that term is defined in the Mining Act 1978 section 8(1) is carried out;</i></li> <li>• Insert the following clause into Part 32 – Additional Site and Development Standards in the Local Planning Scheme: <b>32. Requirement for consultation to commence development</b> <i>In considering proposals to commercially extract minerals, Council may exercise its discretion to inform the Minister for Mines and the Minister for Planning in writing that the granting of a mining lease or general purpose lease is contrary to the provisions of the Scheme and the Local Planning Strategy.</i></li> <li>• Include 'Holiday Accommodation' as an 'A' use within the 'Rural Smallholdings' zone.</li> <li>• Include 'Holiday House' as a definition within the Scheme and list it as a 'D' use against the 'Residential', 'Special Residential', 'Rural Residential' and 'Rural Smallholdings' zones.</li> <li>• Amend the Local Planning Scheme maps to reflect current buffer requirements in relation to the Waste Water Treatment Plan and other identified sites.</li> <li>• Incorporate relevant provisions of the Shire's new Local Planning Policy framework on the following issues within the Local Planning Scheme, where relevant: <ul style="list-style-type: none"> <li>◦ Water Sensitive Urban Design;</li> <li>◦ Wind Farms;</li> <li>◦ Advertising Signs;</li> <li>◦ Extractive Industries; and</li> <li>◦ Heritage Places.</li> </ul> </li> <li>• Incorporate current car parking standards within the Local Planning Scheme.</li> </ul>

### Re-zoning of specified lots

- Rezone the Dongara Town Centre from 'Local Centre' to a new 'Commercial' zone.
- Rezone lots on the periphery of the new Dongara 'Regional Centre' zone to 'Mixed Use' to provide a transition between the 'Commercial' and residential hinterland.
- Rezone the existing vacant 'Service Commercial' zoned land on Point Leander Drive to a 'Urban Development' zone for residential purposes in order to consolidate the existing Dongara town centre.
- Extend the 'Commercial' zone within Port Denison in accordance with the recommendations of the Dongara-Port Denison District Structure Plan.
- Rezone the 'Industrial' zoned land north of Russ Street to an 'Urban Development' zone to facilitate residential subdivision of this land.
- Rezone the lots located to the east of the 'General Industrial' estate on Brand Highway from 'General Farming' to 'General Industrial' to extend the 'General Industrial' estate in line with the recommendations of the Dongara-Port Denison District Structure Plan.
- Rezone Lot 250 Oceanside Boulevard to 'Urban Development' zone to facilitate structure planning to achieve a varied lot mix.

### Changes to use class table

- Include 'Holiday Accommodation' as an 'A' use within the 'Rural Smallholdings Zone'.
- Include 'Holiday House' as a definition within the Local Planning Scheme as defined in the Planning and Development (Local Planning Schemes) Regulations 2015 and list it as a 'D' use against the 'Residential', 'Special Residential', 'Rural Residential' and 'Rural Smallholdings' zones.
- Insert Mining Operations as a use within the use class table and list it as a 'D\*' use within the 'General Farming' zone and an 'X' use for all other zones.
- Include the following footnote to Table 1 – Zoning Table:  
'Mining' covered by the Mining Act 1978 is exempt from the requirement for planning approval and will be determined in accordance with the Mining Act 1978.
- Include 'Tree farm-carbon sequestration' as defined by SPP2.5 as a use class within the Local Planning Scheme and list it as a 'D' use within the 'General Farming' zone.
- Include 'Tree farm-other' as defined by SPP2.5 as a use class within the Local Planning Scheme and list it as a 'D' use within the 'General Farming' zone.

### Changes to Residential Densities

- Increase residential densities on the periphery of the Dongara Regional Centre to R30/R40 in accordance with the recommendations of the District Structure Plan.

### Changes to Special Control Areas

#### Irwin River Floodway and Floodplain SCA

- Create a Special Control Area in the Local Planning Scheme to provide development controls in relation to the Irwin River floodway and floodplain development control area. The Special Control Area should contain the following requirements:
  - Proposed development (i.e. filling, building, etc.) that is located outside of the floodway is considered acceptable with regard to major flooding. A minimum habitable floor level of 0.5 metre above the appropriate 100 year ARI flood level is recommended to ensure adequate flood protection.
  - Proposed development (i.e., filling, building, etc.) that is located within the floodway and is considered obstructive to major flows is not acceptable as it would increase flood levels upstream. No new buildings are acceptable in the floodway.

#### Public Drinking Water Source Protection Area SCA

- Introduce a Special Control Area in the Local Planning Scheme in relation to Public Drinking Water Source Protection Areas to ensure appropriate protection against land uses that may potentially have a detrimental impact on the quality and quantity of public drinking water supplies.

#### Basic Raw Materials Protection Area SCA

- Consider introducing a Special Control Area in the Local Planning Scheme to protect priority extraction areas for Basic Raw Materials.

#### Development Contribution Area SCA

- Consider introducing a Special Control Area relating to the collection of developer contributions to fund district level infrastructure within the Dongara-Port Denison Urban Area.

#### Power Infrastructure Buffer Special Control Area

- Introduce a Special Control Area in the Local Planning Scheme to provide development controls in relation to two 132kV power lines (Three Springs to Mumbida and Mungarra to Three Springs) which traverse through the north-eastern portion of the Shire (Mount Horner locality).



### New or revised local planning policy

#### *New policy:*

- Prepare a local planning policy relating to development along the Irwin River, addresses matters such as floodplain identification and management, foreshore reserve definition, access and appropriate use and development.
- Consider preparing a green infrastructure / sustainable design policy relating to design requirements for significant development proposals and/or subdivision.
- Prepare Design Guidelines for the 'Special Use 28' site at the corner of Point Leander Drive and Samuel Street to provide guidance on how the site can be developed for hotel/motel purposes.
- Prepare a new Local Planning Policy on extractive industries to replace the current local law.
- Prepare a new Local Planning Policy on Heritage Places.

### Studies

- Prepare a Local Tourism Planning Strategy for the Shire.
- Undertake a feasibility and gap analysis of tourist accommodation within the Shire.
- Undertake a feasibility assessment to re-use the Fisherman's Co-Operative building in Port Denison for a specific tourism oriented use.
- Undertake a Coastal Hazard Risk Management Adaptation Plan (CHRMAP) for the Shire of Irwin coastline.
- Prepare a Local Biodiversity Study for the District.
- Undertake bushfire prone area mapping to map bushfire prone areas within the District.
- Undertake a signage audit to develop a signage Strategy and review the entry statement treatments to town.
- Undertake detailed analysis and investigations relating to the creation of a new industrial estate on land located on the south-eastern side of the intersection of Brand Highway and Midlands Road.
- Undertake preliminary investigations to identify a new site for a waste management facility.
- Undertake a site selection study to identify future sites for cemetery use.
- Undertake a site selection study to identify future sites for the relocation of the pistol club.
- Undertake a comprehensive review of the Shire's Heritage Inventory.
- Consider the preparation of a Development Contribution Plan and associated implementation framework to allow for the equitable coordination and provision of district level drainage area within the Dongara Port Denison Urban Area.
- Update the Shire's Housing Audit to reflect the new scheme zones as reflected in the *Planning and Development (Local Planning Schemes) Regulations 2015*.
- Develop a targeted business attraction plan with a view to strengthening the trades, engineering, and service sectors which support the developing gas, agricultural and marine service industries.

## 5.2 Monitoring and Review

The Local Planning Strategy will need to respond to future changes in State Government Policy or local policies and /or growth trends and development and economic activities within the Shire and may be amended from time to time as necessary.

The focus of monitoring and review should be on the extent to which the Local Planning Strategy has been successful in:

- Articulating and achieving the objectives of the Strategy for the Shire;
- Guiding land use and development decisions to achieve the outcomes of the Local Planning Strategy.

Any review, amendment or modification of the Strategy is required to follow a formal procedure set out in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015*. The process will include public advertising, community consultation and final endorsement by the Council of the Shire of Irwin and the Western Australian Planning Commission.

Figure 1 - Overall Strategy Map

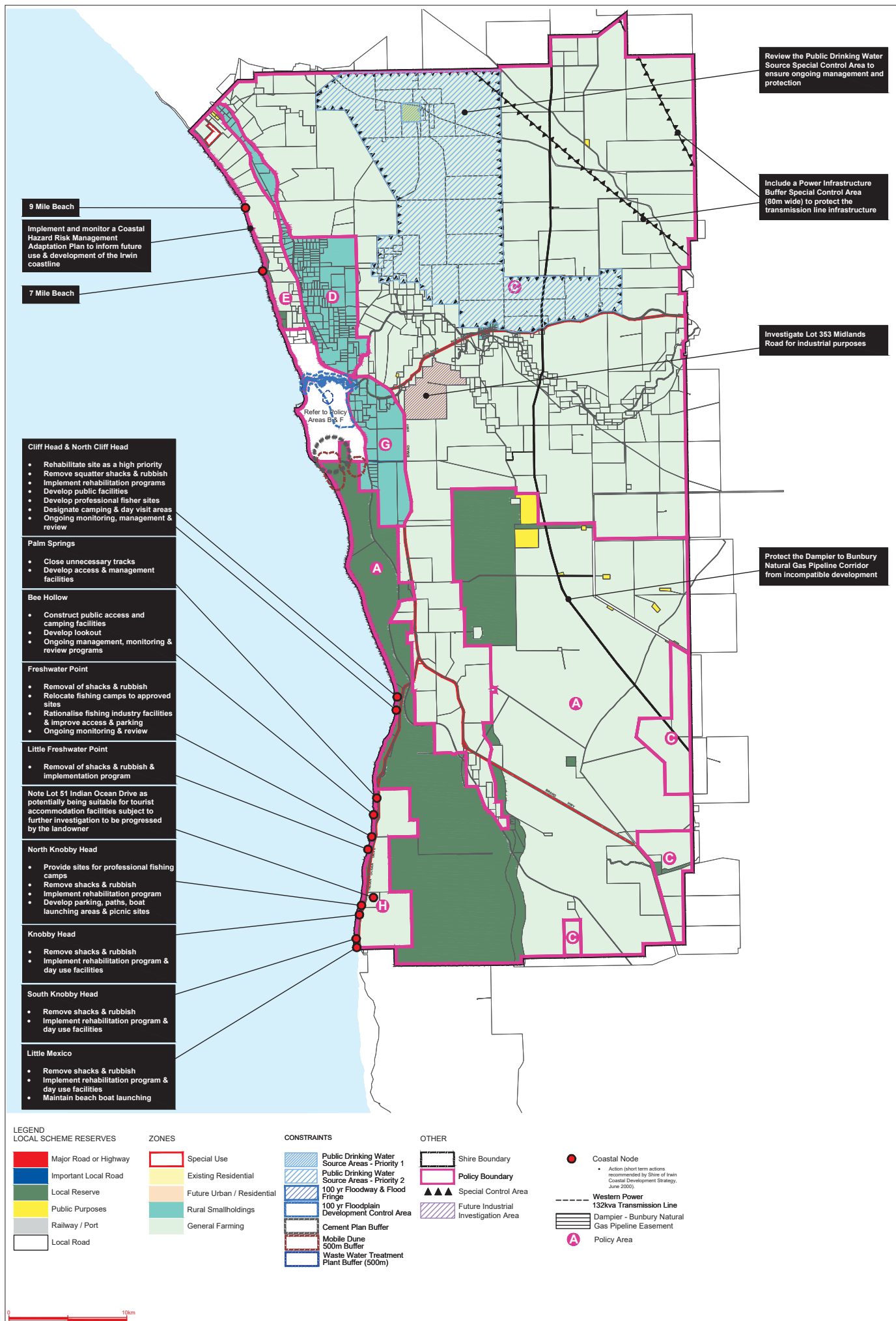
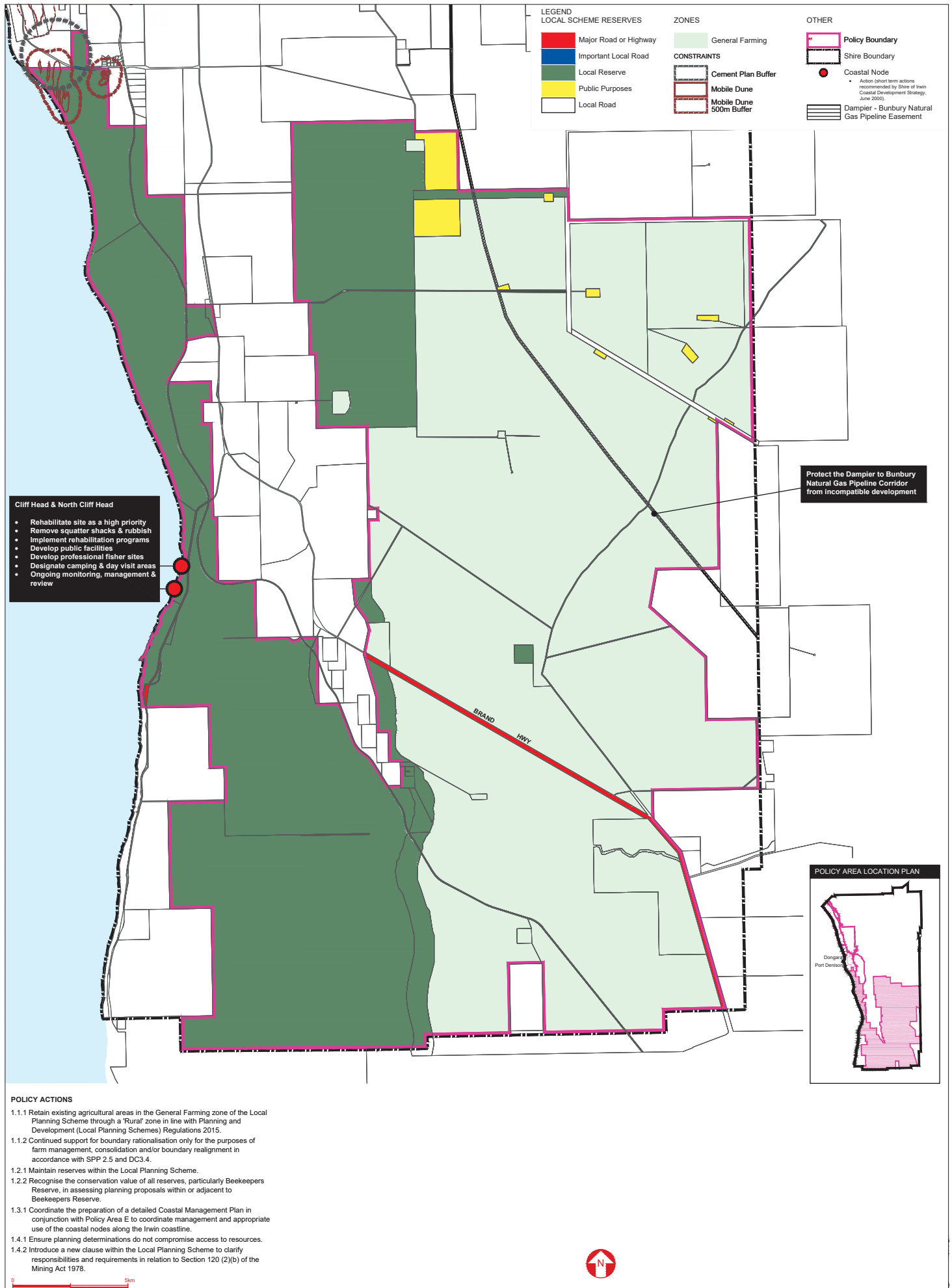
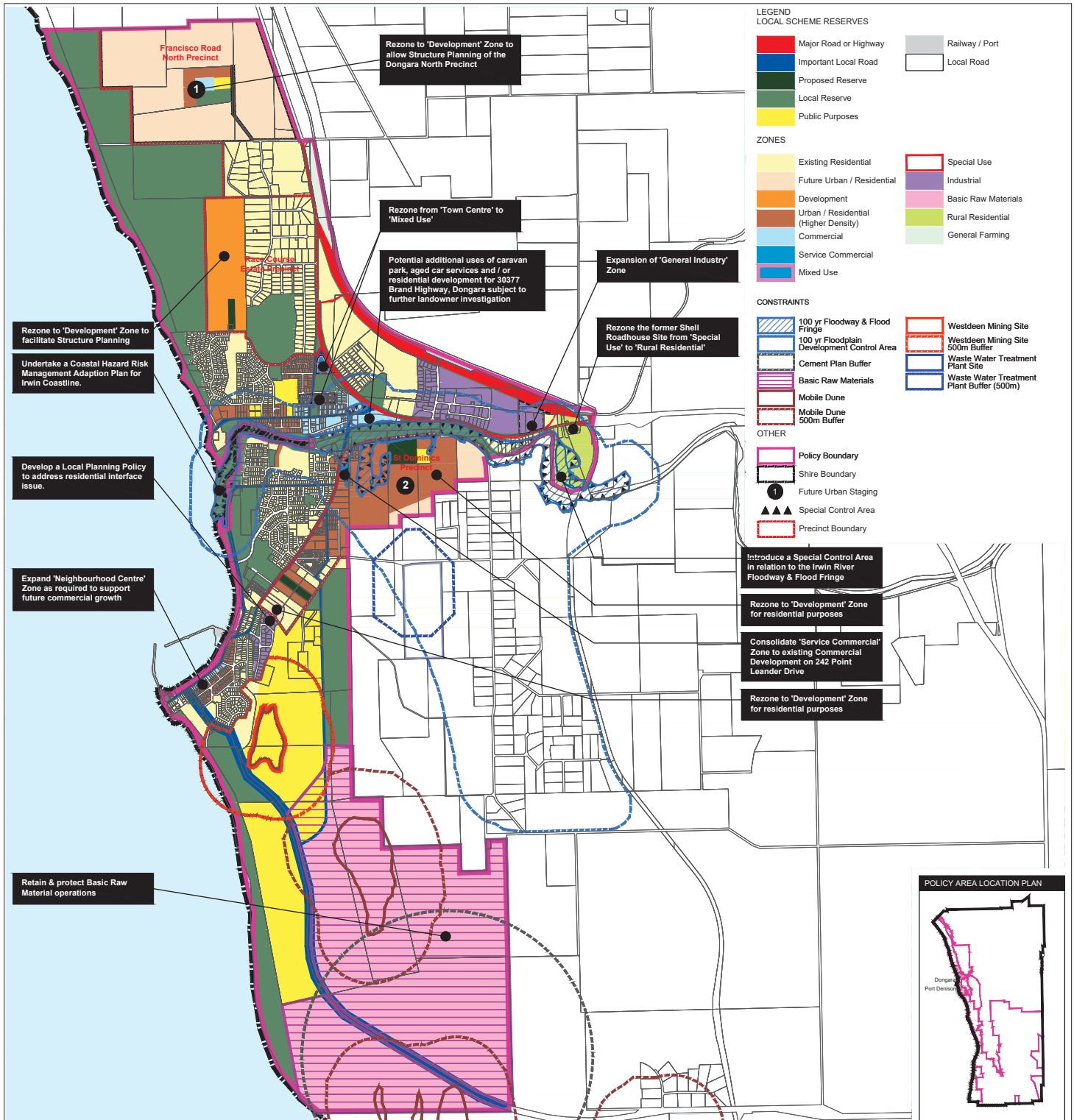


Figure 2 - Policy Area A





**POLICY ACTIONS**

- 1.1.1 The Shire shall not support the release of new housing land within the:
1. Residential zone, by way of Local Structure Plans; or
  2. Rural Residential and Rural Smallholdings by way of rezoning; unless the demand for housing is adequately aligned with the supply of housing land within these zones, after consideration of the Shire's Housing Land Audit and Market Analysis.
- 1.1.2 Promote the orderly release of land for residential purposes generally on the following basis:
1. Promote density infill of existing vacant residential zoned land as a priority in accordance with the Dongara Port Denison District Structure Plan. Promote the delivery of diversity of lot / dwelling product within these areas;
  2. Prioritise the delivery of residential land in close proximity to the town centre and existing services over land identified for future urban;
  3. Following the infill of existing zoned and serviced land, release future urban land in the following priority order:
    - i. Dongara North Precinct;
    - ii. St Dominics Precinct.
  4. Subdivision of land within the Rural Residential zone that is not serviced by reticulated services will not be supported.
- 1.1.3 New urban land is to be rezoned to a 'Urban Development' Zone to require the preparation of a structure plan prior to subdivision and development.
- 1.1.4 Specifically rezone Lot 250 Oceanside Boulevard to 'Development' Zone to facilitate structure planning to achieve a varied lot mix within the parameters of Special Residential and Residential R12.5.
- 1.1.5 Rezone the former Shell Roadhouse Site at 30183 Brand Highway,

- Dongara from 'Special Use' to 'Rural Residential' to integrate the site with the zoning of surrounding land.
- 1.1.6 30377 Brand Highway, Dongara is identified as potentially being suitable for additional land uses such as caravan park, aged care services and / or residential development. Any proposal would need to be progressed by the landowner and will be assessed on its individual merits.
- 1.2.1 Expand the existing 'General Industrial' zone located on Brand Highway eastwards in accordance with the DSP.
- 1.3.1 Introduce Development Contribution Areas by way of Special Control Areas within the Local Planning Scheme to establish the statutory requirement for development contributions.
- 1.3.2 Develop a Development Contribution Plan and cost schedule to provide a framework for the collection of developer contributions towards key infrastructure.
- 1.4.1 Consolidate the new 'Commercial' zone by rezoning surplus commercial land to 'Mixed Use' generally in accordance with the recommendations of the Dongara Town Centre Revitalisation Plan.
- 1.4.2 Undertake a detailed review of the 2009 Town Centre Precinct plan in light of the recommendations contained in the Town Centre Revitalisation Plan to ensure appropriate use and development outcomes are achieved and incorporated into the Local Planning Scheme.
- 1.4.3 Rezone the existing 'Service Commercial' zoned land on Point Leander Drive to a 'Urban Development' zone for residential purposes so that key retail tenancies are not 'pulled' from the existing core town centre area.
- 1.4.4 Undertake a feasibility analysis to explore options for location of a larger supermarket site to support the district. This analysis should examine issues around site area requirements, land tenure issues, landowner

- intentions, site selection criteria with a view to protecting the viability of the existing town centre and other matters.
- 1.4.5 Expand the Commercial zone to support future commercial growth in Port Denison in accordance with the recommendation of the Dongara Port Denison District Structure Plan.
- 1.5.1 Undertake a Land Audit of the Shire's assets and determine recommendations for development/lease/sale of excess land.
- 1.6.1 Undertake the recommendations of the Site Selection Study in relation to identifying a site for a new Waste Management Facility.
- 1.6.2 Undertake a site selection study to identify future sites for cemetery use.
- 1.6.3 Undertake a site selection study to identify future sites for re-location of the pistol club.
- 1.7.1 Prepare a set of Design Guidelines for lots along Point Leander Drive located adjacent to the foreshore to ensure objectives relating to character, amenity and a positive aesthetic contribution to the adjacent public realm are met.

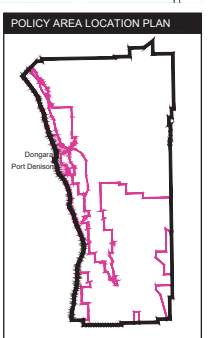


Figure 4 - Policy Area C

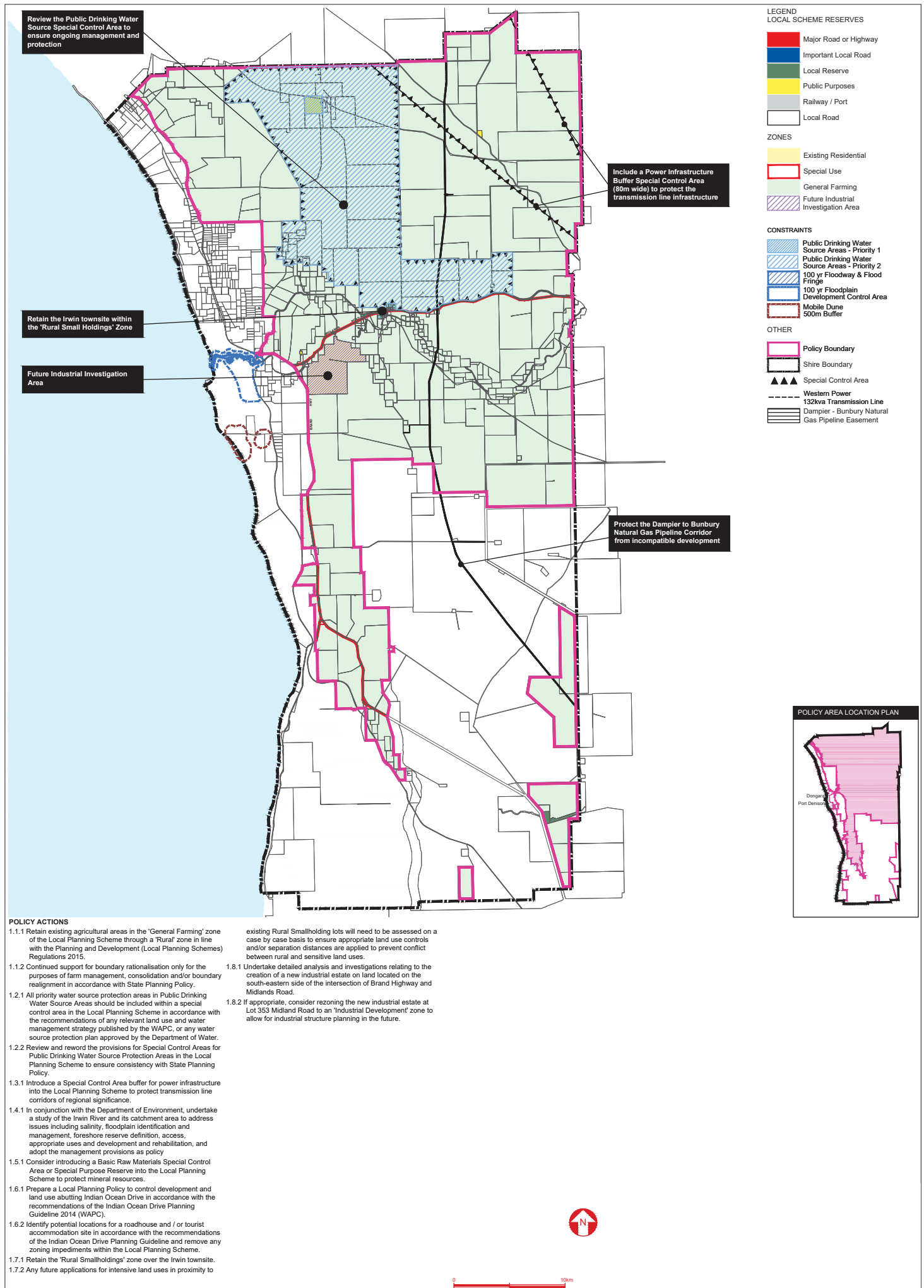
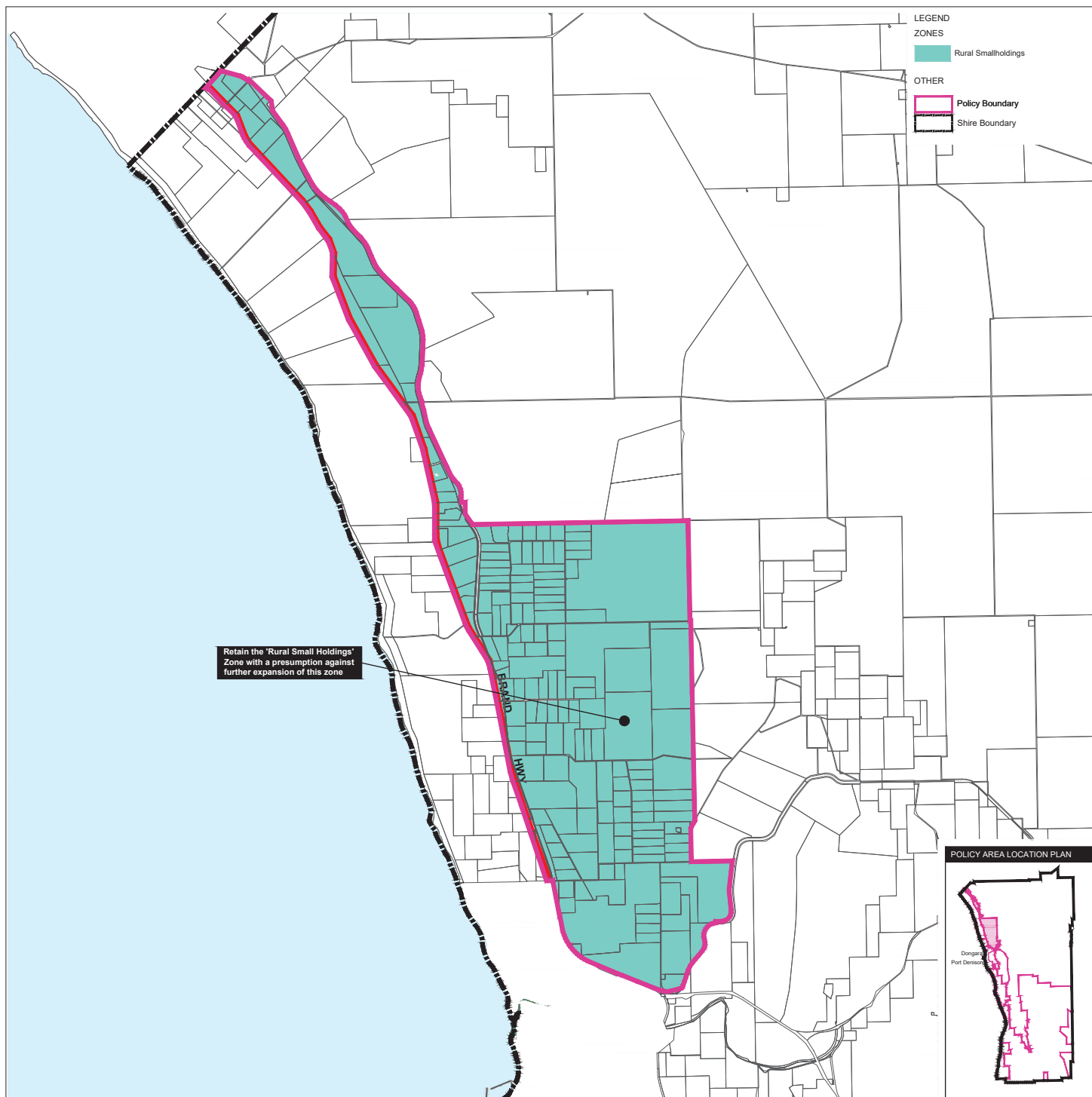


Figure 5 - Policy Area D

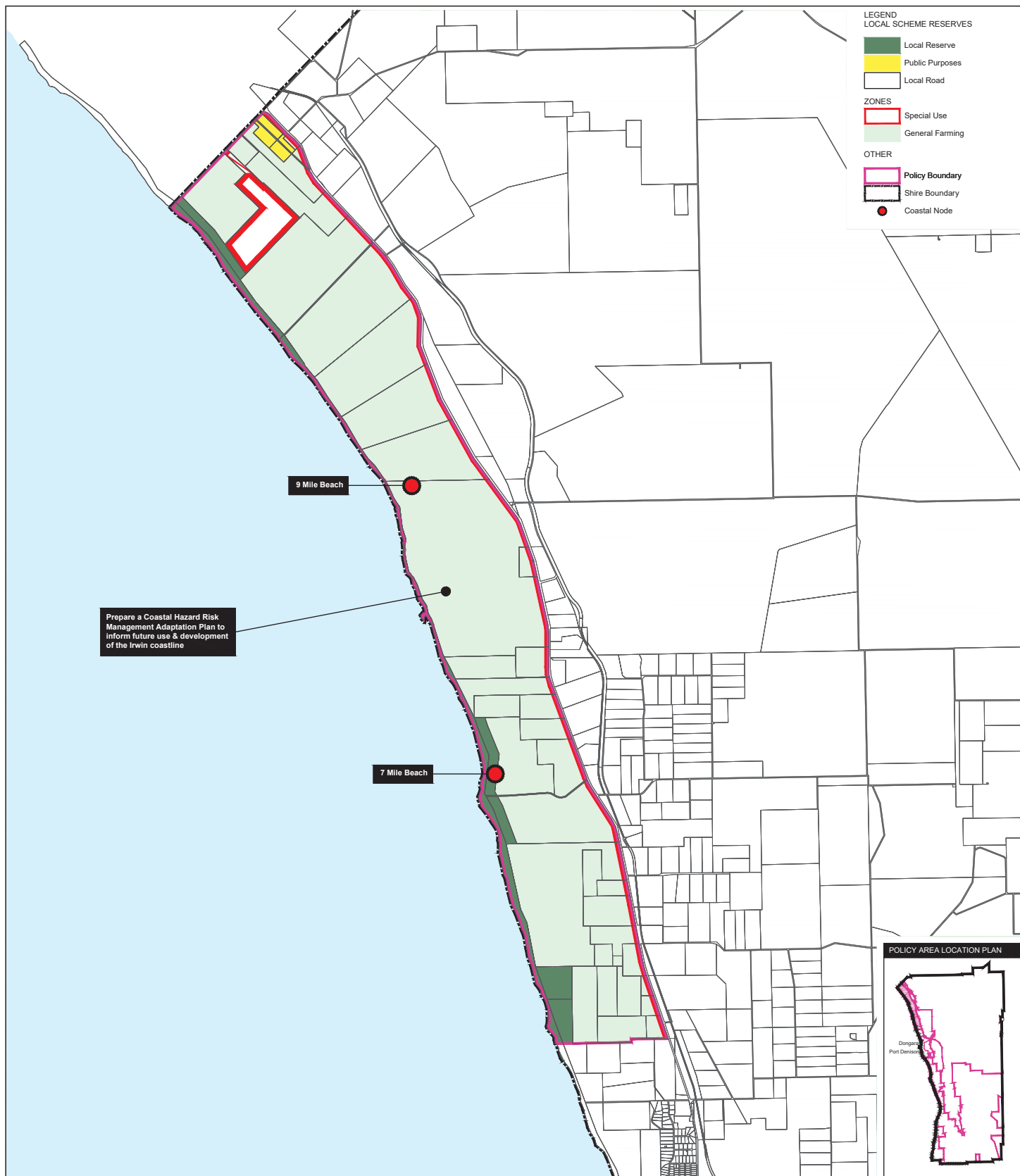


**POLICY ACTIONS**

- 1.1.1 For land already zoned 'Rural Small Holdings', require structure planning to be undertaken as a pre-requisite to any further subdivision approval to ensure a coordinated approach to subdivision and development
- 1.2.1 No further extension to the policy area as identified in the Local Planning Strategy.
- 1.2.2 No additional land is to be rezoned to Rural Small Holdings, unless the demand for housing is adequately aligned with the supply of housing land within these zones, after consideration of the Shire's Housing Land Audit and Market Analysis.
- 1.2.3 Maintain the existing minimum lot area of 15 hectares and have regard to the recommendations and requirements of State Planning Policy 2.5 and Development Control Policy 3.4.
- 1.3.1 Imposition of development and land management provisions contained in LPS No. 5, at the time of subdivision/development approval.



Figure 6 - Policy Area E



Prepare a Coastal Hazard Risk Management Adaptation Plan to inform future use & development of the Irwin coastline

9 Mile Beach

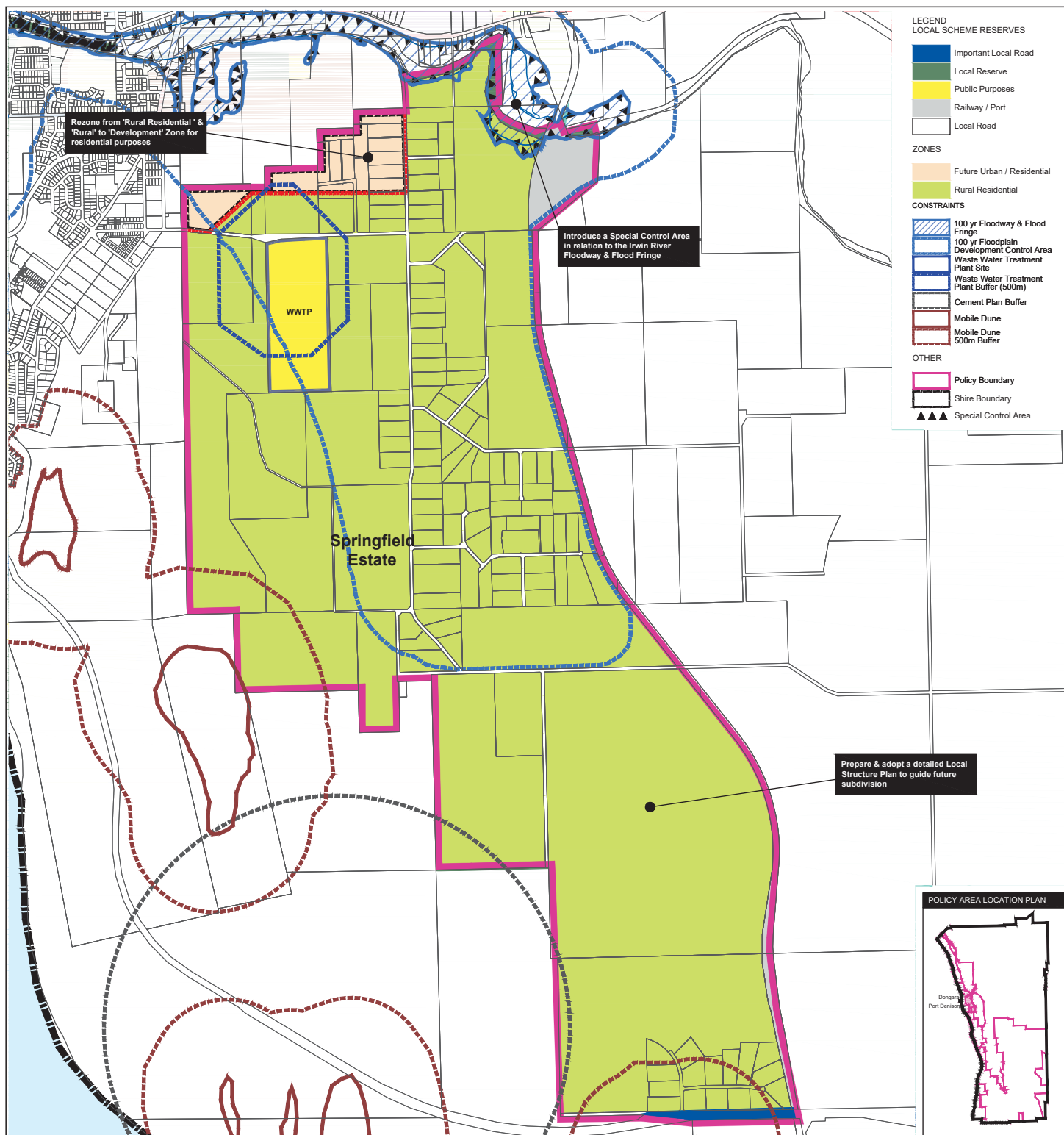
7 Mile Beach

**POLICY ACTIONS**

- 1.1.1 Implement relevant actions from the Coastal Hazard Risk Management Adaptation Plan (CHRMAP) to guide the future use, development and protection of this section of coastline.
- 1.1.2 Require a foreshore reserve to be defined and ceded as a condition of approval to any rezoning or subdivision of land.
- 1.1.3 Retain the dune system within the 'General Farming' (Rural) zone where there is a general presumption against subdivision except where land is first rezoned to Special Use to facilitate a project of tourist significance.
- 1.1.4 Require rezoning for subdivision and/or development, to have regard to the recommendations of relevant strategic planning documents, particularly in relation to development and access to the coast and Brand Highway, and any other management plan prepared for the coastal strip.
- 1.1.5 Support the undertaking of a coastal management strategy for the coast north of Dongara, including this policy area, and consider adoption of its recommendations once complete.
- 1.1.6 Support the implementation of a fire management plan for the coastal dune area in conjunction with the relevant authorities



Figure 7 - Policy Area F



**POLICY ACTIONS**

- 1.1.1 Subdivision and development within the Springfield Estate requires Structure Planning.
- 1.2.1 Maintain a buffer around the WWTP in accordance with the Water Corporation site specific investigations.
- 1.2.2 Undertake regular review of the buffer requirements and identify technology improvements to reduce the buffer where possible.
- 1.3.1 No development being supported within a 500m radius of the mobile dune toe over Reserve 22459 (refer to attached plan) until the mobile dune is stabilised to the satisfaction of DoIR and there are no potential impacts from mining.
- 1.3.2 Subdivision of land within a 1.5km buffer of Cockburn Cement's plant as indicated on the Strategy Maps is not permitted until such time as the Cockburn Cement operations cease.
- 1.3.3 The local government will recommend that all new lots within 500m of the boundary of Reserve 22459 be subject to a notification on title relating to the presence of the mobile dune which is a natural feature and of the mining operations. This is an interim measure until such time as the mobile sand is mined and the area is vegetated. The notification to state as follows:  
*"This lot is adjacent to a naturally occurring mobile sand dune that is subject to quarrying operations and the use and enjoyment of the land may be affected by natural dune movement as well as by the quarrying or factors related to the quarrying."*
- 1.3.4 No development being supported within 1.25km of Cockburn Cement's Lime Sand processing Plant on Kailis Drive (Refer to Plan).
- 1.3.5 The local government will recommend that all new lots created within 2km of Cockburn Cements Lime Sand process plant be subject to a notification on title informing prospective purchasers of those operations. The notification to state as follows:  
*"This lot is near an operating lime sand processing plant and the use and enjoyment of this land may be affected by those operations or other factors relating to those operations."*
- 1.4.1 Amend the LPS No. 5 scheme maps to reflect current buffer requirements in relation to the WWTP and other identified sites.
- 1.5.1 Amend LPS No. 5 to require the preparation of structure plans for areas zoned 'Rural Residential' prior to subdivision.
- 1.5.2 Require Springfield Estate to be subject to comprehensive structure planning to coordinate issues relating to access, servicing, infrastructure, environment issues, bushfire planning and other matters prior to supporting further subdivision.
- 1.6.1 No more land is to be rezoned to Rural Residential, unless the demand for rural residential land is adequately aligned with the supply of land within this zone, after consideration of the Shire's Housing Land Audit and Market Analysis.

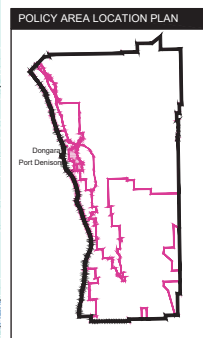
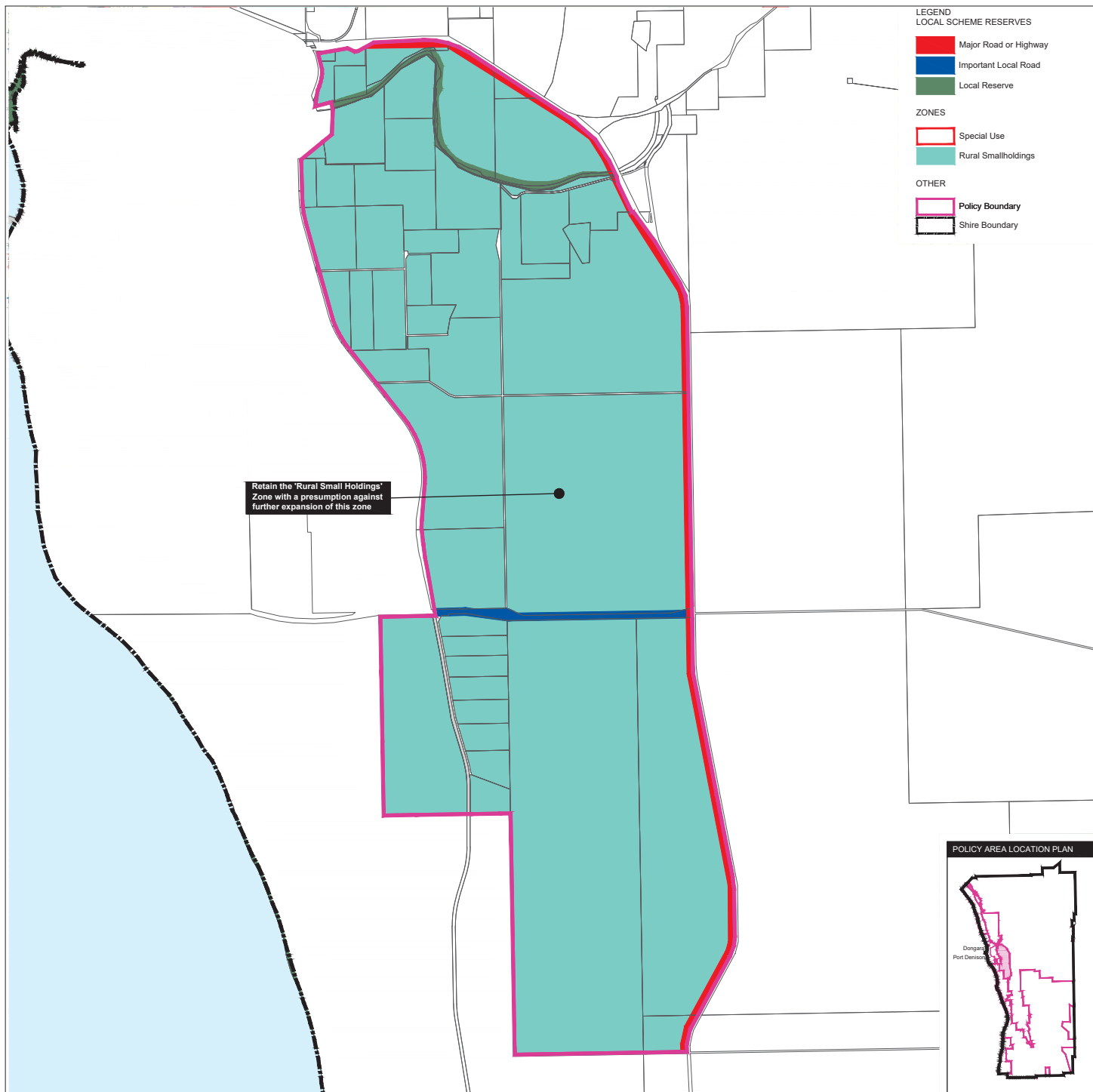




Figure 8 - Policy Area G

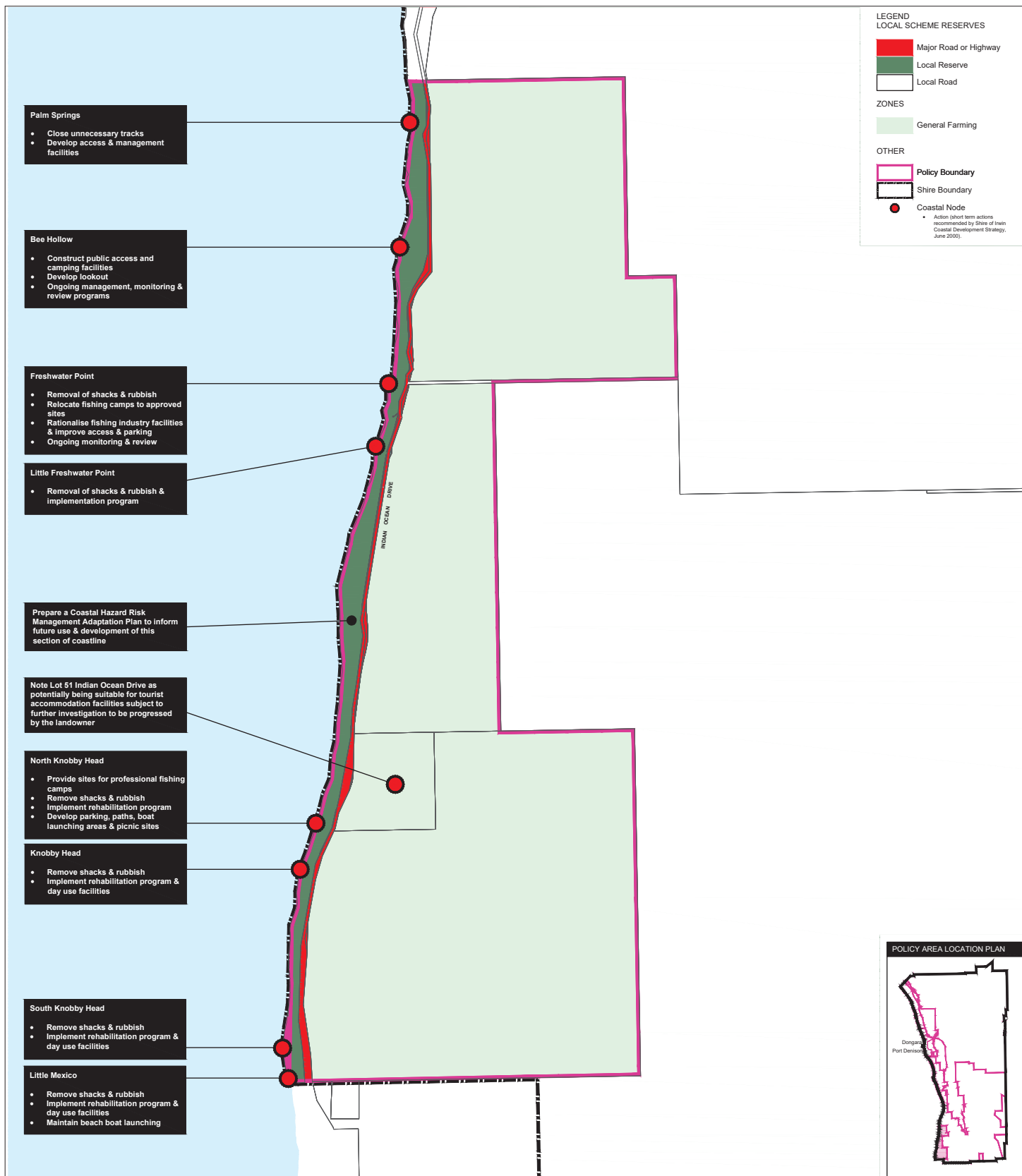


**POLICY ACTIONS**

- 1.1.1 Retain the 'Rural Smallholdings' zone within LSP No. 5 with a presumption against further expansion of this zone and a presumption against further decrease in the recommended minimum lot sizes already contained within LPS No. 5.
- 1.1.2 Maintain the existing minimum lot area of 20 ha and have regard for the provisions of LPS No. 5, State Planning Policy 2.5 and Development Control Policy 3.4.
- 1.1.3 Utilisation of LPS No. 5 provisions at the time of subdivision/development to ensure the protection and rehabilitation of landform, the visual landscape and adequate foreshore reserves.
- 1.2.1 No further extension to the policy area as identified in the Local Planning Strategy.
- 1.2.2 No more land is to be rezoned to Rural Smallholdings, unless the demand for Rural Smallholdings land is adequately aligned with the supply of land within this zone, after consideration of the Shire's Housing Land Audit and Market Analysis.
- 1.3.1 Require and/or undertake structure planning in conjunction with landowners to ensure a coordinated approach to development. Such structure planning should be a prerequisite to subdivision. Special attention should be paid to rectifying limited access to the policy area from the Urban Area, delineation of suitable rail crossings, road network, servicing and bushfire hazard planning and management.
- 1.4.1 Protection of the floodway and floodplain within a Special Control Area to manage land use and development along the Irwin river.
- 1.4.2 Pursue the acquisition of a river reservation both sides of the Irwin River through the subdivision vesting process.



Figure 9 - Policy Area H



**Palm Springs**

- Close unnecessary tracks
- Develop access & management facilities

**Bee Hollow**

- Construct public access and camping facilities
- Develop lookout
- Ongoing management, monitoring & review programs

**Freshwater Point**

- Removal of shacks & rubbish
- Relocate fishing camps to approved sites
- Rationalise fishing industry facilities & improve access & parking
- Ongoing monitoring & review

**Little Freshwater Point**

- Removal of shacks & rubbish & implementation program

**Prepare a Coastal Hazard Risk Management Adaptation Plan to inform future use & development of this section of coastline**

**Note Lot 51 Indian Ocean Drive as potentially being suitable for tourist accommodation facilities subject to further investigation to be progressed by the landowner**

**North Knobby Head**

- Provide sites for professional fishing camps
- Remove shacks & rubbish
- Implement rehabilitation program
- Develop parking, paths, boat launching areas & picnic sites

**Knobby Head**

- Remove shacks & rubbish
- Implement rehabilitation program & day use facilities

**South Knobby Head**

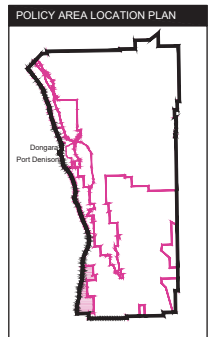
- Remove shacks & rubbish
- Implement rehabilitation program & day use facilities

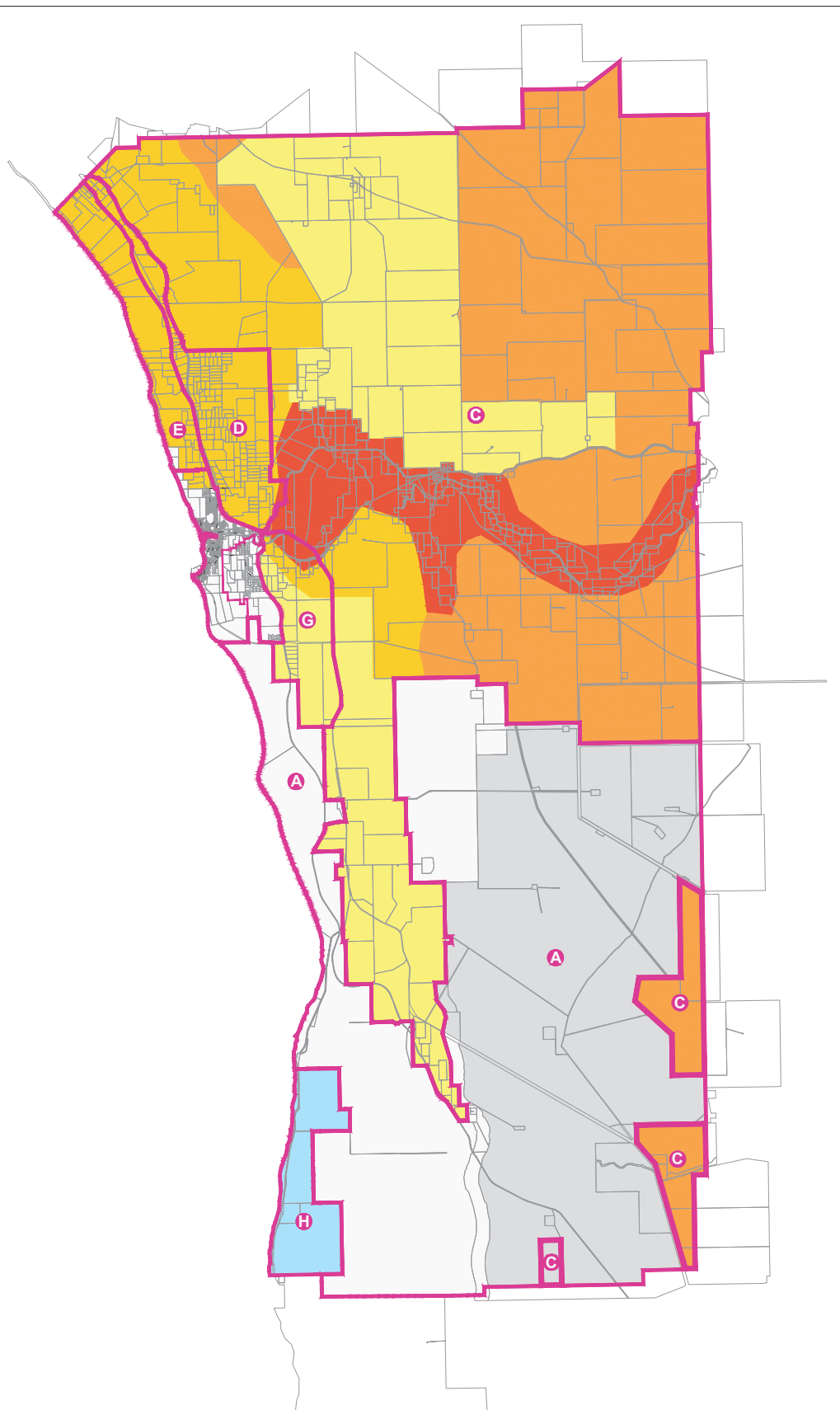
**Little Mexico**

- Remove shacks & rubbish
- Implement rehabilitation program & day use facilities
- Maintain beach boat launching

**POLICY ACTIONS**

- 1.1.1 Support the removal of existing unlawful squatter shacks on coastal Crown land as per the State Government Squatter Policy (July 1989 and January 1999).
- 1.1.2 Investigate the formalisation of leasehold tenure for fishers' shacks only in the circumstance that the use of the shack is in conjunction with fishing licenses issued by the Department of Fisheries and subject to negotiation between local authorities and the Department of Lands.
- 1.2.1 A tourist / traveller 'Development Note' may be appropriate within this precinct, provided that it considers the character and environmental values of the natural area, and reflects this through site-responsive design. Future development potential would need to be supported by relevant technical investigation to be prepared by the landowner/s.

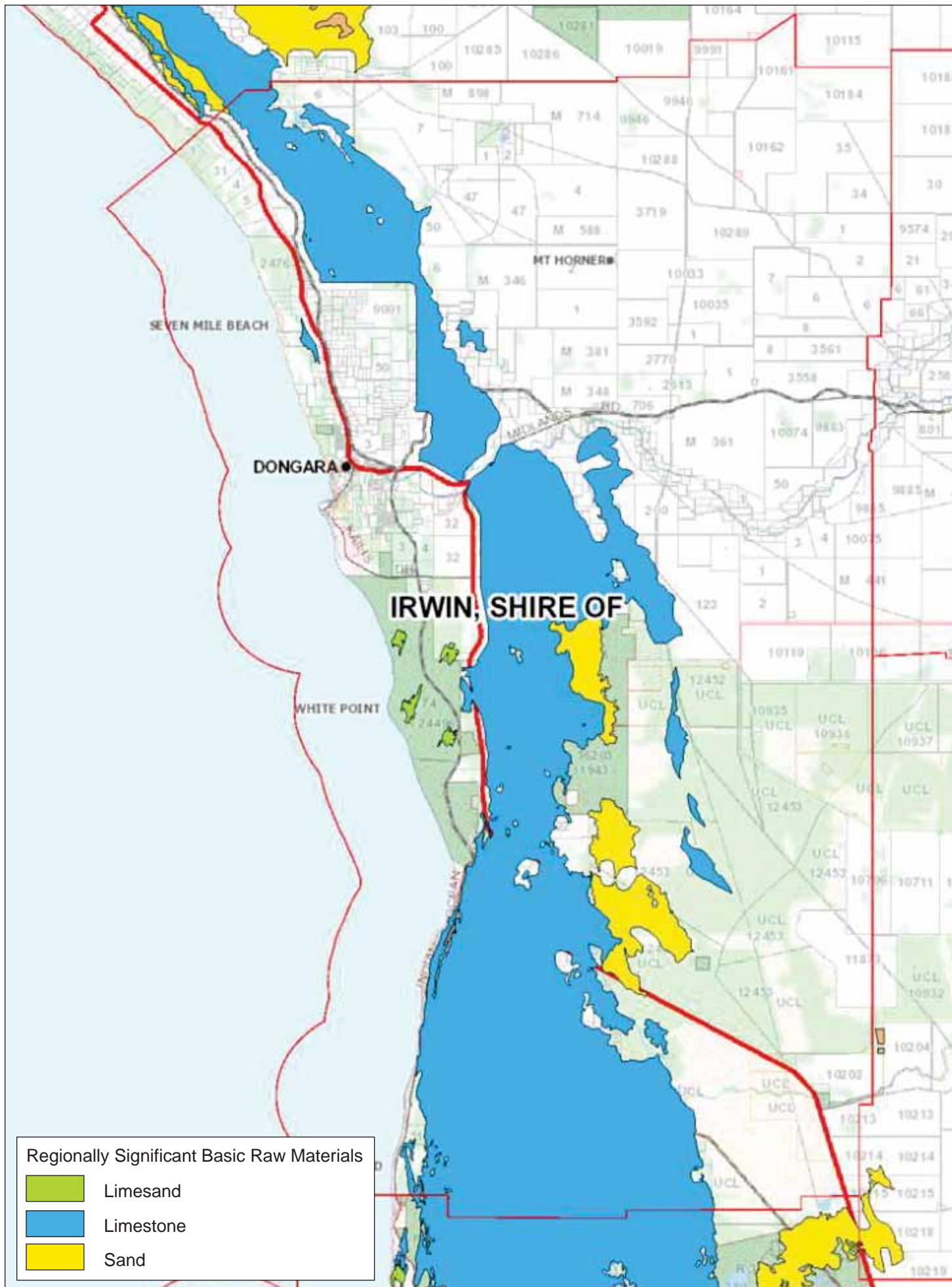




- LEGEND
- A Policy Area Boundary
  - A - Greatest Versatility
  - B - High Versatility
  - D - Moderate Versatility
  - E - Lower Versatility
  - G - Limited Potential
  - Non Agricultural Land
  - Unallocated Crown Land



Figure 11 - Natural Resources Map





# Part 2 Report

## Local Planning Strategy Review

*July 2017*



# Document Control

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# 1. Introduction

This Local Planning Strategy for the Shire of Irwin (hereon in referred to as the Strategy or LPS) has been undertaken in order to review the Shire's 2007 Local Planning Strategy which is in need of a significant review following the progression of a number of key strategy documents relating to the Shire including:

- The 2014 Dongara Port Denison District Structure Plan;
- Draft Town Centre Revitalisation Plan;
- Department of Agriculture High Quality Agricultural Land Study for the Geraldton Planning Region;
- Land Demand Modelling Paper, which models residential, commercial and industrial land requirements;
- Port Denison Foreshore Master Plan;
- Community Development Plan;
- Tourism Development Plan;
- Shire of Irwin Coastal Hazard Risk Management and Adaptation Plan; and
- Central Regions Land Capacity Analysis for the Shire of Irwin.

This Strategy document provides a review of the existing local planning strategy in the context of the above key documents and other relevant documentation and through this review, establishes the long term planning direction for the Shire to guide land use planning decision making over the next fifteen to twenty years.

The Strategy comprises two documents:

- Part one, the Strategy, which provides a summary of the major characteristics and issues relevant to the future planning and development of the Shire and also establishes the vision, objectives, strategic plan and actions required to implement the Strategy; and
- Part two, being this document, which provides the relevant background and justification to the Strategy, including the State, regional and local planning context, local profile of the community and an analysis of key issues facing the Shire.

This section sets out the statutory context within which this Strategy has been prepared, including its role and purpose, and the method of its preparation.

## 1.1 Statutory Context

*The Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations 2015) requires that where a local planning scheme envisages the zoning or classification of land, a scheme report is to be produced in the form of the Strategy, which shall:

- Set out the long term planning directions for local government;
- Apply State and regional planning policies; and

- Provide the rationale for the zones or the provisions of the local planning scheme.

The *Regulations* provides that determinations of the local government under a scheme are to be consistent with the Strategy. The Strategy expresses the strategic vision, policies and proposals of a local government that are relevant to the implementation of a scheme. It provides a means to interpret State and regional policies at the local level allowing the implementation of broader objectives relating to urban form and development.

On this basis, the Shire of Irwin should review its Local Planning Scheme No. 5 (LPS No. 5) with a view to incorporating the relevant strategies and actions within its scheme, which is the principal statutory land use planning document for expressing and achieving the local government's objectives, policies and proposals in conjunction with the Strategy.

The Western Australian Planning Commission (the WAPC) is required to certify that the Strategy is consistent with the Regulations 2015 above prior to the advertisement of the Strategy. The WAPC may also endorse the Strategy following advertising.

The Strategy may be amended by an amendment prepared by the Shire and approved by the WAPC.

## 1.2 Role and Purpose

The Strategy sets out the long term planning direction for the Shire of Irwin over the next twenty years and establishes strategies and actions in the context of the State, regional and local planning framework.

The Strategy establishes the rationale for land use, planning and development controls which will inform a future review of LPS No. 5. It is intended that this Strategy will be read in conjunction with the Shire's (revised) Local Planning Scheme.

This Strategy applies to all land contained within the district of the Shire of Irwin.

The Strategy holistically looks at long term planning directions and assists in establishing the overall objectives and vision for the Shire. However, the application of the planning initiatives in the Strategy and subsequent Local Planning Scheme will not in isolation deliver wider objectives and the vision for an area. This will need to be achieved through the application of the Shire's broader Strategic Community Plan using all available mechanisms for delivery across the broad spectrum of local government services and activities, including but not necessarily limited to delivering vital community, recreation, infrastructure and other development initiatives through a capital works program linked to the Strategic Community Plan and also via a supporting local planning policy framework.

## 1.3 Methodology

Extensive preliminary consultation with the community and key stakeholders was undertaken as the basis for preparing this local planning strategy. A summary of the consultation and engagement methodology employed to gather an understanding of the key issues is provided below.

- Letters were sent to landowners, residents and business owners within each of the 'new policy areas', inviting people to participate in a workshop. A feedback form accompanied these invitations to capture feedback from those unable to attend.
- Details of the LPS review, including its purpose, an overview of the project program and consultation process, were made available on Shire's website and at key locations including Shire's office and library, highlighting the opportunity to be involved.
- A series of interactive workshops were held with community members including residents, landowners, workers and local business people. Each workshop focused on a different theme or sub-set of the community, as follows:
  - o Project Reference Group and Shire Managers
  - o Workshop one – Business Owners Lunch Session
  - o Workshop two – Urban Centre
  - o Workshop three – Rural Living
  - o Workshop four – General Landowners
- Feedback forms were also received after workshops were held.
- Invitations were sent to key stakeholders state agencies, infrastructure agencies/commercial providers, industry organisations/associations/businesses, industry/resource companies and non-government/not for profit organisations via mail and email inviting stakeholders to participate.
- Meetings and consultation were held with key stakeholders including representatives from:
  - o Department of Sport and Recreation
  - o Mid West Chamber of Commerce and Industry
  - o The Chamber of Minerals and Energy WA
  - o Main Roads WA
  - o Department of Transport
  - o Mid West Development Commission
  - o Department of Aboriginal Affairs
  - o Department of Water
  - o Department of Health
  - o Department of Agriculture and Food
  - o Department of Lands
  - o DBNGP (WA) Nominees Pty Ltd
- Written feedback was received from the following stakeholders:
  - o State Heritage Office
  - o Disability Services Commission
  - o Department of Planning (Tourism division)
- A Council debrief session was held to capture any final thoughts and clarify any queries that has arisen throughout the engagement process.

The Community and Stakeholder Engagement Outcomes Report is contained at Appendix A.

## 2. Local Profile

### 2.1 Overview and History

The Shire of Irwin is the southern most Local Government Area (LGA) of Western Australia's Batavia Coastline, located 365 kilometres north of Perth. The Shire is strategically located in the centre of one of WA's richest resource areas, with linkages to major export facilities located in the neighbouring City of Geraldton.

Refer to Figure 1 – Location Plan

The Indigenous people who inhabited or made use of the lower Irwin River area, the Wattandee, called the river estuary 'Thungarra', meaning 'a place of seals'. The anglicising of this name led to the town being called Dongara.

The area was first settled by European settlers in 1851. As the community grew a jetty at Port Denison was built in 1867 to service the increase in shipping. In the same year an inn license was granted to Joseph Walton at Dongara who built the 'Irwin Arms' now Dongara Hotel. In 1894 the Midland Railway connected Perth and Geraldton and a local merchant, Francis Pearse, opened the Royal Steam Roller Flour Mill; the imposing four-storey building remaining a landmark in the town. The iconic Moreton Bay Fig Trees that line the main street of Dongara were planted in 1906.

The Shire of Irwin's natural assets are the cornerstone of the economy and include high quality agricultural lands, access to a recognised sustainable 'wild fishery' and an abundance of natural mineral and gas resources. The Shire has a healthy tourism industry, and is a preferred settlement location for those seeking a 'sea-change' lifestyle.

### 2.2 Physical Features and Environment

#### Climate

The Shire of Irwin is described as having a Mediterranean climate, with mild wet winters and warm to hot dry summers. The average maximum temperatures range from 19.5°C in July through to 32.6°C in February, while the average minimum temperatures range from 8.9°C in August through to 19.2°C in February.

The average rainfall within the Shire of Irwin is approximately 440mm annually (Bureau of Meteorology 2014), with rainfall generally higher within the coastal portion of the Shire. The majority of rainfall (over 85 per cent) occurs between April and September, with the wettest months being June and July.

The average minimum and maximum temperatures, as well as the annual average rainfall have been summarised in the graph (Figure 2) below.

The prevailing winds within the Shire of Irwin are an important consideration, with the strong south-south-west sea breeze that is part of the summer wind pattern being a feature on the coast. During December to February, the south-south-west wind arrives between 10 am to noon, and regularly exceeds 40km/h. The winter wind pattern (between June and August) is more variable and is influenced by the movement of cold fronts west to east, originating in the Indian Ocean. The dominant winds are from the east to north-east, while behind the fronts, the winds are generally west to south-westerly, averaging approximately 18km/h (see figures 3 - 6 overleaf).

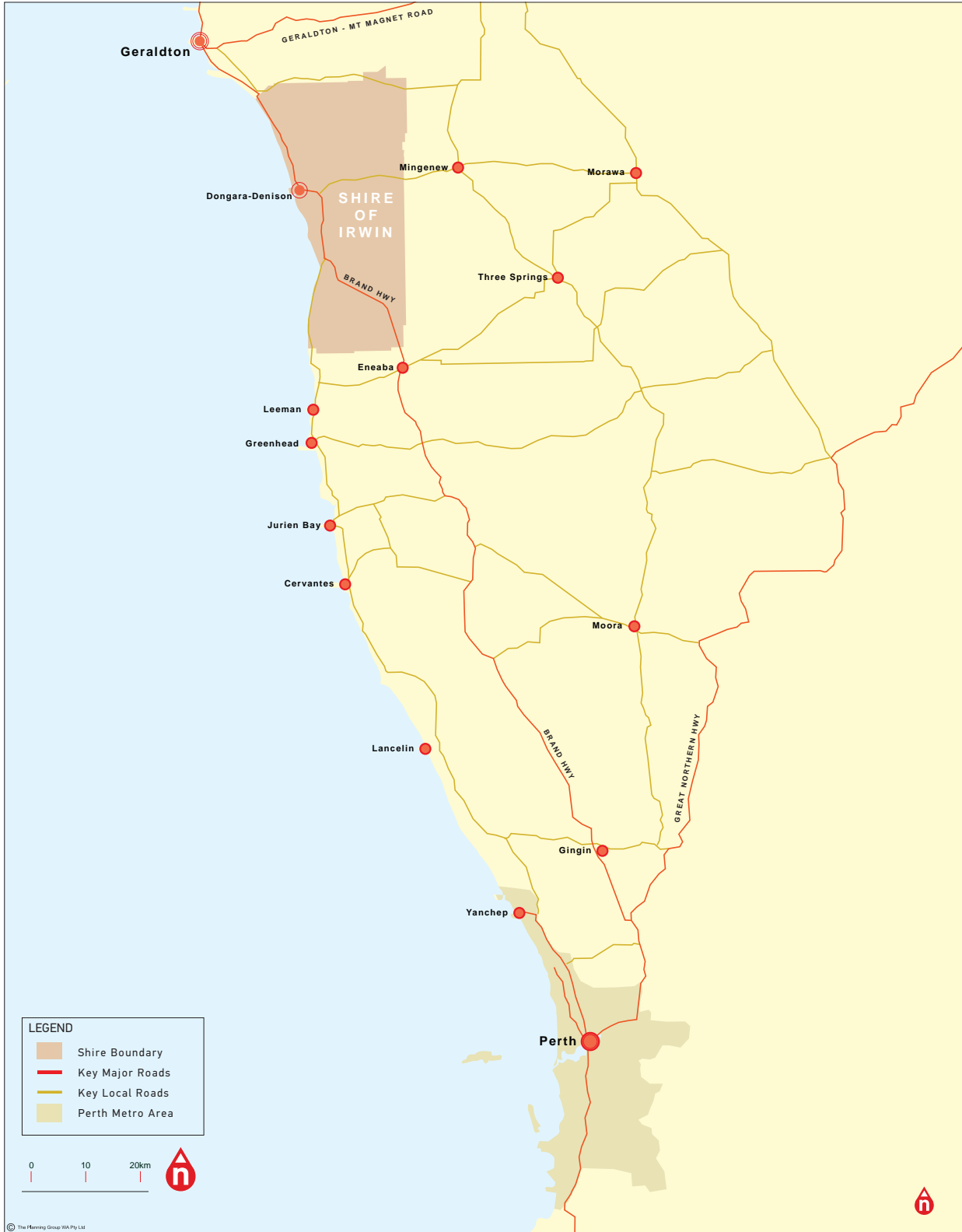


Figure 1 - Location Plan

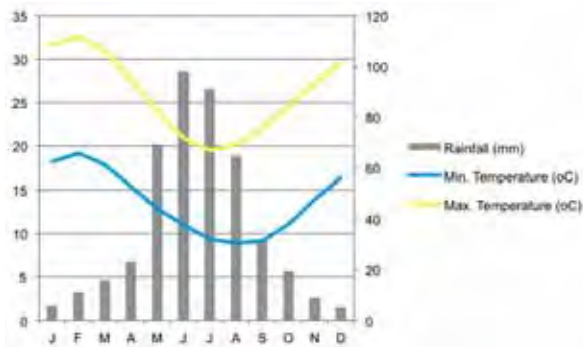


Figure 2 - Average minimum and maximum temperatures

## Landforms and Soils

The Shire of Irwin is situated within the Northern Agricultural Region, which covers approximately 7.5 million hectares of land. The area encompassed by the Shire of Irwin ranges in topography from 10m Australian Height Datum (AHD) along the coast (western portion of the Shire of Irwin) to 300m AHD along the eastern margin of the Shire.

The Shire of Irwin is dominated by three geological formations, namely the Dandaragan Plateau in the east, the Arrowsmith Region through the central portion of the Shire of Irwin and the Swan Coastal Plain in the west. The Arrowsmith Region and Swan Coastal Plain portions are separated by the Gingin Scarp.

The coastal plain (Swan Coastal Plain) portion is up to 20 km wide, and rises gently to about 50 m above sea level along the edge of the coastal plateau. It is characterised by gently undulating sand dunes that form sub-parallel to the coastline, and is composed of alluvial fans, eolian calcarenite and the Quindalup and Spearwood Dune Systems (Stuart-Street and Clake 2005, Department of Water 2006, DoW 2007). The coastal plateau (Arrowsmith and Dandaragan) reaches a maximum elevation of about 300 m and is characterised by a relatively flat sandplain interspersed by ridges and mesas formed by resistant strata. The Dandaragan Plateau is relatively flat with older alluvial channels in-filled with eolian sediments, while the Arrowsmith Region is dissected by active drainage to form a gently undulating land surface (Stuart-Street and Clarke 2005, DoW 2006, DoW 2007).

Soil-landscape zones are regional units based on geomorphologic or geological criteria on recurring patterns of topography, soils and vegetation. Within the Shire of Irwin, there are four soil-landscape zones that have been mapped by the Department of Agriculture, which have been outlined within Table 1. The Geraldton Coastal zone occurs within the western portion of the Shire of Irwin, while the Arrowsmith zone occurs within the central-eastern portion. The Dandaragan Plateau and Victoria Sandplain occur within the east and north-eastern portion of the Shire of Irwin respectively.

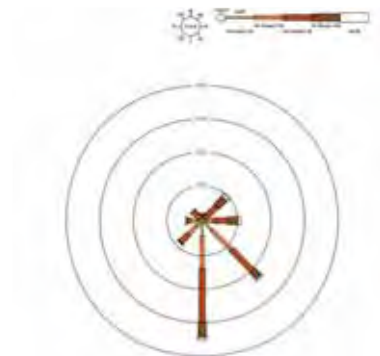


Figure 3 - Average wind direction and speed at 3pm for July (BoM 2014)

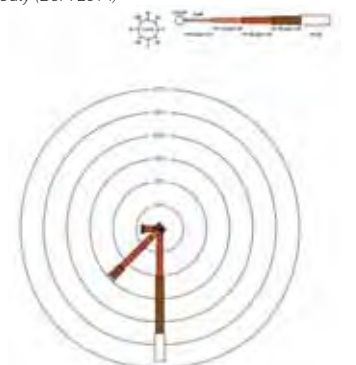


Figure 4 - Average wind direction and speed at 3pm for December (BoM 2014)

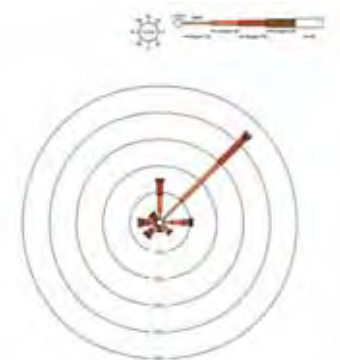


Figure 5 - Average wind direction and speed at 9am for July (BoM 2014)



Figure 6 - Average wind direction and speed at 3pm for July (BoM 2014)

Table 1: Soil-landscape zones within the Shire of Irwin (Department of Agriculture 2005)

Soil-Landscape Zone	Description
Geraldton Coastal	Dunes with alluvial plains and sand sheets. Low hills of Tamala limestone, recent calcareous and siliceous dunes with alluvial plains and sand sheets. Mainly shallow and deep sands with some Loamy and Sandy earths.
Arrowsmith	Dissected lateritic terrain with hills, breakaways, plateau and sandplain remnants on colluvium and deeply weathered mantle over sedimentary rocks. Soils are mainly Pale deep sand (often gravelly), Yellow deep sand, Deep sandy gravel and Grey deep sandy duplex.
Dandaragan Plateau	Gently undulating plateau with areas of sandplain and some laterite on Cretaceous sediments. Soils are formed in colluvium and weathered rock. Deep sands with Ironstone gravelly soils and Loamy earths.
Southern Victoria Sandplain	Gently undulating, weakly dissected sandplain on in-situ weathered Yarragadee sandstone and alluvium. Yellow deep sands with Pale deep sands over gravel. Minor areas of lateritic duricrust occur.

### Coast and Foreshores

The Shire of Irwin is composed of a 75km long continuous coastline, which encompasses a variety of nearshore and coastal landforms. Within the Shire of Irwin this includes:

- Irwin River mouth and estuary.
- Nearshore reefs.
- Outcrops of coastal limestone at the shoreline.
- Small shore-parallel foredunes that sit immediately behind the beach.
- Relict foredunes that extend hundreds of metres to a few kilometres inland.
- Large dune fields comprising transgressive or parabolic dunes that can extend hundreds of metres to several kilometres inland.
- Dune ridges, barrier dunes and alluvial flats.
- Blowouts and sandsheets, hundreds of metres wide.

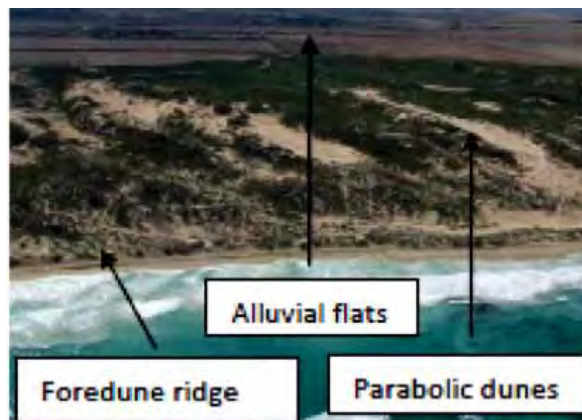


Figure 7 - Active blowouts, parabolic dunes and sand sheets

SOURCE: The Coast of the Shires of Coorow to Northampton, Mid West, Western Australia: Geology, Geomorphology and Vulnerability (2012)



Figure 8 - High ridge of nested blowouts and parabolic dunes

SOURCE: The Coast of the Shires of Coorow to Northampton, Mid West, Western Australia: Geology, Geomorphology and Vulnerability (2012)



Figure 9 - Large blowout, sand sheets and example of deflation basin.

SOURCE: The Coast of the Shires of Coorow to Northampton, Mid West, Western Australia: Geology, Geomorphology and Vulnerability (2012)



To the north of the Dongara town site, the coastal area is dominated by parabolic and nested parabolic dune complexes (of the Quindalup Dunes) with areas of active parabolic lobes and blowouts, as well as deflation basins (basins formed as a result of wind moving sand particles). To the south of the Dongara town site, the coastal area is dominated by long-walled parabolic dunes and deflation basins, with areas of active parabolic dunes and blowouts. Further inland there are barrier dune complexes that are dominated by the Spearwood Dune System (which represent a change in natural structure from one type of soil to another)

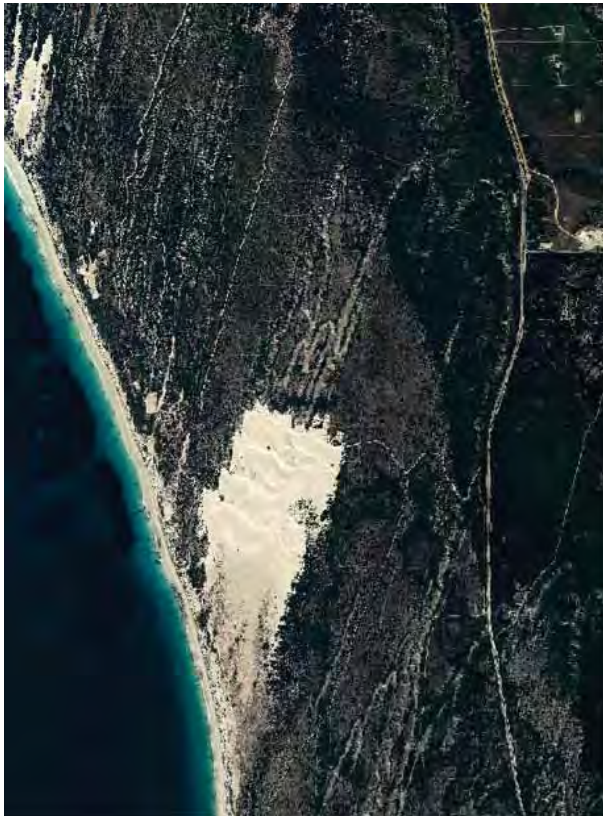


Figure 10 - Aerial of Shire of Irwin Coast, south of Point Leander

Within the Shire of Irwin, there are a number of significant dune blowouts and sandsheets. The majority of these blowouts are natural occurrences and result from dry sand being mobilised by high velocity winds. Downwind from blowouts, sand can smother surrounding vegetation and cover infrastructure such as roads and buildings (Hesp 2002).



Figure 11 - Excerpt from *The Coast of the Shires of Coorow to Northampton, Mid West, Western Australia: Geology, Geomorphology and Vulnerability* (2012). D = Deflation basin, B = Blowout (and Sandsheets), b = Beach, Pl = Long-walled parabolic dune, SpDc = Barrier dune complex.

## Biodiversity and Natural Areas

The Shire of Irwin is situated within the Geraldton Sandplains Interim Biogeographic Regionalisation for Australia (IBRA) region (Thackway and Cresswell 1995). The Geraldton Sandplains IBRA region is described as being composed of 'mainly proteaceous scrub-heaths, rich in endemics on sandy earths of an extensive, undulating, lateric sandplain mantling Permian and Cretaceous strata, while on the areas associated with drainage, extensive woodlands of York Gum and Jam are present'.

A variety of vegetation structural types occur in the Irwin area, comprising numerous floristic types. The principal formations include woodlands, shrublands and heaths, as well as sedgelands and occasional herblands. Beard (1976, 1979a and b) and the National Vegetation Information System Database (2003) produced broad-scale vegetation maps which divides the Shire of Irwin into six vegetation systems. A description of the vegetation systems has been provided within Table 2.

**Table 2: Vegetation Systems within the Shire of Irwin, based on Beard (1976, 1979a and b) and the National Vegetation Information System Database (2003)**

Vegetation System	Description
<b>Greenough</b>	Plant communities associated with coastal limestone extending from Kalbarri to Dongara. Dominant plants range from <i>Acacia rostellifera</i> and <i>Melaleuca cardiophylla</i> thickets on rocky ridges to acacia-banksia scrub on sand covered limestone and <i>Acacia rostellifera</i> low forest with occasional <i>Eucalyptus camaldulensis</i> on the alluvial flats.
<b>Ilyarrie</b>	Occurs on undulating country east of the Cliff Head system where yellow siliceous sand overlies limestone. The system owes its name to the common name of its character species <i>Eucalyptus erythrocorys</i> . This tree forms isolated groves standing out from the surrounding scrub heath of which <i>Beaufortia squarrosa</i> and <i>Banksia sphaerocarpa</i> appear as dominant species.
<b>Cliff Head</b>	Varies from a low <i>Acacia Melaleuca</i> heath on limestone platforms to dense thickets of <i>Acacias</i> , <i>Eucalyptus</i> and <i>Melaleuca</i> 's on sand ridges. Species include <i>Acacia lasiocarpa</i> , <i>A. rostellifera</i> , <i>A. xanthina</i> , <i>Melaleuca acerosa</i> , <i>M. cardiophylla</i> and <i>Eucalyptus obtusiflora</i> . The salt lakes in the south comprise samphire on the margins surrounded by thickets of <i>Melaleuca huegelii</i> , <i>M. thyoides</i> , <i>M. lanceolata</i> and trees of <i>Casuarina obesa</i> .
<b>Erindoon</b>	Associated with the flat coastal plain between the limestone deposits on the coast to the base of the Pleistocene shoreline to the east. The vegetation is predominately a scrub heath on the deep sandy flats with smaller areas of low heath comprising <i>Calytrix</i> , <i>Melaleuca</i> and <i>Eremaeas</i> on the winter wet depressions. The scrub heath is dominated by scattered small trees of <i>Eucalyptus todtiana</i> , <i>Banksia menziesii</i> , <i>B. prionotes</i> and <i>Xylomelum angustifolium</i> .
<b>Tathra</b>	A diverse scrub heath dominates the extensive areas of sandplain of this system with taller emergents that include <i>Allocasuarina huegeliana</i> , <i>Eucalyptus todtiana</i> , <i>Banksia attenuate</i> , <i>B. prionotes</i> and <i>B. menziesii</i> . Smaller thickets of <i>Melaleuca</i> ( <i>M. uncinata</i> , <i>M. hamulosa</i> ) can be found associated with swamp country at the base of breakaways.
<b>Irwin</b>	Associated with the narrow floodplain of the Irwin River east of Dongara. River channels lined with <i>Eucalyptus camaldulensis</i> and <i>Casuarina huegeliana</i> . The floodplain was formerly comprised of woodland of <i>E. loxophleba</i> with scattered <i>E. camaldulensis</i> and <i>C. huegeliana</i> .

The Shire of Irwin is known to contain a number of significant flora, vegetation and fauna values that are identified under both state and federal legislation and policy, with the Shire of Irwin considered to contain high levels of species diversity. These values include but are not limited to:

- Threatened Ecological Communities and Priority Ecological Communities, such as TEC 'Greenough River Flats *Acacia rostellifera* low forest with scattered *Eucalyptus camaldulensis* on Greenough Alluvial Flats.
- Declared Rare Flora and Priority Flora, including but not limited to *Calectasia cyanea* (Blue Tinsel Lily), *Chorizema humile*, *Eucalyptus leprophloia* (Scaly Butt Mallee), *Conostylis micrantha* (Small-flowered Conostylis), *Leucopogon parviflorus* (Coast Beard-heath), *Thelymitra stellata* (Star Orchid). Three occurrences of Priority flora species *Anthocercis intricata* have been identified within the town sites of Dongara and Port Denison.
- Threatened and Priority Fauna species, both marine and terrestrial species including but not limited to Carnaby's black cockatoo, Chuditch and Leatherback turtle

Beekeepers Nature Reserve is a Department of Parks and Wildlife managed reserve that is located within the southern portion of the Shire of Irwin. It is approximately 66,000 hectares in size and extends into the Shire of Carnamah to the south, with over 25% of the reserve found within the Shire of Irwin. Beekeepers Nature Reserve has been reserved for the protection of flora and includes a large variety of species. Yandanogo Nature Reserve is located approximately 17 kilometres south-east of the Dongara town site. It is over 6,500 hectares in size and has been reserved for the conservation of flora and fauna. Dongara Nature Reserve is located approximately 3 kilometres north of the Dongara town site and is approximately 52 hectares in size.



Figure 12 - Beekeepers Nature Reserve, within the southern portion of the Shire of Irwin.

SOURCE: Available online: URL: [http://www.panoramio.com/user/3335900?with\\_photo\\_id=85278789](http://www.panoramio.com/user/3335900?with_photo_id=85278789) (2014)



Figure 13 - *Verticordia fragrans* (Priority Three (P3))

SOURCE: Available online: URL: <http://awaywiththegoddards.blogspot.com.au/2012/10/october-14-2012-as-promised-this-post.html> (2014)



Figure 14 - Coastal lagoon, located at the mouth of the Irwin River.

SOURCE: Emerge Associates 2014



Figure 15 - Sandbar blocking Irwin River mouth.

SOURCE: Emerge Associates 2014

## Hydrology

### Surface Water

The Shire of Irwin is located within two surface drainage systems, namely the Greenough Drainage Basin in the northern portion of the shire and the Arrowsmith Drainage Basin within the southern portion. The Irwin River is the prominent watercourse within the region and flows from north-east to south-west, originating to the east of Mullewa (in the north-east portion of the Greenough Drainage Basin). It is considered to have a dendritic drainage pattern, with four major tributaries: Lockier River, Sand Plain Creek, Nangetty Creek and Mullewa Creek.

The catchment of the Irwin River is approximately 608,000 ha in size, with the river and its tributaries flowing through largely cleared sandy and erosional plains, passing through parabolic dunes and underlying coastal limestone before entering the Indian Ocean to the west of Dongara town

site. The Irwin River is approximately 158km long, and while the upper reaches of the river flow ephemerally (often following rainfall in the catchment), the mid-to-lower reaches flow perennially as a result of localised groundwater discharge. The mouth of the river is a coastal lagoon system which is blocked by a sandbar for the majority of the year, although it is open intermittently as a result of flash flooding.

The Irwin River is subject to flooding, and the flood mapping has recently been undertaken by the Department of Water. This mapping has been incorporated into the Dongara - Port Denison District Water Management Strategy and is illustrated in Figure 16.



Figure 16 - 100 year floodplain (dark blue) and flood development control area (light blue). Source: Salim 1997.

The majority of watercourses within the Arrowsmith Drainage Basin flow in an east-west direction from the uplands region in the eastern part of the catchment and drain into the swamps and lakes of the interdunal depressions adjacent to the coast. The Arrowsmith catchment has a high density of drainage lines along the Dandaragan Scarp which are incised and form a distinctive dendritic pattern of drainage. Generally, surface water movement in the coastal catchments is only apparent at the end of winter when the chains of lakes and swamps are filled and connected by broad streams.

### Groundwater

In the region, groundwater occurs within a variety of geological formations, with the most significant groundwater resources stored within thick sedimentary aquifers. The groundwater flow systems in the region are maintained by rainfall recharge, with recharge most likely to occur during heavy rainfall when the process is enhanced by recharge from surface runoff and local flooding. In the coastal plain and coastal plateau region, groundwater discharges from the unconfined aquifers by subsurface flow into river pools, by evapotranspiration, and outflow along the coast.

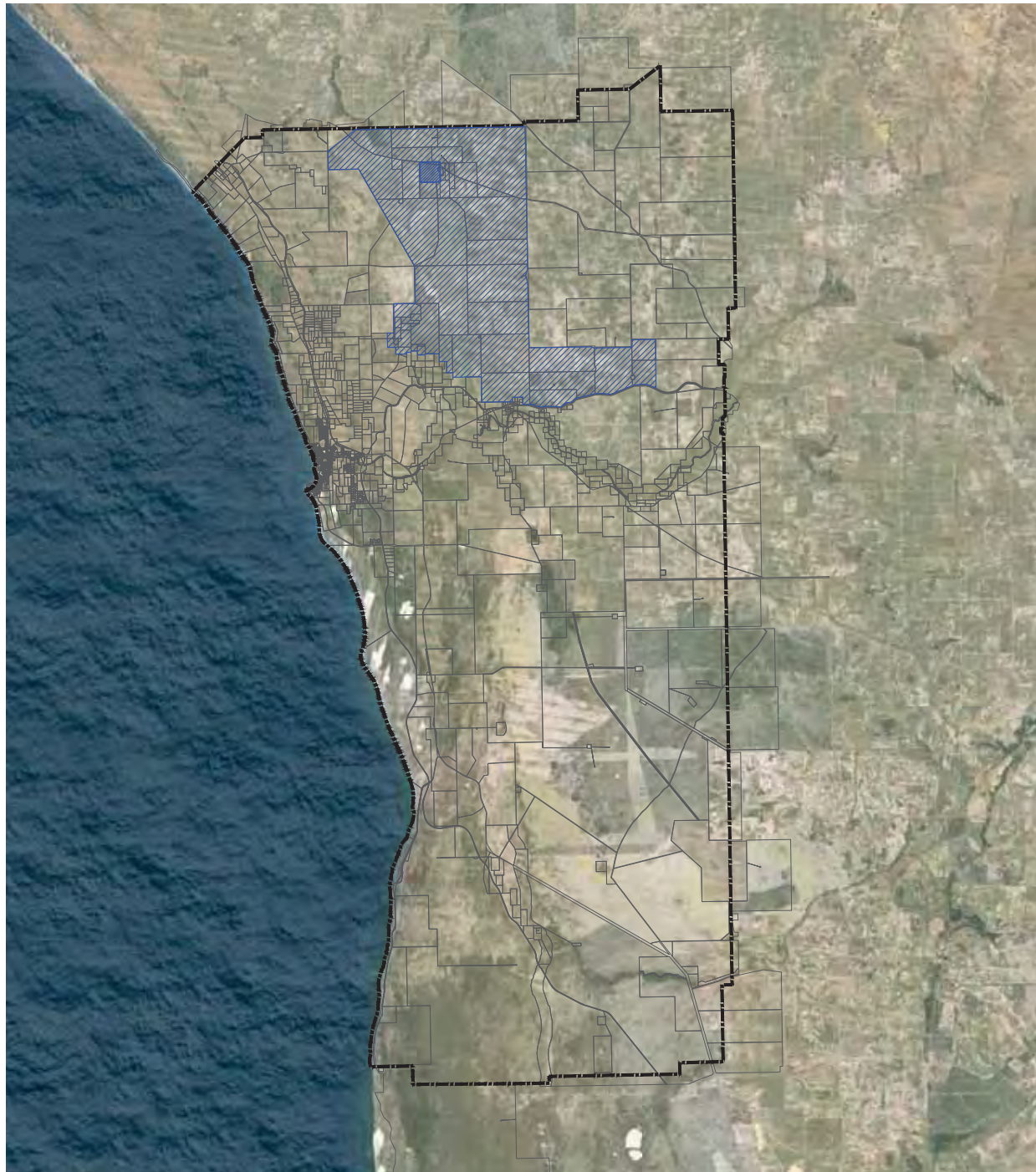
The Shire of Irwin is found primarily within the Arrowsmith groundwater area, which is a proclaimed groundwater area under the Rights in Water Irrigation Act 1914, while a small portion of the northern portion of the Shire of Irwin is found within the Gascoyne groundwater area. Within the Arrowsmith groundwater subarea, groundwater allocation limits have been determined by the Department of Water (2010) with a groundwater abstraction (except for domestic uses) requiring a licence.

The Arrowsmith groundwater area is located in the Northern Perth Basin and covers an area approximately 10,350 km<sup>2</sup> in size. There are eight groundwater subareas found within the Arrowsmith groundwater area, with four of these located within the Shire of Irwin. These include the Dongara, Eneabba Plain, Allanoooka and the Twin Hills subareas. The majority of groundwater is found within two major aquifer units, described below:

- Superficial: The Superficial formation extends from the coast to the Gingin Scarp with an average saturated thickness of 20m. It consists of sand, silt, clay and limestone sediments that extend from Geraldton in the north to Bunbury in the south. The aquifer discharges to the ocean where a seawater interface exists (ranging from the coastline to 8km inland). Groundwater quality is generally brackish to saline close to the coast.

- Yarragadee: The Yarragadee formation is an extensive aquifer containing large volumes of fresh to brackish groundwater. It is up to 3000m thick and is described as a multi-layered aquifer composed of multilayered sand, sandstone, siltstone and shale with groundwater occurring between these layers. The direction of flow in the aquifer is predominantly to the west with some upward leakage into the overlying superficial deposits towards the coast, mainly where groundwater discharges into the lower Irwin River.

The majority of groundwater abstracted from the Superficial formation is brackish to saline near the coast and is generally considered to be non-potable quality, but can be used for watering of stock and irrigation. In recent years, the quality and quantity of groundwater able to be abstracted from the Superficial formation within the Dongara and Port Denison town sites has decreased, likely as a result of a decrease in rainfall (and associated recharge) and an increase in groundwater abstraction.



**CONSTRAINTS**  
 Public Drinking Water Source Areas - Priority 1  
 Public Drinking Water Source Areas - Priority 2  
**OTHER**  
 Shire Boundary

Figure 17 - Priority 1 and Priority 2 Public Drinking Water Source Areas

## Water Supply

Public Drinking Water Source Areas are proclaimed by the Department of Water to protect water quality of identified drinking water sources, which can include surface water or groundwater sources. These areas provide the majority of the community of Western Australia its drinking water supplies.

Within the Shire of Irwin, the Department of Water have identified two Public Drinking Water Source Protection Areas (PDWSA) and these are associated with the Allanooka and Dongara-Denison Water Reserves. The reserves are located approximately 12km and 20km north east of the Dongara town site respectively and are found within the Allanooka and Eneabba groundwater subareas.

The PDWSAs include a Priority One (P1) and Priority Two (P2) area. P1 areas are managed to ensure that there is no degradation of the drinking water source by preventing the development of potentially harmful activities in these areas. P2 areas are managed to ensure that there is no increased risk of water source contamination and/or pollution.

Refer to Figure 17.

Water supply is discussed further under Servicing and Infrastructure.

## Land Capability

The Department of Agriculture and Food recently completed a review of the Geraldton Region including the Shire of Irwin in 2013 and identified areas of high quality agricultural land. High quality agricultural land refers to the comparison of land capability and water availability with social and economic requirements (such as distance to market, labour availability and infrastructure) to determine the importance of different agricultural areas at a regional scale.

The review indicates that the most significant land degradation hazards within the Shire of Irwin are wind erosion, subsurface acidification, subsurface compaction and water repellence. With regard to classifying agricultural land, the Shire of Irwin contains areas of:

- Greatest versatility, described as having the largest water resources for irrigation, high rainfall and high yielding soils. This is predominantly associated with the inland area of the Irwin River.
- Relatively high versatility, described as large to moderate water resource for irrigation, good rainfall and moderate to high yielding soils. This is associated with the central eastern portion of the Shire of Irwin.
- Moderate versatility, described as moderate or potential water resources for irrigation, good rainfall with lower yielding soils. This area is located in the northern coastal area and central portion of the Shire of Irwin.
- Relatively low versatility, described as moderate or potential water resources for irrigation, moderate to low yields with variable rainfall and soils.

- Unallocated Crown Land, described as areas with good water supplies and variable soils but covered by intact remnant vegetation.

The Shire of Irwin is identified as being the largest vegetable and fruit growing area within the Geraldton Region, with over 47 hectares in total.

The land capability mapping is shown at Figure 18.

## Bushfire Hazard and Risk

Bushfires are a natural and periodic event in the Australian landscape, within many native flora and fauna adapted to fire and often requiring fire as part of their life cycle. The frequency and occurrence of fire within the Shire of Irwin is affected by a complex range of interrelated factors, including seasonal rainfall conditions and the associated accumulation of flammable materials (i.e. vegetation, leaf litter, dead wood), ignition source (i.e. lightning, people) and land use (i.e. urban, rural, pastoral, mining, amenity). Of these, the main determinant is the availability of flammable material which often influences the intensity, extent and frequency of fires.

The Shire of Irwin is dominated by dense scrub and heath vegetation communities near the coast, with Acacia- Casuarina thickets with some emergent Eucalypt species further inland. This vegetation is highly flammable and is likely to have a fuel load between 8 to 10 tonnes per hectare, depending upon how recently the area of vegetation has been burnt.

In the Geraldton Sandplains region of Western Australia, the bushfire risk is greatest from November through to April, when moisture content of vegetation is low. Fires can be destructive to both lives and property, and can have detrimental impacts on biodiversity.

State Planning Policy 3.7 - Planning in Bushfire Prone Areas (SPP 3.7) requires that bushfire risk management be addressed at the strategic planning stages to ensure bushfire risk management is incorporated into the planning decision making framework. This is discussed further later in the document.

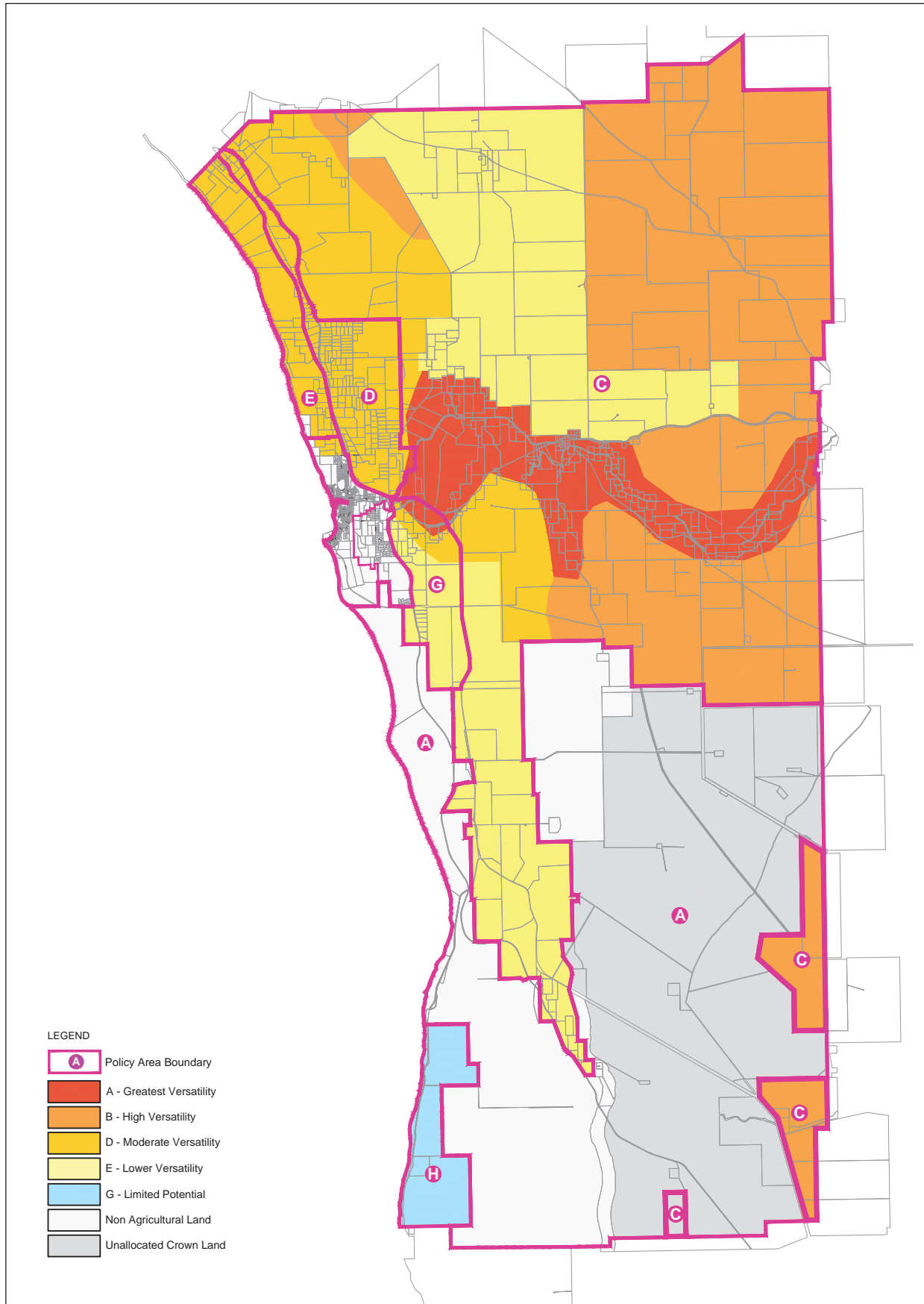
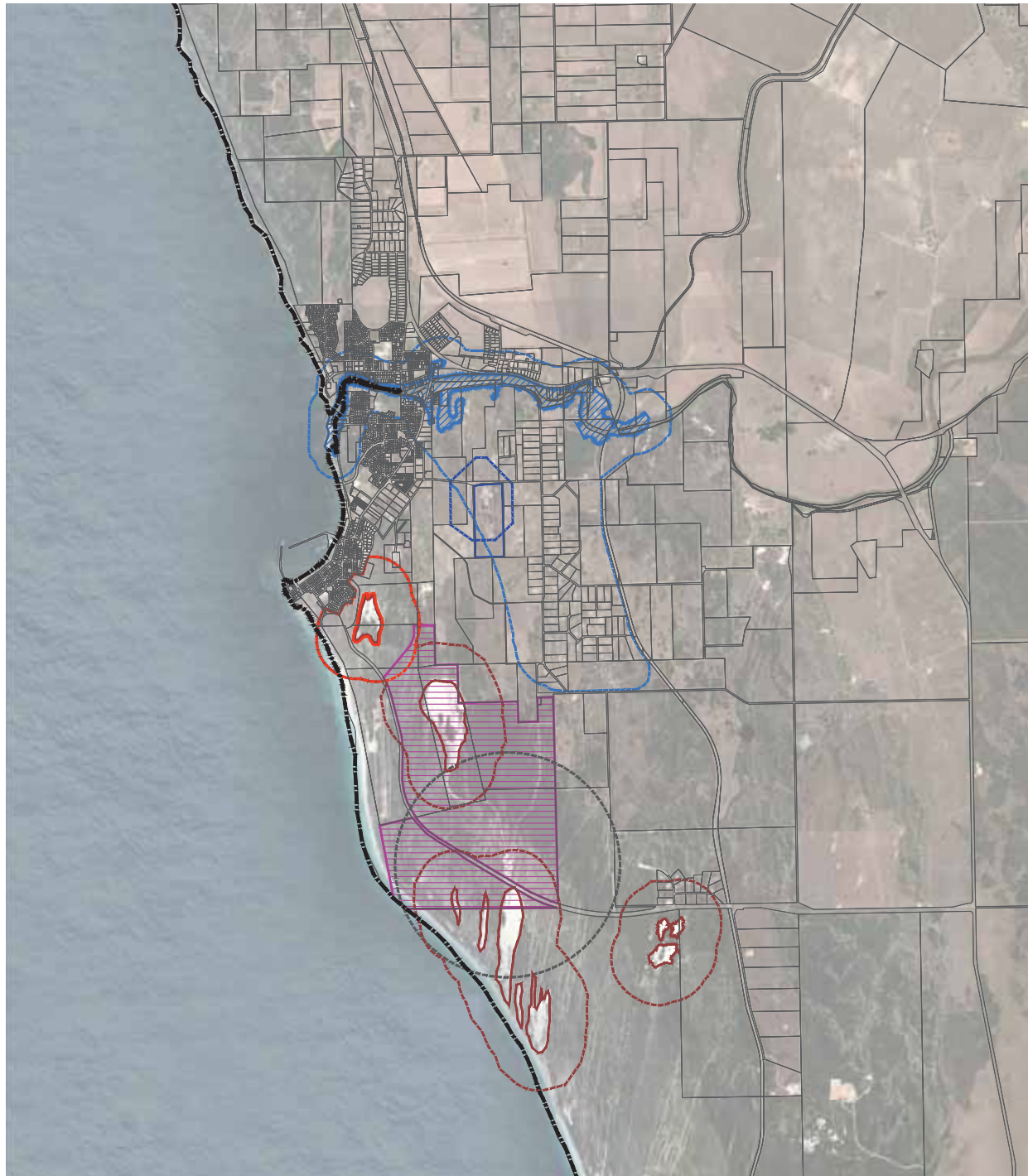


Figure 18 - Priority agricultural land based on agricultural land areas (ALAs). SOURCE: Figure 5.1, Tille et al (2013).














- | CONSTRAINTS   |  | OTHER   |                                  |
|---|--|---|----------------------------------|
|  | 100 yr Floodway & Flood Fringe             |  | Mobile Dune                      |
|  | 100 yr Floodplain Development Control Area |  | Mobile Dune 500m Buffer          |
|  | Waste Water Treatment Plant Site           |  | Basic Raw Materials              |
|  | Waste Water Treatment Plant Buffer (500m)  |  | Westdeen Mining Site             |
|  | Cement Plan Buffer                         |  | Westdeen Mining Site 500m Buffer |
|   |  |  | Shire Boundary                   |



Figure 19 - Constraints Townsite Map



## Other Land Use Considerations

Within the Shire of Irwin, there are a number of land uses that occur within the vicinity of existing sensitive land uses (such as residential development, schools, hospitals, motels, etc.). These land uses include:

- Wastewater treatment facility. The Dongara Wastewater Treatment Plant is located approximately two kilometres from the Dongara town site.
- Waste transfer station. A waste transfer station is located approximately two kilometres south of the Dongara town site. Waste is sorted and recycled at the facility, or is transferred to a waste disposal facility in Geraldton.
- Industrial development, including marine-based industry, and light industrial (i.e. transport-related).
- Agriculture. This includes broad-acre and irrigated agriculture.
- Dongara airfield. The airfield is located approximately five kilometres south of the Dongara town site and is a bitumen strip used by local industry and the Royal Flying Doctor Service.
- Exploration and mining tenements. A number of exploration and mining tenements exist within the Shire of Irwin, which are actively being managed. These tenements are for a range of minerals and resources and include:
  - Oil and gas, both onshore and offshore. This includes Beharra Springs Gas Field (near Mount Adams Road), Jingemia (south of Kalis Drive) and offshore deposits west of Cliff Head.
  - Limestone and limesand extraction. There are significant limestone and limesand resources located within the Shire of Irwin, with a number of these located within the vicinity of the major town sites of Dongara and Port Denison.
  - Geothermal. There are several exploration leases for geothermal resources, and these exist South of the town sites of Dongara and Port Denison.

The land use buffer constraints are mapped at Figure 19.

## Heritage

The Shire of Irwin has a rich cultural history, including both Aboriginal and European (historic) heritage.

Pre-settlement, the Wattandee people travelled seasonally through the areas between Mingenew and Dongara. Evidence of aboriginal occupation of Dongara and the surrounds has been found in middens in the area. It is likely that Wattandee people spent the summer months in the Irwin River estuary area, with access to freshwater pools along the riverbed and at Nhago Spring. There are a number of native title claims, seven State-protected Registered Aboriginal Sites, and at least 21 other sites identified (but not registered) in the Irwin region.

European settlers first settled in the region in the 1850s. There are 16 places in the Shire included on the State Register of Heritage Places for their heritage significance, the majority of which are located within the Dongara

townsite. They include the Moreton Terrance and Leander Drive Fig Trees, St John the Baptist Anglican Church, former Irwin Roads Board Office, Dongara School Master's House (now the Shire's staff quarters), Dongara Post Office (now the Public Library), and the Royal Steam Flour Mill.

## 2.3 Population

This Strategy has been informed by the recent preparation of the Dongara Port Denison District Structure Plan and the Dongara Town Centre Revitalisation Plan, being the two key strategic land use planning documents prepared by the Shire to provide direction for the growth and development of the Dongara Port Denison Urban Area.

In the Strategy, land demand and supply analysis, the local profile, and regional overview of population, economy and employment have been informed by the Land Demand Modelling Paper 2014 (Appendix D). During finalisation of the Strategy, more up to date information on the land capacity of settlements with respect to forecast population has been made available.

Land supply information in the Strategy may be superseded by the Department of Planning's Central Regions Land Capacity Analysis for the Shire of Irwin (Appendix F), and is intended to be regularly updated and published on the Department's website (<https://www.planning.wa.gov.au/8268.aspx>).

### Historical and Projected Population

The Shire of Irwin has been experiencing above average population growth over the past 10 years (1.7% p.a.) compared to the broader region (0.9% p.a.) and State (2.3% p.a.) trends. In 2012, the region was estimated to have a total population of 3,675 residents.

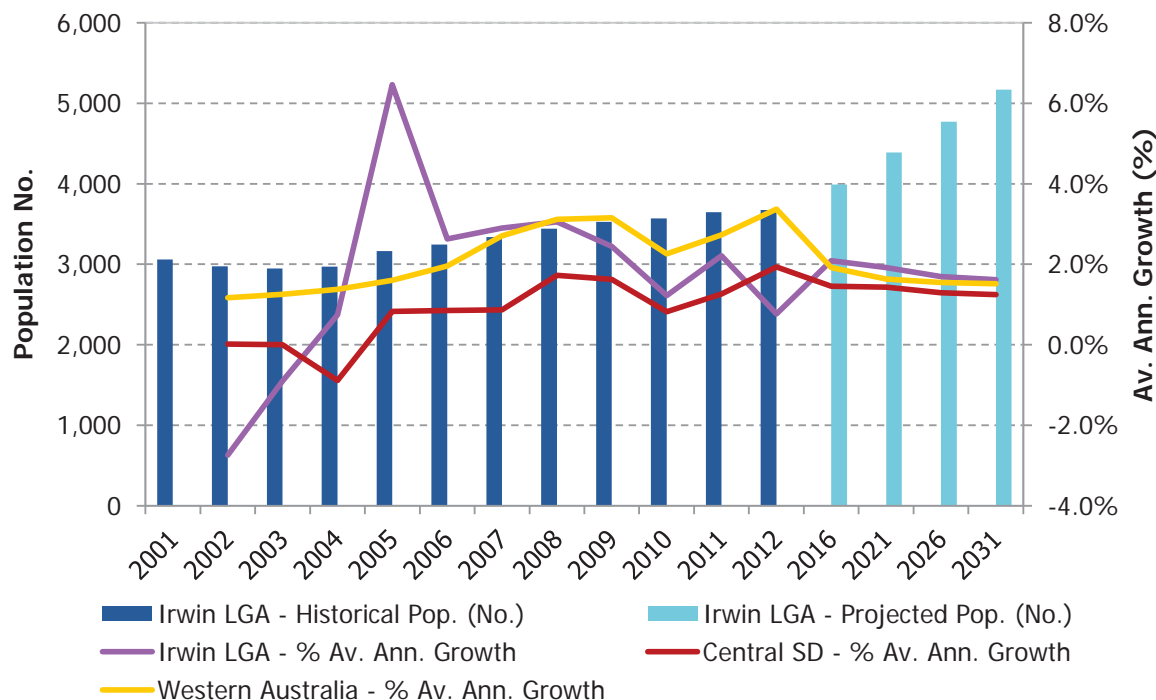
Refer to Figure 20.

Over the next 20 years, population estimates indicate that the population will likely increase by a further 1,526 residents (2011-2031) equating to an average increase of 76 residents per year (or 1.8% per annum on average, compared to 1.4% and 1.7% for the region and State).

Population growth has the potential to create many positive economic and social outcomes for regional communities. Planning for provision of dwellings and infrastructure to support population growth is critical for attracting and retaining residents within communities, as is understanding the type and nature of the population and their dwelling and activity requirements.

The planning response should therefore consider the:

- Ability of the region to respond to population growth through provision of appropriately zoned residential lands.
- Provision of community assets and infrastructure to respond to community demand and need.
- Provision of appropriate employment lands to encourage investment, economic diversification and jobs creation to support population growth.



Source: ABS (2012a), WA Tomorrow (2012)

Figure 20 - Historical and Projected Population, Irwin LGA 2001-2031

### Age and Sex

The Shire of Irwin population has an older population (41.8 years) compared to Regional (37.4 years) and State (36.8 years) averages. Higher proportions of population aged over 45 years has been created by:

- The popularity of the Shire of Irwin as a place to live and retire in.
- Difficulties in attracting and retaining the younger population due to limited career and employment opportunities.

Age characteristics have significant implications for local planning for infrastructure and services. Local planning for different age demographics can be considered in terms of planning for retention and attraction of people from different age profiles. The Shire of Irwin has an older population and is seeking to attract more youth.

Key planning implications for achieving these goals are:

- Supporting the Ageing Population: Provision of health and aged care services and residential aged cared supply in the Irwin LGA, and the attraction of skilled workers and infrastructure required to service this need.
- Attraction of Youth: Diversification of the economy and creation of a variety of sustainable job opportunities will be important for attracting and retaining youth in the future.

In the 2011 Census, there were 1,822 (51.1%) males and 1,745 (48.9%) females recorded.

Refer to Figure 21.

### Ethnicity

In the 2011 Census, the most common ancestries in the Shire were Australian 35.3%, English 31.7%, Scottish 7.8%, Irish 6.4% and German 2.4%. Aboriginal and Torres Strait Islander people made up 2.2% of the population.

At this time 80.9% of people were born in Australia. The other most common countries of birth were England 5.8%, New Zealand 3.1%, Scotland 1.1%, Netherlands 0.4% and Germany 0.3%.

### Family Structure

Of the families in the Shire at the 2011 Census, 39.8% were couple families with children, 49.1% were couple families without children and 10.5% were one parent families.

## 2.4 Housing

At the 2011 Census, 1,327 private dwellings in the Shire were identified as occupied, and a further 387 (22.6%) of private dwellings were unoccupied.

Of the occupied private dwellings, 91.6% were separate houses; 2.6% were semi-detached, row or terrace houses, or townhouses; 2.7% were flats, units or apartments; and 2.9% were other dwellings. The average number of bedrooms per occupied private dwelling was 3.2. The average household size of occupied dwellings within the Shire was 2.4 people, or 1.9 people per household when taking into account occupied and unoccupied dwellings within the Shire.

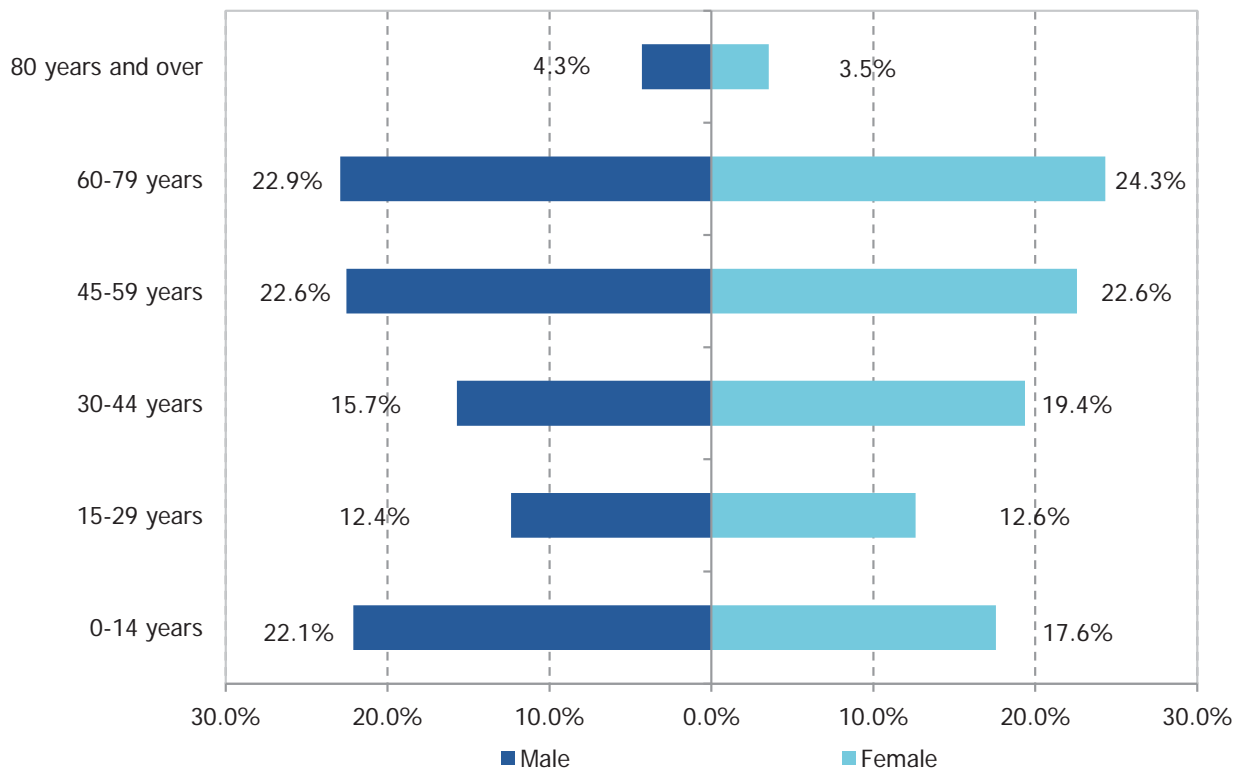


Figure 21- Age Distribution, Shire of Irwin 2011 Source: AEC (2013)

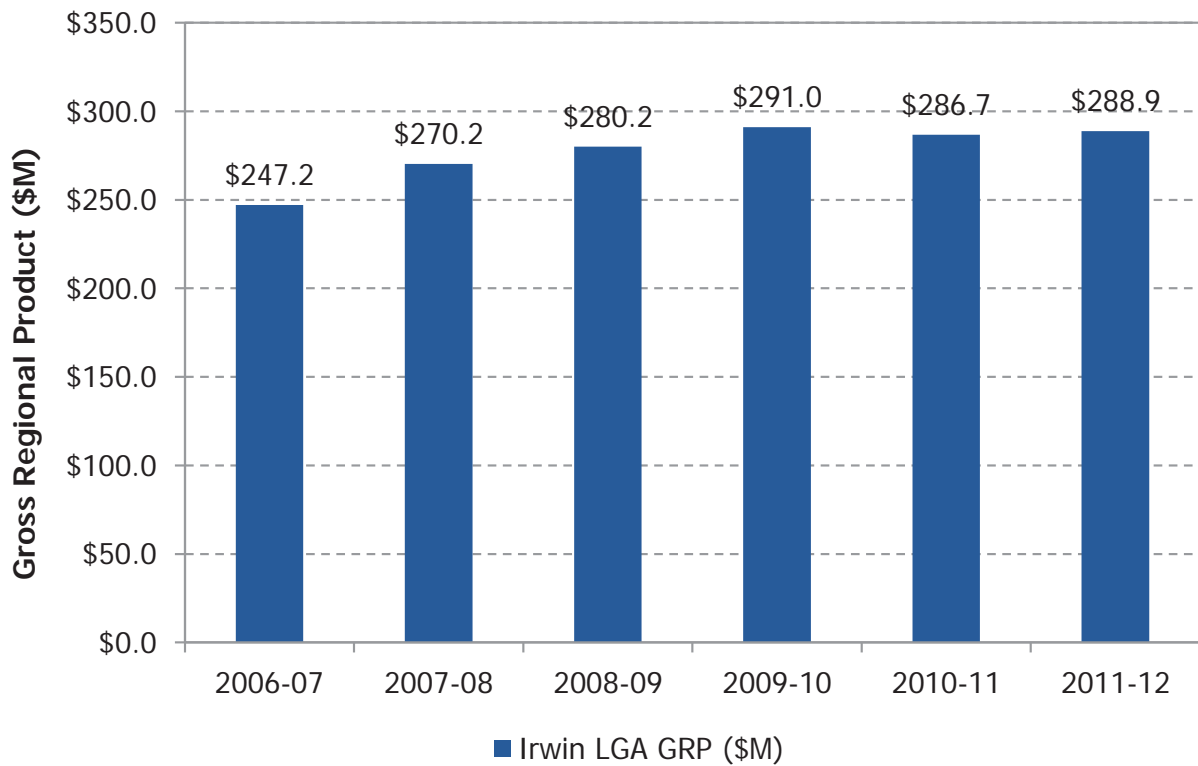


Figure 22- Gross Regional Product, Irwin LGA 2006-07 to 2011-12 Source: AEC (2013)

## 2.5 Economy

The Shire of Irwin economy has been founded on strong agriculture and fishing industries. The unique combination of natural and cultural (traditional and European) assets and coastal lifestyle are the foundation of a healthy local tourism industry. More recently, mining and resource industries have become a major driver of the local and regional economies.

### Gross Regional Product

The Shire of Irwin had a Gross Regional Product of \$288.9 million in 2011-12. This is an increase of almost 17% since 2006-07. Leading sectors (by total value contribution) for the Shire of Irwin economy include the sectors of mining, construction and agriculture, forestry and fishing, highlighting a largely primary industries and resource based economy.

Over the past five years, mining and agriculture, forestry and fishing industries have experienced growth of \$32.8 million and \$12.5 million respectively. In contrast, construction has experienced declines of \$10.5 million. Declines in the construction sector industry value add has likely been a function of the mining and resource industry moving from a period of development to operation.

The construction sector is sporadic in nature with any growth in the sector reliant upon further resource sector development, infrastructure development and population growth to drive activity.

Refer to Figure 22 and Table 3.

Table 3: GRP by Industry, Irwin LGA, 2006 - 07 to 2011 - 12

Industry	2006-07		2011-12		Total Change	
	GRP (\$'M)	%	GRP (\$'M)	%	GRP (\$'M)	%
Agriculture, forestry & fishing	\$10.7	4.8%	\$23.2	8.8%	\$12.5	4.0%
Mining	\$103.6	46.3%	\$136.4	51.5%	\$32.8	5.3%
Manufacturing	\$10.0	4.5%	\$7.4	2.8%	-\$2.6	-1.7%
Electricity, gas, water & waste services	\$3.0	1.4%	\$2.1	0.8%	-\$0.9	-0.5%
Construction	\$42.2	18.9%	\$31.7	12.0%	-\$10.5	-6.9%
Wholesale trade	\$0.9	0.4%	\$1.2	0.5%	\$0.4	0.1%
Retail trade	\$8.9	4.0%	\$9.7	3.6%	\$0.8	-0.3%
Accommodation & food services	\$6.9	3.1%	\$5.8	2.2%	-\$1.1	-0.9%
Transport, postal & warehousing	\$8.9	4.0%	\$7.4	2.8%	-\$1.5	-1.2%
Information media & telecommunications	\$0.0	0.0%	\$0.0	0.0%	\$0.0	0.0%
Financial & insurance services	\$4.2	1.9%	\$8.3	3.2%	\$4.1	1.3%
Rental, hiring & real estate services	\$3.0	1.4%	\$3.0	1.1%	\$0.0	-0.2%
Professional, scientific & technical services	\$2.7	1.2%	\$5.6	2.1%	\$2.9	0.9%
Administrative & support services	\$1.6	0.7%	\$1.1	0.4%	-\$0.5	-0.3%
Public administration & safety	\$3.5	1.6%	\$4.5	1.7%	\$1.0	0.1%
Education & training	\$5.6	2.5%	\$4.6	1.7%	-\$0.9	-0.7%
Health care & social assistance	\$6.2	2.8%	\$11.0	4.2%	\$4.8	1.4%
Arts & recreation services	\$0.5	0.2%	\$0.5	0.2%	-\$0.1	-0.1%
Other services	\$1.5	0.7%	\$1.0	0.4%	-\$0.5	-0.3%
Ownership of dwellings	\$12.2	n.a.	\$12.5	n.a.	\$0.3	n.a.
Gross Sector Value Add	\$236.1	n.a.	\$277.2	n.a.	\$41.0	n.a.
Taxes Less Subsidies	\$11.1	n.a.	\$11.7	n.a.	\$0.7	n.a.
Gross Regional Product	\$247.2	n.a.	\$288.9	n.a.	\$41.7	n.a.

## Employment

The Shire of Irwin had a labour force of 1,950 in September Quarter 2013. Unemployment has generally fluctuated between a 1.5% and 3.9% over the past five years, increasing to 4.2% in the September Quarter 2013. Unemployment rates in Shire of Irwin continue to remain below broader regional (5.8%) and State (4.6%) levels.

Construction, agriculture, forestry and fishing, retail, accommodation and food services are the most prominent employers within the Shire of Irwin. By comparison, Table 3 shows that the leading sector by value – mining – has a much lower contribution to employment in the Shire of Irwin than many other sectors.

Refer to Figure 23 and Figure 24.

## Key Industries

### Agriculture

Historically, agriculture has been the Shire of Irwin's leading sector. The region has a good climate, regular rainfall and rich growing soils that can support a variety of agriculture activities.

There are approximately 75 (ABS, [2012c], records 73) agriculture businesses that undertake a variety of production activities, including production of cereal crops and grains, livestock (sheep and cattle) and a wide range of other production activities including olive growing, canola, pepper, melons and many other horticultural varieties.

The Shire makes an important contribution to the state's economy, producing an estimated \$27.4 million of agricultural products in 2010-11. Table 4 lists the gross agricultural value of livestock and other agricultural produce (GVAP) in the shire in 2010/11.

Produce	GVAP \$m
Cereal crops (mainly wheat)	11.1
Livestock (mainly sheep and cattle)	6.2
Legume crops (mainly lupins)	3.1
Livestock products (wool)	2.3
Canola	2.1
Vegetables	1.0
Fruit	0.8
Other broadacre crops	0.5
Hay production	0.2
Nuts	0.1
TOTAL	27.4

Table 4: Estimated value of selected agricultural produce in the Shire of Irwin 2010-11 (Source: Australian Bureau of Statistics).

### Fishing

The Batavia Coast has a major fishing industry with western rock lobster generating considerable value to the economy and centred in Dongara-Port Denison. It is estimated that

almost half of Western Australia's rock lobster fishing catch is caught along the Irwin and Greenough coastline. During rock lobster fishing season (mid-November to June), the fishing harbour at Port Denison is home to approximately 70 boats (Shire of Irwin, 2014).

Rock lobsters are either exported live or processed as whole, cooked lobster or lobster tails. In recent times, the WA Department of Fisheries has introduced measures including a quota management system, size limits, and controls on the type of equipment used to ensure long-term sustainability of the fisheries. This has resulted in some declines in revenues from rock lobster catches over the past decade.

Other fisheries in the region include prawns, scallops, abalone and finfish. The Shire of Irwin approved the development of an onshore abalone aquaculture project at Seven Mile Beach, placing Australia at the forefront of global Abalone Farming (Shire of Irwin, 2014).

### Mining and Resources

Mining and resources is the Shire of Irwin's largest sector (by value) and employs 5.0% of the resident workforce.

#### Mineral Sands Mining

Mining of mineral sands is a key activity in the Shire of Irwin and surrounding region. Discovery of a mineral sands deposit 25 kilometres south of Dongara generated international interest from mineral sands company Ticon (Mine Web, 2002). Tronox has also recently applied to the Western Australian Government for approval to undertake a mineral sands mining and primary concentration operation (Dongara Titanium Minerals Project). The Dongara resource contains approximately 85 million tonnes of ore and has a potential mine life of 15 years (Tronox, 2014).

#### Oil and Gas

Oil and gas exploration is also an emerging industry in the Shire of Irwin and broader region. There have been several major discoveries of recoverable quantities of oil and gas reserves in the local government area and surrounds over the past 10 years. One of these discoveries includes the Hovea Field (onshore) located 15kms south of Dongara. It is anticipated this field may have the potential to produce up to 5% of WA's total fuel needs over the coming years. There have also been offshore discoveries and confirmation of resources in the Perth Basin (south of Dongara).

As the industry moves from exploration to production there will be many business and employment opportunities that will arise from these resource sector developments, particularly in the construction sector.

### Tourism and Visitation

Tourism is one of the Shire of Irwin's leading sectors. In 2013, the Shire attracted approximately 120,000 visitors with 95.6% being domestic visitors. The primary target market for tourism in Irwin Shire is the 'traditional family holiday market'. Dongara and Port Denison offer a range

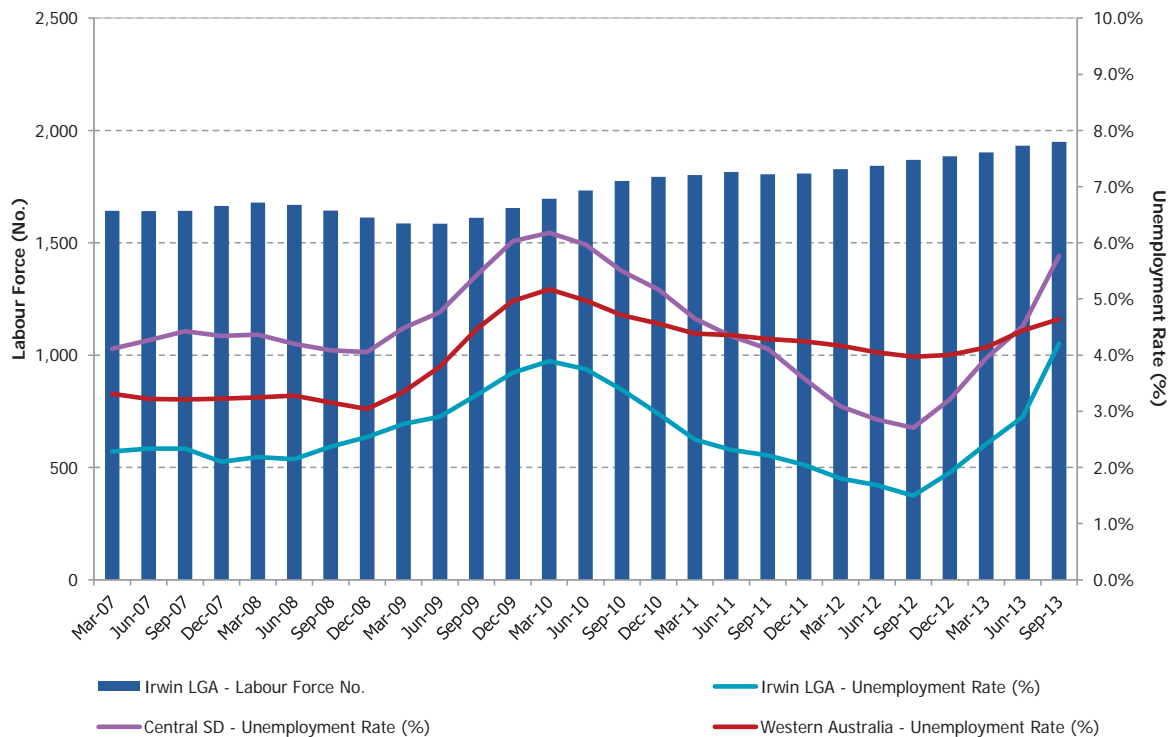


Figure 23 - Labour Force and Unemployment, Irwin LGA September Q 2013 Source: DEEWR (2013)

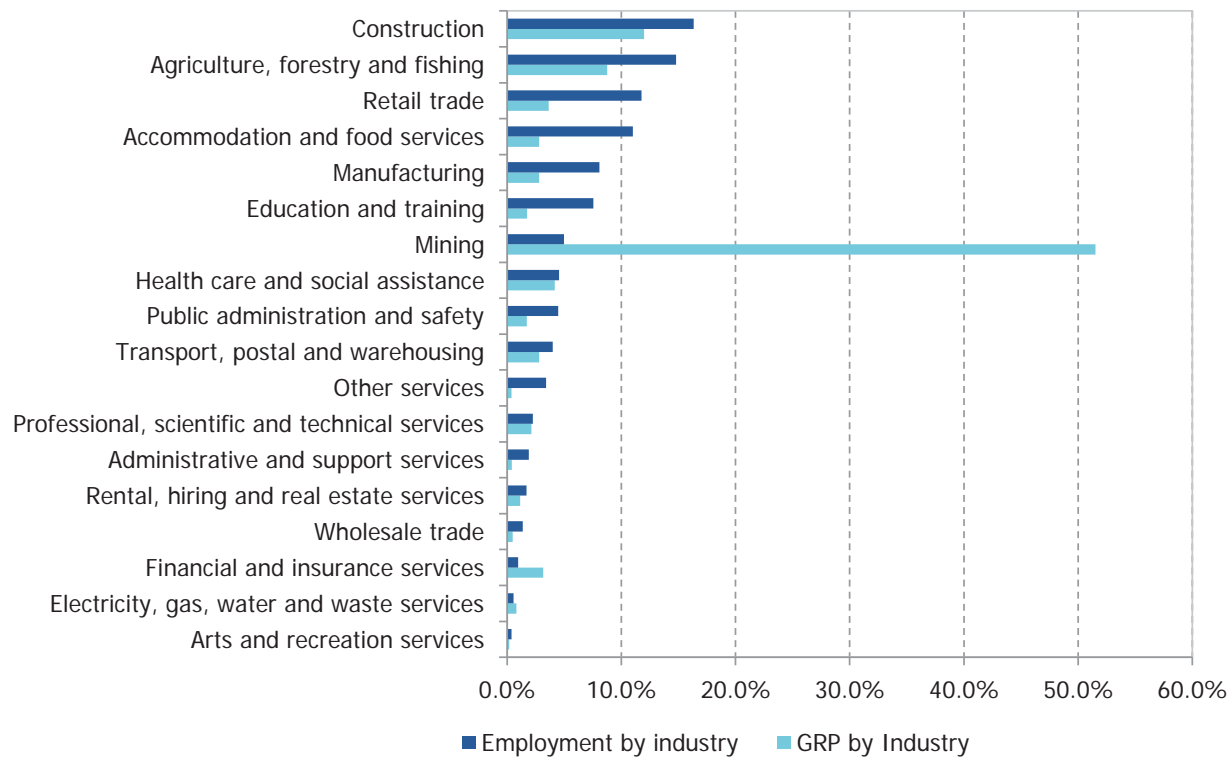


Figure 24 - Employment by Industry, Irwin LGA 2011 Source: ABS (2012b)

of tourism products including a variety of accommodation, nature tourism experiences (e.g. fishing, nature walks, beaches, the Irwin River) and retail and food.

Dongara and Port Denison compete directly with nearby coastal towns such as Kalbarri, Geraldton and from further afield in WA such as Busselton, Bunbury, Albany, Jurien and Lancelin. Dongara and Port Denison draw the majority of their visitors from intrastate.

Refer to Figure 25 to Figure 29.

### Construction

Construction is the second largest sector (by value) in the Shire of Irwin generating an estimated \$31.7 million in industry value add in 2011-12. There are 84 construction businesses located in the Shire of Irwin (ABS, 2013b), comprising 60 non-employing businesses (owner-operator), 19 businesses that employ up to four employees and five construction businesses that employ between four and twenty employees (ABS, 2013b). Further analysis of employment statistics indicates these construction businesses provide a wide variety of services including house construction, non-residential construction, heavy/civil engineering construction and other construction services including landscaping, site preparation, concreting and bricklaying, plumbing, electrical and others (ABS 2012b).

These businesses service the local population and business needs, as well as supporting construction activity in the broader region.

As the population grows and the oil and gas industry shifts from exploration to operations, there will be an increasing demand for construction services, however, depending on the nature and type of the demand, some of these may need to be imported to the region.

Future diversification of local tourism products also has the potential to contribute construction demand through development of tourism accommodation and associated tourism assets.

### Health Care and Social Assistance

Health care and social assistance is the fourth largest sector of the Shire of Irwin economy (by value) (\$6.2 million in 2011-12). There are a range of health services in Dongara-Port Denison including the Dongara Eneabba Mingenew Health Service (Public Hospital), the Dongara Health Centre and Child Health Clinic (WA Department of Health, 2014). There are also a range of other allied health services and services for aged care (including retirement facilities).

The Shire of Irwin has a higher proportion of persons aged over 60 years and is also ageing at a faster rate (when compared to the region and the state averages). Rapid rates of ageing will place pressure upon limited aged care services in the Shire of Irwin.

Future consideration for delivery of appropriate levels of aged care in the region is currently underway to support existing residents as they age. The proposed Thungarra Aged Care Facility is a \$35 million project that could supply 26 aged care beds to the Shire of Irwin community (development date unknown) (Pracsys, 2013).

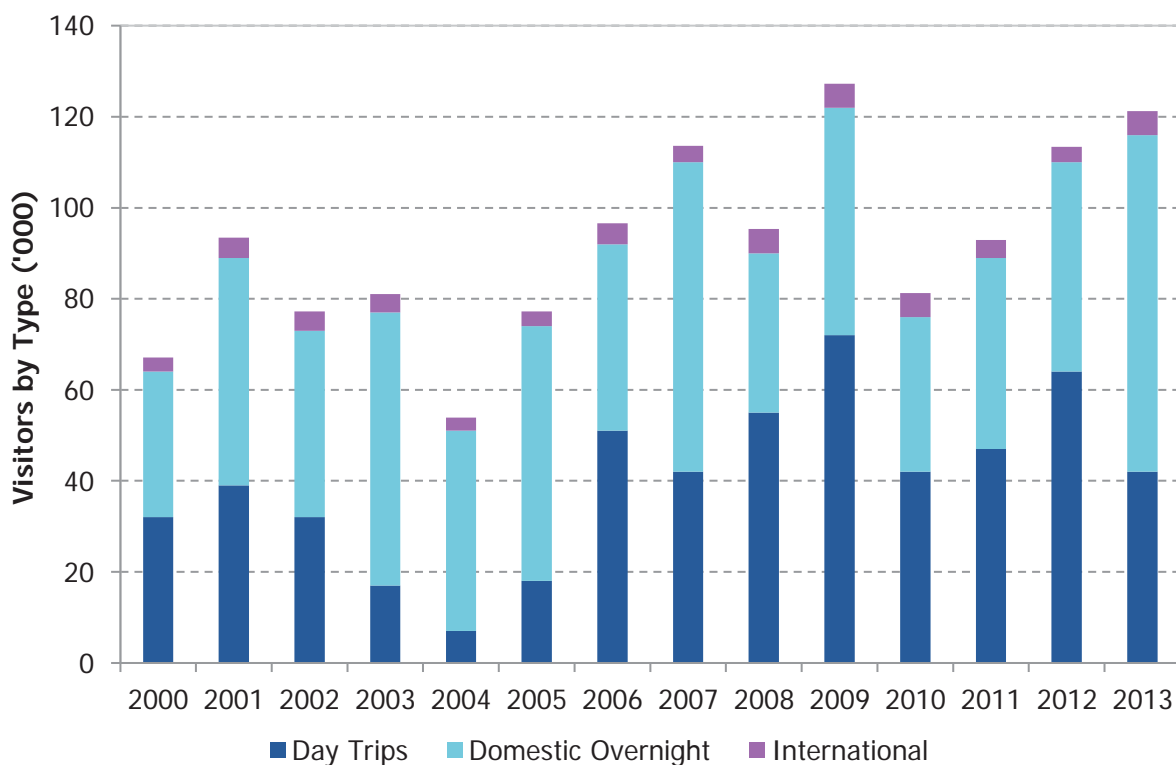


Figure 25 - Tourism Visitation by Visitor Type, Irwin LGA Source: TRA (2013)

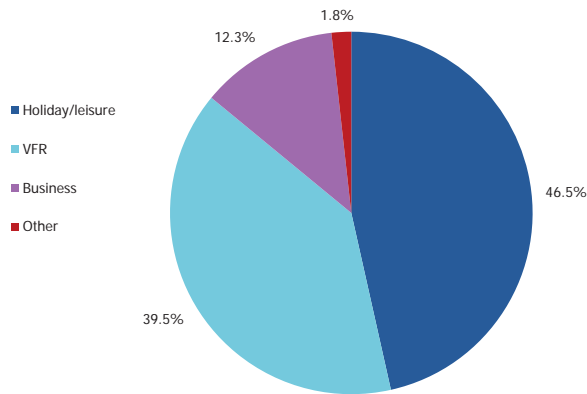


Figure 26 - Purpose of Visit, Domestic Visitors

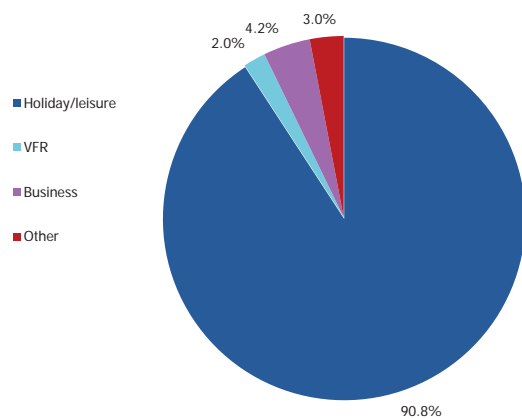


Figure 27 - Purpose of Visit, International Visitors

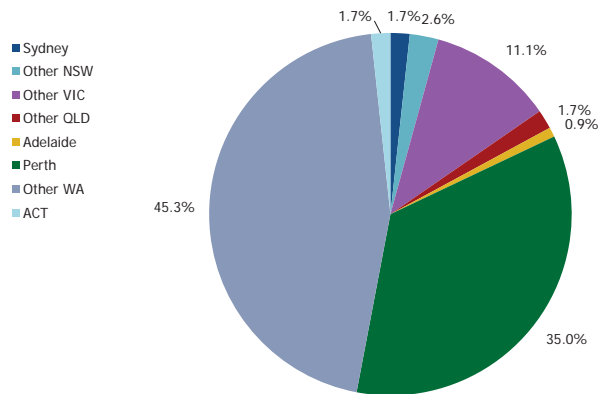


Figure 28 - Visitor Source, Domestic Visitors

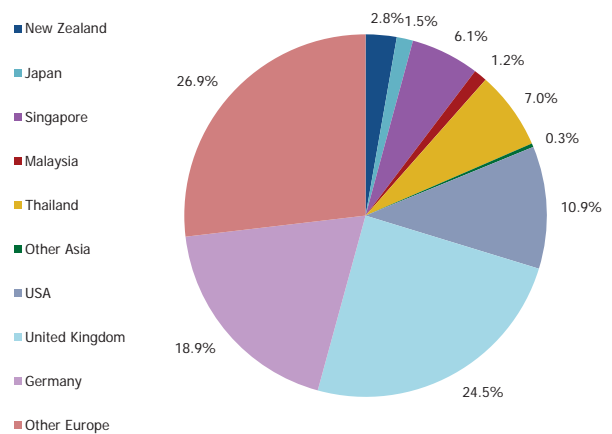


Figure 29 - Visitor Source, International Visitors

Source: TRA (2013)

## 2.6 Commercial and Retail

Dongara-Port Denison is the designated regional centre that contains the Shire’s key employment lands.

Within the centre there is 105.7 hectares of zoned employment lands comprising:

- 27.0 hectares of commercial zoned land.
- 69.8 hectares of industrial zoned land (marine based industry, light industry, general industry zoned land).
- 8.9 hectares of community purpose zoned land.

Of the 27.0 hectares of commercial zoned land, 6.9 hectares are vacant and the remaining 20.1 hectares comprise a mix of older buildings in need of some refurbishment as well as a range of newer buildings with street good street frontage and parking.

Retail and commercial operations within the Shire of Irwin are primarily located in Dongara (Moreton Street and Smith Street) with some limited retail tenancies located in Port Denison. The small number of retail and commercial offerings impacts transaction activity in both towns.

## 2.7 Community

### Education

The Dongara District High School services the twin towns of Dongara and Port Denison as well as students bussed in on two services from the surrounding Irwin Shire, offering kindergarten to year 12 on a single campus. For year 11 and 12 students Dongara District High only offers a vocational program, with those seeking an academic pathway in these years needing to enroll with the Schools of Isolated and Distance Education (SIDE) or commuting to Geraldton.

Dongara District High has a total of 40 teaching staff and 32 non-teaching staff. The total population of the school is 500 (as at December 2012) which comprises of 390 primary children and 110 secondary.



## Health

The Shire of Irwin does not have a hospital, but is serviced by the Dongara Eneabba Mingenew Health Service located in Blenheim Road, which is open Monday to Friday. A registered nurse is available to respond to emergency or urgent cases 24hrs.

The nearest hospital is the Geraldton Regional Hospital, which services the Mid West region, located 65km north of Dongara.

## Recreation

The Irwin Recreation Centre provides a focus for sport and recreation in the Shire, and is the base for many sporting groups and associations. The facility was opened in February 2009 and includes a fitness centre, indoor multi-purpose courts, dedicated football oval, outdoor tennis courts, outdoor basketball / netball courts, large playground, crèche and a function room.

The Town Cricket Pavilion is situated on Waldeck Street and is home to both the Dongara Cricket Club and the Hockey Club. For social sporting events, the Cricket Pavilion and its amenities offer spectators and participants a place to relax and enjoy the games under the Moreton Bay Fig trees.

The Dongara Golf Club offers 18 holes of reticulated grass greens, located at the eastern outskirts of Port Denison.

The Dongara Activity Park offers a variety of recreational activities including archery, mini golf, croquet, quoits, bocce and barbeque facilities.

Other sporting recreation facilities in the Shire include the skate park, BMX track, and playgrounds.

The Shire also has a number of natural recreation attractions, including the beaches, the river and walking trails such as the Irwin River Nature Trail and the Heritage Trail (maps are available from the Tourist Centre). In addition to the mapped walking trails there are many pathways around town, the foreshore and river area for informal recreation.

The Autumn Centre located behind the Shire Administration Centre holds regular activities such as bingo and carpet bowls.

## 2.8 Servicing and Infrastructure

### Water Supply

The Towns of Dongara and Port Denison are connected to scheme water but the surrounding rural residential and rural areas are not. Water supply to the Dongara and Port Denison town sites is sourced from the Allanooka Groundwater Bore field which is part of the Arrowsmith groundwater area.

Currently the rural residential lots of the Port Denison suburb of Springfield are not connected to any scheme water supply and are reliant on sourcing their own water supply.

Groundwater of the Springfield area is considered brackish (poor quality) and is under pressure in maintaining supply to existing well licenses. Springfield residents are allowed to extract water from underground water sources but only for non-potable water purposes. This has been reinforced by a notice placed on all land titles at subdivision stating that groundwater is not fit for consumption.

Residents of the suburb of Bonniefield are reliant on groundwater and rainwater for supply of their potable water requirements. Existing groundwater well licenses are putting pressures on the supply of groundwater in the area with water quality already considered fresh to brackish.

Water supply within the Shire of Irwin is an ongoing planning issue which will continue to be put under pressure as development and population grow in the area. It is expected that future water supply will be less reliant on groundwater extraction and more dependent on alternative options such as rain water tanks at the resident level, to desalination and wastewater recycling systems in the long term.

Although the Department of Water has available water supply for residential use it is not expected that this supply will be available indefinitely. Therefore, alternative supply options will likely be required to supply the needs of any long term requirements of the Shire of Irwin and the town sites of Dongara and Port Denison.

Residents should be encouraged to install water tanks for potable water supply use where possible. This will reduce demand on groundwater supplies.

Notices are currently placed on land titles at subdivision stage which informs potential owners that ground water is not suitable for potable use in the area of Springfield. The Department of Water recommends that the areas of Springfield are connected to scheme water.

The Department of Water has identified pressures on the groundwater in the Bonniefield area and is considering implementing requirements for desktop, basic, or detailed hydrogeological assessments (referred to as H1, H2 or H3 level of assessment, respectively) for any future allocation of groundwater well licenses.

The objectives for water supply for the Shire of Irwin would be to:

- encourage private sourcing of water through rain water tanks;
- encourage the use of grey water for toilet flushing and gardens;
- connect the suburb of Springfield to scheme water;
- discourage groundwater extraction in the Bonniefield area.

## Sewer Infrastructure

Dongara and (parts of) Port Denison are the only locations in the Shire of Irwin that are connected to a Water Corporation controlled wastewater service.

In 2009 the Dongara Waste Water Treatment Plant (WWTP) was upgraded. Existing old infrastructure for the infiltration of treated wastewater has remained onsite for use in emergency situations. Capacity of the upgraded facility is expected to be 1200 m<sup>3</sup> of wastewater per day. The Dongara Wastewater Treatment Plant is currently capable of servicing a population up to approximately 8,500 which represents 210% increase in Town population.

According to the current Local Planning Scheme No 5 there is a 500m odour buffer around the Dongara WWTP. There are pressures to relocate the Dongara WWTP as it is situated between the town of Port Denison and the rural / residential lots of the suburb of Springfield. As population growth occurs pressure will be put on the existing odour buffer around the Dongara WWTP which will restrict development further east of Port Denison.

It is recommended that the odour buffer zone of the WWTP is reconsidered based on the new upgraded facility that produces fewer odours than the old facility. A more applicable odour buffer zone would facilitate residential development of the land to the east of the Dongara Golf Course.

The Shire owns ponds located at the waste transfer station, into which septic tanks are emptied. It is the Shire's objective that a partnership be formed with the Water Corporation to take over septic discharge so that the Shire-owned ponds are no longer required.

Residents of the Shire of Irwin that are not serviced by the Dongara WWTP are required to process their wastewater onsite. This has been previously achieved by the installation of leach drains. Due to the ground conditions surrounding the Town of Dongara it is now considered unacceptable to install leach drains and are to be replaced with Aerobic Treatment Units (ATU's). ATU's require an area for infiltration of treated wastewater on the resident's property. Where the resident is not capable of supplying a suitably sized area for treated wastewater infiltration then connection to sewer reticulation is required.

Any future development, which cannot be connected to the gravity sewer system, should encourage Aerobic Treatment Units to be used throughout the Shire to discourage leach drain use which effects groundwater quality.

Extension of mains sewer should be a requirement of all future residential developments.

## Power Supply

The Shire of Irwin is connected to the Southwest Interconnected Grid. Western Power online capacity mapping tool indicates that the Southwest Interconnected Grid has limited capacity in the region in the order of less than 5 megavolt ampere.

Western Power acknowledges that there are voltage stability limitations that exist between Three Springs and Geraldton under peak demand conditions. This is the likely cause for regular black outs within the Towns of Dongara and Port Denison. Anecdotal evidence shows that the frequency of black outs occur on average every 3 days over the peak periods of December and January.

Western Power is considering the installation of a static reactive power compensator on the Northampton feeder in 2018 which would alleviate some of the voltage capacity issues in the area.

It is expected that any future population growth of the Dongara and Port Denison Town sites would occur slowly which would allow time for the Southwest Interconnected grid to be upgraded.

The Shire of Irwin should encourage Western Power to review the existing power network in the towns of Dongara and Port Denison and identify the limiting infrastructure that is causing the localised blackout throughout the towns.

Private wind power generation and solar power conversion should be promoted throughout the Shire which would help reduce power supply reliance on Western Power.

## Street Lighting

There is street lighting throughout the Dongara and Port Denison town sites. There is a variable standard of lighting throughout the towns, with street lighting located on some roads on every power pole or every second power pole or every third power pole. This would not meet Australian Standards.

The main street through Dongara has dedicated lighting poles with underground power. Moreton Bay Fig trees have large canopies which can block street lighting during the night. The Shire of Irwin has installed upward lights directed at the trunks of the trees to combat the Moreton Bay Fig trees from blocking the street lighting.

Street lighting to Australian Standards promotes safer roads and pedestrian networks. Lighting poles are required due to underground power being installed throughout Western Australia. The provision of underground power provides an aesthetically pleasing appearance to the street, improves road safety and reduces likelihood of power network interruptions through removal of overhead lines.

The Shire of Irwin requires all future residential developments to meet with the current Australian Standards for street lighting. However, one of the implications of increased lighting standards is increased power and energy consumption and an increase in operational running costs to the Shire. There are also significant capital costs associated with underground power and increasing lighting.

The Shire of Irwin should look to progressively upgrade street lighting at key intersections through the Dongara and Port Denison town sites and maintain their requirement for any new development requiring lighting to be provided to Australian Standards.

As part of the State Underground Power programme there is a category for Localised Enhancement Projects which targets main street and tourism areas for underground power. This is a potential source of funding for future upgrades to the lighting within the Shire.

## Telecommunications

There is a Telstra cable network throughout Dongara and Port Denison. A Telstra exchange is located at the back of the Shire offices in Dongara.

According to the Telstra, Optus and Vodafone network coverage maps, Dongara and Port Denison have good coverage. Rural areas of the Shire of Irwin can experience between good to no coverage.

The National Broadband Network (NBN) is an Australian Government initiative which will deliver high-speed broadband to all Australians. The NBN is a new, wholesale-only, open access, high-speed broadband network. The NBN will involve connecting 93 per cent of Australian homes, schools and businesses to a high-speed fibre network, capable of providing broadband speeds of up to 1 gigabit per second.

An upgrade of the Telstra network will be required to provide a National Broadband Network (NBN) compliant network for any new lots created as part of any subdivision development. The developer is now required to pay for the cost of Telstra pits and pipe and the installation and to provide a trench for installation, which is usually done as part of the power installation works.

There is no known timeframe for the NBN rollout other than the initial Government commitment that it would all be completed within a 10 year period. However, the NBN website currently advises that the fixed wireless infrastructure construction is expected to be completed by 2015.

Geraldton has had NBN construction occurring throughout the City with Fixed Connections infrastructure already built. Fixed Wireless connections are available to the majority of the Geraldton City. NBN should be lobbied to extend that network to include the Shire of Irwin as part of the next stage of the NBN programme to ensure that it has the most recent telecommunications networks available to assist existing businesses and assist in the attraction of new businesses and residents to the area.

## Gas

The residents of the Shire of Irwin are not connected to a gas service. Neither ATCO Gas nor APA Group has gas infrastructure servicing the Shire of Irwin or the towns of Dongara and Port Denison.

ATCO Gas has no proposal to connect the Shire of Irwin to a gas service. They confirm that there would be a requirement to have a significant commercial or industrial industry that is established within Dongara or Port Denison to warrant the construction of a pressure reducing valve (gateway) off the Parmelia gas pipeline.

Should the residents of the Shire of Irwin want a gas service then the Shire would need to attract a commercial or industrial industry that would use significant gas supply to warrant the installation of a pressure reducing valve. This pressure reducing valve would be installed off of the Parmelia Gas pipeline. Funds made through the sale of gas from this valve would have to pay for the construction cost of gas services installed within the Shire of Irwin.

Pressure reducing valves generally cost in the order of \$4 million and a significant barrier to obtaining gas supply to the residents of the Shire of Irwin.

## DBNGP

The Dampier to Bunbury Natural Gas Pipeline (DBNGP) traverses through the Shire of Irwin. The DBNGP corridor is managed by the Department of Lands Infrastructure Corridors on behalf of the DBNGP Land Access Minister and is subject to the Dampier to Bunbury Pipeline Act 1997.

Land use within the DBNGP corridor is restricted to ensure that the integrity of the gas pipeline is not compromised. The Department of Lands should be consulted with respect to any land use or development within proximity to the DBNGP corridor.

## Road and Rail Network

Dongara and Port Denison are accessed primarily via the Brand Highway that is located to the east of the towns and runs north and south along the coast. The Brand Highway is used significantly by heavy vehicles.

The road network for the Shire is in relatively good condition. Each road within the major town sites has been constructed to industry standards. The Shire has a full time construction and maintenance team that upgrade, resurface and maintain all roads. The Shire has a maintenance program and allocated budgets for upgrade of roads and maintenance for the next ten years.

Roads outside the towns of Dongara and Port Denison are generally unsealed gravel roads that are frequently graded to reform and remove corrugations.

The road hierarchy is depicted in Figure 30.

There are two railway lines that pass through the Shire of Irwin:

- Perth to Mingenew to Dongara to Geraldton narrow gauge line under the jurisdiction of Brookfield Rail. This line is currently in operation with predominant use by grain trains that are operated by Watco for CBH Group.
- Dongara to Eneabba narrow gauge line is under the jurisdiction of Brookfield Rail and is currently out of service following Iluka suspending mining operations at Eneabba.

There are no planned upgrades to any rail infrastructure within the Shire of Irwin. Recent upgrades have occurred to the Mullewa line to Geraldton to allow the increase in transport from 3 million tons per annum to 25 million tons per annum by Brookfield Rail.

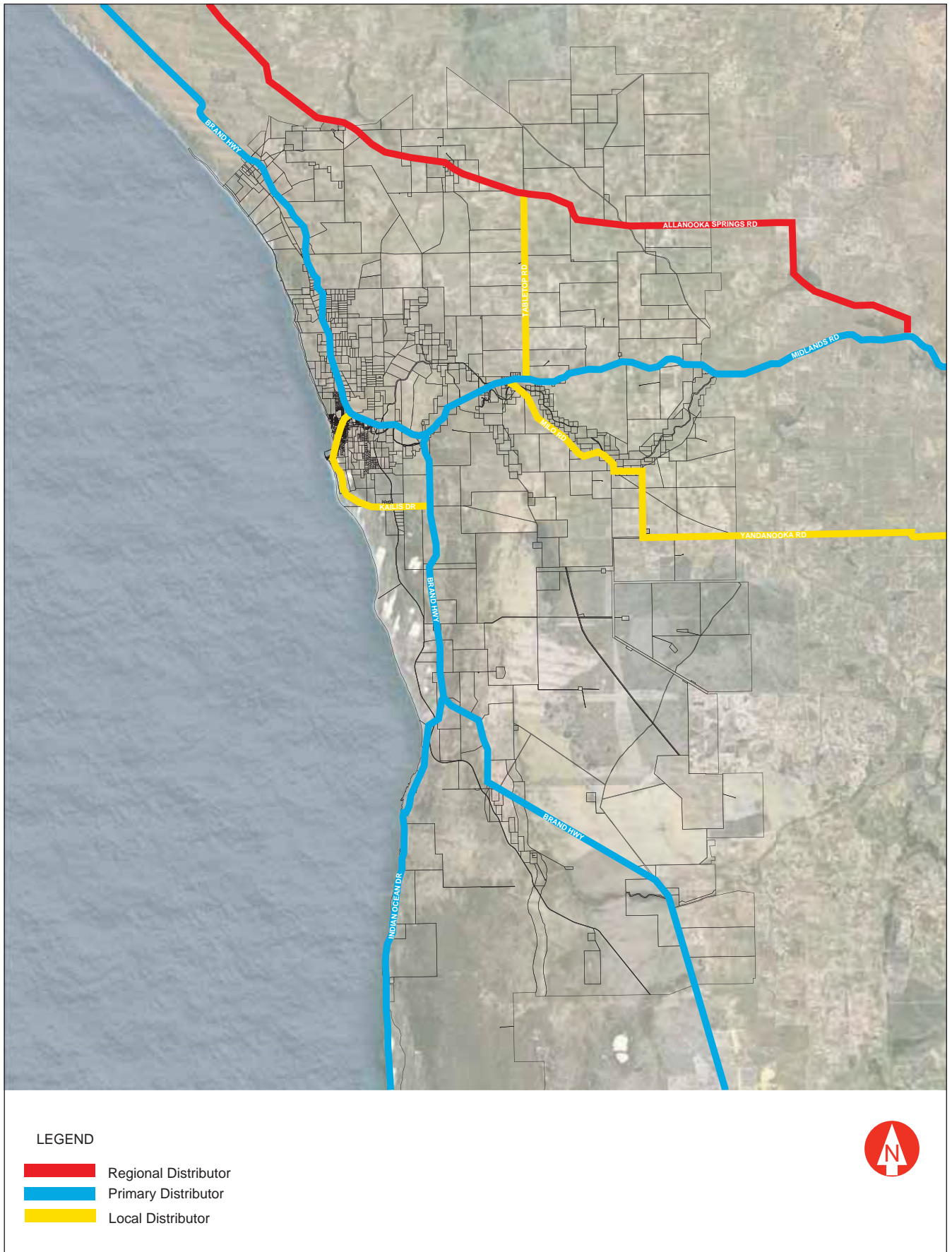


Figure 30 - Road Hierarchy Map

The main key findings are:

- The intersection of Moreton Terrace and Point Leander Drive is currently operating acceptably with pressure placed at peak tourist time through December and January. The Dongara Town Centre Revitalisation Plan suggests reconstructing the intersection and diversion of traffic. This will improve the level of service currently experienced at the intersection.
- The Point-Leander Drive crossing of the Irwin River is considered a significant constraint on the traffic network of Dongara and Port Denison as this crossing represents the only access across the River. This has led the Shire of Irwin to consider the opportunity for an additional crossing by extending St Dominics Road north. An additional crossing over the Irwin River will allow an option for trucks and service vehicles to move between towns without entering the main Dongara town centre. This is considered important for increasing safety within the town centre.
- The Shire is currently investigating the feasibility of a pedestrian bridge crossing the Irwin River.
- Expansion of the Dongara Industrial area will result in additional traffic crossing the Brand Highway which will increase the concern for safety. This safety issue will be alleviated by the construction of the Brand Highway bypass which is planned to be aligned to the north of the industrial area.
- The Department of Transport has plans to expand the Port Denison port capacity with construction of additional berths, servicing areas, parking and port facilities. This will increase the traffic volumes on Point-Leander Drive and will impact on the Point-Leander Drive 5 legged roundabout, Irwin River Crossing and Moreton Terrace intersection.
- The Kailis Drive sand dune is blowing across the road and provides a potential safety issue to road users. It will require regular monitoring and maintenance.
- The intersection of Francisco Road and Brand Highway is on the border of meeting the safe intersecting sight distance (SISD) requirements of the AustRoads Guidelines.

The main goals for the Shire of Irwin are:

- To maintain roads where dune systems may impact on the road network. This could be completed with assistance from the local mining industry who operate heavy machinery on the road system.
- Complete a Road Safety Audit for the intersection of Francisco Road and Brand Highway.
- Execute the Dongara Town Centre Revitalisation Plan.
- Investigate options available to extend St Dominics Road north across the Irwin River.

## Drainage

The Shire of Irwin is located on the coast. Natural sand dunes run for the length of the coast in the Shire. These sand dunes act as natural barriers stopping stormwater from direct overland flow to the Indian Ocean. Stormwater mainly infiltrates into the sandy ground or is collected by

the two main rivers being the Greenough River and Irwin River. The majority of stormwater within the Shire of Irwin is collected by the Irwin River and transported through Dongara and Port Denison to the Indian Ocean.

In February 2014 the Dongara District Structure Plan District Water Management Strategy (GHD 2014) was prepared for the Shire of Irwin. This report undertakes a detailed investigation into the surface water, groundwater and salinity issues in the town and should be referenced for detailed information in relation to these items. Stormwater collected within Dongara and Port Denison drains into drainage sumps or directly discharges into the Irwin River and in some locations into sensitive wetland areas.

New residential developments in the Shire are incorporating current Water Sensitive Urban Design techniques to better process stormwater before discharge into the Shire's drainage system.

Key pressures on the drainage of the Shire of Irwin are:

- Extensive sand dunes running along the length of the Shire of Irwin that trap stormwater from draining directly to the Indian Ocean. Pressure is therefore placed on the Irwin and Greenough Rivers to convey stormwater. As the catchments are large for both rivers, flooding can be unexpectedly quick and high (flash flooding).
- Currently the Irwin River is blocked by a sand bar. This sand bar would affect the stormwater levels upstream of the Irwin River for all storm events as water levels in the Irwin River are higher than if the river mouth was unblocked.

The Shire of Irwin has a combination of drainage standards within Dongara and Port Denison. The Shire generally has stormwater discharge into drainage basins throughout the towns with overland flow paths to the ocean. At some points this stormwater discharge is directly into the Irwin River and/or ocean. Discharge directly into the Irwin River does not meet current standards and must be discontinued, as this practice can alter the water quality of the Irwin River and the wildlife contained within.

Parts of Dongara and Port Denison lie within the Department of Water (DoW) floodplain development control area for the Irwin River. As outlined in the Dongara-Port Denison District Structure Plan (June 2014), DoW advised that development within the floodway is unacceptable as it is considered obstructive to major flows and would increase flood levels upstream. Development outside the floodway (including within the flood fringe) is considered acceptable with respect to major flooding, and a minimum habitable floor level 750 mm above the 100 year ARI flood level is recommended to ensure adequate flood protection.

Additionally, access into and out of the Springfield area may be restricted during flooding events.

As development moves further north and south of the towns of Dongara and Port Denison, care needs to be given to the drainage design. This is important as the distance from the main discharge point of the Irwin River will become longer and catchments will become larger.

Careful planning now will alleviate drainage problems in the future and reduce the cost of development which in turn will better promote future development to occur. There are options available now to set aside drainage basin areas that can service multiple developments more efficiently than individual basins are capable of.

Maintaining current water sensitive urban design standards for new developments is important to maintain the quality of natural ecosystems.

### **Pedestrian and Cycling Facilities, and Public Transport**

There are footpath networks throughout Dongara and Port Denison, in particular in the main streets. Apart from the footpaths, there are no designated cycle facilities in the towns.

The Dongara main street, Moreton Terrace, has significant issues with the Moreton Bay Fig tree roots lifting the pavers of the footpaths. This causes a safety issue with pedestrian and cyclists by creating trip hazards, especially adjacent to the road. The Shire of Irwin has attempted to alleviate this issue by installing floating footpaths where the tree roots can grow underneath without effecting the path.

The following public transport buses stop within Dongara and Port Denison.

Integrity Coach Lines:

- Perth to Broome and back twice a week
- Perth to Exmouth and back once a week
- Perth to Geraldton and back three times a week

Transwa:

- Perth to Geraldton, via Moora, and back four times a week
- Perth to Geraldton, via Eneabba, and back five times a week

There is no public transport between or around Dongara and Port Denison.

The Hames Sharley report of March 2014, The Shire of Irwin Bicycle Plan, should be referred to for greater detail regarding the future Shire of Irwin connected footpath and bicycle network and recommended key infrastructure upgrades. The Shire will progressively implement the bicycle plan as funding becomes available.

### **Airport**

The aerodrome is located on the southern outskirts of Port Denison and is operated by the Western Australian Department of Transport and funded by Royalties for Regions, Regional Airport Development Scheme. The aerodrome has been resurfaced with asphalt recently, which was funded by an oil and gas company which uses the aerodrome for daily flights to their offshore oil rig. The airstrip is approximately 18m wide and 1.2km long. It has a single lane access off Kailis Drive.

The Port Denison Aerodrome is currently been used by the oil and gas industry every day. The Aerodrome may need infrastructure upgrades in the future if the use is increased, subject to demand.

### **Port**

The Port of Port Denison has two boat ramps and three jetties. There are facilities to refuel boats and the port is enclosed by two rock barriers. The Port is controlled by the Western Australian Department of Transport.

There are off shore oil and gas operations near Dongara and Port Denison. Boats that support and resupply the off shore operations leave from the Port of Geraldton. The Port of Geraldton is located 30minutes north of Dongara. According to the Department of Transport, local servicing and resupply out of Port Denison would be welcomed by the oil and gas industry. This demand is applying pressure to increase the capacity of the Port of Port Denison to enable refuelling of the oil and gas industry's larger boats.

The Western Australian Department of Transport has plans to expand the capacity of both the refuelling areas and the berth numbers. Additionally, as part of the Department of Transport's plan for redevelopment of the Port of Port Denison, a child friendly swimming area may be included.

At certain times in the year and subject to ocean currents, the Port has limited flushing which stagnates the water with resultant decomposing seaweed emitting an unpleasant odour. This issue could be resolved through small alterations to the current port rock barriers and/or their permeability. Specialist coastal engineering consultants should be engaged to assess the situation and provide opportunities for resolution to this odour issue prior to the Department of Transport moving forward with any Port expansion.

### **Landfill**

Currently the Shire of Irwin has an operational Waste Transfer Station located on Dee Street, to the east of Port Denison.

The Transfer station handles the following material:

- General household waste
- Commercial waste
- Asbestos
- Green waste
- Animal carcasses
- Wastewater Treatment Plant solid waste

An external contractor operates the waste collection operations on behalf of the Shire of Irwin. Waste is placed into 240 litre mobile rubbish bins by the Irwin community, which are then picked up and taken to the Transfer Station by an external contractor. Recycling facilities are located at the Transfer Station where newspapers and other goods are recycled, including sale of goods direct to the public.

The nearest residents are located approximately 400m away from the boundary of the Transfer Station. The Shire has received complaints about the smell of the tip from the local residents.

The Shire of Irwin has the intention to relocate the Transfer Station but at this stage have no plans in place. Should the tip be relocated then the land would not be suitable for permanent structures to be built over the top. Relocation of the adjacent golf course to the Transfer Station would be an option for reuse of the land. Land that would be swapped with the golf course would then be suitable for residential subdivision.

## 2.9 Mining and Petroleum

### Geology and Prospectivity

The Shire has potential for multiple resource commodities. Historical activities have included limesand, sand and gypsum mining. Current activities are dominated by petroleum, limesand, limestone, and gypsum extraction, and titanium-zircon, coal and petroleum exploration. Refer to Appendix B for mapping depicting mineral deposits.

#### Regional Geology

With the exception of Mesoproterozoic (between 1600 – 1000 million years old) granitic gneiss intersected in some deep petroleum wells, the Shire of Irwin is underlain by Phanerozoic (less than 542 million years old) sedimentary rocks of the Perth Basin.

The deposition of the sedimentary rocks that now form the Perth Basin commenced in a marine environment during the Ordovician (post 460 million years) and continued intermittently through in the Quaternary (1.8 million years). Perth Basin sedimentary rocks host significant petroleum fields for gas, oil and condensate. The youngest sediments are unconsolidated or partly lithified and consist mainly of sands, limestones, silts, clays and gravels of marine, estuarine and eolian origin. Extensive deposits of titanium-zircon mineralisation containing ilmenite, zircon and monazite are associated with a former shoreline along the Gingin Scarp, which now forms a prominent northwest trending topographic feature west of Irwin. Potential resources within the Perth Basin or surficial sediments include petroleum, shale and tight gas, geothermal energy, coal, titanium-zircon, gypsum and basic raw materials including limesand, limestone, sand and clay.

### Mineral Resources

Within the Shire there is one operating gypsum mine and six proposed titanium-zircon openpits with Tronox Limited's 'Dongara-Irwin Heavy Mineral Sand Project'. In addition there are currently 15 undeveloped mineral deposits within the Shire; including nine titanium-zircon deposits, five diatomite-spongolite deposits and a coal deposit. Two former gypsum mines are also mapped within the Shire.

Within the southeastern portion of the Shire the 'Strategic Mineral Resource Protection Areas' for titanium-zircon and their 500 metre separation areas require protection from conflicting and sensitive land uses.

### Petroleum Resources And Geothermal Energy

Some sections of the underlying sedimentary rocks within the Shire of Irwin are highly prospective for petroleum and coal resources and prospective for geothermal energy, and shale and tight gas resources.

Exploration to date has identified a total of sixteen petroleum fields, comprising seven for gas, six for oil, two for gas and condensate and one for oil and gas. Currently thirteen fields are classified as 'Producing' and three as 'Depleted'.

Petroleum fields also require protection from conflicting and sensitive land uses. Urban or rural residential development within or near the petroleum fields needs special consideration in consultation with the Department of Mines and Petroleum (DMP).

### Basic Raw Materials

Basic raw materials extraction plays a significant role in the local economy. Strategic mineral protection areas have been identified following consultation with the Department of Mines and Petroleum and are identified on the relevant Strategy maps.

There is a total of thirteen BRM quarries and deposits within the Shire (Appendix B) for limesand, limestone, sand and clay. Four limesand quarries are classified as 'Operating', four are 'Proposed' for limesand associated with mobile dunes along the coast south of Dongara, one is 'Proposed' for sand at Wye Farm Road, and four quarries for limesand, sand and clay are classified 'Shut'.

There are currently six Extractive Industry Licenses for sand and three licences for limesand. Thirteen Crown reserves are used for the purpose of BRM.

Separation distances to existing Basic Raw Materials (BRM) operations in proximity to sensitive land uses have been identified on the Strategy maps to ensure basic raw materials extraction operations are protected and land use conflicts minimised.

### Oil and Gas

Operational off-shore gas fields located in the region include Dongara, Woodada and Beharra Springs.

There are also many untested prospects in the region, including those that contain shale gas resources as onshore gas prospects east of Dongara. The potential for these prospects are improved from an economic and logistics point of view given the proximity to the Parmelia and Dampier-to-Bunbury natural gas pipeline, the general proximity to the Perth region and the deregulated Western Australian gas markets. Apart from economic considerations, social and environmental impacts are key considerations in determining whether such prospects may proceed.

Employment opportunities may be generated from the oil and gas industry in the longer term subject to these prospects obtaining the relevant approvals. The Shire may need to consider if petroleum exploration and operations should be formalised in LPS No. 5 in terms of definitions, scheme provisions and associated guidance material. If required, the Shire can undertake a scheme amendment to update to incorporate these considerations.

### **Mining Tenements, Petroleum And Geothermal Titles**

In total, there are fifty granted mining tenements and thirteen pending mining tenements, wholly or partly within the Shire, but no active State Agreements (Appendix B). Most of the mining companies are targeting titanium-zircon along the Gingin Scarp and east to the Shire boundary, and limesand associated with mobile dunes along the coast south of Dongara.

There are eight granted and six pending petroleum titles, one pending petroleum application, and eight granted geothermal titles wholly or partly within the Shire of Irwin.

### **Constraints**

Separation distances to existing BRM operations in proximity to sensitive land uses have been identified on the Strategy maps to ensure basic raw materials extraction operations are protected and land use conflicts minimised.

### **Memorandum Of Understanding (September 1998)**

DMP encourages proactive intergovernmental communication to assist in the comprehension and resolution of potential land use conflicts, and is actively involved in the following Memorandum of Understanding (MOU):

The 'Land use planning and mineral resource exploration and mining' Memorandum of Understanding (MOU) was signed on 1 September 1998 between the Western Australian Planning Commission, and the then Department of Minerals and Energy and Ministry for Planning. This MOU established a management system for effective and efficient consultation between the Commission and the Department to ensure that mineral resource interests, including basic raw materials, are taken into account in the land use planning process. Its principal aim is to ensure that there is consultation between the Commission and the Department before either party makes decisions affecting land use and significant mineral resources. This MOU commits signatories to work together to integrate mineral exploration, mining land use and planning.



# 3. State Planning Context

## 3.1 State Planning Strategy

The first State Planning Strategy was published in 1997 and was primarily focused on land use planning. Since then Western Australia has been shaped by population growth, the global economy and increased water and energy requirements.

The draft State Planning Strategy (December 2012) sets a vision for 2050 based on a framework of State planning principles and strategic directions and seeks to anticipate, adapt to and manage the drivers of change most likely to influence the future development of Western Australia.

The draft Strategy recognises that remote settlements and regional local governments are critical to the State's economic wellbeing and central to the Western Australian experience. Key strategies and actions relevant to the Shire of Irwin are as follows:

Strategic Direction	Aspiration
<b>Economic development</b>	Regional areas consistently attract and retain a skilled workforce. Regional areas are more economically diverse.
<b>Education, training and knowledge transfer</b>	More regional knowledge education infrastructure.
<b>Tourism</b>	Community's unique identity, history and sense of place is promoted and supported.
<b>Environment</b>	Planning and development decisions balance environmental, social and economic elements. Pastoral rangelands activities are diversified and natural resources are managed sustainably.
<b>Agriculture and food</b>	Fragmentation of agricultural land is limited and consolidation is encouraged. Increased export and inward investment in the agrifood sector.
<b>Physical infrastructure</b>	All new urban development is water sensitive, energy efficient and climate responsive as a development standard. Industry, agricultural and mining sections implementing best management practice. Secured strategic sites, buffers and corridors for waste management facilities. Integrated land use and transport. Telecommunication infrastructure is a matter of consideration in planning frameworks, schemes and development decisions.
<b>Social infrastructure</b>	Streets are designed for people. A high degree of character and amenity that reflects the cultural values of the community. Compact settlement structures with civic spaces. Community integration through a variety of meeting places. The demographic of the region displays a mix of ages and skills. There is a variety of housing types, sizes and affordability, including adaptive re-use of existing buildings. There are local opportunities for further skill training.
<b>Land availability</b>	Adequate land is available, accessible and serviced for housing, recreation, transport, water, food and industry through the efficient use of land. Well-serviced regional towns that have built-in capacity to cater for growth.
<b>Remote settlements</b>	All remote settlements are on appropriate land tenure. Adequate social services.

## 3.2 State Planning Framework

The WAPC's State Planning Policy No. 1: State Planning Framework brings together State and regional policies applying to land use and development in Western Australia into a State Planning Framework, and reinforces key strategic directions of the State Planning Strategy.

Those elements of the State Planning Framework most relevant to the Shire of Irwin are outlined in the following sections.

## 3.3 State Planning Policies

### SPP 2 Environmental and Natural Resources Policy

This Policy sets out the key principles of how planning can integrate ecological, economic and social considerations into decision-making whilst acknowledging the inherent difficulties of balancing conflicting needs. The Policy measures most relevant to the Shire of Irwin can be summarised as follows:

Local planning schemes and decision making should consider the following:

- Protect significant natural, indigenous and cultural features and consider incorporation of appropriate planning and building design and siting criteria to ensure that new development is consistent and sensitive to the character and quality of the landscape/features, including the requirement of a visual impact statement;
- Take account of potential for on-site and off-site impacts of land use on the environment and have regard to the potential conflict between sensitive land uses and activities with air emission impacts;
- Encourage urban and regional water management through water sensitive design that better manages stormwater quality and quantity;
- Identify existing and potential areas affected by severe land degradation (e.g. acid sulphate soils, salinity, erosion) and, where appropriate, facilitate measures such as promoting vegetation retention or rehabilitation and the prevention of inappropriate development;
- Ensure the protection of areas of high biodiversity conservation value through planning controls and conservation covenants;
- Recognise and protect agricultural land in line with SPP2.5, and diversify compatible land uses in these areas; and
- Promote energy efficient development and good climate responsive urban design.

### SPP 2.5 – Rural Planning

State Planning Policy 2.5 – Rural Planning (SPP 2.5) was adopted by the WAPC in December 2016 with the primary intent of the policy to protect and preserve rural land assets within Western Australia. SPP 2.5 applies to rural land throughout Western Australia in relation to rural land.

The specific objectives of the policy are to:

- (a) support existing, expanded and future primary production through the protection of rural land, particularly priority agricultural land and land required for animal premises and/or the production of food;
- (b) provide investment security for existing, expanded and future primary production and promote economic growth and regional development on rural land for rural land uses;
- (c) outside of the Perth and Peel planning regions, secure significant basic raw material resources and provide for their extraction;
- (d) provide a planning framework that comprehensively considers rural land and land uses, and facilitates consistent and timely decision-making;
- (e) avoid and minimise land use conflicts;
- (f) promote sustainable settlement in, and adjacent to, existing urban areas; and
- (g) protect and sustainably manage environmental, landscape and water resource assets.

The policy measures that are specifically relevant to the preparation of this local planning strategy include the following:

Policy Measure	Policy
<b>Protection of rural land and land uses</b>	<ul style="list-style-type: none"> <li>• Require land use change from rural to all other uses to be planned and provided for in a planning strategy or scheme;</li> <li>• Retain land identified as priority agricultural land in a planning strategy or scheme for that purpose;</li> <li>• Ensure retention and protection of rural land for biodiversity protection, natural resource management and protection of valued landscapes and views.</li> </ul>
<b>Rural living</b>	<ul style="list-style-type: none"> <li>• Rural living precincts will only be supported where they form part of a settlement hierarchy established in an endorsed planning strategy;</li> <li>• The planning requirements for rural living precinct are that –               <ol style="list-style-type: none"> <li>(I) the land be adjacent to, adjoining or close to existing urban areas with access to services, facilities and amenities;</li> <li>(II) the proposal will not conflict with the primary production of nearby land, or reduce its potential;</li> <li>(III) areas required for priority agricultural land are avoided;</li> <li>(IV) the extent of proposed settlement is guided by existing land supply and take-up;</li> <li>(V) areas required for urban uses are avoided;</li> <li>(VI) appropriate water and electricity supply is available and proximity to other important services and facilities;</li> <li>(VII) other environmental factors, such as avoiding land prone to flooding, mitigating bushfire risk and buffers and ensuring the land is capable of supporting the development of dwellings and associated infrastructure.</li> </ol> </li> </ul>
<b>Regional variation, economic opportunities and regional development</b>	<p>Provide economic support for rural communities through the following measures:</p> <ol style="list-style-type: none"> <li>(a) continue to promote rural zones in schemes as flexible zones that cater for a wider range of land uses;</li> <li>(b) support small rural communities by providing for rural enterprise zones which combine light industry and housing, provided they are carefully planned;</li> <li>(c) support small scale tourism opportunities; and</li> <li>(d) recognise the differing needs of the various regions, and consider regional variations where they meet the stated objectives of the policy.</li> </ol>
<b>Tree farming</b>	<p>WAPC Policy in regard to tree farming is:</p> <ol style="list-style-type: none"> <li>a) tree farming is supported and encouraged on rural land as a means of diversifying rural economies and providing economic and environmental benefit;</li> <li>b) tree farming should generally not occur on priority agricultural land;</li> <li>c) tree farming should generally be a permitted use on rural land, except where it would create an unacceptable bushfire risk;</li> <li>d) in planning for tree farming, consideration should be given to potential bushfire risk, environmental and economic factors, water availability, visual landscape impacts, transport impacts, planting thresholds, appropriate buffers and other factors; and</li> <li>e) the establishment of tree farms do not warrant the creation of new or smaller rural lots.</li> </ol>
<b>Intensive agriculture</b>	<p>Intensive agriculture is generally supported and encouraged on rural land provided rural amenity and environmental impacts can be effectively managed.</p>
<b>Basic raw materials outside the Perth and Peel planning regions</b>	<ol style="list-style-type: none"> <li>(a) Significant Geological Supplies and their buffers are not to be developed for other purposes until the resource is extracted, or unless development is compatible with the future extraction of the resource;</li> <li>(b) Region and local planning schemes should identify Significant Geological Supplies and significant basic raw material resources, and include provisions for their protection, access and use;</li> <li>(c) Region and local planning schemes should generally not prohibit the extraction of basic raw material resources;</li> <li>(d) Sensitive zones and/or land uses may be approved where it can be demonstrated they will not limit the existing or potential extraction of basic raw materials.</li> </ol>
<b>Preventing and managing impacts in land use planning</b>	<p>The key measures for preventing and managing impacts in land use planning are built around the following themes:</p> <ul style="list-style-type: none"> <li>• Avoiding land use conflict;</li> <li>• Ensuring sensitive land uses in rural zone which are consistent with rural amenity;</li> <li>• Determination of buffers for off-site rural land use impacts and incorporation of buffers into relevant planning instrument; and</li> <li>• Managing land use transition between rural and urban zones.</li> </ul>

The requirements of this policy have informed the rural land use planning within this local planning strategy. The local planning strategy also gives consideration to agricultural versatility mapping provided by the Department of Agriculture and Foods.

### SPP 2.6 – State Coastal Planning Policy

The purpose of the State Coastal Planning Policy is to provide guidance for decision-making within the coastal zone including managing development and land use change; establishment of foreshore reserves; and to protect, conserve and enhance coastal values.

The objectives of this Policy are to:

1. ensure that development and the location of coastal facilities takes into account coastal processes, landform stability, coastal hazards, climate change and biophysical criteria;
2. ensure the identification of appropriate areas for the sustainable use of the coast for housing, tourism, recreation, ocean access, maritime industry, commercial and other activities;
3. provide for public coastal foreshore reserves and access to them on the coast; and
4. protect, conserve and enhance coastal zone values, particularly in areas of landscape, biodiversity and ecosystem integrity, indigenous and cultural significance.

Policy measures outlined in section 5 of SPP 2.6 come under the headings of General Measures; Development and Settlement; Water Resources and Management; Building Height Limits; Coastal Hazard Risk Management and Adaption Planning; Infill Development; Coastal Protection Works; Public Interest; Coastal Foreshore Reserve; Coastal Strategies and Management Plans; and Precautionary Principle.

As a coastal settlement, this policy is particularly relevant for Dongara and Port Denison. The policy measures have been used to inform the future planning for the Shire.

### SPP 2.7 Public Drinking Water Source Policy

The objective of this Policy is to ensure that land use and development within Public Drinking Water Source Areas (PDWS areas) is compatible with the protection and long-term management of water resources for public water supply.

Under the Policy, it is expected that planning strategies, schemes and decision-making will identify and, where appropriate, include provisions to protect surface and groundwater resources for public water supply.

Priority PDWS areas have been identified within this document and where relevant are proposed to be protected via the introduction of Special Control Areas within the local planning scheme framework to control the types of land uses that are permitted within these areas.

Within the Shire, two Public Drinking Water Source Areas have been identified: the Allanooka and Dongara-Denison Water Reserves approximately 12km and 20km north east of the Dongara town site respectively. The safeguarding of these areas, in line with SPP 2.7, will be necessary for the Shire to ensure their long-term protection.

### SPP 2.9 Water Resources

This Policy provides guidance for the consideration of water resources in land use planning processes. The objectives of the Policy generally seek to protect, conserve and enhance significant water resources and to ensure the availability and quality of water sources.

The Policy indicates that water resource issues should be a key consideration when developing a local planning strategy, including the following requirements:

- Mapping water resources within the area and applying an appropriate hierarchy;
- Determining the type and intensity of land uses permissible within a public drinking water source areas, as well as applying appropriate zonings, reserves, buffers, setbacks, development restrictions and subdivision controls;
- Identifying a public open space network inclusive of drainage lines and multiple-use corridors;
- Considering off-site / downstream influences of planning decisions.

The Policy recommends the following additional requirements relevant to the Shire of Irwin when considering water resources in local planning schemes:

- The use of special control areas in protection and management of water resources;
- Public drinking water source areas should be protected from inappropriate subdivision and development;
- Schemes should afford significant water resources protection, including buffers/ setbacks or the requirement for preparation of a management plan.

The Shire has identified, through Department of Water mapping, priority PDWS areas that require protection within its local planning scheme by way of a Special Control Area.

### SPP 3.1 Residential Design Codes

The purpose of the Residential Design Codes (R-Codes) is to provide a comprehensive basis for the control of residential development throughout the State by listing a number of design principles and deemed-to-comply criteria. Generally, the R-Codes seek to:

- Provide appropriate design for the intended residential purpose, density, context of place and local scheme objectives;
- Encourage sustainable design initiatives for new housing;
- Encourage design which respects heritage and local culture;
- Facilitate housing diversity, choice and affordability; and
- Ensure certainty in timely assessment and determination of proposals applied consistently across State and local government.

Currently, the Shire of Irwin's local planning scheme identifies residential densities of R2.5 up to R50, primarily in the Dongara and Port Denison townsites. In accordance with the local planning scheme, the Shire of Irwin is to assess any application for residential development against the R-Codes, giving due regard to the above objectives and the design principles contained therein.

### Liveable Neighbourhoods

Liveable Neighbourhoods is an operational policy for the design and assessment of structure plans (regional, district and local) and subdivision for new urban (predominantly residential) areas in the metropolitan area and country centres, on greenfield and large urban infill sites.

Liveable Neighbourhoods has the following aims:

1. To provide for an urban structure of walkable neighbourhoods clustering to form towns of compatible mixed uses in order to reduce car dependence for access to employment, retail and community facilities.
2. To ensure that walkable neighbourhoods and access to services and facilities are designed for all users, including those with disabilities.
3. To foster a sense of community and strong local identity and sense of place in neighbourhoods and towns.
4. To provide for access generally by way of an interconnected network of streets which facilitate safe, efficient and pleasant walking, cycling and driving.
5. To ensure active street-land use interfaces, with building frontages to streets to improve personal safety through increased surveillance and activity.
6. To facilitate new development which supports the efficiency of public transport systems where available, and provides safe, direct access to the system for residents.
7. To facilitate mixed-use urban development which provides for a wide range of living, employment and leisure opportunities, capable of adapting over time as the community changes and which reflects appropriate community standards of health, safety and amenity.
8. To provide a variety of lot sizes and housing types to cater for the diverse housing needs of the community at a density that can ultimately support the provision of local services.
9. To ensure the avoidance of key environmental areas and the incorporation of significant cultural and environmental features of a site into the design of an area.
10. To provide for a more integrated approach to the design of open space and urban water management.
11. To ensure cost-effective and resource-efficient development to promote affordable housing.
12. To maximise land efficiency wherever possible.

To achieve these aims, the policy sets out the design elements for good neighbourhoods, which should be followed in the development of structure plans and

subdivision plans. Additional guidance is also provided in the appendices with regard to site and context analysis; the design process for District Structure Plans and consequent subdivision; the walkable catchment technique; cash in lieu of public open space; and guidance on school site layouts.

The application of Liveable Neighbourhoods will be necessary for any future structure planning or subdivision planning of new urban areas in the Shire.

### SPP 3.4 Natural Hazards and Disasters

State Planning Policy 3.4 Natural Hazards and Disasters (SPP 3.4) considers a range of potential hazards to communities, including flooding, severe storms and cyclones, bush fires, storm surge, coastal erosion, landslides and other land movements and earthquakes.

The objectives of SPP 3.4 are to:

- Include planning for natural disasters as a fundamental element in the preparation of all statutory and non statutory planning documents, specifically local planning schemes and amendments, and local planning strategies; and
- Through the use of these planning instruments, to minimise the adverse impacts of natural disasters on communities, the economy and the environment.

In preparing the local planning strategy for the Shire, consideration has been given to addressing the impact of these potential hazards on community, the built environment and infrastructure. Pertinent to the Shire of Irwin will be the need to plan for bushfires, flooding, coastal erosion and storm surge events.

### SPP 3.5 Historic Heritage Conservation

The Historic Heritage Conservation Planning Policy (SPP3.5) sets out the principles of sound and responsible planning for the conservation and protection of Western Australia's historic heritage. The objectives of this policy are:

- To conserve places and areas of historic heritage significance.
- To ensure that development does not adversely affect the significance of heritage places and areas.
- To ensure that heritage significance at both the State and local levels is given due weight in planning decision-making.
- To provide improved certainty to landowners and the community about the planning processes for heritage identification, conservation and protection.

The policy applies to any areas of State or local significance throughout Western Australia. Local planning strategies are required to have regard to the designation of heritage areas and should seek to minimise the extent to which land use zoning and other planning controls conflict with, or undermine, heritage conservation values.

The Dongara townsite was first surveyed in 1852, and as one of the State's oldest European settlements has a rich and valued heritage. The coastal area at the mouth of the

Irwin River, now known as Port Denison, was officially gazetted in 1867 and also has a rich history. Historical evidence of the twin towns' past, seen in the many early buildings still remaining and the Moreton Bay Figs lining the main street, is highly valued by the community.

The Shire's heritage places are currently recognised on the Municipal Heritage Inventory, which has informed the preparation of a Heritage List. The Heritage List has not yet been adopted under the local planning scheme, and therefore is not afforded the protection of the scheme.

It is recommended that the Heritage List be adopted pursuant to Clause 7.1 of LPSS to grant statutory protection to the list.

### SPP 3.6 – Development Contributions for Infrastructure

SPP 3.6 sets out development contribution provisions for standard infrastructure items applied by the Western Australian Planning Commission (WAPC) on the subdivision, strata subdivision, or development of land; and provides a consistent, accountable and transparent system for local governments to plan and charge for community infrastructure items which are not included in the standard provisions through development contribution plans.

The policy outlines that development contributions can be sought for items of infrastructure that are required to support the orderly development of an area. In addition, local governments can seek contributions for the capital costs of community infrastructure which is defined as: *'the structures and facilities which help communities and neighbourhoods to function effectively, including –*

- *sporting and recreational facilities*
- *community centres*
- *childcare and after school centres*
- *libraries and cultural facilities; and*
- *such other services and facilities for which development contributions may reasonably be requested, having regard to the objectives, scope and provisions of this policy.'*

The establishment of Development Contribution Plans, in accordance with SPP 3.6, will assist the Shire in providing the key infrastructure required to support future growth.

### SPP 3.7 – Planning in Bushfire Prone Areas

State Planning Policy 3.7 – Planning in Bushfire Prone Areas establishes a State-wide framework to address bushfire risk throughout Western Australia. The objectives of SPP 3.7 are outlined below:

- Avoid any increase in the threat of bushfire to people, property and infrastructure. The preservation of life and the management of bushfire impact are paramount.
- Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process.

- Ensure that higher order strategic planning documents, strategic planning proposals, subdivision and development applications take into account bushfire protection requirements and include specified bushfire protection measures.
- Achieve an appropriate balance between bushfire risk management measures and, biodiversity conservation values, environmental protection and biodiversity management and landscape amenity, with consideration of the potential impacts of climate change.

The policy stipulates that higher order strategic planning documents should give high level consideration of relevant bushfire hazards when identifying or investigating land for future development.

SPP 3.7 is supported by the Guidelines for Planning in Bushfire Prone Areas (the Guidelines) which provides guidance in determining appropriate land use planning in relation to bushfire prone areas, specifies the requirements to be met at each stage of the planning process and outlines the necessary bushfire protection measures that are to be incorporated into development.

Future subdivision and development approvals within the Shire may be subject to the requirements of the policy and be required to provide the following level of assessment:

- a) a BAL Contour Map to determine the indicative acceptable BAL ratings across the subject site, in accordance with the Guidelines.
- b) the identification of any bushfire hazard issues arising from the BAL Contour Map; and
- c) an assessment against the bushfire protection criteria requirements contained within the Guidelines.

This information can be provided in the form of a Bushfire Management Plan.

### SPP 4.1 Draft State Industrial Buffer Policy

The draft State Industrial Buffer Policy (SPP 4.1) applies state wide to:

- new industrial areas and uses, and essential infrastructure;
- sensitive land uses in proximity to existing industrial areas and essential infrastructure; and
- the expansion or change in the operations of existing industry and essential infrastructure.

The objectives of the policy are to:

- avoid conflict between industry and/or essential infrastructure and sensitive land uses;
- protect industry and/or essential infrastructure from encroachment by those land uses that would be sensitive to impacts and adversely impact the efficient operations;
- provide for the development of industry and/or the provision of essential infrastructure in a way that maximises amenity, minimises environmental and

health impacts and takes account of risk to nearby sensitive land uses; and

- promote compatible uses in areas affected by off-site impacts of industry and/or essential infrastructure.

The Shire of Irwin has a number of existing industrial areas generally located adjacent to Brand Highway or in close proximity to the Port. Consideration will need to be given to the establishment of development provisions to ensure an appropriate interface treatment between residential and industrial areas where any proposed change in land use or new development is contemplated, and also where existing industrial uses abut residential areas.

### SPP 5.2 Telecommunications Infrastructure

The Telecommunications Infrastructure Planning Policy (SPP5.2) provides a framework for the preparation, assessment and determination of applications for planning approval for telecommunications facilities within the context of the planning system of Western Australia.

The objectives of this policy are to:

- facilitate the provision of telecommunications infrastructure in an efficient, cost-effective and environmentally responsible manner to meet community needs;
- facilitate the development of an effective statewide telecommunications network in a manner consistent with the economic, environmental and social objectives of planning in Western Australia as set out in the Planning and Development Act 2005 and the State Planning Strategy;
- assist community understanding of the issues involved in the design and installation of telecommunications infrastructure and provide opportunities for community input to decision making;
- promote a consistent approach in the preparation, assessment and determination of applications for planning approval for telecommunications infrastructure;
- minimise disturbance to the environment and loss of amenity in the provision of telecommunications infrastructure; and
- ensure compliance with all relevant health and safety standards in the provision of telecommunications infrastructure.

The policy applies to the zoning, subdivision and development of land throughout Western Australia in respect to all telecommunications infrastructure other than those facilities exempted under the *Telecommunications Act*.

### SPP 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning

The Road and Rail Transport Noise and Freight Considerations in Land Use Planning Policy (SPP5.4) aims to promote a system in which sustainable land use and transport are mutually compatible. It seeks to minimise the adverse impacts of transport noise without placing unreasonable restrictions on noise sensitive residential development, or adding unduly to the cost of transport infrastructure. The policy applies to proposals for noise-sensitive development in the vicinity of major transport corridors or freight handling facilities, construction of major roads and railways, redevelopment of major roads and railways and freight handling facilities.

The objectives of the policy are to:

- protect people from unreasonable levels of transport noise by establishing a standardised set of criteria to be used in the assessment of proposals;
- protect major transport corridors and freight operations from incompatible urban encroachment;
- encourage best-practice design and construction standards for new development proposals and new or developed transport infrastructure proposals;
- facilitate the development and operation of an efficient freight network; and
- facilitate the strategic co-location of freight handling facilities.

Various roads within the Shire accommodate freight traffic, including Brand Highway, Point Leander Drive, Kailis Drive, Indian Ocean Drive, Midlands Road, Allanoooka Springs Road, Tabletop Road and Milo Road, amongst other roads, and therefore land use planning in proximity to these roads would be subject to the requirements of this policy.

The policy includes mapping of the freight network within Western Australia and Brand Highway and the parallel rail line are identified as part of this network. SPP5.4 is relevant to planning within the Dongara townsite for land that is zoned 'Special Residential' and located between the existing Brand Highway and future bypass alignment and rail reserve.

Given that the 'Special Residential' zone has not yet been subdivided or developed for residential purposes, it would be considered a new 'noise sensitive' development for the purposes of application of SPP 5.4.

The policy recommends a number of measures to manage and mitigate against noise impact on new noise sensitive developments, including:

- Undertake a noise impact assessment as early as practicable in the planning process.
- A range of noise mitigation measures including providing adequate separation from noise sources, noise attenuation barriers and building design and construction techniques.

- Notifications on title advising prospective purchasers of the potential for noise impacts from major road and rail corridors.

A Special Control Area may also be introduced to introduce Scheme controls to mitigate adverse environmental impacts due to proximity to a noise emitting freight route.

### **Development Control Policy 2.2 – Residential Subdivision**

Development Control Policy 2.2 (DC 2.2) establishes the WAPC's policy position on residential subdivision. The policy states that generally the minimum lot size and frontage requirements of the relevant R-Code will form the basis for subdivision of residential land.

A primary consideration for the Shire of Irwin relates to the application of the Government Sewerage Policy and its application to those areas that do not have the ability to connect to reticulated sewerage. The policy provide for some exceptions to the application of the Government Sewerage Policy (i.e. not subdivision within sewer or minimum lot size of 2,000m<sup>2</sup>) for areas outside the Perth metropolitan area as follows:

1. small infill subdivision or development which does not have potential for the creation of more than four additional lots, dwellings or single residential equivalents respectively in the immediate vicinity, and where the proposal completes rather than extends the existing pattern of subdivision and development;
2. remote and isolated subdivisions or density developments which do not involve the potential for the creation of more than 25 lots, dwellings or single residential equivalents and the applicant can demonstrate that site conditions are suitable for effective long-term on-site disposal, residential developments do not exceed R12.5 and no individual lot containing on-site disposal is less than 700m<sup>2</sup>, and sewerage services are unavailable and impractical within the foreseeable future; and
3. aged or dependent persons' accommodation which does not exceed a density of R12.5 and meets tests of need and site suitability.

### **Draft Government Sewerage Policy (2016)**

The draft Government Sewerage Policy (2016) has been released for public consultation and establishes the State government's position on the provision of reticulated sewerage in the State in relation to the rezoning, structure planning, subdivision and development of land. The policy adopts a risk management approach to sewage management in line with AS 1547 On-site domestic wastewater management.

The objectives of the policy are:

- To protect public health and amenity;
- To protect the environment and the State's water and land resources;

- To promote the efficient use of infrastructure and urban land; and
- To minimise costs to the broader community by ensuring an appropriate level and form of sewerage servicing is provided.

The policy generally requires the new subdivision and development to connect to the reticulated sewerage network, however does list exemptions where this may not be applicable. Specific to Dongara, Schedule 4 of the Policy identifies Dongara as a town located outside of the Perth and Peel metropolitan region where residential subdivision may not be required to connect to reticulated sewer in the following circumstances:

- a) On-site sewage disposal is determined to be the best practicable option for servicing, and unsewered subdivision at the density proposed is specifically provided for through the provisions of the local planning scheme or a local structure plan endorsed by the Western Australian Planning Commission;
- b) Proposed lots are not in a public drinking water source area or sewage sensitive area; and
- c) The average lot size is not less than 1,000m<sup>2</sup>, with a minimum of 950m<sup>2</sup>. In heavy soils, larger lot sizes and/or secondary treatment systems will be required.

The policy sets out further exemptions to the provision of reticulated sewerage which may be applicable to subdivision and development within the Shire in specific circumstances.

Specific requirements are set out within the policy depending on the type of subdivision or development proposed.

### **Planning Bulletin 49/2014 – Caravan Parks**

Planning Bulletin 49 identifies that the preparation of new or amended local planning schemes should reflect the provisions of the bulletin and guidance contained in the Tourism Planning Guidelines. Schemes should include zones that allow for caravan park developments and the permissibility of land uses in each zone.

The preference is for new caravan park sites to be zoned 'Special Use - Caravan Park', as opposed to the generic 'Tourist' zone to provide long term security of use of the site as a caravan park.

In order to promote a more standardised approach to zoning, a local planning scheme may provide for caravan parks (intended for shortstay and long-stay) in the following manner:

- by zoning Caravan Parks as 'Tourist' or 'Special Use – Caravan Park';
- by the zoning table identifying Caravan Parks as a permitted use (P) in the 'Tourist' zone and a discretionary use (D or A) in the 'Residential' or 'Rural' zones; and
- by the zoning table identifying Park Home Parks as not permitted use (X) in the 'Tourist' or 'Special Use – Caravan Park' zones.



In utilising 'Special Use' zones, additional scheme provisions may be appropriate for inclusion in the Schemes Special Use Schedule. These site specific provisions may be used to restrict length of stay within the caravan park.

Caravan parks primarily intended for long-stay or non-tourism purposes (e.g. residential parks, park home parks, lifestyle villages or transient workforce accommodation parks) should be defined as Park Home Parks and zoned 'Special Use – Park Home Park'.

Planning Bulletin 49 also provides guidance for assessing new and/or the redevelopment of existing caravan parks, including site suitability, internal design and capability.

### Planning Bulletin 87

Planning Bulletin 87 (PB 87) addresses issues relating to land use planning and high pressure gas transmission pipelines in the Perth Metropolitan Region. While it applies specifically to the Perth Metropolitan Region, the document is still worth considering in the context of the Shire of Irwin, as the Dampier to Bunbury Natural Gas Pipeline traverses through the Shire.

PB 87 highlights the risks associated with planning in and around high pressure gas transmission pipeline corridors. The document seeks to ensure that future schemes, scheme amendments, structure plans, land use, subdivision and development do not encroach on the potential for the existing pipeline corridor and easements to provide the capacity required to meet the long-term demand for natural gas within Western Australia.

The document identifies setback distances for various uses to an existing high pressure gas transmission pipeline corridor. The specific setback distances prescribed for the Dampier to Bunbury Natural Gas Pipeline is set out in the following table. Distances are to be measured at 90 degrees to the edge of the pipeline corridor or easement.

Pipeline	Setback distance		
	Sensitive*	Residential	Industrial / Commercial
Dampier to Bunbury Natural Gas Pipeline (DBNGP) north of Muchea (MLV116)	200 m	150 m	100 m

\* Sensitive development is defined as development such as hospitals, schools, childcare facilities and aged care housing development.

Furthermore, any proposals to rezone land from rural to urban (or urban deferred) relating to land located within 660m of the DBNGP corridor north of Muchea are required to be referred to the pipeline owner for comment.

The DBNGP corridor traverses through rural zoned land within the district. This Strategy does not contemplate rezoning of any rural land in proximity to the DBNGP corridor.

### Tourism Planning Guidelines (2014)

The objectives of the Tourism Planning Guidelines are to:

- encourage a consistent approach to planning for tourism across local planning strategies;
- ensure that tourism planning and development is considered at the strategic planning stage, as part of the wider planning context; and
- clarify expectations on the scope and detail required as part of a planning assessment, to enable considered planning decision making around tourism uses at the State, regional and local levels.

The Guidelines set out the purpose, scope and content of the tourism component of a local planning strategy.

With regard to site selection for future tourist accommodation development, the Guidelines identify the following criteria which can be applied when giving consideration to suitable sites:

- the site has been identified in a report/study as having the potential to accommodate a tourism facility; and/or
- the site contains an existing tourist accommodation development; and/or
- the site is located in an area of high tourist amenity and is of an adequate size to accommodate a tourism facility.

Sites should be assessed based on their suitability for tourism purposes. This will involve an analysis of the amount of vacant Tourist-zoned land currently available to determine whether this land will meet the needs forecast in the supply/demand study over the life of a local planning strategy. Analysis should also identify sites zoned for tourism purposes which are no longer suitable for tourism based on size, location or existing nonresidential development.

Furthermore, the Guidelines recognise that it is important to identify service capacity and infrastructure projects which could potentially impact directly and indirectly on tourism growth and visitor experience within the local government area including access (e.g. roads, rail, airports), water, wastewater, telecommunications and power, noting that these factors can also impact on the growth of other sectors.

### WAPC Rural Planning Guidelines (V2, Feb 2014)

The Rural Planning Guidelines provide an explanation of the intent and interpretation of SPP 2.5 and DC 3.4 and are intended for use in the preparation or review of regional and local planning strategies and schemes, scheme amendments, structure plans, and other planning instruments such as local planning policies. They also include interpretation relevant to the subdivision of rural land. The guidelines should be read in conjunction with SPP 2.5 and DC 3.4.

The Guidelines identify a variety of rural land uses types including priority agriculture; rural land; rural living precincts; tree farms; and non-agricultural land uses on

rural land in a local planning strategy. The guidelines provide guidance with regards to considerations that need to be given in preparing a local planning strategy to plan for rural land and these considerations have been taken into account in formulating recommendations and strategies relating to rural land use planning matters.

## 3.4 Other Relevant Legislation

### Land Administration Act 1997

Part 7 of the *Land Administration Act 1997* (LAA) deals with pastoral leases. The term of a pastoral lease may not exceed 50 years. Subsequently, all pastoral leases within Western Australia are due to expire on 30 June 2015. Pastoral leases will need to satisfy a number of conditions if they are to be renewed. The conditions are as follows:

1. Compliance with lease conditions, including stocking requirements and maintenance of infrastructure;
2. There being no Soil Conservation Notices or other orders by the Commissioner of Soil and Land Conservation;
3. There being no unfulfilled requirements of the Commissioner of Soil and Land Conservation and/or the Pastoral Lands Board in relation to observance of lease conditions;
4. The exclusion of areas from the existing lease that may be required for public works, conservation, national park, nature reserve or other State purposes; and
5. The annual lease rental for the lease will apply to the renewed lease.

The Department of Regional Development and Lands has viewed the expiry of leases in 2015 as an appropriate time to negotiate exclusions from pastoral leases of key areas of land identified for public purposes.

### Mining Act 1978

#### Section 120

Section 120 of the *Mining Act 1978* states that local planning schemes and local laws are to be considered but do not derogate decisions made under the *Mining Act 1978*. Therefore, planning schemes cannot prohibit or affect the granting of mining tenements (mining leases and exploration licences) or carrying out of any mining operation authorised by the *Mining Act 1978*. Recent State law has resolved that mining operations include accommodation camps and other associated infrastructure proposed to be located within mining tenements affecting Crown land.

Consequently, the Shire of Irwin local planning scheme will have limited application to the control of land use in relation to mining activities undertaken on Crown land within the Shire. Rather, any decision made under the *Mining Act 1978* will have to have due regard and consider the requirements of the Shire's local planning scheme.

### Mining of Construction Materials

On Crown land, construction materials are defined as 'mineral' and therefore there is need for a mining lease under the *Mining Act 1978* for construction material extraction. On private property, commercial construction material extraction is authorised by the Shire through the grant of an Extractive Industry Licence. It is very likely that mining of construction materials will be required for all new infrastructure (roads, bridges, telecommunications etc) to be built within the Shire.

### Rights in Water and Irrigation Act 1914

In proclaimed areas under the *Rights in Water and Irrigation Act 1914* (RIWI Act) it is illegal to take water from a watercourse or groundwater aquifer without a licence. The Department of Water is the responsible authority who issues permits to monitor and protect the State's water resources and the Department promoted the sustainable and efficient use of water. RIWI licensing is active in all proclaimed areas (groundwater and surface water areas) and for all artesian groundwater wells throughout the State.

Applications for water licences are made through the Department of Water's regional office.

# 4. Regional Planning Context

## 4.1 Mid West Regional Blueprint

### Strategies and Actions for Shire of Irwin and Immediate Surrounds

The Mid West Regional Blueprint (the Blueprint) was developed by the Mid West Development Commission in collaboration with Regional Development Australia. The Blueprint identifies five key pillars which are essential for the successful growth of the region. These pillars are:

1. Physical infrastructure;
2. Digital and communications;
3. Economic development;
4. Highly desirable communities; and
5. Knowledge and learning.

The Blueprint establishes a high level vision to deliver each of these five pillars and key elements of the vision and what it might mean for the Shire is examined in the following table.

Pillar / Vision	What it means for the Shire
<p><b>Physical infrastructure:</b></p> <ul style="list-style-type: none"> <li>• An extensive and efficient supply chain infrastructure and transport network is required to underpin existing agriculture, fishing and resources sectors.</li> <li>• Focus on expanding supply of products and services to new and expanding domestic and global markets.</li> <li>• Transport constraints impede regional productivity and investment which is required to unlock region's significant future growth potential.</li> </ul>	<p><b>Priorities include:</b></p> <ul style="list-style-type: none"> <li>• Realign the Brand Highway Bookarra and S-Bends: replace bridges at Pell's River, Greenough River and Irwin River.</li> <li>• Integrated bypass solution for heavy traffic between / around Dongara, Geraldton and Northampton.</li> <li>• Ensure other essential services (water, energy and waste) are upgraded to support growth within the Shire.</li> </ul>
<p><b>Digital communications:</b></p> <ul style="list-style-type: none"> <li>• Communications infrastructure will largely underpin the development of many proposed major projects in the region.</li> <li>• Investment in new communications infrastructure is necessary to achieve equity of provision in the region and help position Mid West business on global scale.</li> <li>• Digital communications to build greater productivity and innovation in region.</li> </ul>	<ul style="list-style-type: none"> <li>• Progression of NBN roll-out throughout the Dongara-Denison Urban Area will be important to support local business development.</li> </ul>
<p><b>Economic development:</b></p> <ul style="list-style-type: none"> <li>• Need for Mid West to capitalise on its strengths and identify new sources of future growth to remain competitive.</li> <li>• A goal of around 71,500 jobs by 2050 has been set for the region.</li> <li>• The Blueprint proposes further economic diversification and an increase in innovation to drive productivity growth in existing areas of regional advantage.</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure sufficient land is zoned for industrial and commercial purposes to support business growth within the Shire.</li> <li>• Continue to protect and promote rural land for agricultural purposes.</li> <li>• Ensure the protection of significant geological supplies and basic raw materials for mining.</li> </ul>
<p><b>Highly desirable communities:</b></p> <ul style="list-style-type: none"> <li>• Communities must be vibrant and inclusive with appropriate infrastructure and services to facilitate growth.</li> <li>• Urbanisation and the ageing of regional populations presents both challenges and opportunities for the region.</li> <li>• Provision of appropriate human capital to help support thriving economies to attract and retain workers and families and encourage young people back to the region.</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to provide community facilities and infrastructure required to support growth.</li> <li>• Improve housing diversity and choice, including opportunities to age in place.</li> </ul>
<p><b>Knowledge and learning:</b></p> <ul style="list-style-type: none"> <li>• Quality education and training are key drivers of economic growth, a higher standard of living and socially cohesive community.</li> <li>• Continued investment in education and training is critical for the region.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and set aside land for new schools in</li> </ul>

## 4.2 Mid West Regional Planning and Infrastructure Framework

The objectives of the Framework are to:

- provide the regional context for land-use planning in the Mid West;
- provide an overview of the major regional economic, social, cultural and environmental issues;
- identify the priority actions required to enable comprehensive regional and sub-regional planning; and
- identify the priority regional infrastructure projects to facilitate economic and population growth in the Mid West.

The framework identifies Geraldton as a Regional City and Dongara-Port Denison as a Sub-Regional Centre with a role in servicing the north midlands towns located inland. The role of Sub-Regional Centres is defined as follows:

*"Retail services offered in sub-regional centres largely focus on the day-to-day needs of their populations; however some comparative and speciality retail does occur, particularly in larger centres. Other commercial and light industrial activities, which generally exist to service the local economies, are important functions of these centres. Sub-regional centres often provide local government administrative functions; in addition to a range of social infrastructure and services, including local recreation, primary health services, secondary education and further training facilities".*

The document identifies a hierarchy of projects for the Mid West, some of the most relevant of these projects for the Shire are:

- Mid West Energy Project Stage 1 (Southern Section) – 330kV transmission line from Neerabup – Enneabba and a new 330/132kV terminal substation at Three Springs;
- Mid West Energy Project Stage 2 (Northern Section) – extension of Stage 1 330kV transmission line from Enneabba – Moonyoonooka;
- Mid West Energy Strategy – to facilitate the delivery of regional energy infrastructure (including transmission generation) to meet demand and support regional development. Potential renewable and alternative energy projects may be considered as part of this;
- Brand Highway upgrades, including passing lanes between Badgingarra and Dongara;
- Brand Highway Dongara Bypass;
- Mid West Regional Water Planning;
- Geraldton Hospital/Health Service;
- Mental health inpatient unit and co-located community health service at Geraldton Health Campus.

The Framework divides the Mid West into sub regions, with the Shire of Irwin falling within the Batavia Coast sub region. The document acknowledges that while population within the Batavia Coast has increased over time, the rural land base has become more fragmented, which is particularly evident in the Shire.

## 4.3 Mid West Investment Plan 2011-2021

Together with the Mid West Regional Planning and Infrastructure Framework, the Mid West Investment Plan (MWIP) is designed to provide a strategic direction for the Mid West region over the next ten years to 2021. The MWIP outlines the community priorities in the Mid West as a set of projects designed to have an impact across the region.

The following aspirational goals were put in place and projects that were considered high priority generally satisfied one or more of the following criteria:

- capturing opportunities;
- improving the quality of life;
- increasing social equity;
- enhancing economic diversity and productivity; and
- reducing the impacts on the environment.

An agreed list of Mid West projects was assessed and prioritised into three categories:

- High – projects that will provide significant economic and/or social benefit to the local community and demonstrate regional benefits. Essential for economic growth;
- Medium – projects that provide valuable social and/ or economic benefits. Broad regional benefit and important for regional growth; and
- Low – provide some social and/or economic benefits as well as broader regional benefits. Worthwhile for regional growth.

After further consolidation of project details, the Mid West Development Commission (MWDC) Board identified the "Flagship" projects. These were categorised as absolutely essential to the region and had a demonstrated need to be progressed substantially or completed within four years, therefore requiring urgent funding consideration.

### Batavia Coast

The Batavia Coast sub region comprises the primary centre of Geraldton-Greenough and the surrounding shires of Chapman Valley, Irwin and Northampton. The majority (84%) of the region's population lives in the coastal locations of Geraldton, Dongara and Kalbarri, with 37,900 people (est. 2009) residing in the City of Geraldton-Greenough.

Key characteristics of the Batavia Coast include:

- Growing communities within these coastal shires.
- Includes the primary centre of Geraldton and the two town centres of Dongara-Denison and Kalbarri.
- Major tourism experience and amenities due to proximity to the coast. The recent completion of Indian Ocean Drive will increase opportunities.
- The proposed Oakajee deepwater port is located within the Shire of Chapman Valley.
- Contains 84% of the region's population.
- The Batavia Coast is likely to provide the majority of

population increases in the Mid West region.

- Potential for FIFO or DIDO workers to have their usual residence in these coastal localities.

### Shire of Irwin

The Shire of Irwin is located about 64 km south of Geraldton and covers an area of 2,374 km<sup>2</sup>. The major settlement is Dongara/Denison. Key industries of the area include wheat and sheep farming, oil/gas and mineral mining, rock lobster fishing, olive growing and tourism. Increased resource activity and its attractive coastal location may see Dongara become a residential base for FIFO operations in the greater region.

Dongara and Port Denison have identified shortfalls in recreation, tourism accommodation and aged care/housing facilities. There is also major concern with regards to critical infrastructure including the capacity of power supply. This is being addressed by additional three phase power lines, however, any significant increase in population would mean further infrastructure upgrades would be required. The town is also nearing capacity of current scheme water supply so with any population increase this would need to be addressed.

Key drivers:

- Fast growing population (average increase of 3% pa from 2005 to 2010).
- Oil, gas and coal exploration with proposed gas fired power station.
- Strong agriculture and tourism.
- Continued attraction of retirees.

### Flagship Projects Summary

Relevant to Shire of Irwin:

Category	Project	Propo- nent
Key Infrastructure & Services	Mobile Phone Coverage – Black Spots not expected to be covered by RMCP	Dept of Commerce / Mid West LGAs
Community Development & Town Revitalisation	Town Enhancement & Revitalisation Projects	Mid West LGAs
Maritime	Coastal Management and Erosion	Shire of Irwin
Housing & Land Development	Housing (social & worker) and Land Development (industrial & residential)	Mid West LGAs
Health	Aged Care Facilities including independent living units.	Dept of Health / Mid West LGAs
	Health Facilities (replacement facilities, upgrades and expansions)	Dept of Health
Energy	Mid West Energy Project Stage Two	Western Power

## 4.4 Mid West Regional Club Development Plan 2013-2017

The intent of the Regional Club Development Plan is to:

- Increase stakeholder understanding of emerging club development challenges in the region;
- Guide strategic and operational planning processes for organisations involved with the delivery of club development;
- Guide investment in club development activities and initiatives.

The plan covers three sub regions of the Mid West – Batavia Coast (which includes the Shire of Irwin), North Midlands and Murchison.

Strategies are identified with the aim of achieving the following Strategic Outcomes:

- Clubs demonstrate sound governance and strong business practices;
- Sport and recreation is served by a skilled, dedicated and abundant workforce;
- Clubs will enable more people to become more active more often;
- Clubs will have access to resources that assist them in delivering sport and recreation to their communities;
- Clubs have access to appropriate and affordable facilities.

## 4.5 Batavia Coast Economic Development Strategy 2013

Batavia Coast comprises the City of Greater Geraldton and Shires of Chapman Valley, Irwin and Northampton.

The purpose of the Batavia Coast Economic Development Strategy (BCEDS) is to outline a set of interventions that align with the efforts and resources of stakeholders towards a common set of economic development goals.

The Strategy identifies seven key interventions relating to human capital, international relationship building, tourism, supply chain management, economic diversification, food integrity, and agriculture.

The Strategy concludes that Batavia Coast's full economic potential will require investment in key strategic infrastructure. Sustained growth can be achieved even without headline infrastructure development such as Oakajee or the Mid West Energy Project, with considerable scope to build on the sub-region's strengths in logistics, agriculture and tourism, as well as the rapidly growing mining sector.

As well as the existing strengths of Batavia Coast, there is considerable scope for improvement in human and social capital, a process that has already begun with the Durack Institute and the Geraldton University Centre.

## 4.6 Batavia Coast Strategy 2001

The policy objective of the Batavia Coast Strategy (DPI, 2001) is:-

*“to ensure that all reasonable demands along the coast for housing, tourism, recreation, commercial, industrial and other activities are provided for, while sustaining or enhancing existing coastal resources and environmental quality at an acceptable community cost.”*

The Strategy has now been superseded by the Batavia Coast Economic Development Strategy 2013 however an overview of the 2001 Strategy is provided for reference.

The key issues identified include:-

- recreation, access and the natural environment;
- development and provision of facilities;
- the marine environment;
- location specific development;
- tourism;
- industry and ports; and
- management and enforcement.

The strategy requires an integrated approach to planning and management of the coast and a management framework to improve the coordination of agencies, organisations and community groups in the implementation of regional and local strategies. In addition to the Geraldton Region Plan, local authorities have various mechanisms for the implementation of coastal planning including the Local Planning Strategy, local policies and guidelines, structure plans, coastal and/or foreshore management plans and Local Laws.

Specifically, the Strategy identifies the following issues within the Shire of Irwin as requiring further consideration during local planning implementation:

- Assessment of opportunities in Dongara for better use of the Irwin River and its environs;
- Continuing and improving catchment planning and management initiatives for the Irwin River;
- Formalising appropriate off road vehicle arrangements at beaches north and south of Dongara;
- Seeking an appropriate location within Dongara for marine research and teaching facility;
- Improving access to and within the foreshore reserve adjacent to Northshore;
- Development of additional boat launching facilities;
- Determining conservation values for areas of the coast and consider transfer to a public authority for management;
- A coastal strategy is required for the northern section of the coastline;
- Education of the public in regards to community responsibility for coastal management;
- Supporting tourism development with minimal rural residential development; and

- More detailed assessment of the proposed Mt Gibson Iron-Ore ship loading facility undertaking an environmental, economic, social and community cost/benefit analysis.

The Local Planning Strategy will consider these issues and implementation strategies in developing policies to guide the coastal strip from Dongara/Port Denison to the Shire's northern boundary and east to the Brand Highway.

## 4.7 Dongara Cape Burney Coastal Study

The Department of Planning commenced the preparation of the Dongara Cape Burney Coastal Study in 2008 in conjunction with the then City of Geraldton-Greenough and the Shire of Irwin with a view to outlining a strategy for planning of this section of the Batavia coastline.

The study involved the preparation of technical information to guide future decision making with respect to planning of this section of coastline which includes Policy Area E.

The technical documentation progressed to date should be considered and factored into any future decision making with respect to planning of this section of coastline which includes Policy Area E within this Local Planning Strategy. These documents include:

- The Dongara to Cape Burney Visual Landscape Assessment, which assesses landscape features to arrive at a set of landscape management objectives and design guidelines.
- The Dongara to Cape Burney Western Australia: Geomorphology report which describes the geomorphology of the coast to assist in identifying areas of relative instability including sections of the beach and dune system that are potentially subject to environmental change.
- The Dongara to Cape Burney Flora and Vegetation Survey which aims to provide a regional context of native vegetation in the Greater Geraldton region to inform planning decision making.

Future planning strategies and in particular coastal planning initiatives should have regard to the above documents.

## 4.8 Allanooka and Dongara-Denison Water Reserves Water Source Protection Plan 2002

The town water supplies for Geraldton, Dongara, Port Denison, Walkaway and Narngulu come from Water Corporation bores that are screened in the multilayered aquifer of the Yarragadee Formation. The aquifer is recharged by direct infiltration of rainfall and by infiltration of surface water along drainage lines.

The plan proposes a modification to the Water Reserves to:

- exclude land down-gradient of the existing and proposed public water supply production bores; and
- combine the existing Water Reserves to create one reserve.

The objective of water source protection in this reserve is to preserve water quality at its current high level.

The current agricultural and industrial land uses are compatible with the proposed level of protection. The Water and Rivers Commission encourages the adoption of best management practices to protect water quality.

As the majority of land in the reserves is freehold rural land, it is anticipated that alternative agricultural land uses will be proposed in the future and will therefore need to be monitored and managed.

## 4.9 Identification of High Quality Agricultural Land in the Mid West Region

The Department of Agriculture and Food WA (DAFWA) has prepared Stage one of the Geraldton Planning Region with respect to the *Identification of High Quality Agricultural Land in the Mid West Region*.

The study has been prepared on the premise that broadacre agriculture requires continued access to large areas of good quality land receiving enough reliable rainfall to produce crops and pastures. Likewise irrigated agriculture needs smaller areas of suitable land but these must be matched with good supplies of water for irrigation, both to preserve existing production and to allow for expansion.

The document establishes a pilot or 'test' methodology for identifying high quality agricultural land (HQAL) through the synthesis of information including soil type, access to water resources, land capability to ultimately determine and map the versatility of land to accommodate a variety of agricultural land uses.

The Shire accommodates agricultural land that has a range of versatility, including land categorised as the 'Greatest Versatility' along the Irwin River and at the northern extent of the Shire and land with 'High Versatility' in the eastern portion of the Shire. Agricultural land with 'Moderate' and 'Low Versatility' also exists throughout the Shire. An area of 'Limited Agricultural Potential' has been mapped at the southern extent of the Shire.

The document contains recommendations relating to categorised Agricultural Land Areas (ALAs) and these recommendations have been considered in formulating recommendations with respect to rural land use planning.

## 4.10 Mid West Tourism Development Strategy (2014)

The Mid West Tourism Development Strategy was commissioned by the Stage government to provide a regional tourism development strategy for the mid-west region. The strategy focuses on five key areas to grow tourism in the mid-west region during 2015-2025, as follows:

1. Increasing accommodation capacity from camping through to resorts;
2. Opening up day use sites previously overlooked or under-developed to enhance the Mid West's appeal as a destination;
3. Improving the quality and distribution of information for pre-trip planning and way finding;
4. Attracting more high-yield visitors and the growing self-drive and RV market; and
5. Increasing the range of Aboriginal and eco nature based tourism activities, attractions and experiences.

Specifically, with respect to the Shire of Irwin, the strategy makes the following recommendations:

- Continue to encourage the development of a 4-5 star hotel-resort at the former Kailis plant site near the foreshore; ideally 40-50 rooms to support events / seminars using the conference facilities within the recreation centre. Encourage TWA to co-promote the site to investors.
- Encourage the development of additional farmstays, holiday homes, B&B's and lodges-hostels; encourage growth in visitation during the peak periods.
- Investigate the development of a fortnightly or monthly farmers market in-near town; encouraging local producers, entrepreneurs and businesses to deliver a variety of produce and products.
- Investigate parking for long vehicles near the main street, with appropriate signage.
- Continue to explore the sustainability of an ocean pool as an attraction.
- Investigate greater use of the river, the riverbanks and surrounding areas, including day time activities (e.g. trails, picnic areas, benches, pathways, canoeing, swimming) and evening activities (e.g. BBQ's, rest areas).
- Investigate larger, more prominent signage on the Brand Highway / Kailis Drive junction to encourage higher volume of visitors / vehicles into Port Denison.
- Investigate re-branding as Dongara with a strong emphasis on ocean/coast, river, heritage, country town, fishing and marine activities. Phase out Port Denison and Shire of Irwin from all branding and tourism promotion. Introduce a logo and tag line and incorporate into all promotional mediums.

- Investigate upgrading directional signage in-around Geraldton to the visitor centre, day use sites, attractions / places of interest, hospitality, parking (for long and short vehicles), trails and sport-rec facilities.
- Continue to progress the Port Denison Foreshore master plan.
- Continue to progress the Town centre revitalisation plan including the RV park, the relocated Visitor Centre and visitor amenities at the Park.
- Continue to progress the development of tourism nodes along the coast both as day use sites and overnight short stay sites.



# 5. Local Planning Context

## 5.1 Shire of Irwin Strategic Community Plan 2012-2022

The development of this Strategic Community Plan (SCP) was instigated by the Shire of Irwin, to provide the long term strategic framework and direction for the Shire. This approach complies with the Integrated Planning and Reporting Framework and Guidelines, which requires all local governments to develop their 10+ year Strategic Community Plan through a process of community engagement aimed at identifying long term community aspirations, visions and objectives.

Four key objectives are identified within the SCP, each supported with a number of outcomes and strategies. The objectives and outcomes of the plan are identified in the following table:

Category	Objective	Outcomes
<b>Economic</b>	A prosperous, diverse and thriving economy	<p>Supports existing industries, facilitates new development and promotes economic growth.</p> <p>Irwin Shire, Dongara and Port Denison are recognised as a lifestyle community.</p> <p>Increased and diverse tourism opportunities</p> <p>Planned economic growth to maintain a high quality of life for our residents</p> <p>Maximise opportunities presented by industry.</p> <p>Improved training and employment opportunities.</p> <p>Increased accessibility of appropriately zoned commercial land.</p> <p>Maintain a steady increase of a diverse population.</p>
<b>Environment</b>	To respect and understand our natural and built environment and conserve our heritage	<p>Recognise and retain our places of heritage value.</p> <p>Manage and protect the coastal environment and the Irwin river environment.</p> <p>Conserve and protect our natural and built environment through land-use management, planning and development strategies.</p> <p>Our natural assets and open spaces are accessible and amenable.</p> <p>Our Town Centres are attractive, accessible and inviting, whilst maintaining their unique character.</p> <p>Physical assets are maintained efficiently and effectively.</p>
<b>Social</b>	A friendly, safe and engaged community enjoying a quality of lifestyle and a diverse range of services, programs and facilities	<p>High quality and well maintained community infrastructure.</p> <p>Well utilized, efficient and multi-purpose community resources.</p> <p>Increased availability of aged care facilities.</p> <p>Improved youth engagement and programs.</p> <p>Maintain and improve medical and health services.</p> <p>Arts, culture and recreation are recognised and supported.</p> <p>Community groups and volunteers are acknowledged and supported.</p> <p>Maintain our safe community.</p>
<b>Civic Leadership</b>	A collaborative and forward looking community that is guided by strong leadership	<p>A well informed and engaged community.</p> <p>Effective governance, sound management and prudent financial responsibility.</p> <p>A local government that is respected, professional and accountable.</p> <p>Improve regional partnerships with government and industry.</p> <p>Strong advocates representing the Shire's interests.</p>

The document was developed following extensive consultation with the community. One of the components of the plan includes an assessment of community facilities based on level of importance and level of satisfaction. The following services were rated as being 'very important' with a low level of satisfaction:

#### **Very Important / Low Satisfaction**

Aged and disabled services  
 Aged person homes  
 Asset and infrastructure maintenance  
 Community engagement  
 Drainage, stormwater and flood management  
 Economic development  
 Health and medical services  
 Long term planning  
 Recycling services  
 Road works  
 Street lighting  
 Support for volunteers  
 Swimming areas / beaches  
 Town planning  
 Verges and footpaths

## 5.2 Shire of Irwin Local Planning Strategy (2007)

The 2007 Shire of Irwin Local Planning Strategy (2007 LPS) was prepared as a basis to review the Shire's Local Planning Scheme No. 4 and to guide the progressive development of the Shire over the next 10 to 15 years.

Key issues which were identified by the 2007 LPS include:

1. The need for the Shire to continue to play its appropriate role in the Midwest Region which has Geraldton as its regional centre.
2. The need to progressively grow and develop one major urban centre, being the Dongara/Port Denison Urban Area, so that the Shire can service its residents, residents of adjoining inland local communities (north midlands) and to best service and attract a substantial tourist population.

Some other key issues identified by the 2007 LPS include:

- The protection of sensitive ocean/river foreshore ecological areas and rehabilitation of sensitive landscapes;
- The need to promote the traditional/heritage character of the Shire via the encouragement of any new development to blend in with that character;
- The strengthening of local pride and sense of community;
- The enhancement of local work opportunities;
- Ensuring that adequate civic/community facilities and services are provided;
- The development of a safe, attractive and usable pedestrian/cycle network throughout the urban area;
- The satisfaction of regional responsibilities which the Shire has due to its geographical location on an attractive coastline.

The 2007 LPS identifies seven different policy areas and identifies a vision for development within each of these precincts along with strategies and actions to achieve each vision for the precincts. These policy areas will be the subject of review as part of the preparation of this Local Planning Strategy.

It is timely to undertake a review of the 2007 LPS given the following strategic studies are currently being progressed by the Shire and other State authorities:

- Mid West Housing Study;
- Mid West Blue Print;
- Regional Tourism Strategy;
- Community Development Plan;
- Bike Plan;
- Shire of Irwin Local Economic Development Strategy;
- Town Centre Revitalisation Plan;
- Foreshore Management Plan;
- Dongara/Port Denison District Structure Plan; and
- A Coastal Hazard Risk Management Adaptation Plan (subject to funding).

These studies contribute to the discussion on how the provision and distribution of retail, commercial, community, recreation facilities will occur to support residential growth over the next 10 to 15 years and, where currently available, have informed the recommendations of this Local Planning Strategy.

## 5.3 Shire of Irwin Local Planning Scheme No. 5

The Shire of Irwin Local Planning Scheme No. 5 (LPS No. 5) was gazetted on the 7th May 2008 and is now over 5 years old. In accordance with the Town Planning Regulations 1967, Local Planning Schemes should be reviewed every 5 years.

The LPS No. 5 has been prepared in accordance with the Model Scheme Text and includes various zones, special control areas, policy requirements and procedural requirements for land use and development.

The LPS No. 5 will need to be reviewed in light of this current local planning strategy review, which will provide recommendations, strategies and actions that may necessitate a review and/or modifications to the current LPS No. 5.

Critical to the review of LPS No. 5 will be the need to investigate the following:

- The objectives of the Scheme, including the need to reflect current economic, social, built form and environmental objectives identified in recent strategic studies applicable to the Shire;
- The need to ensure relevant statutory recommendations/requirements from the Dongara/Port Denison and other strategies are factored into the review of the Scheme;
- The applicability and suitability of the various zones, zone objectives and associated provisions;
- A review of the use class table to ensure appropriate permissibility of land uses is applied into the future;
- The prescribed boundary and provisions relating to the Water Supply Protection Area Special Control Area;
- The need to review the heritage provisions of the Scheme;
- Review the list of developments exempt from requiring planning approval to ensure that an appropriate level of land use/development control is achieved while at the same time ensuring that the Shire's planning resources are not exhausted on assessing statutory planning applications.

The various zones and policy provisions will need to be reviewed.

## 5.4 Shire of Irwin Dongara Port Denison District Structure Plan (2014)

The Dongara – Port Denison District Structure Plan (DSP or the Plan) considers the key opportunities and challenges that affect the twin settlements, and functions as the next iteration of previous townsite expansion studies. The Plan provides a strategic framework to respond to these opportunities and challenges, to sustainably grow the townsite in a manner that serves the needs of the community now, and in the future.

The DSP sets the broad principles for development of Dongara – Port Denison, and will guide the preparation of more detailed local structure plans for individual land holdings. Based on extensive consultation with landowners, key stakeholder agencies and the Shire of Irwin, the following objectives for the DSP have been identified:

1. Development reflecting contemporary practice in sustainable urban development;
2. A mix of residential development types and densities;
3. Provision for dedicated tourism sites;
4. Retaining landform to optimise views and physical elements of landscape;
5. Integration of development with existing attributes of the area including the coast and golf course and other community and recreation purposes as required; and

6. Sensitive treatment of interfaces with adjoining land uses e.g. Marine based industry area.

Whilst the DSP does not identify specific zoning classifications, it does provide the broad district level zones for the study area, each with distinctive characters and functions. The DSP also identifies precincts within the DSP which focus on the broader urban expansion areas but may also include existing development.

In recognition of some of the limitations, local characteristics and functions of the urban expansion areas, the identified precincts set out the staging and implementation priorities for these areas. Future planning of these precincts, through Local Structure Plans or revitalisation and streetscape strategies, will provide more detailed guidance for development.

The DSP does not specify timeframes for the development of any part of the DSP area, given the range of parameters that can affect the timing of development. However, the DSP does contemplate the appropriate timing and staging of when development should occur.

The Plan identifies that urban growth would best be facilitated on a moving "development front" and this is likely to be determined by infrastructure costs and/or the removal of current development constraints.

This "front" is recommended generally to flow initially east from the Port Denison urban area (St Dominics), then north from the Dongara urban area (Race Course Estate & Fransisco Road North).

The St. Dominics precinct is recommended as the initial development corridor as it has limited constraints and is closely associated with existing community and service infrastructure. This would be followed by the Racecourse Estate, once the broader planning issues and infrastructure provision have been resolved.

Development of the Dongara North urban cell is recommended as the third stage release of new urban land following the update of existing zoned residential land.

Given existing pressures for development of land immediately north of Fransisco Road, the District Structure Plan acknowledges that these areas may be developed in the short to medium term provided there is adequate infrastructure provision to support development land identified for development further South.

The DSP recognises that this Local Planning Strategy will build upon the outcomes of the DSP and be followed by future planning stages including local scheme amendments, local structure plans, subdivision applications and finally development applications in order to realise the recommendations.

## 5.5 Shire of Irwin Dongara District Structure Plan District Water Management Strategy 2013

GHD Pty Ltd was commissioned by LandCorp to coordinate the production of a District Water Management Strategy (DWMS) in support of a District Structure Plan (DSP).

In accordance with state government planning framework as outlined in Better Urban Water Management (WAPC, 2008), a DWMS is required to accompany the DSP. A Local Water Management Strategy (LWMS) is required at the subsequent development plan stage.

The principles and objectives for managing urban water as stated in the Stormwater Management Manual for Western Australia (Department of Water 2004-2007) are as follows:

- Water quality: to maintain or improve the surface and groundwater quality within the Development Areas relative to pre-development conditions.
- Water quantity: to maintain the total water cycle balance within the Development Areas relative to the predevelopment conditions.
- Water conservation: to maximise the reuse of stormwater.
- Ecosystem health: to retain natural drainage systems and protect ecosystem health.
- Economic viability: to implement stormwater management systems that are economically viable in the long term.
- Public health: to minimise the public risk, including risk from injury or loss of life, to the community.
- Protection of property: to protect the built environment from flooding and waterlogging.
- Social values: to ensure that social, aesthetic and cultural values are recognised and maintained when managing stormwater.
- Development: to ensure the delivery of best practice stormwater management through planning and development of high quality developed areas in accordance with sustainability and precautionary principles.

## 5.6 Local Retail Planning and Commercial Strategy (2001)

The Local Retail and Commercial Strategy was developed to consider options relating to retail and service commercial floor space and its location within the urban area over the next 25 year period. Further, the study recognised the current role of the existing Dongara Town Centre as the principal focus of commercial activity within the Dongara/Port Denison Urban Area at that time.

Key objectives of the Strategy were:

- to identify a suitable location and land area for the development of a new district centre that would service a population "in excess of 20,000 people";
- to examine options for development of a mixed business centre;
- to identify suitable locations for a new neighbourhood centre development associated with future urban expansion; and
- to the examination of options associated with the continuing wellbeing and viability of the existing Moreton Terrace/Point Leander Drive.

The Strategy's recommendations have been reviewed and taken into account in the current Local Planning Strategy and Local Planning Scheme No. 5.

## 5.7 Shire of Irwin Tourism Development Plan 2013-2018 (2014)

Dongara and Port Denison straddle the Irwin River and are the two main towns that are the centre of the tourism industry in the Shire of Irwin. While there is an established tourism industry it has stagnated in recent years and has not reached its potential in terms of visitor numbers and economic benefit for the local community. The current tourism industry is built on word of mouth repeat business attracting primarily low yield visitors for a traditional caravan or chalet type holiday. It is also an extremely popular destination during school holidays and at peak times such as Easter most accommodation providers are reporting 100% occupancy.

The vision for tourism is recommended to be "The sustainable growth of a tourism sector that contributes to the lifestyle of the community by the promotion and support of the destination's natural beauty, heritage and activities to visitors."

In order to grow Dongara – Port Denison's tourism sector over the next five years five key strategies have been developed. These strategies address the five key strategies of tourism, access, accommodation, activities, attractions and amenities and are designed to position the destination in selected target markets and develop the visitor experience consistent with community aspirations and market trends. Each strategy is supported by a number of actions:

**Strategy one** - Implement actions, which will encourage tourist traffic on the Brand Highway to divert through Dongara - Port Denison.

**Strategy two** – Drive increased visitation by branding and maximised exposure of the destination using electronic means.

**Strategy three** – Attract and develop appropriate events.

**Strategy four** – Support the coordinated efforts of local tourism related businesses.

**Strategy five** – Prioritise and source funding for tourism related product and infrastructure development.

The Plan also includes an action plan which identifies a suite of actions that are required to deliver the above strategies. Some of the key flagship actions relevant to this local planning strategy include:

1. Undertake a signage audit to develop a signage strategy and review the entry statement to town.
2. Establish individual branding for the two towns separate to the Shire's branding.
3. Establish an RV site next to the highway opposite Irwin Crescent.
4. Undertake cooperative marketing activities with Australia's Coral Coast (ACC) and local business.
5. Develop a Local Tourism Planning Strategy.
6. Conduct a feasibility study for a new footbridge over the Irwin River.
7. Develop a Town Centre Revitalisation Plan.
8. Investigate and implement free WIFI in Dongara and Port Denison.
9. Up-grade drive-in facilities.
10. Conduct a new event such as wind/sand sculptures competition or sound and light show.
11. Review coastal camp sites within the Shire.

## 5.8 Dongara Town Centre Precinct Plan (2009)

The Shire commissioned the Town Centre Precinct Plan to address issues associated with the Town Centre provisions relating to zoned land on Moreton Terrace, between Smith Street and Walton Streets and lots in Point Leander Drive.

The Precinct Plan identifies eight sub-precincts within the town centre zone as follows:

1. Moreton Terrace Main Street Commercial;
2. Irwin River – Tourist Residential;
3. Waldeck Street – Town Entry;
4. Brand highway – Town Entry;
5. Smith Street – Mixed Use;
6. Civic;
6. Point Leander Drive – Commercial;
8. Point Leander Drive – Service Commercial Residential.

The Precinct Plan then goes on to define permissible land uses for each of the eight sub-precincts which is implemented by way of Clause 5.25.2 and 5.25.3, which require the preparation of a precinct plan to define land use, setback, building height and other controls.

This document therefore plays an important role in controlling land use and development within the Town Centre zone and will require a comprehensive review to ensure that land use and development controls reflect current planning investigations and recommendations for the town centre.

## 5.9 Dongara Town Centre Revitalisation Plan

The Dongara Town Centre Revitalisation Plan is designed to be the basis for the Town's short, medium and long term development. It is designed to partner with the District Structure Plan and provide a framework for redevelopment.

The study was designed to address a number of key objectives, including parking and traffic; disabled access; lighting and signage; public open space and landscaping; public amenities and facilities.

Two concept options are presented identifying a range of proposed interventions.

The broad principle behind Option One was to create a new entry into Dongara off Brand Highway via Martin Street, closing the existing entry point and creating more of a park at the existing Lobster entry park. It proposed to turn Moreton Terrace into a one-way street only, allowing for widened verges and a more pedestrian orientated environment. This would also allow sufficient room for a generous drainage swale on Moreton Terrace. The plan aims to encourage activation of street frontage along Moreton Terrace and provide pedestrian permeability through the site. A large Civic Space was proposed on the main street with integrated information centre and community facilities. Laneway access into rear parking areas was restricted to one way from Moreton Terrace.

The broad principle behind Option Two was retaining the existing entry and two way traffic flow on Moreton Terrace however, slowing traffic through road surface treatments such as rumble strips, raised pedestrian crossings and formalised kerbs and crossovers. Laneway access was proposed to be closed or restricted to one way only to create formalised pedestrian laneway links between Moreton terrace and adjacent streets. The existing entry was proposed to be upgraded with parking allowance for tourists to utilise the park and be able to access to the lobster for photos. A Civic area was proposed on the main street integrating key community facilities and the information centre. An area of raised pedestrian priority environment on Moreton Terrace links to the hotel carpark and provides an area which can be closed off for markets and events, central to the main street.

The final plan is a hybrid of the two options taking into consideration the feedback from the Shire of Irwin and Community members. The report document identified that community members were generally supportive of restricting access on to Moreton Terrace to a one way arrangement to create a pedestrian friendly street with

wide verges and alfresco opportunities. However, there was mixed support for relocating the entrance off Brand Highway onto Martin Street, and therefore in the short term the existing entrance has been retained with the intention that the Shire can investigate the feasibility of the alternative entry further as a future project dependant upon development of the site earmarked for proposed redevelopment. The plan also has additional parking to reflect a large concern of the community regarding future parking limitations. The plan also highlights existing vacant lots where the Shire can investigate potential parking expansion in consultation with lot owners.

The report outlines an implementation plan divided into 'quick fixes', 'priority actions' and 'long term strategic actions'.

## 5.10 Shire of Irwin Recreation Needs Analysis Draft Nov 2013

This Study aims to provide the strategic direction for recreation facilities, programs and services provision in the Shire of Irwin to meet the needs of the community over the next 10+ years. The identified needs and recommendations are consistent with the identified values of the Shire of Irwin Council and Community and align with the relevant key challenges identified in Western Australia's sport and recreation industry planning framework document.

The Study presents a total of 30 recommendations to meet the sport and recreation facilities, programs and services needs of the community. The recommendations are prioritised Low, Medium or High so as to provide guidance for the Shire on setting priorities and where applicable a time frame of Short Term (1-3 years), Medium Term (4-9 years) and Long Term (10+ years) has been indicated.

Those particularly relevant to the planning strategy include:

- Remove the BMX Track and conduct some landscaping to beautify the area and provide a buffer between the skate park and residential housing.
- Conduct a feasibility study of the potential co-location of the Dongara Bowling and Recreation Club at the Dongara Golf Club and the development of a shared clubhouse facility.
- Conduct a feasibility study for a potential pedestrian crossing over the Irwin River at an appropriate location.
- Upgrades the park land area on the corner of Pickering Drive and Flanagan Way to a Neighbourhood level park as per the Public Open Space Strategy and include provision of playground equipment to service the families in the local area.

## 5.11 Shire of Irwin North Coast Development Analysis Planning Report 2013

The North Coast Development Analysis (NCDA) Planning Report includes a review of State and local planning framework as it relates to the north coastal development analysis study area. The report outlines principles related to sustainability, environmental objectives, economic objectives, and social objectives.

Two concepts are developed:

1. Concept One is characterised by development occurring with a 'business as usual' approach. The defining characteristic of this concept is the boundary taken from the cleared vegetation line along the dunal system and coastal plain.
2. Concept Two is characterised by development being informed by the landforms within the study area. The defining characteristic of this concept is the recognition of the distinctive boundary between the dunal system and the adjacent coastal plain regardless of vegetation. The concept also recognises smaller coastal nodes which provide direct access to the coast via sealed and unsealed access roads.

### Implementation

The report identifies that there is a real opportunity of including elements from both concepts to encourage development of the NCDA study area. The following opportunities are seen as key attributes to the study area:

- The identification of a boundary following the distinctive landforms (eastern edge of the secondary dune system) of the study area is seen as crucial to the future development of the NCDA.
- The identification of nodes along the coast to provide direct access to the coastline from Brand Highway, and encourage the development of associated infrastructure, including car parks, public toilets and ancillary development within an expanded foreshore reserve. The location, number and staging of these nodes is to be explored as part of future structure planning for the NCDA area.
- The identification of a foreshore reserve along the full extent of the coastline to be supported by a coastal risk assessment delineating the full extent of the horizontal setback datum for the study area.
- The general presumption against the inappropriate or indiscriminate development of the fragile coastal dune system to offer protection and conservation, except where it can be demonstrated that development will not have a detrimental impact to the natural environment.

The creation of a 'Development' zone within TPS5 has recently been adopted by Council and is currently awaiting endorsement by the WAPC. This zone will effectively allow Council to identify large strategic sites for future development but at the same time restrict their subdivision and development to occur until a detailed structure plan has been prepared.

Structure Plans will require approval by the Council and, in cases where subdivision is proposed, the WAPC. This process will enable comprehensive masterplanning of areas, the integrated consideration of multiple issues, the incorporation of stakeholder and agency feedback into the planning of complex areas, and the creation of a clear and consistent statutory framework to guide significant developments.

On this basis the key planning mechanism identified to facilitate the implementation of the NCDA findings, will be the formulation of a Local Structure Plan. This structure plan is yet to be progressed.

## 5.12 Shire of Irwin Coastal Development Strategy 2000

The study area for the Coastal Development Strategy includes land and nearshore water comprising the coastal area of the Shire of Irwin, between the southern shire boundary and North Cliff Head, excluding the gazetted townsites of Port Denison and Dongara.

The following key concerns are identified in the Strategy:

- Squatters Shacks;
- Appropriate land use – location, site layout and design – in small development nodes;
- Determine need for conservation areas;
- Promote use of solar energy, water efficiency, waste disposal; and
- Traffic management.

Recommended priorities for development are identified for each of the key locations within the study area, and the following general recommendations are made:

- Agreement be reached between relevant Government agencies in relation to the roles of each to assist in the implementation and ongoing management of the study area. In this regard Landgate should have responsibility for vesting reservations in the Shire;
- The roles of the leaseholders will vary according to the nature of their leased area, however all will be responsible for the management of land contained within the area of their lease;
- The first managed cabin (eg. Professional fisher camp) site should be constructed early to establish the standard and quality of the development considered acceptable;

- A fire management plan be prepared to the satisfaction of the Bushfires Board of WA and the local authority;
- Rehabilitation and landscaping be undertaken using local native plant species as recommended in the Coastal Development Strategy;
- Investigate options to implement development at development nodes in accordance with findings in the Coastal Development Strategy;
- Introduce the findings of the Coastal Development Strategy into the local government local planning scheme for the area by reference through reservation and zoning, scheme objectives, land use and development requirements and policy statements.

## 5.13 Irwin River Estuary Coastal Management Plan 2005

The Irwin River Estuary Coastal Management Plan (CMP) was prepared to document management measures and recommend passive and active facilities for the Irwin River Estuary and the coastal foreshore area to Granny's Beach.

Recommendations are made for conservation management with regard to native vegetation, rehabilitation, weeds, native vertebrate fauna, pests and storm water drainage; and for recreation management with regard to access, facilities, and public awareness, interpretation & safety.

Some of the relevant recommendations to this LPS review include:

- Maintain linkages supporting native vegetation with adjoining areas of riverine foreshore and existing and proposed reserves and open space;
- Passive recreation such as bushwalking and bird watching will be encouraged through the installation of crushed limestone walk trails within the reserve;
- Discharge of stormwater into the Foreshore Reserve should not be permitted;
- Existing informal pedestrian and vehicle access tracks that are not identified as proposed access routes should be closed and rehabilitated;
- Vehicle access within the foreshore reserve should be prohibited and discouraged through the installation of bollards, signage and planting of native species at the entry of tracks; and
- Installation of directional, interpretive and public safety signage within the foreshore reserve as required.

## 5.14 Port Denison Foreshore Master Plan 2013

The study area extends from Granny's Beach in the north to the obelisk precinct in the south and is bound on the east side by Point Leander Drive.

Proposals focus on opening up the views into the marina, increasing pedestrian connectivity and safety, maintaining sandy beaches, improve swimming opportunities, provide sheltered social spaces, improving public amenities, consolidate the commercial precinct along Point Leander Drive and regenerate dunal landscape.

The document provides precinct planning concepts for the following areas within Port Denison locality:

- Port Denison foreshore (core area adjacent to existing commercial area);
- Fisherman's Hall (two options);
- Grannies Beach;
- Boat Ramp facility;
- Obelisk (located at the southern point of the Port;

Specific strategies included within the plan are:

1. Exploration of options for the refurbishment of the fisherman's hall;
2. Formation of a new central plaza space with shelter sheds, BBQ's, shared pathway and lawn from a reclaimed portion of the existing car parking;
3. A protected ocean pool for use by the public;
4. Way finding and landmark signage;
5. Children's (water) playground.

The proposed strategies aim to provide new and additional activities on the foreshore which would attract additional use from locals and visitors alike.

## 5.15 Shire of Irwin Dongara Open Space Strategy 2011

The purpose of the Dongara Open Space Strategy is to establish the adequacy of the current provision and distribution of public open space and as a result provide a framework for the future, based upon the future growth of Dongara/Port Denison.

Within the State and local planning context, an examination of the current provision of Open Space and its distribution for the Dongara/Port Denison area was undertaken. Thirty six open space areas were identified.

Open Space areas have been categorised as either:

1. Local/Neighbourhood Parks – open to the public and located conveniently within residential areas for use primarily by nearby residents or for site specific requirements (24).

2. Sporting Club Areas – generally patronised by organised recreational/social clubs (six sites); and
3. Foreshore Reserve Areas – made up of both coastal and river foreshore areas, with recreational areas generally confined to nodes and connecting paths (six sites).

On an area basis the amount of public open space is 11.7% and accords with the WAPC's requirement for 10% of urban areas to be allocated to public open space and significantly exceeds the requirement based upon population.

To accord with Liveable Neighbourhoods objectives for neighbourhood parks to be within 400 metres walking distance of residences, a number of local parks need to be upgraded to neighbourhood status to achieve maximum access to neighbourhood facilities. Proposed upgrades are indicated within the document and are taken into account in preparing this local planning strategy. The public open space strategy is illustrated in Figure 31.

Provision for open space has been made in the Local Planning Strategy for future residential areas where, in due course, its development and management will be determined. In particular additional public open space will be needed as Northshore develops and ultimately provision for District parks as the urban front extends northwards and southwards.

The Strategy makes specific recommendations with regard to various sites, including for the upgrading of facilities; upgrading to 'neighbourhood' or 'district' park status; and the need for further detailed study or planning.

## 5.16 Shire of Irwin Municipal Inventory of Heritage Places 1998/2005

In 2004 the Shire of Irwin commissioned consultants to revise the Irwin Municipal Heritage Inventory (MHI).

The major changes recorded are:

- Revision of the Management Category descriptions to separate places already entered on to the State Heritage Register (1A) and those recommended for inclusion on the Register (1B).
- Revision of the Management Categories of places listed in the Local Planning Scheme. Only Category 1A, 1B and 2 places have been included on the current list.
- Most places have been re-photographed and the digital images have been linked to the database. Sites (Management Category 4) have had a map or a historic photograph included where possible.
- Histories have been revised to include information from Conservation Plans and Heritage Register Assessments.
- The historic chronology has been revised and updated. Events associated with a particular place are now included on the place record.



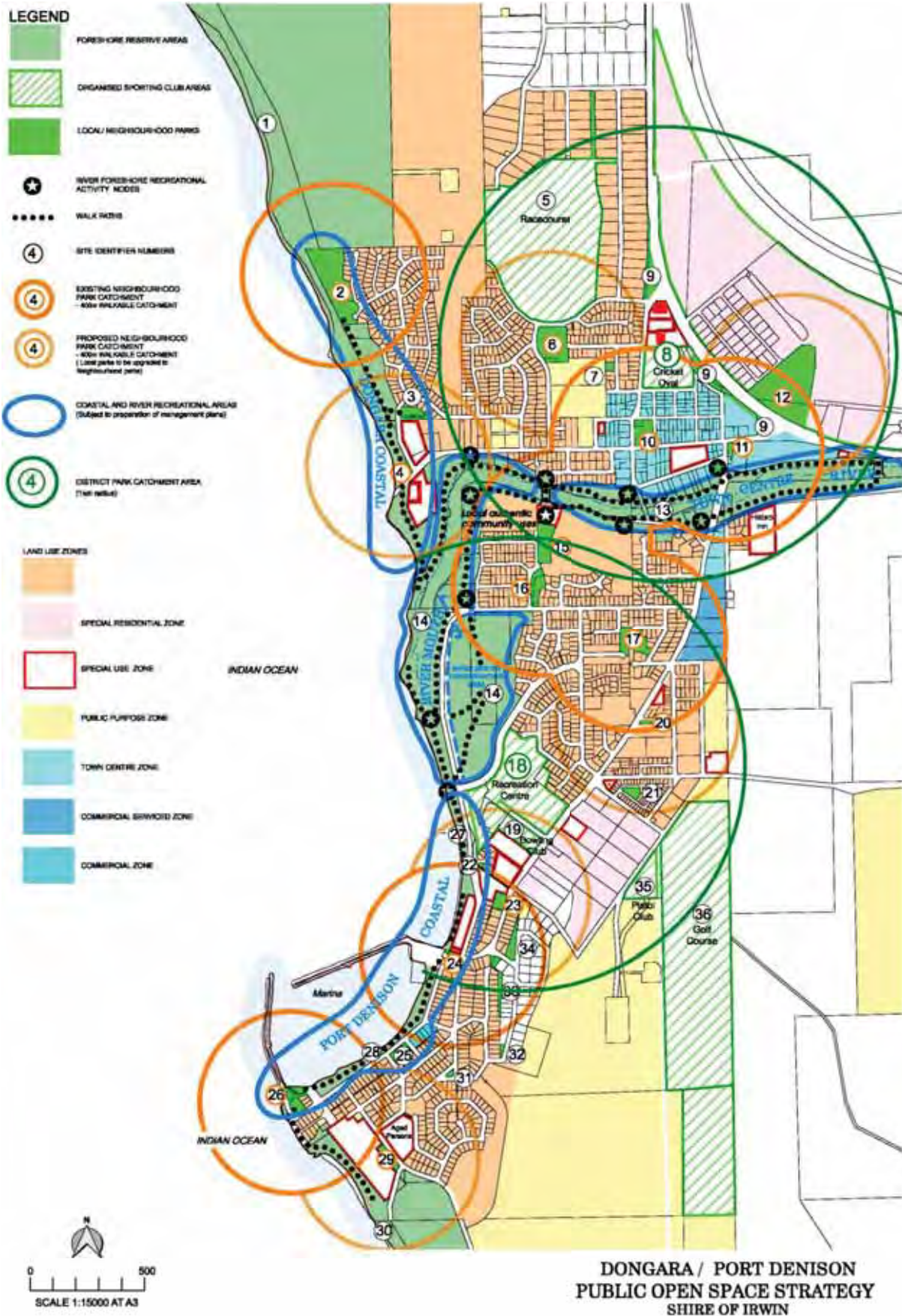


Figure 31 - Shire of Irwin Public Open Space Strategy Source: GHD Ltd

## Heritage Precinct Recommendation

The Dongara Town Centre has over 25 heritage places entered into the Municipal Inventory, 15 of which are either category 1A or 1B. The Dongara Heritage Trail, which was produced by the Irwin District Historical Society, covers this area and consideration should be given to including these places in a Central Dongara Heritage Precinct.

It is recommended that the Irwin Shire Council request the Irwin Heritage Committee, in consultation with the Regional Heritage Advisor, to investigate the implications of a heritage precinct in Dongara and if deemed appropriate to make recommendations on its boundaries and implementation.

## Status

The Heritage of Western Australia Act 1990 requires that Local Governments update their Inventory annually and review it every four years. As the MHI was last updated in 2004/2005, its review is now overdue.

The MHI is a record of the places identified as having heritage significance to the Shire; however, it is not a statutory document.

The Shire's Local Planning Scheme No. 5 includes a Heritage List known as *Schedule II – Places of Natural Beauty and Historic Buildings and Objects of Historic Natural, Scientific And Townscape Interest*, which will be afforded statutory protection under the Scheme once the current omnibus amendment to LPS 5 has been adopted. The Heritage List includes a total of 62 places, designated Management Category 1 (recommended for inclusion on the State Register of Heritage Places) or 2 (maximum incentives under the Local Planning Scheme).

It is understood that the Shire intends to review its MHI imminently, and it is recommended that once this has taken place, the Heritage List is subsequently reviewed.

## 5.17 Shire of Irwin Green Infrastructure Strategy 2015-2020

The Shire of Irwin prepared a Green Infrastructure Strategy in 2015 to coordinate the delivery of an integrated network of green spaces and corridors which are to be underpinned by easily maintained sustainable engineering solutions.

The Strategic aims of the strategy are to:

1. improve the quality of life for our community, develop existing and new partnerships, and make the Shire a more attractive place to live, work, play and visit, while respecting indigenous and heritage values;
2. provide easily maintained, economically and environmentally sustainable engineering solutions for parks, gardens, roads, footpaths/cycleways, verges, and other natural and semi natural green spaces;
3. develop an integrated network of multifunctional green spaces connected by footpaths and cycleways that enhance our sense of place, and cultural identity, and encourage active use by our community;
4. enrich biodiversity by restoring and providing interconnected green networks and habitats for wildlife with a focus on native species;
5. implement Green Infrastructure to mitigate the impacts of climate change and cool urban areas;
6. lead by example by reducing water and energy consumption and utilising sustainable energy sources (solar, wind etc.);
7. encourage investment from the public and private sector and guide the development of new residential, commercial and industrial subdivisions; and
8. prioritise, develop and begin to implement Green Infrastructure projects and initiatives and accurately target resources.

The strategy is underpinned by a number of policies to direct the delivery of the aims and objectives of the strategy. These policies are listed below:

1. Council policy for street trees and verge treatments. This policy outlines the documentation required to be submitted with projects (i.e. applications for subdivision) to ensure that planting and other works are carried out in accordance with the Green Infrastructure Strategy.
2. Council policy for existing public open space. This policy outlines considerations and requirements to enhance the natural qualities and high quality of public open space, while also rationalising water use.
3. Local Planning Policy 3 – Water Sensitive Urban Design. This policy seeks to ensure the principles of Water Sensitive Urban Design are implemented at subdivision and development stage.

The strategy includes an Action Plan that is intended to be reviewed and updated annually and includes the following initiatives and projects:

### Initiatives

1. Develop a Waterwise Program.
2. Develop and implement energy saving initiatives in all Shire buildings.
3. Investigate the potential for Solar PV systems on all Shire buildings.
4. Move the Shire's administration towards paperless systems.
5. Lobby Western Power to implement energy efficient streetlights.
6. Investigate how to attract renewable energy projects to the Shire, including solar farms and wind farms.
7. Investigate opportunities for cogeneration and trigeneration power for Shire buildings.
8. Develop guidelines for community gardens.

9. Develop guidelines for Living Smart – simple living, water, power, waste, gardening for food production and biodiversity.
10. Investigate the potential for a Shire-owned reticulated sewer system in Port Denison.

### Projects

1. Point Leander Drive verge planting program.
2. Rationalise existing public open spaces in accordance with the provisions of the Council policy for existing public open space.
3. Retrofit Shire road reserves with sustainable drainage systems.
4. Undertake energy audits for all Shire buildings.
5. Develop a Local Biodiversity Strategy.

## 5.18 Shire of Irwin Coastal Hazard Risk Management and Adaptation Plan (CHRMAP)

The Shire of Irwin in partnership with Curtin University's Department of Engineering and the Northern Agricultural Catchments Council (NACC) combined to prepare a Coastal Hazard Risk Management Adaptation Plan (CHRMAP) for the Shire of Irwin coastline. This CHRMAP has been prepared to meet the requirements of SPP2.6 and associated guidelines. The purpose of the CHRMAP is to provide strategic guidance on coordinated, integrated and sustainable management and adaptation for land use and development in the coastal zone.

The CHRMAP document identifies the following objectives:

- Increase knowledge of coastal features, processes and hazards in the Shire;
- Include stakeholders and community in planning and decision-making process;
- Identify coastal hazards;
- Identify coastal hazard risk areas (both natural and man-made) impacted by coastal hazards and their functions;
- Determine likelihood and consequence of impacts from coastal hazards on assets and assign a level of risk; and
- Identify relevant management/coastal adaptation actions and how these can be incorporated into short and long term planning.

Following the completion of the mapping of coastal hazards, an implementation plan was developed following engagement with the community and stakeholders. This implementation plan is provided overleaf.

Priority	Action	Timeframe	Responsibility
High	In the Port Denison, Granny's Beach and Surf Beach area: a. Investigate potential inundation impacts and ascertain the need and viability for improving the inundation resilience of public infrastructure in this area (e.g. the sea wall between Granny's Beach and Surf Beach); b. Investigate retrofitting urban drainage systems to accommodate fluvial flooding; c. Investigate the need for coastal protection structures to protect/defined areas from erosion.	July 2021	Shire of Irwin / Department of Planning / Department of Transport
High	Carry out flood modelling of the Irwin River, including an analysis of combined river flooding and coastal impacts.	July 2021	Shire of Irwin
Medium	In all coastal areas where new buildings are proposed, ensure all buildings are relocatable.	As need arises	Shire of Irwin
Medium	In urban areas – continue to implement the Shire's Green Infrastructure Strategy and the Local Planning Policy for Water Sensitive Urban Design.	Ongoing	Shire of Irwin
Medium	Modifications to Planning Scheme	As need arises	Shire of Irwin / WAPC
Medium	In all areas, educate the public about the area's natural communities and sensitive habitats and encourage public appreciation and environmentally sound recreational enjoyment of the area.	Ongoing	Shire of Irwin
Medium	In all areas monitor and allow natural processes to occur, and ensure the public are kept informed.	Ongoing	Shire of Irwin / NACC
Low	Plan for the future relocation of the airfield by 2070, or sooner if threats materialise.	2031 (or sooner, if required)	Shire of Irwin / WAPC

# 6. Analysis of Key Issues

## 6.1 Environment

### Climate Change

Research from the CSIRO indicates that the climate is changing at a rate significantly faster than that experienced throughout geological history and that while climate varies naturally in location and time, the changes currently being experienced, and that are expected over the next 100 years, are occurring at a rate more rapid than previously adapted to. The term 'climate' refers to average weather conditions over longer time periods and includes consideration of temperature, rainfall, sea level, ocean acidity and salinity, solar radiation and water vapour in the atmosphere while 'weather' is the brief, rapidly changing condition of the atmosphere influenced by the movement of air masses.

As the climate changes, the Shire of Irwin is likely to experience:

- Exceptionally low soil moisture once every six years.
- Annual rainfall decline by 10 to 20 per cent, which will increase the variability of the agricultural growing seasons and river flows.
- Increased extreme summer storms, resulting in a higher incidence of flash flooding.
- Prolonged dry periods, likely to reduce vegetated groundcover and increase the risk of water and wind erosion.
- Subdivisions relying on water tanks e.g. Springfield.

These changes are likely to result in:

- Increased vulnerability of coastal infrastructure to sea level rise.
- Increased degradation of infrastructure and material due to higher temperatures, altered soil moisture, and extreme weather events (i.e. flash flooding).
- Increased detrimental health impacts as a result of higher temperatures, increase in insect-borne and water-borne diseases and extreme weather events (such as flash flooding).
- Reduction in groundwater resources, increased soil erosion and loss of vegetation.
- Reduction in crop, pasture and livestock productivity due to increased heat stress.

### Coastal Zone and Foreshore

As previously documents within this report, the Shire has recently completed the preparation of a Coastal Hazard Risk Management and Adaptation Plan (CHRMAP) for the Irwin coastline which defines a coastal zone prone to coastal processes including storm surge, erosion and accretion.

The document identifies the following hazard risk compartments, each which have been modelled for inundation and erosion including associated mapping:

#### Port Denison, Granny's Beach and Surf Beach

This area is comprised of fairly significant levels of public infrastructure, a caravan site, beaches and adjacent residential and commercial properties. The area has experienced significant levels of erosion between Granny's Beach and Surf Beach and minor levels of erosion on the foreshore within the marina. Most of the areas likely to be significantly affected by coastal inundation and erosion over the next 94 years are likely to be public land.

#### South Beach North

This area includes the beach and adjacent dunes and scrubland, a caravan park, a public road, a café and the Surf Lifesaving Club's shed. All of the land is public land. Development within the caravan site is expected to be controlled by an emerging Local Development Plan, which will take the requirements of SPP 2.6 into consideration. The South Beach reserve is managed by the Shire of Irwin, and there is no expected need for further development. No significant coastal erosion events have been recorded in this area, although the car park and public road are experiencing inundation annually. The modelling shows that the caravan park will be unaffected by coastal inundation over the 96 years, but may be affected by erosion in the 2110 scenarios. The buildings near the public car park may be affected by inundation and erosion over the next 50 years.

#### South Beach South

This area contains the community's most popular and well-used beach and adjacent dune systems. Atop the dune systems is the Shire's airfield, which sits approximately 12 metres above sea level. The area suffers from some anthropogenic hazards associated with erosion caused by off-road vehicles and other human activity. Apart from the airfield, this area will remain undeveloped. No significant coastal erosion events have been recorded in this area, although the extent of the beach varies due to natural coastal processes. With regard to the coastal modelling, the natural areas are shown to be most affected by significant storm events. In some scenarios, the modelling shows the airfield to be significantly affected by both inundation and erosion.

#### Seaspray Beach and Irwin Rivermouth

This area is comprised of beaches and adjacent dune systems, a rivermouth, a coastal wetland system, public roads, boardwalks, a car park and public toilet and caravan park. Most of this area is public land, with the exception of a freehold lot containing buildings associated with the

caravan park. Erosion issues at Seaspray Beach have unearthed infrastructure placed during the days of the crayfish factory. The Irwin Rivermouth area is likely to be much more sensitive to significant inundation and erosion events across the 94 year period.

### Seven Mile Beach

Seven Mile Beach is comprised of beaches and associated dune systems, a public car park and public road. The car park is used for overnight camping and recreational fishing. In October 2013, the car park was eroded leaving 1.5m drop to the beach. The dune heading south has undergone extensive erosion through the winter months. The area suffers from some anthropogenic hazards associated with erosion caused by off-road vehicles, uncontrolled pedestrian activity, stock and feral animal grazing and bushfire hazards. The modelling shows the natural areas may be affected in most scenarios. The car park and public road are shown to be affected by erosion in the 2070 (0.5m sea level rise) and 2110 (0.9m and 1.5m sea level rise) scenarios.

### Freshwater Point

This area is comprised of limestone shoulder that protects a small bay, beaches and adjoining scrubland, a public access track and parking area, public toilet and a number of shacks and other structures associated with the fishing industry. A number of shacks and structures have been recently removed due to the shrinking coastline in this location. The area is used by overnight campers and fishermen. Under the Shire's Coastal Development Strategy, there is potential for shacks to be located within new recreational and fishermen's nodes. The modelling shows the natural areas will be affected in most scenarios and that the private and public infrastructure would be most threatened by the erosion scenarios.

### Cliff Head North

This area is comprised of beaches and associated dune systems, public access tracks, camping areas and a public toilet. The area is used for recreational camping and fishing. There are few historical records of significant inundation or erosion events for Cliff Head north. Under the Shire's Coastal Development Strategy, there is potential for shacks to be located within new recreational and fishermen's nodes. The modelling shows that the natural areas are likely to be affected across all scenarios, with erosion likely to have the most significant impacts. The public toilet and public access tracks are shown to be affected in the 2110 scenarios.

### Cliff Head South

Cliff Head South is comprised of beaches and associated dune systems, fishermen's shacks, public access tracks, camping areas and public toilets. The area is used by the fishing industry but is mostly used for recreational purposes. There is a mining tenement on the land. Under the Shire's Coastal Development Strategy, there is potential for shacks to be located within new recreational and

fishermen's nodes. The natural areas are likely to be most affected across all modelling scenarios, with erosion likely to have the most significant impacts. The public toilets, shacks, public access tracks and camping areas are shown to be affected in the 2110 scenarios.

After analysing the likelihood and consequence of the inundation and erosion maps for each hazard for each compartment, the risk levels were established for each compartment, as detailed in the following tables.

Coastal Inundation			
Risk Hazard Area	Likelihood	Consequence	Risk Priority Level
Port Denison, Granny's Beach and Surf Beach	Likely	Moderate	High
South Beach North	Possible	Minor	Medium
South Beach South	Almost Certain	Minor	High
Seaspray	Almost Certain	Minor	High
Seven Mile Beach	Unlikely	Insignificant	Low
Freshwater Point	Unlikely	Minor	Low
Cliff Head North	Rare	Insignificant	Low
Cliff Head South	Possible	Insignificant	Low

Coastal Erosion			
Risk Hazard Area	Likelihood	Consequence	Risk Priority Level
Port Denison, Granny's Beach and Surf Beach	Possible	Catastrophic	Extreme
South Beach North	Possible	Major	Extreme
South Beach South	Unlikely	Major	High
Seaspray	Almost Certain	Major	Extreme
Seven Mile Beach	Possible	Minor	Medium
Freshwater Point	Likely	Moderate	High
Cliff Head North	Possible	Moderate	High
Cliff Head South	Possible	Moderate	High

## Biodiversity and Natural Areas

The Shire of Irwin is situated within the Geraldton Sandplains Interim Biogeographic Regionalisation for Australia (IBRA) region (Thackway and Cresswell 1995). It is known to contain a number of significant flora, vegetation and fauna values that are identified under both state and federal legislation and policy, including declared rare flora, threatened ecological communities and regionally significant vegetation complexes.

Within the broader region, a number of threats are recognised as potentially impacting on the flora, vegetation and fauna values, and can include but are not limited to:

- Increased fragmentation (from activities such as clearing), loss of areas of remnant vegetation and limited recruitment of new vegetation.
- Grazing pressure.
- Feral animals, including foxes, cats, rabbits and goats.
- Exotic weeds, including box thorn, castor oil, wild oats, lupins, iceplant and saffron thistle.
- Changes in fire regimes.
- Changes to salinity and hydrology, including altered flow regimes affecting riparian vegetation and sand occlusion.
- Pollution.
- Human influences including urbanisation, recreation (including access on horses and off road motor vehicles) and tourism.

It is noted that the Shire does not have a local Biodiversity Strategy to provide a coordinated approach to management and protection of the Shire's biodiversity.

### Stormwater Management

In Western Australia, urban water management falls under the jurisdiction of the Department of Water, who require the preparation of plans and strategies at the different stages of planning as administered by local government and the Western Australian Planning Commission (WAPC).

*Planning Bulletin 92 Urban Water Management* (WAPC 2008) provides the state government policy in relation to this urban water management framework. Within the framework there is the requirement for the following:

- A District Water Management Strategy, to be submitted in support of a District Structure Plan, local planning strategy or region scheme amendment.
- Local Water Management Strategy, to be submitted in support of a LSP or Local Planning Scheme amendment.
- Urban Water Management Plans, to be submitted at the subdivision stage.

There is an emphasis within this framework on the application of water sensitive urban design to effectively and efficiently manage the way in which water within an urban context is utilised. This design minimises the impact of urbanisation on the natural water cycle.

A District Water Management Strategy (GHD 2014) has been prepared for Dongara-Port Denison District Structure Plan, and is for the major population centre within the Shire of Irwin. The District Water Management Strategy recommends that (new) stormwater infrastructure should not be permitted to discharge directly into the Irwin River or foreshore reserve area. The key management objectives from the District Water Management Strategy include:

- For small events (i.e. 1 year 1 hour average rainfall interval (ARI) event) and to protect ecological values and maintain hydrological regimes:

- o Runoff from constructed impervious surfaces generated by up to the 1 year 1 hour ARI should be retained or infiltrated as close to source as possible.
- o Lots should employ soakwells (where soil conditions permit) or rainwater tanks.
- o Roads should employ vegetated swales or (where conventional piped systems will be used in urban areas) bottomless, leaky or tree pits.
- o Pre-development peak flow rates and total volume runoff from the whole sub-catchment should be maintained at outlets from the site for the critical 1 year ARI event.
- For minor events (i.e. 1 in 5 year ARI events) and to maintain serviceability of roads and infrastructure and manage flow rates to prevent erosion:
  - o Runoff generated by events greater than the 1 year ARI up to the 5 year ARI should be transferred via the minor conveyance system, which may include road gutters, verges and swales
  - o Runoff from the whole catchment should be managed within landscaped areas such as swales, basins, living streams or constructed wetlands, located in road reserves, POS or linear multiple use corridors
- For major events (i.e. 1 in 100 year ARI event) and to protect people and buildings from flooding:
  - o Runoff generated by events greater than the 5 year ARI up to the 100 year ARI should be transferred via the major conveyance system, which may include road reserves and floodways.

### Irwin River

The Irwin River is a prominent watercourse within the region and is subject to flooding. Flooding along the Irwin River generally occurs when sufficient heavy or prolonged rainfall produces runoff which overflows the banks of a watercourse. The Irwin River is likely to flood during summer, when cyclone events move through the area resulting in significant rainfall within the broader surface water catchment. Damage from flooding can be considerable to people, infrastructure and the natural environment, and the impacts are often exacerbated by land clearing and urbanisation.

The Department of Water has developed a number of guiding principles for floodplain management that aim to ensure that proposed development has adequate flood protection from a 100 year Average Rainfall Interval (ARI) flood and that it does not detrimentally impact on the existing flooding regime of the general area. Floodplain management should:

- Ensure land use minimises flood risk and damage costs.
- Ensure all three levels of government and the local community accept their responsibilities in floodplain management.
- Ensure appropriate floodplain mitigation measures minimise damage and are acceptable to the local community.

- Promote the use of non-structural (i.e. aimed at reducing or avoiding the susceptibility of new developments to flood damage through land use and building controls, acquisition of land and relocation, effective flood forecasting, public awareness etc.) rather than structural (i.e. physically modify the natural behaviour of flooding) mitigation measures where possible.
- Ensure floodplain management measures have beneficial economic, social and environmental outcomes.
- Provide flood forecasting and warning systems and emergency management arrangements to help minimise the impact of flooding.

## Water Supply

Groundwater is an important source of water for potable and non-potable water within the Shire of Irwin. The quality of groundwater varies according to the underlying soil and geology and can have high salinity, but can also be detrimentally affected by contamination from minerals, chemicals, erosion and harmful micro-organisms.

Two Public Drinking Water Source Areas, the Allanooka and Dongara-Denison Water Reserves have been identified approximately 12km and 20km north east of the Dongara town site respectively. These areas have been identified to protect the potable water supply source for Dongara and Port Denison, as well as other towns in the Mid-West region.

In general, Public Drinking Water Source Areas are sensitive to contamination, which can result from a range of activities including urban development, fuel handling and storage, chemical spills, inappropriate management and treatment of effluent and grazing.

## Bushfire

In the Geraldton Sandplains region of Western Australia, the bush fire risk is greatest from November through to April, when moisture content of vegetation is low. Fires can be destructive to both lives and property, and can have detrimental impacts on biodiversity. While it is impossible to prevent all fire, the extent, impact and frequency of fire within the Shire of Irwin can be managed appropriately by identifying those areas where fire poses a significant threat to life and property and ensuring that land use and development adopt the appropriate fire protection mechanisms for the specific risk.

State Planning Policy 3.7 – Planning in Bushfire Prone Areas provides a policy framework and direction for how land use should address bushfire risk management in Western Australia. SPP 3.7 requires bushfire hazard to be considered at the highest level strategic planning for districts to ensure that bushfire risk is considered in the decision-making process.

The *Guidelines for Planning in Bushfire Prone Areas* and Australian Standard 3959-2009 Construction of buildings in bushfire prone areas (AS 3959) outline a process for identifying bushfire risk and methods to manage and mitigate this risk to an acceptable level.

AS 3959 sets construction standards for buildings in bushfire prone areas, with the intention being to improve the resistance of a building to attack from burning embers, radiant heat, flame contact or a combination of these three factors. Figure 33 provides an outline of bushfire attack mechanisms.

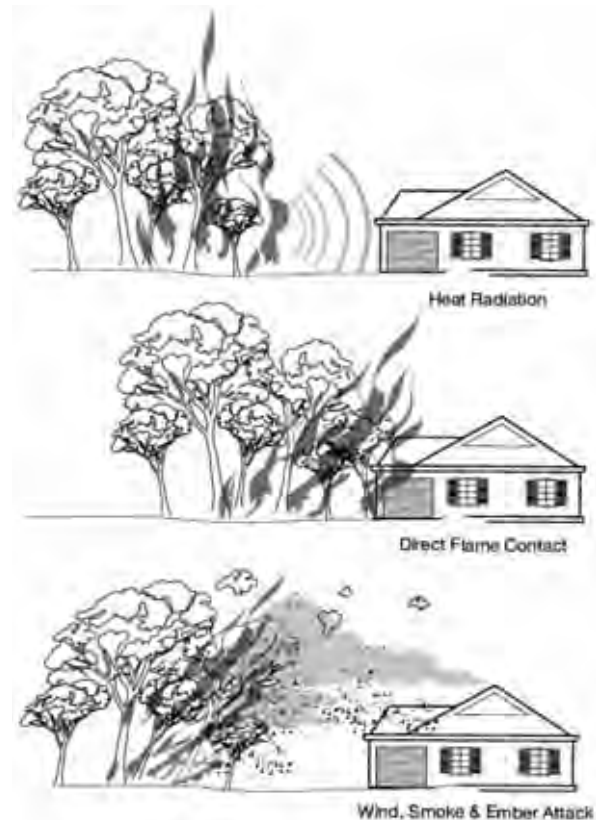


Figure 33 - Bush fire hazard

## Other Land Uses

There are a number of emissions that are generated by industrial, commercial, rural activities and infrastructure that may exceed amenity levels considered acceptable to residential areas and other sensitive land uses (such as schools, hospitals, motels etc.). These emissions include noise, dust, gaseous and particulate emissions and odour. Guidance for the Assessment of Environmental Factors Separation Distances between Industrial and Sensitive Land Uses No. 3 (EPA 2005) outlines the Environmental Protection Authority position with regard to the management of emissions. This includes:

- Avoidance of impacts.
- Minimisation of the creation and discharge of waste by industry implementing best practice.
- Ensure environmental impacts from industrial emissions are acceptable and meet the relevant regulations and health criteria beyond the boundary of the site, industrial estate or buffer area.



- The protection of sensitive land uses from industrial emissions is assisted by the identification of suitable separation distance at the strategic and structure planning stages of the land use planning process, and in the early project formulation stages in the case of individual projects.
- Where site-specific technical investigations are completed, this will provide the most appropriate guide to the separation distance that should be maintained between a particular industry and sensitive land uses, or between industrial precincts and sensitive land uses, to avoid or minimise land use conflicts.

*State Planning Policy 4.1 State Industrial Buffer Policy with regard to Guidance for the Assessment of Environmental Factors Separation Distances between Industrial and Sensitive Land Uses No. 3 (EPA 2005)* provides the recommended generic separation distances between sensitive land uses (and industrial land uses such as the wastewater treatment facility), in order to avoid potential conflicts between these land uses.

There are a number of current land uses within the Shire of Irwin that may require specific separation considerations. It should be noted that where site specific investigations have been undertaken to determine an appropriate separation distance, this information has been included. Otherwise the separation distances have been outlined based on *Guidance for the Assessment of Environmental Factors Separation Distances between Industrial and Sensitive Land Uses No. 3 (EPA 2005)*. The land uses include:

- Wastewater treatment facility. The Dongara Wastewater Treatment Plant is located approximately two kilometres from the Dongara town site. The Water Corporation have undertaken site specific investigations to determine a suitable separation distance, which is outlined in Figure 33.
- Waste transfer station. A waste transfer station is located approximately two kilometres south of the Dongara town site. Waste is sorted and recycled at the facility, or is transferred to a waste disposal facility in Geraldton. *Guidance for the Assessment of Environmental Factors Separation Distances between Industrial and Sensitive Land Uses No. 3 (EPA 2005)* recommends a 200m separation distance, and this is outlined in Figure 33.
- Industrial development, including marine-based industry and light industrial (i.e. transport-related). The requirement for a separation distance will be dependent upon the type of industry and the proposed activities. *Guidance for the Assessment of Environmental Factors Separation Distances between Industrial and Sensitive Land Uses No. 3 (EPA 2005)* recommends a 200m to 1000m separation distance for boat building and maintenance activities depending upon the size of the facility and whether certain chemicals are utilised.
- Cement of lime manufacturing works (Cockburn Cement). A 1250m development exclusion buffer (separation distance) has been provided to the Cockburn Cement facility and is outlined in Figure 34.

- Exploration and mining for a range of minerals and resources. These include:
  - o Oil and gas, both onshore and offshore. *Guidance for the Assessment of Environmental Factors Separation Distances between Industrial and Sensitive Land Uses No. 3 (EPA 2005)* recommends at least a 2000m separation distance between these activities and sensitive land uses.
  - o Limestone and limesand extraction. *Guidance for the Assessment of Environmental Factors Separation Distances between Industrial and Sensitive Land Uses No. 3 (EPA 2005)* recommends at least a 500m separation distance between these activities and sensitive land uses.

## Green Infrastructure

The Shire has prepared a Green Infrastructure Strategy which contains an Action Plan to be updated annually. This action plan should be delivered as funding and resources allow.

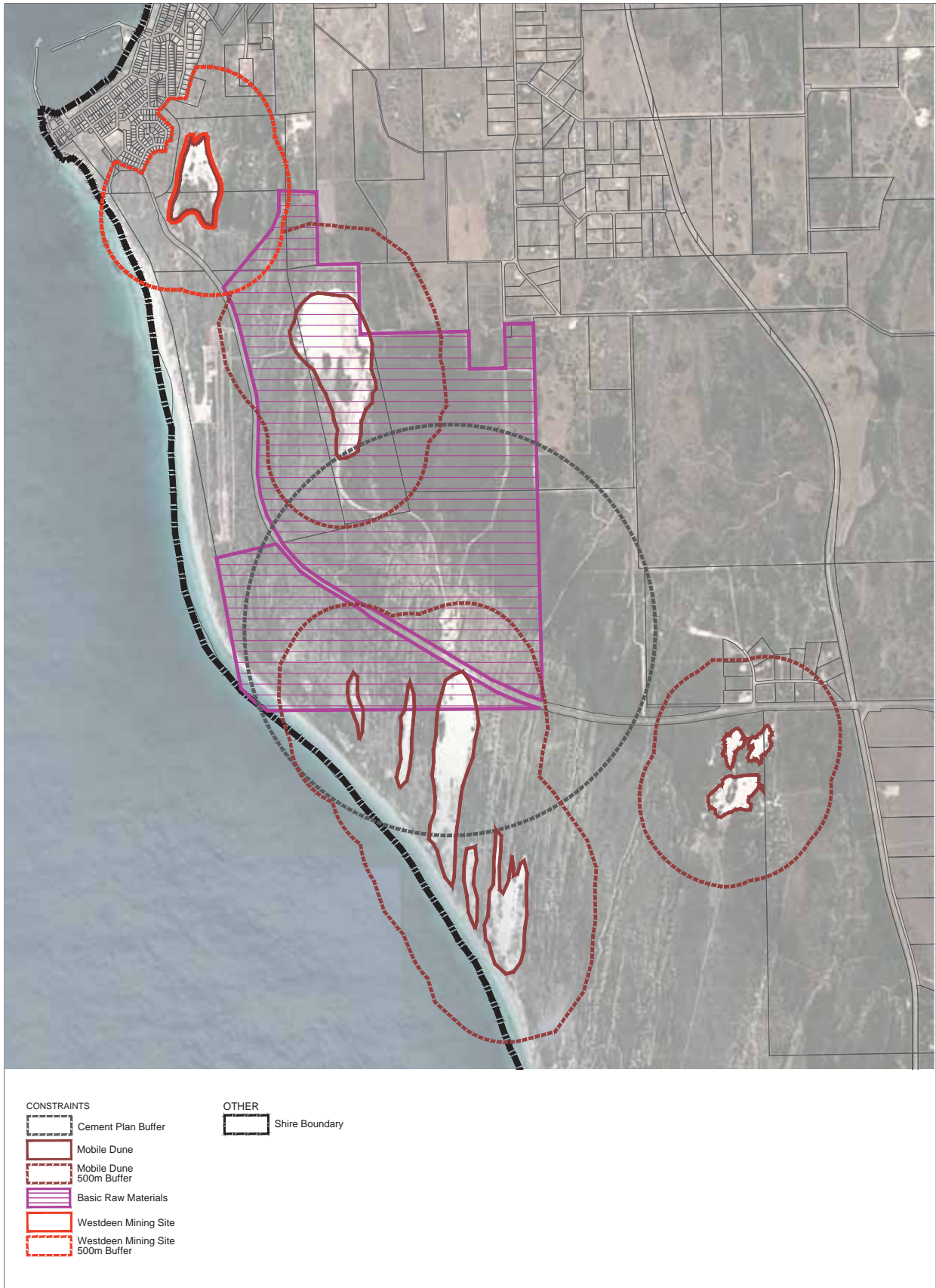


Figure 34 - Separation distances between sensitive and industrial land uses

## 6.2 Dongara Port Denison District Structure Plan Analysis

The Strategic Plan investigates the existing and future population and the current and future supply of different types of zoned land. Using these figures, the Strategy is able to determine potential future demand and supply for each land use whilst considering current opportunities and constraints. The outcomes of the Strategic Plan have informed development of the Strategies and Actions within Section 4.

### Population and Housing

The District Structure Plan (DSP) provides for a future potential dwelling yield of 8,240 and population of 18,617. The supply of residential land easily exceeds the projected population growth over to 2050 which has been modelled as follows:

*Historical and Projected Population, Irwin LGA 2011-2050p (Medium Scenario)*

Catchment	2011	2012	2016	2021	2025	2050	Total Change	Av. Ann. % Growth
Irwin LGA	3,647	3,675	3,991	4,388	4,696	6,884	3,237	1.6%
Central SD	65,283	66,543	70,498	75,694	79,700	107,645	42,362	1.3%
WA	2,353,409	2,432,706	2,624,794	2,845,715	3,026,377	4,422,445	2,069,036	1.6%

*Note: The Medium Scenario is modelled on WA Tomorrow Projections – Scenario C*

*Source: ABS (2012a), WA Tomorrow (2012)*

The following table demonstrates the expected demand for housing within each zone for the years 2021, 2025 and 2050. This demand is based on an average population growth rate of 1.6%. The numbers of houses are derived from the portion of the Shire's housing market shared by each zone between January 2008 to 2015. The portion of the housing market for each zone is as follows:

- Residential zone – 64%
- Special Residential zone – 11%
- Rural Residential zone – 14%
- Rural Smallholdings zone – 7%
- General Farming – 3.5%
- Town Centre – 0.5%

*Expected demand for housing by each zone*

Expected demand for houses within each zone (No. of houses)				Current potential housing supply (No's of houses)	
Zone	2021	2025	2050	Minimum	Maximum
				2015	
Residential	1,559	1,616	2,436	2,366	8,324
Special Residential	268	278	419	99	198
Rural Residential	341	355	533	190	760
Rural Smallholdings	170	176	266	654	654
General Farming (Rural)	85	88	133	-	-
Town Centre (Rural Townsite /Centre)	12	13	19	44	44
<b>Expected Demand</b>	<b>2,435</b>	<b>2,526</b>	<b>3,806</b>	<b>3,362</b>	<b>9,980</b>

The table above depicts the anticipated demand for housing by each zone within the Shire and then compares this against the anticipated minimum and maximum dwelling yield to give an indication of supply versus demand. The potential supply of housing within the General Farming zone has not been provided, due to the general presumption against further subdivision of this land for residential purposes.

Analysis of the statistics contained in the above table and the average prices of vacant residential lots and houses within the Shire as contained within Appendix C – Shire of Irwin's Housing Land Audit and Market Analysis 2015 demonstrates that:

1. while the average household size for occupied dwellings is 2.4 persons, at the 2011 Census, the proportion of unoccupied dwellings was 22.6%, thereby reducing the average household size to 1.9 persons, based on total dwellings. The unusually high percentage of unoccupied dwellings has been assumed to be carried forward into the future due to a large percentage of holiday homes within the Shire.
2. the demand for housing land within the Shire is strongly focused on the smaller lot sizes provided by the Residential, Special Residential and Rural Residential zones;

3. there are significant oversupplies of housing land within the Residential, Rural Residential and Rural Smallholdings zones;
4. the impact of the oversupply of residential land in each zone is contributing to a significant fall in vacant land prices and house prices within the Residential and Rural Smallholdings zones; and
5. there is an undersupply of Special Residential land (2,000m<sup>2</sup>-1ha).

The DSP identifies a substantial amount of future urban land to be released for residential purposes and outlines a broad approach to staging of the release of this land, in accordance with the following order of priority with corresponding potential dwelling and population yield:

Order of Priority	Precinct	Potential Dwelling Yield	Population
1	St Dominics Precinct	1,061	2,440
2	Race Course Estate Precinct	1,566	3,602
3	Francisco Road North Precinct	2,501	5,753
4	South Port Denison Precinct	452	1,040
<b>TOTAL</b>		<b>5,580</b>	<b>12,835</b>

Given the apparent oversupply of residential land identified by the DSP, the Shire has resolved to re-prioritise the distribution of future residential land on the following basis:

1. To not to proceed with the South Port Denison precinct due to significant land constraints associated with the basic raw materials extraction industries currently located to the south-east of Port Denison.
2. To not to proceed with the intensification of the Racecourse Estate for residential purposes and instead has resolved to leave this estate for Rural-Residential purposes based on the projected demand for this type of residential product.
3. Prioritise the release of the Francisco Road North Precinct on the basis that the area is zoned 'Urban Development' with an approved Structure Plan.
4. There is no current interest from the landowners within the St Dominics Precinct or Race Course Estate precinct to develop the land for residential purposes.

### Housing Diversity

The Shire of Irwin currently has limited housing diversity, with the majority of dwellings being single houses, often with three or more bedrooms. This provides limited choice for young singles or couples, and 'empty-nesters' who may prefer a smaller dwelling with lower maintenance requirements.

Lot 250 Oceanside Boulevard Dongara, is a 55ha undeveloped lot located on the northern subdivision front of Dongara. This lot is currently zoned Residential R12.5 however represents a significant opportunity to establish dwelling lot diversity within Dongara. It is therefore recommended that this lot be rezoned to 'Development' zone to facilitate structure planning to achieve greater dwelling diversity.

Under LPS No. 5, grouped dwellings are permitted in the Residential zone, and the Town Centre zone (with the exercise of discretion). Multiple dwellings may be

permissible in the Residential and Town Centre zones, subject to the Shire's discretion following a period of public advertising.

Under LPS No. 5, Ancillary Accommodation is only permitted (with the exercise of discretion) in the Residential, Special Residential, Rural Residential, Rural Smallholdings and General Farming zones. Ancillary Accommodation is not permitted in the Town Centre zone (among others).

The Shire has recently progressed an omnibus amendment (Amendment No. 16) which has addressed a number of restrictions within LPS No. 5 relating to residential building height, restrictions on Grouped Dwelling development, ancillary accommodation and other requirements relating to R-Code issues.

Access to public open space is important, particularly for smaller dwellings, to provide attractive spaces for recreation. Most medium density residential zoned land (R30 to R60, though in the Shire there is a maximum of R50) is currently located in close proximity to local reserved land (public open space), generally adjacent to the Irwin River or the coastal area of Port Denison. Access to public open space should be a key consideration when considering any increase in residential density coding.

### Retail and Commercial Land

Commercial development within the Dongara/Port Denison urban area services the needs of the local and hinterland communities, as a part of a hierarchy of service centres including Geraldton. It also acts as a focal point for tourism and is the administration centre for industry and local government within the Shire of Irwin.

The District Structure Plan identifies a Regional Centre zoning in relation to the existing Commercial and Service Commercial zoned land within and around the Dongara town centre (main street). An extended 'Neighbourhood Centre' zoning is identified along Point Leander Drive within Port Denison and a further Neighbourhood Centre site to service the Racecourse estate and surrounds.

Notwithstanding the above, the most appropriate zone under the Regulations 2015 for commercial land within the Dongara Urban Area is a 'Town Centre' zone based on Dongara being identified as a sub-regional centre under the Midwest Regional Planning and Infrastructure Framework.

### Existing Supply

The total gross area of existing commercial and service commercial zoned land within the Dongara Port Denison Urban Area is provided in the table below:

Zone	Land Area (Hectares)
Town Centre	22.5172 ha
Neighbourhood Commercial	0.5938 ha
Service Commercial	4.0999 ha
<b>Total</b>	<b>27.2109 ha</b>

Much of the existing commercial zoned land in the town centre is unlikely to be available for commercial redevelopment or use, due to:

- existing well-established non-commercial uses;
- overall demand for retail and commercial uses;
- landowner intentions;
- difficulty of land assembly given the number of small residential lots; and
- heritage considerations dictate against significant redevelopment in some parts of the town centre.

It is appropriate however that the existing surplus of commercial zoned land around the town centre be rezoned to 'Mixed Use' to facilitate higher density residential outcomes, opportunities for tourist development, office space and community uses to create a lively, mixed use precinct.

### Future Demand

The following table provides the projected additional demand for commercial land compared to existing provision in 2011.

### Future Commercial Land Requirement Modelling

Land Type	2016	2021	2025	2050	Current Vacant Zoned Land Under LPS No. 5
Commercial Zoned Land	0.2559 ha	0.4748 ha	0.6326 ha	1.7930 ha	2.2631 ha

In consideration of the above requirements over the next 35 years, it is apparent that there is an existing oversupply of commercial zoned land within the Dongara town centre in particular. It is therefore necessary to look at focussing on consolidating the core retail / commercial area, while also providing for neighbourhood commercial opportunities in Port Denison and also part of the Racecourse estate extensions to service the northern growth corridor.

## Industrial Land

### Existing Supply

At present two Industrial zones exist within the Shire. The first is a General Industry zone located off the Brand Highway, at the eastern entrance to the town. With a Special Residential subdivision proposed to adjoin to the south of the existing zone, a Light Industry zoned strip has been zoned to act as a buffer to the General Industry zone.

The second is the 'Marine Based Industry' zone in Port Denison in close proximity to the small boat harbour. The intent of this zone is to service the Fishing Industry.

The total gross areas relating to existing land zoned for industrial purposes within the Dongara Denison Urban Area is summarised in the following table:

Zone	Land Area (Hectares)
General Industry	34.1602 ha
Light Industry	10.9547 ha
Marine Based Industry	10.2153 ha
<b>Total Industrial Land</b>	<b>55.3302 ha</b>

### Future Demand

Demand for industrial land is expected to continue to service population growth in the region. There is also limited land available for any extension to the existing Port Denison Light Industry zone, due to its location adjoining Residential zones and the surrounding natural landscape features.

The following table provides the projected increase in demand for industrial land within the Shire compared to the existing provision in 2011.

### Future Industrial Land Projection

Land Type	2016	2021	2025	2050	Current Vacant Zoned Land Under LPS No. 5
Industrial Zoned Land	2.9201 ha	5.5650 ha	7.3790 ha	18.6145 ha	5.6282 ha

Based on the above, it is evident that there will be a shortfall in industrial land by around the year 2021. It is therefore necessary to commence investigations to secure further industrial land to cater for industrial growth beyond 2021.

It is anticipated the types of activities likely to occupy the *additional industrial zoned land* include:

- **Construction and construction services** (estimated to represent 38.7% of industrial land requirements). These services could include a mix of residential and non-residential, heavy and civil engineering and general construction services such as services for land development and site preparation, building structure services (e.g. concreting), installation services such as plumbing and electrical and others such as plastering and carpentry.

- **Non-metallic mineral product manufacturing** (15.2% of industrial land requirements). Activities are likely to include activities to supply the local construction sector such as cement and lime manufacturing.
- **Metal product manufacturing** (10.7% of industrial land requirements). Activities are likely to include specialised manufacturing activities to support local industry, such as the emerging oil and gas industry and the local boat manufacturing and marine sectors.
- **Transport** including road, water and other transport types of services (9.0% of land requirements).
- **Food product manufacturing** (6.6% of industrial land requirements).
- **Transport and other machinery and equipment manufacturing** which is likely to be represented mainly by the local boat building and marine sector (5.7% of industrial land requirements).

Based on the above types of industries it will be necessary to investigate future industrial land to accommodate future light and general industrial uses.

The Shire has identified land on the South-Eastern corner of the intersection of Brand Highway and Midlands road as a future industrial investigation area for the following reasons:

- the land is currently used for mining and industrial purposes by Eneabba Energy Pty Ltd;
- the site is advantageously located on two regional roads and is not located in proximity to any sensitive land uses;
- the Shire anticipates the need to accommodate heavy industrial land uses.

The Mid West Development Commission has also identified the potential creation of a new industrial estate within the Shire which leverages the logistics and industrial development opportunities provided by the busy Brand Highway and Midlands Road, adjacent gas production and future power generation facilities, and proximity to the engineering, trades and services facilities of Dongara, as well as high residential amenity of the two townships.

Industrial and business growth would also be best supported by pursuing the provision of NBN across the townships which could in turn support a business/technology precinct, hub or co-working facility with high speed connectivity within the town centre (Dongara or Denison).

A targeted business attraction plan could also be developed by the Shire to strengthen the trades, engineering and service sectors which support the developing gas, agricultural and marine service industries in conjunction with planned expansion or infill of the existing industrial areas.

Refer to Appendix D – Land Demand Modelling Paper which documents the assumptions and methodology used in determining future residential, commercial and industrial land requirements.

## Rural Residential Zone

The District Structure Plan identifies expansive Rural Residential areas north of Dongara and east of Port Denison.

Existing rural residential areas within the Shire are located at Springfield to the south-east of the town centre and the area known as Race Course Estate (or North Dongara) to the north of the town centre. Whilst both areas have progressively developed during the life of Local Planning Scheme No. 5, significant areas remain undeveloped which suggests the current supply is adequate. Springfield has generally been developed to two hectares without provision of scheme water. Notwithstanding, reticulated water will be required for further subdivision of the North Dongara Rural Residential area.

Additional land has been rezoned to Rural Residential at the southern end of Springfield estate to the south-east of the Port Denison township following recommendations contained within the Shire's previous 2007 Local Planning Strategy and land in the very south-east of Policy Area F has already been subdivided for Rural Residential purposes (approximately 18 lots).

Subdivision of the Springfield estate has occurred in a disjointed manner due to informal structure planning. As subdivision of the Springfield estate has not progressed further due to a current lack of demand for this type of lot product, issues relating to access and bushfire management in particular remain an outstanding issue for current created lots and the future planning of the estate.

Further structure planning of the Springfield estate is being undertaken to address the issues associated with access, road network and bushfire management.

It is considered that the existing mechanisms under the rural residential zone which requires the preparation of subdivision guide plans is not adequate to ensure the comprehensive planning of this area with respect to coordinating access, infrastructure and resolving bushfire hazard and other matters.

It is recommended that an interim implementation framework be prepared which explores opportunities and solutions to address existing identified issues and which would inform future local structure planning of the estate. This interim framework would include:

- establishing a vision for the estate;
- a detailed opportunities and constraints analysis to resolve existing issues;
- establishing a workable interim and long term solution to improve accessibility at both the northern and southern end of the estate;
- bushfire hazard and emergency vehicular access to existing lots;
- key future linkages throughout the estate to inform future local structure planning;

It is also noted that the current Rural Residential provisions under LPS No. 5 provides for a range of lot sizes between one to four hectares. This is consistent with the WAPC's current policy framework, including Development Control Policy 3.4, which provides for rural living sized lots between one to four hectares, where a local planning strategy or scheme designates land for this purpose.

## 6.3 Rural Planning Analysis

### Policy Context

The State Planning Strategy sets the scene for the strategic approach to planning for rural land across the State, and as a strategic outcome, seeks to identify and protect existing and future suitable land for food production from further fragmentation. The State Planning Strategy also sets the following aspirations for prime agricultural land:

- Economic value is assigned to the quality and quantity of agricultural land;
- Strategic food production areas are well-serviced by key infrastructure to enable their sustained activity;
- Fragmentation of agricultural land is limited in targeted areas of the State;
- Sufficient water and power is available to sustain agricultural enterprise;
- Ecosystem functions are retained, including natural habitats.

The Mid West Development Commission has also recently released the draft Mid West Regional Blueprint (Regional Blueprint), which seeks to support timely investment in the region in order to facilitate economic growth and development. The document recognises the important contribution that agriculture and food provides to the region in the form of jobs and export dollars. The draft Regional Blueprint document establishes the following relevant high level strategies for agricultural land:

- Develop intensive agriculture / horticulture;
- Reinvigorate a competitive and profitable pastoral industry; and
- Ensure optimal tenure for all competing land uses.

The Regional Blueprint's strategies around expanding food production aim to benefit domestic markets and help the State increase exports and stimulate inward investment to elevate the State's reputation as a quality global food brand.

The current statutory policy framework relating to rural land use planning and subdivision is as set out in State Planning Policy 2.5 and Development Control Policy 3.4. These policies do not prescribe minimum lots sizes for rural land. This acknowledges the wide range of existing rural lot sizes, regional variation and the variety of land uses that can be accommodated on rural land. The intent of both policies is for strategies and schemes to outline situations where rural subdivision may be contemplated,

based on State policy, local circumstances and advice from DAFWA. The recommendations and advice provided from DAFWA is outlined below and is as contained within their document titled 'Identification of high quality agricultural land in the Mid West region: Stage 1 – Geraldton Planning Region' (DAFWA, April 2013).

The current policy framework advocates that rural land should be protected from incompatible land uses and that rural land uses are the most appropriate use of rural zoned land. While there is no minimum lot size prescribed for rural land within these policies, there is a general presumption against the further subdivision and fragmentation of agriculturally versatile land on the basis that there is deemed to be sufficient representation of smaller rural lot sizes to cater for a range of intensive horticultural and lifestyle pursuits in proximity to existing urban areas. Therefore there should be a general strategy adopted which prevents the further fragmentation of rural land where there is an existing prevalence of a range of rural lot sizes.

In informing the above policy position, DAFWA have noted in some areas there is shortage of large lots suitable for new entrants or to support farm expansion. This conclusion is also generally supported by industry trends which indicate that the number of commercial farming businesses has decreased even though rural subdivision was creating new small lots in order to establish new farming enterprises. It has previously been observed that most rural subdivision did not lead to more intensive land use and that land use on the new smaller lots remained under grazing often with the addition of a new dwelling.

DAFWA's position is that it is unaware of any evidence that the creation of additional small lots will promote new intensive industries and that the creation of additional small lots drives up land values and introduces greater land use conflict. Both factors are significant barriers to new investment in agriculture. DAFWA's analysis was provided to the Western Australian Planning Commission during its review of the aforementioned rural planning policies.

### Agricultural Versatility Mapping

The Department of Agriculture and Food (DAFWA) have recently completed agricultural versatility mapping for the Irwin region which is documented in the document titled 'Identification of high quality agricultural land in the Mid West region: Stage 1 – Geraldton Planning Region' (DAFWA, April 2013). The high quality agricultural land use mapping takes into account a range of factors including land tenure, farm size, soil type, access to water/irrigation, land form and other factors. Therefore the mapping employs an innovative and comprehensive methodology to identify and categorise agricultural land in terms of its versatility. Figure 35 overlays the existing policy areas of the current local planning strategy and maps these policy areas in relation to the agricultural versatility of the land.

## Separation of Agricultural and Residential Land Uses

The Department of Health has released the document Guidelines for Separation of Agricultural and Residential Land Uses (2012) to ensure adequate separation distances are maintained between residential land uses and agricultural land uses that may generate chemical spray drift.

The precise designation of a buffer is dependent on many different factors, including the chemicals used, method of application, land uses and land characteristics. Typically, the following minimum requirements should be observed to ensure adequate separation between land uses generating spray drift and residential uses:

1. A separation distance of 300m to control spray drift, dust, smoke and ash.
2. Alternatively, a 40m separation distance can be used where a vegetative buffer has been adequately designed, implemented and maintained in accordance with these guidelines.
3. Vegetative buffers will not be operational until trees reach the minimum effective height to control spray drift. Residential areas should not be developed within 300m until this time.

## Rural Smallholdings Zone

Subdivision within the Rural Smallholdings zone is currently restricted to a minimum lot size of 15 hectares in Policy Area D and 20 hectares in Policy Area G. The DAFWA document entitled 'Identification of high quality agricultural land in the Geraldton Planning Region' identifies these areas as generally being located within the 'South Dongara' and the 'Geraldton-Dongara' Agricultural Land Areas (ALAs) which have been listed as having the following opportunities and constraints with respect to their ability to be used for agricultural purposes:

### Opportunities

- Relatively high rainfall
- Some areas of moderately productive sands
- Some potential for groundwater abstraction
- Well-established transport routes
- Numerous small properties suitable for intensive agricultural development

### Constraints

- Groundwater resources unproven
- Many of the sands have poor productivity
- Careful management of irrigation and fertilisers is required to maintain productivity
- Exposed to strong coastal winds
- Small parcels and dissected landscape can limit the scale of operations
- High land prices
- Potential for conflicts along urban interface and with 'rural life-stylers'

In addition to these issues there is also a number of key considerations that need to be taken into account in planning for rural smallholding land into the future, as outlined below:

1. An apparent lack of demand for further lifestyle rural lots within the Shire due to the prevalence of a large supply of existing smaller rural lots combined with a substantial oversupply of urban zoned land for residential purposes.
2. Significant existing supply of lots within the 15 to 20 hectare range on the fringe of the urban area.
3. The potential for further fragmentation of areas zoned 'Rural Smallholdings' to compromise the future ability for the land to accommodate a range of agricultural activity and thus having an impact on the agricultural viability of the land.
4. Difficulty in obtaining finance to purchase a large lifestyle lot of 15 to 20 hectares.
5. Maintenance burden associated with maintaining a lot of 15 to 20 hectares as a lifestyle lot.
6. Difficulty in servicing resultant lots due to distance from the Dongara Denison Urban Area.
7. Land use conflict between rural land uses and dwellings/lifestyle lots.

There are three existing 'Rural Smallholdings' areas located within LPS No. 5, being land located within existing Policy Area D, land located within existing Policy Area G and the Irwin townsite.

Existing Policy Area D is located over land that contains 'Greatest Versatility' and 'Moderate Versatility' agricultural land and is generally located within the 'Geraldton-Dongara' ALA as mapped by DAFWA (DAFWA, April 2013). DAFWA provides the following recommendations with respect to this area:

1. It is recommended that non-agricultural development be directed away from areas of productive soils onto less productive areas. The productive capacity of these areas needs protection to maintain profitability while allowing for suitably located developments which will not compromise agricultural activities.
2. The Geraldton-Dongara ALA is recognised as having moderate potential for broad acre farming. Some areas already have numerous small properties suitable for intensive agricultural development and therefore there is a presumption against further subdivision.

Existing Policy Area G contains 'Greatest', 'Moderate' and 'Lower' versatile land for agricultural purposes and is largely located within the 'South Dongara' ALA as mapped by DAFWA (DAFWA, April 2013). DAFWA provides the following recommendations with respect to this area:

1. It is recommended that non-agricultural development be directed away from areas of productive soils onto less productive areas. The productive capacity of these areas needs protection to maintain profitability while allowing for suitably located developments which will not compromise agricultural activities.



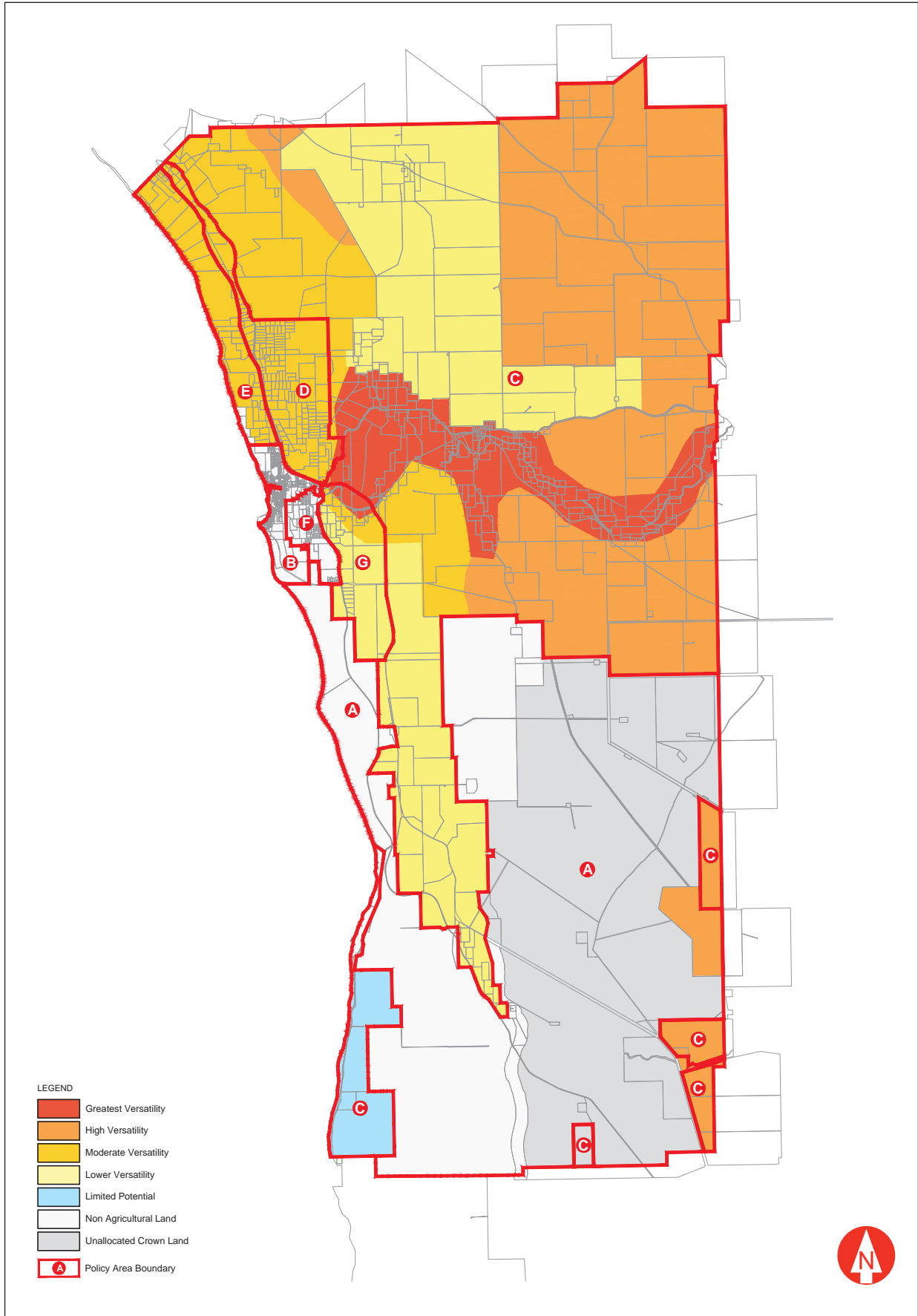


Figure 35 – Existing Policy Area Comparison

2. The South Dongara ALA is recognised as having less proactive soils but relatively high rainfall which maintains moderate broad acre crop yields.
3. Recognised need to manage non-agricultural uses to minimise conflict with surrounding agricultural activities.
4. Utilisation of LPS No. 5 provisions at time of subdivision/ development to ensure the protection and rehabilitation of landform, the visual landscape and adequate foreshore reserves (where applicable).
5. Protection of the floodway and floodplain within a Special Control Area to manage land use and development along the Irwin river.
6. Pursue the acquisition of a river reservation both sides of the Irwin River through the subdivision vesting process.

Policy Areas D and G have already been zoned as 'Rural Smallholdings' within LPS No. 5 and subsequently lots within these policy areas are permitted to be subdivided to a minimum lot size of 15 and 20 hectares respectively. Based on these existing subdivision rights, it is not considered reasonable to change the policy direction significantly to restrict any further subdivision within these policy areas. On this basis it is recommended that Policy Areas D and G remain in their current form with no further expansion or reduction to the minimum lot size recommended.

### Professional Fisher Shacks

There are a number of professional fisher shacks located along the coast of Irwin and the tenure of these shacks is subject to the State government's policy entitled Professional Fisher Shack Tenure along the Central Coast of Western Australia (1999). The policy requires that an applicant for a professional fishers interim lease for a coastal shack must meet all three of the following critical requirements:

- (a) Be a registered holder of a current fishing boat licence authorising a person to use a boat for commercial fishing.
- (b) Be a licenced professional fisher for the fishing zone adjacent to the Shire of Irwin coastline in which the shack is located.
- (c) Have an existing mooring in close proximity to the shack and regularly use the mooring with the licensed fishing boat.

Without these three policy requirements being met, there is no basis for professional fisher shack tenure.

The intention of the policy was that interim leases would be granted for a three year transitional period only and that where there was a continuing need for such seasonal accommodation, the shacks would be removed and relocated to one of several designated development/ recreation nodes.

Moreover, a transitional lease site could only consist of shacks that were subject to a management body lease held as at 1 December 1998 by a licensed professional fisher, and that there would be a maximum of one site for each boat that the fisher operated.

On this basis, the Department of Lands notes that the granting of fisher shack tenure outside of recognised development/recreation nodes is not supported.

## 6.4 Mining and Petroleum

Mining and petroleum industries play an important economic role in the Mid West region and it is therefore necessary to adequately plan for and protect these industries where appropriate. There are a number of mining and petroleum operators that have an impact on the local economy, including basic raw material extraction operations such as Cockburn Cement to iron ore operations in the wider region.

Mining operations provide for local employment and it is understood that a portion of the local workforce is employed by the local extraction industries. Travel access options to remote operations in the mid-west region are limited and could be improved to increase the accessibility for the local workforce.

As previously identified, Section 130 of the *Mining Act 1978* provides protection for mining interests protected by a mining tenement however local governments do have the ability to inform the Minister of Mines and Minister for Planning that a mining proposal is contrary to the provisions of a local planning scheme.

### 6.4.1 Fracking

It is understood that there may be significant resources within the Shire able to be extracted via 'fracking'. The term fracking refers to the mining process that extracts gas from rocks, such as shale, coal seams and sandstones.

Resource extraction via fracking presents opportunities for additional employment and income in the Shire, however this method also presents possible complications and concerns in relation to the impact it may have on existing industries, agriculture, and more particularly upon groundwater supply.

While the Department of Mines and Petroleum is responsible for the granting of licences for the petroleum industry, any fracking activity should be comprehensively assessed prior to commencement, and take into account any possibly implications on the community, groundwater and agricultural activity within the Shire.

Activities that operate under the *Petroleum and Geothermal Resources Act 1967* (including fracking) need to comply with the regulatory requirements under the *Planning and Development Act 2005*, including local government planning administration powers under local planning schemes. Under the Planning and Development Act 2005, development approval is required for anything classified as 'development'. Therefore an application for planning (development) approval is required for petroleum exploration and operations activities.

As there is no standard definition for petroleum activities or land uses (including fracking) within Shire's LPS No. 5, the Model Scheme Text nor the draft *Planning and Development (Local Planning Schemes) Regulations 2014*, these matters are dealt with as 'uses not listed' in LPS

No. 5. This requires a planning application to be submitted to the local government following which the application would be required to be advertised in accordance with the requirements of LPS No. 5.

The Shire needs to consider if petroleum exploration and operations should be formalised in LPS No. 5 in terms of definitions, scheme provisions and associated guidance material. If required, the Shire can undertake a scheme amendment to update to incorporate these considerations.

## 6.5 Tourism Planning Analysis

### Tourism Profile

Key statistics relevant to tourism within the Shire are provided below:

- 121,219 visitors to Shire of Irwin in 2013:
  - Domestic: 42,000 day, 74,000 overnight
  - International: 5,219 visitors
- 286,149 visitor nights spent in Shire of Irwin in 2013
- Accommodation and food services is the fourth largest employer (10.1%)
- Retail trade is the third largest employer (11.8%)
- Established tourism infrastructure and market in Dongara-Denison
- Tourism industry is seasonal which may constrain employment opportunities and deter business attraction and investment
- Port Denison (fishing, tourism, recreation) offers a point of difference to the Geraldton Port (resource industry export hub)
- Lack of service employee base (difficulty in retaining youth)

### Existing Tourism Accommodation

- Denison Waterfront Accommodation
- Dongara-Denison Beach Holiday Park
- Seaspray Beach Holiday Village
- Big 4 Dongara Denison Beach Holiday Park
- Dongara Denison Top Tourist Park, South Beach
- Western Flora Caravan and Tourist Park
- Getaway Beach, Bookara Beach
- Rockpool Beach House
- Thalassa Beach House
- The Beach Cottage
- Denison Central Units
- Lazy Lobster Holiday Units and Chalets
- Leander Reef Holiday Park
- Port Denison Holiday Units
- Surfer's Beach Holiday Park
- Dongara Northshore Unit

- Dongara Beachside Bed and Breakfast
- Sea Vista Bed and Breakfast
- Dongara Backpackers (Breeze Inn)
- Dongara Hotel Motel
- Old Mill Motel
- Priory Hotel
- Port Denison Beach Resort

### Port Denison Tourist Accommodation Opportunities Analysis

The Port Denison foreshore is planned to be redeveloped in accordance with the Port Denison Foreshore Master Plan as funding permits. Port Denison with its port facilities and recreation opportunities will become increasingly attractive to tourists.

In response to this opportunity, an analysis of potential sites in and around the Port Denison marina has been undertaken to identify sites that could potentially accommodate a new substantial tourist accommodation site, such as a 4-star hotel. The potential sites are identified in Figure 36 and a summary of the analysis is provided below.

Refer to Figure 36 – Opportunities Analysis Plan

#### Site 1 – Existing Special Use site

- Site currently zoned for Hotel / Motel use.
- Site could potentially be expanded to incorporate adjacent reserve land.
- Shire could proactively prepare Design Guidelines to provide guidance to the market as to the potential development opportunities for the site.
- Building height and form will be a sensitive issue, particularly for the residential lots behind the development site.

#### Site 2 – Site Adjacent Obelisk

- Site is a 'landmark' opportunity being located adjacent the obelisk and southern end of port.
- Some protection from prevailing winds provided to site.
- Would need to be rezoned from 'Residential' to 'Special Use' or similar to facilitate hotel development.
- Opportunities to integrate into Foreshore Master Plan works.

#### Site 3 – Existing Reserve/Car Park adjacent Dongara Denison Beach Holiday Park

- 'Landmark' site being located at the northern entry into the Port.
- Site is located adjacent to existing tourist accommodation and therefore represents a logical extension of use.
- Site is located adjacent to the beach and could be integrated into landscape works proposed by the Foreshore Master Plan.
- Overshadowing issues will be limited as the site is located on the southern side of the beach and existing units. Some morning shadow may occur in relation to

the beach depending on building height.

#### **Site 4 – Re-Use / Redevelopment of Fishermans Cooperative Building**

- Site is in a prominent location and could integrate with works proposed by the Foreshore Master Plan.
- It is likely that existing Fisherman’s Co-op building would need to be demolished in order to permit development of a hotel rather than re-use of the building for this purpose.
- Building would need to be sensitively designed due to its location.

In relation to the above, it is recommended that the Shire undertake a feasibility analysis of the above sites to undertake a detailed analysis of the issues and opportunities in relation to each site. Should a preferred or strategic tourism site be identified, then it may be necessary to rezone the site to reflect the intended tourism use.

#### **Point Leander Drive**

The section of Point Leander Drive within the townsite of Port Denison is considered an important tourist area that should embody a strong character and sense of place. Currently there are no specific controls, apart from the R-Codes, which guide built form and development for lots overlooking the foreshore reserve. It is therefore recommended that the Shire prepare a set of Design Guidelines for this section of Point Leander Drive to ensure specific controls are established to guide future built form and development to ensure objectives relating to character, amenity and a positive aesthetic contribution to the adjacent public realm are met.

#### **Policy Framework Implications**

##### **Shire of Irwin Local Planning Scheme No. 5**

- ‘Bed and Breakfast’ is a permissible use within the ‘Residential’, ‘Special Residential’, ‘Town Centre’, ‘Rural Residential’, ‘Rural Smallholdings’ and ‘General Farming’ which is considered appropriate and adequate.
- ‘Caravan Park’ is a use classification that is permissible within specifically designated ‘Special Use’ zones which is considered appropriate. However, a scheme amendment would be required as a pre-cursor to establish a caravan park on a case by case basis.
- ‘Holiday Accommodation’ is permissible within the ‘Residential’, ‘Special Residential’, ‘Town Centre’ and ‘General Farming’ zone. ‘Holiday Accommodation’ is a flexible use class that captures tourist accommodation uses that do not fit within the other definitions contained in the Scheme. It is recommended that the permissibility of this use class be extended to the ‘Rural Smallholdings’ zone as an ‘A’ use.
- A ‘Hotel’ is only permissible within the ‘Town Centre’ zone. Alternatively, the ‘Special Use’ zone could establish permissibility for a hotel for a specific site/s.
- A ‘Motel’ is only permissible within the ‘Town Centre’ zone. Alternatively, the ‘Special Use’ zone could establish permissibility for a motel for a specific site/s.

- The ‘Special Use’ zone is considered an acceptable means to establish a zone and provisions to accommodate new tourist development opportunities as they present themselves outside of the permissibility described in Table 1 – Zoning Table.
- Design Guidelines should be considered for key tourist / character areas such as Point Leander Drive in Port Denison.
- The site on the corner of Point Leander Drive and Samuel Street is zoned ‘Special Use’ (SU28) with permissible uses including Hotel, Motel, Restaurant and Eating House. The provisions of this zone require the preparation of Design Guidelines to guide the development of this site. It is recommended that the Shire take a proactive approach and commission the preparation of Design Guidelines to provide some guidance to the market on how the site can be developed.

#### **Policy Area E**

Policy Area E contains a fragile dunal system which is susceptible to degradation as a result of human activities if not protected and managed properly and a number of studies, such as the Dongara to Cape Burney Coastal Study prepared by the Department of Planning in conjunction with the then City of Geraldton-Greenough and the Shire of Irwin, have been undertaken for the locality which generally acknowledge this. Any planning decision made in relation to Policy Area E should have regard to the Dongara to Cape Burney Coastal Study.

The previous Local Planning Strategy for the Shire of Irwin also acknowledged the fragile coastal dune system and sought to protect and manage the dune environment. Since this Local Planning Strategy, State Planning Policy 2.6 has been amended which requires the preparation of a Coastal Hazard Risk Management Adaptation Plan (CHRMAP) to guide decision making on land use and development in proximity to the coast. A CHRMAP should be prepared as a matter of priority to inform future decision making along the Irwin coastline.

Policy Area E has previously been investigated for its potential to accommodate new tourism ventures due to its coastal location. A number of existing small scale tourist accommodation uses already exist within the policy area, such as Getaway Beach, as well as expressions of interest for new tourism ventures for this locality.

However, it should be noted that historically the Shire has consistently resisted development pressure in this location due to the fragile nature of the land being subject to erosion, contains extensive areas of remnant natural vegetation and fauna habitat and does not have access to a potable water supply.

Currently public access to the coast is limited due to the lack of formal public access and also a lack of a continuous coastal foreshore reserve. In considering future development proposals within this precinct, there could potentially be an opportunity to secure new public access, coastal reserves and the establishment of activity nodes along this section of the coast.



Figure 36 – Opportunities Analysis Plan

Any proposal for new tourist development within this policy area should address the following considerations:

1. Public access to the coast and the delineation of a public coastal foreshore reserve;
2. Development to be sympathetic to the fragile nature of the dunal system pursuant to the recommendations of a coastal vulnerability assessment (coastal hazard risk management adaptation plan);
3. Bushfire hazard assessment and management plans;
4. Establishment of coastal activity in appropriate nodal locations along the coastline.

### New Policy Area H

The Shire's Coastal Development Strategy prepared in 2000 provides an analysis of the various issues relating to planning and management of activities within Policy Area H. Some of the key issues and considerations identified by this report include the need to plan for the following activities:

1. Commercial fishing facilities, including boat launching and mooring, fish receipt depots, fuel outlets and storage;
2. Recreational fishing and boating opportunities including the provision of boat launching and trailer parking and holiday accommodation, where appropriate;
3. Appropriate opportunities to provide holiday accommodation;
4. Camping and caravan opportunities;
5. Day use recreation including defined vehicles and pedestrian access, parking, picnic and barbecue facilities;
6. Off road vehicle use;
7. Servicing requirements;
8. Rehabilitation;
9. Land tenure and foreshore reservation; and
10. The need to address the illegal squatter shack use.

A detailed Coastal Management Plan, incorporating a coastal hazard risk management adaptation planning assessment, needs to be prepared for this section of the coastline to identify specific strategies and actions to coordinate the various competing and complementary activities occurring in this locality.

In addition to the above, the landowner of Lot 51 Indian Ocean Drive has mooted the possibility of pursuing the development of a travellers stop on the property. This would be in the form of tourist accommodation and associated facilities, such as a fuel outlet. Such development would need to be undertaken in a sensitive manner that supports the fragile coastal environment and would need to be progressed at the expense of the owner.

## 6.6 Other Economic Considerations

The Shire has adopted the following economic objectives as part of its Strategic Community Plan:

1. Support existing industries, facilitate new development and promote economic growth.
2. Irwin Shire, Dongara and Port Denison is recognised as a lifestyle community.
3. Increased and diverse tourism opportunities.
4. Planned economic growth to maintain a high quality of life for our residents.
5. Maximise opportunities presented by industry.
6. Improved training and employment opportunities.
7. Increased accessibility of appropriately zoned commercial land.
8. Maintain a steady increase of a diverse population.

## 6.7 Community

Community and key stakeholders were engaged with in preparing this Local Planning Strategy. This engagement sought to build upon comprehensive engagement already undertaken in preparing the Shire's Strategic Community Plan (SCP) and the outcomes of this engagement are documented in Appendix A.

Key issues relating to community facilities and services are addressed in the following sub-sections.

### 6.7.1 Aged Care

There is an identified need for additional aged persons accommodation to cater for the future needs of the Irwin community based on an ageing population and the desire to retain this ageing population within the community where there is every opportunity to do so.

The number of licensed high care beds is limited which means that this accommodation will continue to be provided on a regional basis, based on existing population and services. Therefore high care accommodation will continue to be provided in Geraldton and Perth.

There is a preference to provide for ageing in place services within regional communities, such as those services provided through Home and Community Care (HACC) services.

### 6.7.2 Health Facilities

The level of existing health services within the Shire is perceived to be inadequate by the community. The key issues relating to access to health services and facilities raised by the community include:

1. Lack of access to a General Practitioner outside normal business hours and on weekends.
2. Access to dental services is limited.

3. Need to travel to Geraldton or Perth for most medical services, including emergency services.

The current hospital site is also constrained due to location and topography to allow for any major expansion for the future.

### 6.7.3 Recreation Facilities

Key issues raised by the community in relation to recreation facilities included:

1. BMX track is in the wrong location, is underutilized and perceived to be contributing to social issues in the immediate locality.
2. There is an identified need for activities to cater for older youth. Many youth travel to Geraldton for these additional activities.
3. There is currently no community festival or events held in town. Previously the community had the annual 'Blessing of the Fleet' which would help market local offerings to a wider market.

In response to the above, the Shire has progressed a number of key plans to improve recreation facilities within the Shire, including the Port Denison Foreshore Master Plan, Community Development Plan, Irwin Bicycle Plan, Recreation Needs Analysis and Tourism Development Plan.

### 6.7.4 Education

As in most regional areas, access to education facilities is a key issue, given education services are typically provided on a population driven basis. Schooling is only available from kindergarten through to Year 10, with older students required to travel to either Geraldton or Perth. This leads to population leakage as a result of youth leaving the community as opportunities within the Shire remain limited.

There are opportunities to establish tertiary level education services and programs within the Shire through partnerships and based on existing assets such as the Port.

## 6.8 Public Purpose Reserves

Based on the above assessment of key issues, a review of the aims, strategies and actions has been undertaken in relation to each policy area as provided below.

### Airport

The Dongara Airport is located on the western side of Kailis Drive, south of Port Denison.

The Department of Transport has advised that the airport is functioning well for its intended purpose, and has not identified any need in the short to medium term for relocation or expansion.

### Pistol Club

The Dongara Pistol Club is located at Lot 447 Money Street, Port Denison, adjacent to the Dongara Golf Course. In the future this is likely to be impacted by urban expansion, which will necessitate the relocation of the facility to a more suitable site.

### Cemetery

Whilst there is currently capacity at the existing cemetery, the Shire will need to undertake a site selection study to identify future sites once land is utilised in the current location.

The Heritage Act stipulates that Municipal Heritage Inventories, now referred to as Local Government Heritage Inventories (LGHIs), should be reviewed every four years. The Shire's current inventory was prepared in 2005, and therefore should be reviewed as soon as practicable. Once the inventory has been updated, the Scheme provisions should be updated to reflect the current preferred nomenclature (LGHI), in accordance with State Heritage Office guidelines. Management categories should also be reviewed in line with the guidance provided by the State Heritage Office (see SHO Discussion Paper, 'Common Standards for Grading Systems in Local Government Inventories').

## 6.9 Heritage

### 6.9.1 Local Government Heritage Inventory

The provisions of LPS No. 5 relating to heritage are set out in accordance with the Model Scheme Text. Under these provisions, the local government has established and shall maintain a Heritage List to identify those places within the Scheme area which are of cultural heritage significance and worthy of conservation under the provisions of the Scheme, together with a description of each place and the reasons for its entry. The preparation of the Heritage List is to have due regard to the Municipal Heritage Inventory (MHI) prepared under the requirements of the *Heritage of Western Australia Act 1990* (the Heritage Act).

There are currently 135 places on the Shire's Municipal Heritage Inventory, and of those a total of 62 places are included on the Heritage List. The Heritage List comprises all those places designated Management Category 1A, 1B and 2 (except MHI Place No. 134, Linthorne's Cottage). The Heritage List is not currently included in LPS No. 5, however, this is in the process of being rectified as part of an omnibus amendment.

The Heritage Act stipulates that Municipal Heritage Inventories, now referred to as Local Government Heritage Inventories (LGHIs), should be reviewed every four years. The Shire's current inventory was prepared in 2005, and therefore should be reviewed as soon as practicable. Once the inventory has been updated, the Scheme provisions should be updated to reflect the current preferred nomenclature (LGHI), in accordance with State Heritage Office guidelines. Management categories should also be reviewed in line with the guidance provided by the State Heritage Office (see SHO Discussion Paper, 'Common Standards for Grading Systems in Local Government Inventories').

### 6.9.2 Aboriginal Heritage

There are a total of seven registered Aboriginal heritage sites within the Shire.

Obligations are applicable under the *Aboriginal Heritage Act 1972* in relation to these registered Aboriginal sites. Development proponents are expected to liaise with the Department when preparing proposals to ensure that these sites are protected and that impact on Aboriginal communities and their cultural heritage can be evaluated and taken into account prior to development.

## 6.10 Infrastructure and Services

A focus of this local planning strategy will be to ensure that consideration is given to the planning and provision of infrastructure and services to accommodate the population growth envisaged. The following sections provide recommendations with respect to infrastructure and services to accommodate population growth up to the year 2050. The detailed Infrastructure Capacity Report is contained at Appendix E.

### 6.10.1 Water Supply

Water supply to the town sites of Dongara and Port Denison is sourced from the Allanooka Groundwater Bore field which is part of the Arrowsmith groundwater area. Groundwater is pumped into the Allanooka Reservoir which is located approximately 21km north of the Dongara town site.

A 150mm diameter asbestos cement pipe is used to transport water from the Allanooka Reservoir to the Water Corporation controlled water tanks located off Water Supply Road, approximately 5km north of the Dongara town site. There is one 2,500KL water tank and one 2,500KL water tank at this Water Corporation site.

One 375mm diameter asbestos cement distribution main and one 250mm diameter reinforced concrete distribution main transports water from the Water Corporation water tanks, at Water Supply Road, to service the Dongara and Port Denison town sites.

Currently, at peak demand, residents of Dongara and Port Denison use approximately 645kl/day, of which 445kl is used by residents and 200kl for non-residential uses.

Therefore, the Water Corporation tanks at Water Supply Road have approximately seven days of emergency water supply should any critical failure of water supply to the tanks occur.

The Water Corporation has already planned to construct additional water storage to supply the future growth and demand for water of Dongara and Port Denison. There are currently two 2.5ML water storage tanks with plans to construct an additional 2.5ML tank by 2017 and a further 3.0ML tank beyond 2017. With current Department of Water State Water Plan target of 125kl per person per year by 2030, the Water Corporation planned additional 5.5ML of storage should be suitable for the expected population growth of this scenario.

This has previously been achieved by the installation of leach drains. Due to the ground conditions surrounding the Town of Dongara it is now considered unacceptable to install leach drains and these are to be replaced with Aerobic Treatment Units (ATU's). ATU's require an area for infiltration of treated wastewater on the resident's property. Where the resident is not capable of supplying a suitably sized area for treated wastewater infiltration, then connection to sewer reticulation is required.

There is capacity within the Dongara WWTP for population growth of the Dongara and Port Denison town sites. The current population of the Dongara and Port Denison towns is 2,765 people, generating approximately 390m<sup>3</sup> of wastewater per day from approximately 1300 residential households. The capacity of the upgraded Dongara WWTP is 1,200m<sup>3</sup> of wastewater per day, which represents a capacity to service a population of approximately 8,500 or population increase of 300%. Therefore, the Dongara WWTP has capacity to meet the potential sewer requirement that would be experienced under this 2050 growth scenario.

### 6.10.2 Sewer Infrastructure

In 2009 the Dongara WWTP was upgraded to incorporate one aeration lagoon, three aerated sedimentation lagoons in series, a disinfection system and a pump station. Existing old infrastructure for the infiltration of treated wastewater has remained onsite for use in emergency situations. Capacity of the upgraded facility is expected to be 1200m<sup>3</sup> of wastewater per day.

Treated wastewater from the plant is currently transported to the adjacent Dongara Golf Course for use as irrigation to the greens under Department of Environment Regulation, License Number L7685/1993/6. Water quality testing is conducted on a monthly basis.

Solid waste collected from the de-sludging process of the Dongara WWTP is disposed of at the Dongara tip and covered with fill material as per the current management conditions of the environmental license.

Residents of the Shire of Irwin not serviced by the Dongara WWTP are required to process their wastewater onsite.

### 6.10.3 Power Supply

The following power infrastructure surrounds the Towns of Dongara and Port Denison:

- WalkawayWindFarm, approximately 40km north, has a capacity to produce 89.1 megawatts through 54 wind turbines.
- Mungarra Terminal natural gas power station located approximately 50km north has a capacity to produce 112 megawatts through three turbines.
- Mumbida Wind Farm is located approximately 30km north of Dongara and has a capacity to produce 55 megawatts through 22 wind turbines. Construction completed in March 2013.
- Three Springs 330kV terminal located approximately 50km south east.



The Shire of Irwin is supplied power via the 32kV high voltage network. Power is supplied to users within the Shire through a combination of low voltage overhead and underground reticulation power lines. 132kV high voltage transmission lines run through the Shire as part of the Southwest interconnected grid.

Western Power has just completed the construction of the Geraldton isolation transformer, which has increased the capacity and is helping to improve power quality by addressing load imbalance issues in the Dongara and Narrngulu West areas.

The Mid-West energy project involves the upgrading of the Southwest Interconnected Grid through the construction of a 330kV high voltage transmission line from Pinjara through to Eneabba and Three Springs. Upgrading this network is expected to increase the capacity of the network by an additional 500 MW. This network upgrade is critical for the construction of any future power generation expecting to connect to the Southwest interconnected grid.

The Three Springs busbar reinforcement project is designed to reduce thermal overload and increase the thermal capacity of the infrastructure in the immediate area.

Western Power has forecast a reduction in loads for the Geraldton area for the near future with a sharp increase expected with the Oakajee port and some mining operations coming online in the future.

### **Transmission Line Corridors Easements and Restriction Zones**

Western Power manages its asset corridors through a combination of privately owned land, easements on freehold land, restrictions zones, the use of road reservation corridors and other purposely zoned and/or reserved land under local planning schemes.

Where transmission lines run through freehold land, Western Power does not have easements and instead relies on 'Restriction Zones' to ensure appropriate development occurs in the vicinity of its assets. This includes appropriate setbacks of buildings, vegetation and use of land in the vicinity of power line assets. Western Power is able to apply conditions with respect to restriction zones under the *Energy Operators (Powers) Act 1979*.

Two existing 132 kV lines (Three Springs to Mumbida and Mungarra to Three Springs) traverse through the Shire's district boundary in the north-eastern portion of the Shire area (Mount Horner locality) which is primarily zoned 'General Farming' and under private ownership. Western Power require a 10 metre horizontal and vertical restriction zone be observed to the centre line of 132kv transmission lines.

Western Power also recommend that a Special Control Area be identified within local planning strategies and local planning schemes to provide additional statutory protection to these restriction areas. As such it is recommended that a new Special Control Area be introduced within the Shire's Local Planning Scheme to provide additional measures within the Shire's local planning framework to consider land use and development in proximity to these transmission lines.

### **6.10.4 Telecommunications**

There is a Telstra cable network throughout Dongara and Port Denison. A Telstra exchange is located at the back of the Shire offices in Dongara.

According to the Telstra, Optus and Vodafone network coverage maps, Dongara and Port Denison have good coverage. Rural areas of the Shire of Irwin can experience between good to no coverage.

### **6.10.5 Gas**

The residents of the Shire of Irwin are not connected to a gas service. Neither ATCO Gas nor APA Group has gas infrastructure servicing the Shire of Irwin or the towns of Dongara and Port Denison.

The following gas infrastructure exists within the Shire of Irwin:

- Dongara Gas bores which are located approximately 8km east of the Dongara town centre, off the Brand Highway. The Dongara Gas bores are connected to the Parmelia Gas pipeline.
- Beharra Springs gas bores which are located approximately 30km south west of the Dongara town centre. The Beharra Springs bores are connected to the Parmelia gas pipeline.
- Parmelia gas pipeline, built in 1972, running from the Dongara Gas bores to Pinjarra with an approximate pipe diameter of 350mm.
- Dampier to Bunbury Natural Gas Pipeline (DBNGP) running from Dampier to Bunbury with a pipe diameter of approximately 650mm.
- Origin Energy gas pipeline running along the north side of Kailis Drive.

### **6.10.6 Drainage**

In February 2014 the Dongara District Structure Plan District Water Management Strategy (GHD 2014) was prepared for the Shire of Irwin. This report undertakes a detailed investigation into the surface water, groundwater and salinity issues in the town and should be referenced for detailed information in relation to these items.

Stormwater collected within Dongara and Port Denison drains into drainage sumps or directly discharges into the Irwin River, and in some locations into sensitive wetland areas.

### 6.10.7 Waste Transfer Station

The Shire currently provides a waste transfer station and landfill facility at Lot 187 Dee Street, Dongara. The Dee Street Facility consists of the following waste management services:

- Reuse Shed;
- Community drop-off for recyclables, tyres and hazardous waste;
- Stockpile for scrap metals;
- Greenwaste acceptance and mulching area;
- Class I landfill;
- Liquid waste pond; and
- Putrescible waste multi-tier drop-off facility.

While the current waste transfer station has successfully serviced the community for a number of years, the Shire has recognised that the growth of the Dongara townsite has resulted in householders encroaching on the Dee St Facility, which is anticipated to increase in the near future. As a result, the Shire commissioned a consultant to assist in identifying a new site for a modern Waste Management Facility (WMF).

Based on the aspects, criteria, weighting and scoring applied, a Multi Criteria Analysis (MCA) system allowed for the ranking of a number of Sites of Interest to prioritise the site(s) that warrant further consideration.

The maximum available score for a Site of Interest was 300 points. Site 25 (12586 Springfield Drive) ranked the highest from the MCA with a total score of 227.2. Site 9 (354 Brand Highway) followed closely behind with a score of 225.5, less than 2 points below Site 25. The difference in score from this 2nd highest ranked site to the 5th ranked Site is only 14 points. As these five sites were ranked so closely together, the top five sites (including Site 25; Site 9; Site 12, 12452 Mount Adams Road; Site 13, 2831 Water Supply Road; and Site 14, 3 Pye Road) have been selected as Sites of Interest that should warrant further consideration as the site for the proposed WMF.

The road network for the Shire is in relatively good condition. Each road within the major town sites have been constructed to industry standards. The Shire has a full time construction and maintenance team that upgrade, resurface and maintain all roads. The Shire has a maintenance program and allocated budgets for road upgrades and maintenance for the next ten years.

Roads outside the towns of Dongara and Port Denison are generally unsealed gravel roads that are frequently graded to reform and remove corrugations.

Special rural zoning lots require sealed roads with verge table drains and drainage basins.

Urban residential roads are generally sealed and kerbed, with piped drainage discharging to the Shire's drainage network or drainage basins.

Port Denison has a five-legged roundabout that forms the intersection of Point-Leander Road with Blenheim Road, Golf Course Road and Pearse Road.

Kailis Drive forms one of the three main access roads to Dongara and Port Denison. Kailis Drive is an 8m wide sealed road that connects to the Brand Highway and enters Port Denison from the south. Currently Kailis Drive has a potential safety issue where a sizable sand dune is blowing across the road. This has potential to cause an obstruction to commuters, especially after major storm events where the dune system may significantly move in a short period of time.

The intersection of Moreton Terrace and Martin Street has been identified as posing a constraint on the type and size of vehicles using the intersection. This intersection has been constructed with a 10m diameter annulus and a 6m circulating lane. This design would allow for a maximum size vehicle of a rubbish truck to effectively navigate through the intersection without mounting the annulus. For a standard coach bus of 14.5m long, the roundabout would need to be designed with a 13.5m annulus with a 7.5m circulating lane. Currently school buses are mounting the annulus and breaking the kerbing as the roundabout was not designed for this vehicle size.

The intersection of Francisco Road and Brand Highway has been identified as a safety concern to the Shire of Irwin. The critical movement at this intersection is the right turn from Francisco Road moving south onto Brand Highway. This movement is of concern as the north leg of Brand Highway has a rise over a small localised high spot before entering the intersection. Therefore, there is limited safe intersecting sight distance (SISD) to give the critical movement time to enter the intersection safely and allow the south bound movement on Brand Highway to stop in time (if required). It has been identified that the SISD is around 200m for this intersection. A Road Safety Audit should be conducted to alleviate the concerns of the community and the Shire of Irwin, or identify safety improvements required at the intersection. Main Roads WA (MRWA) are aware of the issue and have plans for upgrade or potential relocation.

## 6.11 Traffic and Transport

### 6.11.1 Road and Rail Network

Dongara and Port Denison are accessed primarily via the Brand Highway which is located to the east and runs north and south along the coast. The Brand Highway is used significantly by heavy vehicles.

The Point-Leander Drive bridge, across the Irwin River, is an approximately 7m wide single carriageway (one 3.5m lane for each direction). This section of road is considered one of the main restrictions to the road network as the bridge crossing is effectively the only crossing from Dongara to Port Denison over the Irwin River.

There are two railway lines that pass through the Shire of Irwin:

- Perth to Mingenew to Dongara to Geraldton narrow gauge line under the jurisdiction of Brookfield Rail. This line is currently in operation with predominant use by grain trains that are operated by Watco for CBH Group.
- Dongara to Eneabba narrow gauge line is under the jurisdiction of Brookfield Rail and is currently out of service following Iluka suspending mining operations at Eneabba.

There are no planned upgrades to any rail infrastructure within the Shire of Irwin. Recent upgrades have occurred to the Mullewa line to Geraldton to allow the increase in transport from 3 million tons per annum to 25 million tons per annum by Brookfield Rail.

There is an identified need for a safer truck breakdown area. The land opposite the British Petroleum service station to the north is currently being used but there is no guarantee for long-term use of this land.

### Current Planning

MRWA has advised that there are two significant road upgrade projects planned for within the Shire of Irwin:

- The Brand Highway bypass of the Town of Dongara. This bypass would form part of the Dongara to Northampton Coastal Route. The MRWA is in the initial consultation phase for this project, which is planned to occur outside the next ten year horizon. The alignment of the proposed bypass is to occur adjacent to the existing train line that runs north- south. MRWA has advised that there would be limited access to Brand Highway from the Town with the only access to be at each end of the bypass. MRWA stated that they would consider an application from the Shire to have one of the accesses relocated.
- The intersection of Brand Highway and Midlands Road. This intersection is considered important to MRWA and upgrading is likely to occur within the next 10 years. Upgrade of this intersection is expected to include a continuous path which prioritises Brand Highway with Midlands Road intersecting Brand Highway at a T-intersection. Brand Highway would need to be realigned incorporating a bridge across the Irwin River.

The Shire of Irwin has plans to revitalise the town centre and has engaged a consultant to produce the 'Dongara Town Centre Revitalisation Plan'. This plan has the following significant proposed changes:

- Closing the existing access from Brand Highway to Moreton Terrace and opening access to Brand Highway from Martin Street.
- Converting the section of Moreton Terrace from Martin Street to Waldeck Street to one way with traffic flow in the westbound direction.
- Extension of Irwin Crescent around the north side of the Dongara Town oval to Waldeck Street.

The Shire is considering the option of extending St Dominics Road north across the Irwin River for the purpose of alleviating future pressure on the Point-Leander Drive Irwin River crossing.

There is current planning from the Department of Transport to expand the berth capacity of the port of Port Denison. Additionally, there are plans to increase the capacity of the servicing jetty to cater for larger boats.

This would increase the traffic generated by the port activities and apply additional pressure to the road network, especially between Dongara and Port Denison.

According to MRWA Roads Information Mapping System, the current Shire of Irwin Road Hierarchy is as follows:

- Brand Highway – State Road (Primary Distributor)
- Indian Ocean Drive – State Road (Primary Distributor) • Midlands Road – State Road (Primary Distributor)
- Allanooka Springs Road – Regional Distributor
- Yandanooka West Road – Local Distributor (Rural)
- Tabletop Road – Local Distributor (Rural)
- Milo Road – Local Distributor (Rural)
- Warradong Springs Road – Local Distributor (Rural)
- Kailis Drive – Local Distributor (Urban)
- Hunt-Waldeck Street – Local Distributor (Urban)
- Moreton Terrace – Local Distributor (Urban)
- Point-Leander Drive – Local Distributor (Urban)

### 6.11.2 Airstrip

The airstrip is located on the southern outskirts of Port Denison, and is operated by the Shire of Irwin and funded by Royalties for Regions, Regional Airport Development Scheme. The airstrip has recently been resurfaced with asphalt, which was funded by an oil and gas company using the aerodrome for daily flights to their offshore oil rig. The airstrip is approximately 18m wide and 1.2km long. It has a single lane access off Kailis Drive. The airstrip is not a Certified or Registered Aerodrome under Civil Aviation Safety Authority (CASA) guidelines and as such it is only permitted to accept charter operations up to 30 passengers. The airstrip would require additional upgrades to reach Registered Aerodrome Status and would need to be considered as part of the Ultimate Scenario to service a population of 22,000 people, envisaged under the Dongara-Port Denison District Structure Plan.

### 6.11.3 Port

The Port of Port Denison has two boat ramps and three jetties. There are facilities to refuel boats and the port is enclosed by two rock barriers. The Port is controlled by the Western Australian Department of Transport. The marina is manually flushed via a pump which pumps seawater into the marina. Occasionally an unpleasant odour is generated as a result of seaweed accumulating at the northern end of 'south beach'.



# Appendix A

## Community and Stakeholder Engagement Outcomes Report

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COMMUNITY AND  
STAKEHOLDER  
ENGAGEMENT  
OUTCOMES REPORT

2014 MARCH



TOWN PLANNING  
URBAN DESIGN AND HERITAGE

## Document Control

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# Project Background

The Shire of Irwin instigated the process of reviewing their Local Planning Strategy in late 2013 with the aim of formulating a contemporary land use and development strategy to provide guidance and direction for the future growth of the Shire over the next 10 to 15 years and beyond. The LPS will inform the future preparation of the local planning scheme.

Latest census figures confirm that the Shire of Irwin, including the twin towns of Dongara and Port Denison, has undergone above normal population expansion in recent years, with a likelihood this trend is set to continue. The Strategy review is therefore required to ensure the Shire is well placed to accommodate this period of population growth and to align the Shire's foremost strategic planning document with the Western Australian Planning Commission's preferred approach and format for such documents.

The Shire has recently commissioned and completed a significant number of reports and studies, which the LPS review will build upon and draw into a single strategic document.



# Summary of Outcomes from the Strategic Community Plan 2012-2022

The development of the Strategic Community Plan (SCP) prepared by the Shire of Irwin, provides the long term strategic framework and direction for the Shire. This approach complies with the Integrated Planning and Reporting Framework and Guidelines, which requires all local governments to develop their 10+ year Strategic Community Plan through a process of community engagement aimed at identifying long term community aspirations, visions and objectives.

During the comprehensive engagement process for the SCP the Irwin community was asked to share their visions and aspiration for the future using a range of mechanisms, including an on-line survey, a hard copy survey, interactive displays and promotion at a range of local events and a community visioning workshop held on 29 March 2012.

A high return rate was received, with 413 people responding. The responses informed:

- The review of the community's visions, values and priorities;
- Confirmation of the Shire's vision, values and aspirations; and
- Defining the Shire's Community Strategic Plan objectives, desired outcomes and strategies.

Based on the community engagement the Shire has set out a vision for the future and captured the community's aspirations and values.

Strategic objectives have been developed for each of the four key areas of community interest, being economic, environmental, social and civic leadership. Desired outcomes have been determined to achieve each of the four objectives after considering the Shire's current and future resources along with demographic trends.

The key objectives are as follows:

## **Objective 1 – Economic**

A prosperous, diverse and thriving economy

## **Objective 2 – Environment**

To respect and understand our natural and built environment and conserve our heritage

## **Objective 3 – Social**

A friendly, safe and engaged community enjoying a quality of lifestyle and a diverse range of services, programs and facilities

## **Objective 4 – Civic Leadership**

A collaborative and forward looking community that is guided by strong leadership

Given the extensive and recent consultation that has occurred in developing the SCP, the community engagement process for the review of the Shire's Local Planning Strategy has not sought to replicate but to build on the outcomes of the SCP, and to focus particularly on those issues and aspirations relating to planning.



ST. DOMINGO

# Project Stages

The review of the Local Planning Strategy is expected to take approximately 18-24 months from inception to completion, incorporating the preparation of background studies and community engagement to inform a draft Strategy Review document, followed by advertising, consideration of submissions and endorsement by Council.

This community and stakeholder engagement process forms part of the first stage of the project. The specific steps of the project are as follows:

1. Preliminary consultation and data collection
2. Analysis of relevant information
3. Preparation of draft Strategy and consideration by the Shire
4. Adoption of the Strategy by the Shire
5. Assessment by the Western Australian Planning System, who will give consent to advertise
6. Public advertisement
7. Consideration of submission
8. Submission of modified LPS to the WAPC
9. Final endorsement



DSM/H100



# Methodology

In accordance with the Community and Stakeholder Engagement Plan (February 2012) and Task 1.2 of the submission the following provides an overview of the methodology used to engagement with community and key stakeholders:

- Letters were sent to landowners, residents and business owners within each of the 'new policy areas' proposed as part of the existing LPS were sent an invitation via mail to participate in a workshop. A feedback form accompanied these invitations to capture feedback from those unable to attend.
- Details of the LPS review, including its purpose, an overview of the project program and consultation process, were made available on Shire's website and at key locations including Shire's office and library and advertisements placed within the local newspaper highlighting the opportunity to be involved.
- A series of interactive workshops were held with community members including residents, landowners, workers and local business people. Each workshop focused on a different theme or sub-set of the community, as follows:
  - Project Reference Group and Shire Managers
  - Workshop 1 – Business Owners Lunch Session
  - Workshop 2 – Urban Centre
  - Workshop 3 – Rural Living
  - Workshop 4 – General Landowner
- Invitations were sent to key stakeholders state agencies, infrastructure agencies/commercial providers, industry organisations/associations/businesses, industry/resource companies and non-government/not for profit organisations via mail and email inviting stakeholders to participate.
- Meetings were held with key stakeholders including representatives from:
  - Department of Sport and Recreation
  - Mid West Chamber of Commerce and Industry
  - The Chamber of Minerals and Energy WA
  - Main Roads WA
  - Department of Transport
  - Mid West Development Commission
  - Department of Aboriginal Affairs
  - Department of Water
  - Department of Health
- Written feedback was received from the following stakeholders:
  - State Heritage Office
  - Disability Services Commission
  - Department of Planning (Tourism division)
- A Council debrief session was held to capture any final thoughts and clarify any queries that has arisen throughout the engagement process.

The agenda for the community and stakeholder engagement is included at Appendix A.



# Feedback and Responses

The table below summarises the issues that came to light as part of the consultation and stakeholder engagement process, and provides actions and recommendations in response with regard to both the Local Planning Strategy review and other processes. Full documentation of the consultation and engagement feedback is provided at Appendix B.



## Community

Topic	Issue	Action
General	Community Development Plan underway, will need to consider recommendations.	The Community Development Plan will be reviewed as part of the background review of the LPS, when available.
Housing (incl. Aged)	The shire is pursuing an aging in place approach rather than encouraging provision of aged accommodation. +	The Shire to pursue with relevant agencies (ie. HACC) regarding appropriate service provision.
	Limited facilities for aged. +	As above.
	Shire manages 40 aged pensioner units – time now to extend on this.	LPS to designate sufficient zoned land to accommodate a range of residential uses, including aged persons.
	Mid West Development Commission is looking at housing needs across the region. The Shire expect to get some feedback regarding housing from the Mid West Housing Study (check timing).	Incorporate recommendations of mid west housing study, when available.
	Market demand regarding varieties of different housing typologies will need to be examined.	Review limitations in current scheme to deliver range of housing typologies.
	Lack of social housing. +	The Shire to pursue with relevant agencies regarding appropriate service provision.
	Aged care, Fed licenses (beds) restricted.	The Shire to pursue with relevant agencies.
	Funding opportunities through HACC.	The Shire to pursue funding opportunities through HACC.
Health	Health facilities a key concern and the lack of a Dr. outside normal business hours and not at all on weekends (not meeting community expectations). +++++	LPS to ensure sufficient, appropriately located zoned land for additional health facilities.
	Access to dental services need improvement. ++	As above.
	Need to go to Geraldton for health. This impacts on attracting people to live in town. Including Emergency services as well. (Geraldton has surplus beds for high care).	As above.
Recreation	BMX track in the wrong location, lacking in maintenance. +	Being considered as part of Recreation Needs Analysis. It is noted that this analysis recommends the BMX facility be removed in favour of portable ramps.
	Recent YACC event, which was positive, however some antisocial behavior issues at the track.	Addressed in Recreation Needs Analysis.
	Is there a need for older youth activities, facilities – yes.	To be pursued as part of Community Development Plan.
	Golf course and Bowling Green have regional draw.	Shire to investigate marketing opportunities and flow on business opportunities. This will be recognised in the LPS document.
	Suggestion to develop elite sporting programs.	Department of Sport and Recreation scholarship program in place.
	What is there to do (leisure and recreation for children and families) in winter or summer weather (winds)?	Being considered as part of Recreation Needs Analysis.
	There is currently no community festival or event held in the town, eg. Annual 'Blessing of the Fleet' – would help to expose local offerings to a wider market.	Shire to consider opportunities for annual events.
	Getaway Beach doesn't cater for families.	Additional activities, tourism opportunities and requirements should be considered as part of Local Tourism Strategy.
	Older children tend to use recreation facilities more in Geraldton, despite the Port Denison Recreation Centre being one of the best in the Mid West.	Being considered as part of Recreation Needs Analysis.
	DSR have a new fund available to LGA's for trails. \$20,000 one off for plans etc and then up to \$100,000 for capital funding. Applications close March 2014.	Shire to pursue.
	Kitestock annual event that attracts nationally/internationally (at South beach).	Flow on business opportunities should be investigated as part of Local Economic Development Strategy.
	Opportunities for Club development workshops (governance, planning etc)	Shire to pursue funding / program support through DSR.

Topic	Issue	Action
Cont...	New Mid West Academy for Sport, 17 kids on scholarship. Offers services related to health, nutrition etc. and coaching support for existing coaches.	Noted.
	The Department of Sport and Recreation also have a small fund for clubs to get funding for equipment, applications close March 2014.	Shire to pursue with DSR.
	General maintenance of facilities needs addressing.	Shire to review maintenance requirements of recreation facilities as part of Capital Works Program.
Education	Quality of education is an issue (better schools in Geraldton, schooling only available to year 10 in Dongara). +	Links between local industry and curriculum to be investigate. Land allocation for additional schools, in response to population modeling, to be considered as part of LPS.
Population	Retention of existing population a challenge.	Noted. Encourage provision of the range and level of services required to retain population.
	MWDC looking at strategies for youth retention.	Noted.
	MWDC developing strategy for FIFO incentives to attract population.	Noted.
	Port Denison/Dongara is more about lifestyle, happy to work outside the area but prefer to live in Dongara/Denison.	Noted.
Aboriginal heritage and reconciliation	Reconciliation Committee and Reconciliation Action Plan.	Shire to pursue.
	3 overlapping Native Title claims.	Noted.
Disability services, access and inclusion	The Shire has an access inclusion plan.	Noted. Will be considered as part of the LPS background review.
	Provision of a new swimming pool, it would be fantastic if a hoist was installed and if it suited hydrotherapy.	Noted. The Shire has currently commissioned a Pool Feasibility Study to determine feasibility and requirements.

## Economy

Topic	Issue	Action
Tourism	Not enough traffic through town and better signage required at the southern entrance to town.	Shire to investigate signage and way finding strategies as part of Local Tourism Strategy.
	There is a lack of activities for tourists particularly when the weather is bad .+	Being considered as part of the Recreation Needs Analysis and Local Tourism Strategy.
	Suggestions for activities for tourists included co-locating additional recreational facilities with the new recreation centre, such as a cinema, bar, or high tech facilities; and enhancing the foreshore development . New industry opportunities such as 4WD tours, surfing, canoeing, horse-related, jet skis.	Noted. LPS to consider the availability of appropriately zoned land for these activities and the types of facilities that should be pursued by the Shire.
	Heavy haulage access into town difficult.	Noted. LPS to consider traffic / transport requirements.
	Tourist accommodation only ever full at Easter and holidays – need to attract visitors at other times of the year.	Shire to consider tourism opportunities to attract visitors off-peak as part of Local Tourism Strategy.
	4 star accommodation currently not viable.	Noted.
	Wildflower season – the potential for a tourist trail.	Shire to consider opportunities for wildflower tourist trail, and funding opportunities as part of Regional and Local Tourism Strategies.
	Strategy identifies the provision of more holiday accommodation, though resident raised concern about the cost input into holiday accommodation is not receiving the desired output.	LPS to investigate the availability of appropriately zoned land and scheme / policy requirements to reduce planning red tape associated with holiday accommodation development.
	How does Kalbarri tourist off-season compare?	

Topic	Issue	Action
Cont...	Mid West Chamber of Commerce and Industry can facilitate workshops/sessions for tourism ventures. These can also be online.	Shire to pursue opportunities for tourism business workshops and links with new local chapter of MWCCI.
	Seems to be a conflict between tourist retail needs vs local retail needs.	Noted. To be considered as part of the LPS review.
	Retail hours in Port Denison/Dongara don't facilitate tourism (shops not open, half Sat and Sunday).	Shire to consider deregulation of trading hours and potential incentives for shops to extend hours of operation. However, local business needs to have an appetite to stay open for longer hours.
	Set up an information including viewing platform over south beach (with ample parking for vans etc) near White Tops Rd to encourage travellers to have a longer look.	Shire to pursue the opportunity for viewing platform. LPS to review potential location if deemed appropriate by the Shire.
	Point of difference for marketing, eg. lifestyle, niche industry, best technical school.	High level opportunities to be identified by LPS. Shire to develop position on niche marketing opportunities.
	Need additional sites identified for Tourism.	This should be the subject of a local tourism strategy. LPS to provide high level analysis of tourism opportunities.
Local business	Local businesses find that marketing individually not viable.	Shire to consider opportunities for coordinated Shire or town-wide marketing. Link with local chapter of Mid West Chamber of Commerce and Industry.
	Local Industries very proactive about employing local.	Noted.
	Seeking to establish a local chapter of the Geraldton Chamber of Commerce and Industry.	A local chapter of MWCCI has been established.
	Retailers need to see online retailing as an opportunity rather than a negative. Offer online services to the local and surrounding catchments.	Noted. Shire to pursue opportunities for the MWCCI to provide information / workshops on the benefits of online retailing to local businesses.
	Need to move from a stop over approach to a destination mind set.	Noted.
	Need to look at de-regulated shopping hours in-light of DIDO/FIFO and shift workers.	Shire to consider deregulation of trading hours and potential incentives for shops to extend hours of operation.
	Look at Pollinators (Business Incubator) in Geraldton as a model for Dongara/Port Denison.	Shire to pursue opportunities for business incubators. LPS to identify high level strategies with regard to potential locations etc. Encourage local start-up businesses to work with the Small Business Centre.
	Advertising for any public events should be cohesive for all town businesses.	Shire to investigate opportunities to coordinate cohesive marketing for the Shire.
	Will need to refer to Blue Print recommendations for identifying additional land required for economic activities.	Currently awaiting the 'Blue Print' before progressing growth scenarios, which will inform land use modelling.
	Examine a niche approach to economic development/ land requirements.	Consider high level opportunities in light of the recommendations of the Blue Print, once released.
Examine opportunities to incentivise economic development and growth (policy, scheme, zoning etc).	Noted. To be considered as part of LPS.	
Industry	Mining companies should use local resources.	Shire to pursue opportunities to encourage industry to use local labour, products and services.
	The first meeting of the Dongara chapter of the MWCCI meeting was held Monday night.	Noted.
	Seasonal based employment tends to move between industries.	Noted.
	Marine servicing Industry is about to expand in Geraldton, which may impact on the Port Denison local industry. Need to look at ways to collaborate with Geraldton.	Shire to investigate opportunities for local industries to capitalise on expansion of marine services in Geraldton. Potential to hold discussions with City of Geraldton-Greenough.
	Construction phases of some mines are complete e.g. road, rail and therefore spin offs not happening currently.	Noted.

Topic	Issue	Action
Cont...	Opportunity for on-shore gas reserves. Two companies are more advanced than any other WA company (at proof of concept stage) Norwest Energy/AWE/Bhart Petroleum. Need to look at zoning of land. Could be opportunities for support services. If they come off first in WA, huge benefits, including training opportunities.	LPS to consider land requirements and appropriate zoning for support services and population growth / accommodation opportunities. Shire to pursue local training opportunities / tailored curricula.
	Opportunities to attract DIDO workforce particularly in relation to Extension Hill mine. They are considering bussing from Perth, pick up in other towns along the way? 3 years to construction and 5 years to operations.	Shire to engage with Extension Hill mine operators with regard to the potential for hiring locally and bus transport to / from Irwin.
	Identify Eneabba Gas land immediately west as heading south at Brand Highway v North Midlands.	LPS to consider land requirements / provision for Eneabba Gas.
	Continuity of flights from / to the mines is an issues – need to fly back to Perth and then fly to minesite.	Shire to facilitate discussions between minesite operators and flight service providers. It is also noted the opportunity to provide shuttle bus services from Perth.
	Fishing and farming industries decreasing.	LPS to review land allocation for decreasing industries and potential opportunities for consolidation.
Education and training	The Durack Institute has pulled a number of training courses of which may have impacts (due to State subsidies being withdrawn and inability to attract lecturers).	Noted.
	Development of business skills needed (MWDC).	Shire to pursue opportunities for business education and training with MWCCI.
	DIDO for education and sports occurring (Geraldton).	Noted.
	Opportunity to use Dongara by Universities for R&D – green infrastructure.	Shire to pursue opportunities for specialised education and research with relevant universities. LPS to consider possible facility location.

## Environment

Topic	Issue	Action
Trees / bush / parks	Lack of street trees, shade.	The Shire to consider opportunities to apply a 'street tree' planting program through the commercial and residential areas.
	The Shire does not have a street tree policy – need to establish one.	LPS to make recommendations with regard to LPP.
	Cottonwood does not provide as much shade as a ponciana.	Noted. To be considered as part of Main Street Revitalisation Plan.
	Opportunity to develop P&R land for more formal parklands.	Shire to pursue with relevant State Government agencies responsible for P&R land.
	Verge trees to be pruned and verge cleaned up.	Shire to review maintenance of verges.
	Illegal dumping of household rubbish into bushland.	Shire to consider options to discourage / police illegal waste dumping such as provision of tip passes / skip bins.
River / coast / water	Coastal erosion/management. Adopting a managed retreat approach.	Shire to progress a Coastal Hazard Risk Management Adaptation Plan.
	Need to create better relationship with the Irwin River (eg. Pinjarra).	LPS to consider potential connections between circulation network and river.
	River mouth sand bar is effecting the drainage levels upstream during large events.	Noted. Emerge to review DoW flood modeling for the Irwin river and provide recommendations as part of the LPS.
	The Allanooka and Dongara-Denison Water Reserves Water Source Protection Plan is currently being updated/reviewed – unsure on date when this will be finalised.	To be reviewed as part of the LPS background review when available.

Topic	Issue	Action
Cont...	Include text within Local Planning Strategy regarding water source protection areas.	Recommendations to be included within LPS regarding the need to review the current Special Control Area.
	DWMS and catchment mapping to be provided as part of Local Planning Strategy (in accordance with Better Urban Water Management). DWMS (GHD 2014) prepared for Local Structure Plan may be sufficient.	2014 DWMS to be reviewed as part of LPS background review to determine sufficiency for the LPS.
	Throughout Dongara/Port Denison, stormwater is managed via a (historic) pit and pipe network that discharges directly to the foreshore areas. This practice is generally not acceptable nowadays, but Department of Water have reviewed Dongara/Port Denison and do not see the need to retrofit as the stormwater does not appear to be detrimentally affecting Irwin River (it is relatively healthy).	Noted.
	Expectation going forward will be that any new developments will meet the requirements of Better Urban Water Management and water-sensitive design principles.	Policy requirements to be considered as part of LPS review.
	As far as aware flood mapping of the Irwin River around the town site is up-to-date.	Emerge to confirm with hydrologists from DoW Perth office as part of LPS review.
	Intensive agriculture within the Irwin settlement unlikely to detrimentally affect groundwater or surface water.	Noted.
	The building buffer zone of 500m from sewerage treatment plant located on water corporation victoria location 908 should now be lifted. Surely any likelihood of odours would now be resolved after 20 years. The existence of such a buffer has a serious impact on future development activity.	LPS to review buffers in line with State Government policy requirements. Buffer definition however will be informed by specific modeling undertaken by the Water Corp.
<b>Flora / fauna</b>	Control / removal of corellas. If the corellas aren't controlled then the main street Moreton Bay Fig trees will slowly be destroyed.	Shire to consider review of control measures in association with relevant agencies.
<b>Fire Management</b>	Fire management is not currently addressed in the existing LPS.	The LPS will identify high level strategies to address fire management. Shire to liaise with state agencies regarding their responsibilities. Shire also to pursue volunteer fire fighting.

## Infrastructure

Topic	Issue	Action
<b>Power / Communication</b>	Lack of services to Rural Living areas.	High-level strategies considering potential for developer contribution schemes to be considered as part of the LPS.
	Continuity of power supply is a key concern, particularly for business. Power distribution key current concern (11kva) rather than power generation.	Shire to pursue with relevant service provider.
	Investigate a digital/mobile communication strategy for region.	Potential for the LPS to make recommendations with regard to the preparation of such a strategy to be considered.
	Mid West Development Commission is working with Western Power to get 330kv distribution towers in place ahead of demand.	Noted.
	TV and radio reception bad.	Shire to pursue with relevant service providers.
	Reliable, high speed internet required.	Shire to pursue with relevant service providers.
	Opportunity to look at green infrastructure.	LPS to consider high level strategies.
	Opportunity to pursue natural gas?	Shire to pursue with relevant service provider (Alinta Gas) however distance and cost is likely to be prohibitive.
	Eneabba Gas (power plant) on Beekeepers Reserve stalled.	Noted.



Topic	Issue	Action
Water	Opportunity to enhance the water re-use scheme.	Potential high level strategies to be considered as part of LPS.
	Groundwater quality at Springfield is brackish and unsuitable for use as potable water. Notice has been applied to all titles at subdivision stage for any future subdivisions noting that groundwater is not suitable for Potable water and informs any future owners. It would be more appropriate to utilise scheme water within the Springfield area (rather than bores) for potable water.	Noted.
	Demand for groundwater extraction within the area of Bonniefield is putting pressure on the supply to the point that the Department of Water is likely to require H1, H2 or H3 investigations for any future requests for Groundwater well licenses.	Shire to pursue discussions with Department of Water.
	Water Supply licenses are available for residential purposes off the Scheme water. Water Corporation can confirm availability and ability for the infrastructure to provide scheme water to any future residents.	Noted.
	Only the Golf Course is reticulated by wastewater. The pipeline is available for the oval behind the Rec Centre but volumes not available.	Noted. Shire to consider opportunities for expansion to other recreation areas as population grows.
	Landowner of Location 1261, Springfield asks Shire to approach Water Corp on behalf of all landowners in the area to lift the buffer associated with the wastewater treatment plant completely, or move the ponds further away from the town centre, or to establish a fully enclosed treatment plant (which we are assured is possible).  Since the upgrade of the wastewater treatment plant there has never been an off-putting smell at all, maybe its time to talk to the Water Authority about shrinking the buffer zone, or removing it all together.	LPS to review buffers in line with State Government policy requirements. Buffer definition will be dependent on modeling undertaken by the Water Corp.
	Transport Infrastructure	Pavements are a trip hazard.  Some of the curbs in the Shire are very tall. It would be great if this could be addressed and the ramp style curbs be used where possible. Not only for people with mobility issues but mums with strollers etc.
Parking both for caravans and shoppers an issue.		To be considered as part of Town Centre Revitalisation project and LPS review.
RV dump point required (with toilets) and parking near town.		Expected to be considered as part of Town Centre Revitalisation Plan.
Need more riding path, walkway.		To be considered as part of LPS review.
Provide kayak / canoe access to river in town somewhere (perhaps near the bridge).		To be considered as part of LPS review.
Designated bridle paths, particularly for rural areas.		To be considered as part of LPS review.
Need to consider a second crossing over the Irwin River that's links into Springfield to alleviate traffic (north south) as the town grows.		To be considered as part of LPS review.
Looking at a pedestrian (swing bridge) to cross the Irwin around the Monastery through to Church Street.		Noted. To be considered as part of LPS review.
May need to consider the 5-leg roundabout with increased traffic from growth.		To be considered as part of LPS review.
Chamber of Mineral and Energy - 2014 focus is on infrastructure and supply chain road/rail into Geraldton Port.	Noted.	

Topic	Issue	Action
Cont...	Bypass Road – funding not committed. Geraldton heavy haulage pressures a priority (15-20 years away). Main Roads is currently reevaluating whether bypass is actually required. If bypass were to occur, section of Brand Highway parallel to bypass road would be transferred to LG.	Noted. To be considered as part of LPS review.
	Pells Bridge intersection modifications a priority of Main Roads over the bypass.	Noted.
	Concerns regarding Fransisco Road and Brand Highway intersection (this is the road the Shire is considering closing).	Noted. To be considered as part of LPS review.
	Department of Transport is supportive of Shire of Irwin's efforts under the Country Pathway's program (bicycle/pedestrian network).	Noted.
	Department of Transport do not see a requirement to relocate the airport.	Noted.
	Improve airport – landowner suggests to set aside, rezone land on western side of highway for future airport.	Potential requirement for and location of new airport to be considered as part of LPS review as a long term strategy.
	Increase speed limit of St Domonics Rd to 80km/hr.	Shire to investigate the need for speed limit amendments and if necessary, pursue with relevant government agency.
	Bitumise Steele Road – this is appalling condition. Hasn't even got enough surface to grade.	Shire to pursue with the relevant government agency.
	Construct a parking bay (similar to current Brand Highway) with a Town / area map and signage (especially south beach relative) and viewing platform over south beach and marina as the SW entry statement to Port Denison – Dongara.	Potential for viewing platform and associated parking to be considered by the LPS.
	Transport / road safety issues.	Shire to pursue with the relevant local government agency.
Coastal Infrastructure	The town has the advantage of no through traffic (eg. Trucks at high speed), though there is a need to engage with passing traffic, such as designating Brand Highway for trucks and prioritising Kailis Drive for other traffic.	Shire to consider signage options. Road hierarchy to be identified within LPS review.
	As the Foreshore area is improved may attract more traffic and parking.	Noted. High level considerations with regard to parking to be taken into account with the LPS.
	Vehicle access onto South Beach should continue (though if this were to be discontinued, improved access and parking would be required).	Noted.
	Track into South Beach needs improvement.	Noted.
	Access from Getaway beach to Brand Highway an issue.	Noted.
	Department of Planning has developed concepts for Port Denison Marina to cater for substantial development and additional births. DoP is looking to initially upgrade the north side of the service dock to cater for oil and gas support vessels and foster the local industries to service and repair these vessels.	To be considered as part of the background review for the LPS.
Department of Transport has developed concepts for Port Denison Marina to service oil and gas.	To be considered as part of the background review for the LPS.	

## Built Form

Topic	Issue	Action
Heritage	It is encouraging to see the consideration of heritage places within the preliminary list of key issues.	Noted.
	<p>The Western Australian Planning Commission's Local Planning Manual, while noting the flexibility of local planning strategies, identifies a number of areas in which the strategy would generally consider cultural heritage. Where heritage is identified as a contributory part of the local profile, we would recommend the inclusion of the following:</p> <ul style="list-style-type: none"> <li>• A description of the area's heritage assets and reference to the Municipal Inventory as the main reference document for the identification of places with heritage significance;</li> <li>• Acknowledgement within the State and regional context of State Planning Policy 3.5 Historic Heritage Conservation;</li> <li>• Defined objectives for the future of heritage places in the area; and</li> </ul> <p>Strategies and actions to achieve those objectives, particularly any action or strategy relating to the Local Planning Scheme (e.g. 'prepare a local planning policy for heritage places').</p>	Strategies and actions with regard to heritage will be considered in the LPS.
Land Use / Zoning	Conflicts between residential uses and Marine based Industrial uses.	To be considered as part of LPS. Operational issues to be investigated including hours of operation; noise management. Potential for a Local Planning Policy to address these.
	The location of industrial uses adjacent to Brand Highway is a visual barrier to the town.	Potential high level strategies to mitigate visual impact of industrial uses will be considered in the LPS.
	Rural living lots too big to manage, too small to have a viable crop. Wye Farm example 'a nightmare'.	Size and viability of rural living lots to be considered as part of LPS review.
	15ha lifestyle lots, market stagnate, not viable.	As above.
	Lots over 10ha are subject to capital gains and insurance problems.	As above.
	WAPC policy – 4-40ha or 1-4ha, is there something in between?	As above.
	Shed size needs to be looked at for Rural Living Lots, same as Rural Residential.	To be considered as part of LPS review.
	Look at how long people can use temp living arrangements until they are required to build a permanent structure.	To be considered as part of LPS review.
	Some of the uses on 15ha lots are olives, agistment, recreation (archery), home stay, animal farm & tourist, home occupation (rural). However most is for lifestyle living.	Noted.
	Rural living land to the south may be limited. Need to explore higher density, etc, given proximity to school.	To be considered as part of LPS review.
	Flexibility in range of rural living lot sizes.	Size and viability of rural living lots to be considered as part of LPS review.
	Shire should consider implementing higher density cottage block type lots than the existing 1 hectare on that portion of "Ophelia" Victoria Location 1261 situated on the boundary of the Dongara Golf Course with the added attraction of ocean and town centre views. Such consideration would tend to a much earlier subdivision thereby increasing near town centre population and enabling homeowners to take advantage of the Shire's many and welcome service facilities.	Size and viability of rural living lots to be considered as part of LPS review.
	Proposed rezoning of land on western side of Brand Highway for future shopping centre.	Suggestion will be taken into consideration as part of LPS review.
	The review of the DSP could benefit from broadening its consideration of development to include alternate coastal-rural land-uses and to ensure the DSP does not discourage this and other types of innovative and compatible development.	It should be noted that the DSP is a separate process to the LPS review. DSP will be considered as part of the background review for the LPS.

Topic	Issue	Action
Cont...	The plan for the area zoned rural living in the north of the DSP should be revised to accommodate innovative development that is in keeping with the intrinsic character of the district and contemplate subdivision in the area through to typical rural residential to facilitate this.  Otherwise, the area zoned rural living in the north of the DSP should be changed to future residential.	It should be noted that the DSP is a separate process to the LPS review. DSP will be considered as part of the background review for the LPS.
	I would like to put forward a submission to allow my block at lot 133 Brennand rd Dongara to be zoned R5 or R10 to allow me to subdivide the block.	Suggestion to be considered as part of more general zoning and density considerations for LPS review.
	Preliminary planning to potential development of urban fringe.	To be considered as part of LPS review.
Public Spaces	Many opportunities around the foreshore need to consider disable access.	High level policies to be considered as part of LPS review.
	Main street needs to be more welcoming. Main street revitalisation – signage, toilets, street parking.	To be considered as part of Town Centre Revitalisation project.
	General maintenance of entry via Kailis Drive.	Shire to review maintenance program.
	The importance of the private road on the northern boundary of the DSP should be recognized and consideration given to identifying it as a location for a future public road on the Map on page 51. Landowner of Victoria Location 1953 is not advocating public access to this section of coast, rather an approx. 1.7 km 'no through road' to provide access/egress to/from the area as shown in Figure 1. (included in submission).	Noted. To be considered as part of LPS review.
Other	10.5 m maximum height should be increased to optimise opportunities for views and mixed use developments.	To be considered as part of LPS review.
	Development (and consequently activity) is spread out throughout the twin towns – need for consolidation.	To be considered as part of LPS review.
	Shacks – lease expires June 2015.	Noted.
	New and existing shops should have accessible thresholds and doorways.	Potential high-level strategies with regard to accessibility will be considered in the LPS.
	Building envelopes need to be removed / unrestricted / flexible.	To be considered as part of LPS review.
	Negotiate to encourage reopening of the old west end (tourism).	Shire to consider.
	The correct tenure of VL 1953 is recognised and that the draft DSP is reviewed in consideration of that new fundamental planning landscape for the northern portion of the DSP area.	Noted. This needs to be addressed separately within the DSP.

# Conclusions and Next Steps

Through the consultation process as part of the review of the Shire's Local Planning Strategy, the community has raised a range of issues and aspirations they would like to see considered as part of the project. Recurring themes are broad reaching, which include (as a snap shot):

- The need to determine Dongara / Denison's 'niche', particularly in comparison to Geraldton
- The provision of a range of activities and facilities for locals and tourists alike, particularly when the weather is unfavourable
- Shortage of health and medical facilities
- Deficiencies in infrastructure, particularly power and internet

- The need to provide a range of housing options to accommodate the growth of the population, including aged care / accommodation

The full range of inputs from the community and stakeholders, in addition to TPG's review of all relevant background information and documents, will now directly inform the preparation of the draft Local Planning Strategy.

The community and stakeholders will again be consulted once the draft Local Planning Strategy has been adopted by the Shire and given consent to advertise by the WAPC.





# Appendix A

## Community and Stakeholder Engagement Agenda

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# Appendix B

## **Complete Summary of Feedback**

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## Project Reference Group

Monday 17th February 2014, 10:30 – 12:00pm

### Community

- The shire is pursuing an aging in place approach rather than encouraging provision of aged accommodation.
- The Shire expect to get some feedback regarding housing from the Mid West Housing Study (check timing)
- Market demand regarding varieties of different housing typologies will need to be examined.
- Community Development Plan underway, will need to consider recommendations

### Economy

- Will need to refer to Blue Print recommendations for identifying additional land required for economic activities.
- Need additional sites identified for Tourism.
- Examine a niche approach to economic development/land requirements
- Examine opportunities to incentivise economic development and growth (policy, scheme, zoning etc)

### Environment

- Coastal erosion/management. Adopting a managed retreat approach.
- Fire management is not currently addressed in the existing LPS.

### Infrastructure

- Opportunity to pursue natural gas?
- Opportunity to look at green infrastructure
- Power distribution key current concern (11kva) rather than power generation

### Built Form

- Conflicts between residential uses and Marine based Industrial uses.

## Business Owners Session

Monday 17th February 2014, 12:00 – 1:30pm

### Community

- BMX track in the wrong location, lacking in maintenance.
- Recent YACC event, which was positive, however some antisocial behaviour issues at the track. (Addressed in Recreation Needs Analysis)
- Is there a need for older youth activities, facilities – yes
- Health facilities a key concern and the lack of a Dr. outside normal business hours and not at all on weekends.

- Need to go to Geraldton for health. This impacts on attracting people to live in town. Including Emergency services as well.
- Lack of social housing.
- Limited facilities for aged.
- Golf course and Bowling Green have regional draw.
- Retention of existing population a challenge
- Quality of education is an issue (better schools in Geraldton, schooling only available to year 10 in Dongara)
- There is currently no community festival or event held in the town, eg. Annual 'Blessing of the Fleet' – would help to expose local offerings to a wider market
- Suggestion to develop elite sporting programs

### Economy

- Not enough traffic through town and better sign the southern entrance to town.
- Heavy haulage into town difficult.
- Fishing and farming industry decreasing.
- DIDO for education and sports occurring (Geraldton)
- Reliable, high speed internet required
- Point of difference for marketing, eg. lifestyle, niche industry, best technical school
- There is a lack of activities for tourists particularly when the weather is bad
- Suggestions for activities for tourists included co-locating additional recreational facilities with the new recreation centre, such as a cinema, bar, or high tech facilities; and enhancing the foreshore development
- Advertising for any public events should be cohesive for all town businesses

### Environment

- Wildflower season – the potential for a tourist trail
- Need to create better relationship with the Irwin River (eg. Pinjarra)

### Infrastructure

- Waste disposal, can this be outsourced?
- Continuity of power supply a key concern, particularly for business.
- The town has the advantage of no through traffic (eg. Trucks at high speed), though there is a need to engage with passing traffic, such as designating Brand Highway for trucks and prioritising Kailis Drive for other traffic.
- Pavements are a trip hazard
- Parking both for caravans and shoppers an issue

### **Built Form**

- The location of industrial uses adjacent to Brand Highway is a visual barrier to the town
- Medium density office space
- 10.5 m maximum height should be increased to optimise opportunities for views and mixed use developments.
- Development (and consequently activity) is spread out throughout the twin towns – need for consolidations

## **Urban Centre Session**

Monday 17th February 2014, 6:00 – 7:30pm

### **Community**

- Improved medical facilities.
- Improved primary and secondary education.
- General maintenance of facilities needs addressing.
- Aged care, Fed licenses (beds) restricted.
- Port Denison/Dongara is more about lifestyle, happy to work outside the area but prefer to live here.

### **Economy**

- Local businesses find that marketing individually not viable.
- Seeking to establish a local chapter of the Geraldton Chamber of Commerce and Industry.
- Horse industry opportunities.
- Local Industries very proactive about employing local.

### **Environment**

- Lack of street trees, shade.
- General maintenance of entry via Kailis Drive
- Concern about coastal erosion issues.
- Opportunity to develop P&R land for more formal parklands,

### **Infrastructure**

- Need more riding path, walkways
- Designated bridle paths, particularly for rural areas.
- Need to consider a second crossing over the Irwin River that's links into Springfield to alleviate traffic (north south) as the town grows.
- Looking at a pedestrian (swing bridge) to cross the Irwin around the Monastery through to Church Street.
- May need to consider the 5-leg roundabout with increased traffic from growth.
- As the Foreshore area is improved may attract more traffic and parking.

- Eneabba Gas (power plant) on Beekeepers Reserve stalled.
- Opportunity to use Dongara by Universities for R&D, green infrastructure.
- Opportunity to enhance the water re-use scheme.

### **Built Form**

- Many opportunities around the foreshore need to consider disable access.
- Main street needs to be more welcoming.

## **Rural Living Session**

Tuesday 18th February 2014, 6:00 – 8:00pm

### **Community**

#### **Economy**

- Too big to manage, too small to have a viable crop
- Wye Farm example 'a nightmare'

#### **Environment**

#### **Infrastructure**

- Lack of services to Rural Living areas

#### **Built Form**

- 15ha lifestyle lots, market stagnate
- Lots over 10ha are subject to capital gains and insurance problems
- WAPC policy – 4-40ha or 1-4ha, is there something in between?
- Shed size needs to be looked at for Rural Living Lots, same as Rural Residential
- Look at how long people can use temp living arrangements until they are required to build a permanent structure.
- Some of the uses on 15ha lots are olives, agistment, recreation (archery), home stay, animal farm & tourist, home occupation (rural). However most is for lifestyle living.

## **General Landowner/Tourism Workshop**

Wednesday 19th February 2014, 4:00 – 6:00pm

### **Community**

- Shortage of health and medical facilities
- What is there to do (leisure and recreation for children and families) in winter or summer weather (winds)?
- Getaway beach doesn't cater for families

### **Economy**

- Need more activities for tourists – especially when windy / weather is bad. People come to fish but there is nothing else for them to do.
- Tourist accommodation only ever full at Easter and holidays – need to attract visitors at other times of the year
- 4 star accommodation currently not viable
- New industry opportunities such as 4WD tours, surfing
- Canoe business wasn't viable 15 years ago
- How does Kalbarri tourist off-season compare?
- Strategy identifies the provision of more holiday accommodation, though resident raised concern about the cost input into holiday accommodation is not receiving the desired output.
- Mining companies should use local resources

### **Environment**

#### **Infrastructure**

- RV dump point required (with toilets) and parking near town
- Vehicle access onto South Beach should continue (though if this were to be discontinued, improved access and parking would be required)
- Track into South Beach needs improvement
- Access from Getaway beach to Brand Highway an issue

#### **Built Form**

- Rural living land to the south may be limited. Need to explore higher density, etc, given proximity to school
- 15ha lots are not viable
- Flexibility in range of rural living lot sizes

### **Key Stakeholder Meetings**

#### **Department of Sport & Recreation (Geraldton)**

Tuesday 18th 9:00 – 10:00am

Richard Malacari – Regional Manager Mid West

Simon Barras – Regional Officer Mid West

- Older children tend to use recreation facilities more in Geraldton, despite the Port Denison Recreation Centre being one of the best in the Mid West.
- Kitestock annual event that attracts nationally/internationally (at South beach)
- DSR have a new fund available to LGA's for trails. \$20 000 one off for plans etc and then up to \$100 000 for capital funding. Applications close March 2014.

- Opportunities for Club development workshops (governance, planning etc)
- New Mid West Academy for Sport, 17 kids on scholarship. Offers services related to health, nutrition etc. and coaching support for existing coaches.
- DSR also have a small fund for clubs to get \$'s for equipment, again applications close March 2014.

Refer to DSR reports – Regional Club Development Plan and Volunteers Plan.

#### **Mid West Chamber Of Commerce And Industry**

Tuesday 18th 10:00 – 11:00am

Melanie Davies – Regional Networks & Business development Coordinator

- The first meeting of the Dongara chapter of the MWCCI meeting was held Monday night.
- Seasonal based employment tends to move between industries.
- Marine servicing Industry is about to expand in Geraldton of which may impact on the Port Denison local industry. Need to look at ways to collaborate with Geraldton.
- Retailers need to see online retailing as an opportunity rather than a negative. Offer online services to the local and surrounding catchments.
- The Durack Institute has pulled a number of training courses of which may have impacts (due to State subsidies being withdrawn and cant attract lecturers).
- Construction phases of some mines are complete e.g. road. Rail and therefore spin offs not happening currently.
- MWCCI can facilitate workshops/sessions for tourism's ventures. These can also be online.
- Seems to be a conflict between tourist retail needs vs local retail needs.
- Retail hours in Port Denison/Dongara don't facilitate tourism (shops not open, half Sat and Sunday).
- Need to move from a stop over approach to a destination mind set.

#### **Chamber of Minerals and Energy WA**

Tuesday 18th 12:00 – 1:00Pm

Katherine Flower – Manager – Mid West Region

- 2014 focus is on infrastructure and supply chain road/rail into Geraldton Port.
- Only Sol member is Iluka Mineral Sands, but not much happening at the moment.

- Opportunity for on-shore gas reserves.
- Two companies are more advanced than any other WA company (at proof of concept stage) Norwest Energy/ AWE/Bhart Petroleum. Need to look at zoning of land. Could be opportunities for support services. If they come off first in WA, huge benefits, including training opportunities.
- Opportunities to attract DIDO workforce particularly in relation to Extension Hill mine. They are considering bussing from Perth, pick up in other towns along the way? 3 years to construction and 5 years to operations.
- Need to look at de-regulated shopping hours in-light of DIDO/FIFO and shift workers.

#### **Main Roads WA**

Wednesday 19th 9:00 – 10:00am

Naomi Mynott – Road Corridor Planning Manager

- Bypass Road – funding not committed. Geraldton heavy haulage pressures a priority (15-20 years away)
- Main Roads is currently re-evaluating whether bypass is actually required
- If bypass were to occur, section of Brand Highway parallel to bypass road would be transferred to LG
- Pells Bridge intersection modifications a priority of Main Roads over the bypass
- Restricted access would apply to the Bypass and only access as shown would be allowed
- Concerns regarding Fransico Road and Brand Highway intersection (this is the road the Shire is considering closing)

#### **Department of Aboriginal Affairs**

Wednesday 19th 10:00 – 11:00am

Jacqui Bradley – Regional Heritage Officer

- Reconciliation Committee and Reconciliation Action Plan
- Funding Opportunities
- 3 overlapping Native Title claims

#### **Mid West Development Commission**

Wednesday 19th 10:00 – 11:00am

Trish Palmonari – Principal Project Manager, Infrastructure & Business Development

- Looking at housing needs across the region.
- Looking at strategies for youth retention.
- Development of business skills.

- Look at Pollinators (Business Incubator) in Geraldton as a model for Dongara/Port Denison.
- Developing strategy for FIFO incentives to attract population.
- Investigate a digital/mobile communication strategy for region.
- Working with Western Power to get 330kv distribution towers in place ahead of demand.
- Blueprint to Board next Tuesday. Released by Minister end of March/April

#### **Department of Health**

Wednesday 19th 12:00 – 1:00Pm

Di Franklin – Road Corridor Planning Manager

- Community expectations on access to GPs
- Competition between GP and hospital
- Geraldton has surplus beds for high care
- Preference for ageing in place
- Funding opportunities through HACC

#### **Department of Transport**

Wednesday 19th 10:00 – 11:00am

Tony McCann – Regional Manager

- Department of planning has developed concepts for Port Denison Marina to cater for substantial development and additional births.
- Department of Planning is looking to initially upgrade the north side of the service dock to cater for oil and gas support vessels and foster the local industries to service and repair these vessels.
- Do not see a requirement to relocate the airport
- Developed concepts for Port Denison Marina to service oil and gas
- Do not see a requirement to relocate the airport
- Supportive of Shire of Irwin's efforts under the Country Pathway's program (bicycle/pedestrian network).

#### **Department of Water**

Wednesday 19th 11:00 – 12:00pm

Kerry Wray – Natural Resource Management Officer

- Groundwater quality at Springfield is brackish and unsuitable for use as potable water
- Notice has been applied to all titles at subdivision stage for any future subdivisions noting that groundwater is not

suitable for Potable water and informs any future owners.

- Demand for groundwater extraction within the area of Bonniefield is putting pressure on the supply to the point that the Department of Water is likely to require H1, H2 or H3 investigations for any future requests for Groundwater well licenses.
- Water Supply licenses are available for residential purposes off the Scheme water. Water Corporation can confirm availability and ability for the infrastructure to provide scheme water to any future residents.
- River mouth sand bar is effecting the drainage levels upstream during large events.
- The Allanooka and Dongara-Denison Water Reserves Water Source Protection Plan is currently being updated/ reviewed – unsure on date when this will be finalised.
- Include text within Local Planning Strategy regarding water source protection areas - Kerry to provide an example (I will send through).
- DWMS and catchment mapping to be provided as part of Local Planning Strategy (in accordance with Better Urban Water Management). DWMS (GHD 2014) prepared for Local Structure Plan may be sufficient.
- Some general discussion on stormwater management:
  - Throughout Dongara/Port Denison, stormwater is managed via a (historic) pit and pipe network that discharges directly to the foreshore areas. This practice is generally not acceptable nowadays, but Department of Water have reviewed Dongara/Port Denison and do not see the need to retrofit as the stormwater does not appear to be detrimentally affecting Irwin River (it is relatively healthy).
  - Expectation going forward will be that any new developments will meet the requirements of Better Urban Water Management and water-sensitive design principles.
- As far as aware flood mapping of the Irwin River around the town site is up-to-date. Emerge to confirm with hydrologists from DoW Perth office.
- It would be more appropriate to utilise scheme water within the Springfield area (rather than bores) for potable water.
- Intensive agriculture within the Irwin settlement unlikely to detrimentally affect groundwater or surface water.

### Council De-Brief Session

Wednesday 19th February 2014, 6:00 – 7:00pm

- Aged pensioner unit s managed by the Shire – 40 units. Now is the time to extend on this.
- Believe the skate park is in the right place but not the

BMX track

- The Race Club is fairly protective of the racecourse
  - Reserve vested in the Shire
  - Toilet facilities etc not .... , therefore functions not possible
- The Shire does not have a street tree policy – need to establish one
- Cottonwood does not provide as much shade as a poinciana
- Identify Eneabba Gas land immediately west as heading south at Brand Highway v North Midlands
- Only the Golf Course is reticulated by wastewater. The pipeline is available for the oval behind the Rec Centre but volumes not available.
- The Shire has an access inclusion plan
- Continuity of flights from / to the mines is a issues – need to fly back to Perth and then fly to minesite.
- Aboriginal heritage history
- Regional framework
- Department of Lands
  - Shacks issue
  - Lease expires June 2015

## Feedback Forms and Written Submissions

Submitter	Comments
<p><b>State Heritage Office</b></p> <p>Callum Crofton – A/Manager Development and Incentives</p>	<ol style="list-style-type: none"> <li>1. It is encouraging to see the consideration of heritage places within the preliminary list of key issues.</li> <li>2. The Western Australian Planning Commission's Local Planning Manual, while noting the flexibility of local planning strategies, identifies a number of areas in which the strategy would generally consider cultural heritage. Where heritage is identified as a contributory part of the local profile, we would recommend the inclusion of the following: <ul style="list-style-type: none"> <li>• A description of the area's heritage assets and reference to the Municipal Inventory as the main reference document for the identification of places with heritage significance;</li> <li>• Acknowledgement within the State and regional context of State Planning Policy 3.5 Historic Heritage Conservation;</li> <li>• Defined objectives for the future of heritage places in the area; and</li> <li>• Strategies and actions to achieve those objectives, particularly any action or strategy relating to the Local Planning Scheme (e.g. 'prepare a local planning policy for heritage places').</li> </ul> </li> </ol>
<p><b>Disability Services Commission</b></p> <p>Desmond Griffiths</p>	<p>I would ask that issues surrounding accessibility be considered in all aspects of local planning.</p> <p>As per the previously identified issues:</p> <ul style="list-style-type: none"> <li>• Built environment item 3. New and existing shops should have accessible thresholds and doorways</li> <li>• Services and facilities item 1. Provision of a new swimming pool, it would be fantastic if a hoist was installed and if it suited hydrotherapy</li> <li>• Civic leadership item 3. Improve roads and footpaths. Some of the curbs in the Shire are very tall. It would be great if this could be addressed and the ramp style curbs be used where possible. Not only for people with mobility issues but mums with strollers etc.</li> </ul>
<p><b>Department of Planning (Tourism)</b></p> <p>Loretta van Gasselt – Planning Manager Policy Development and Review</p>	<p>The attachment to the email 'Existing Issues Previously Identified' lists six headings with key issues outlined under each heading (headings include: built environment, services/facilities, economy, social well-being, civic leadership and natural environment). Tourism is specifically addressed under the economy heading. However, addressing issues identified under the other headings is likely to have an indirect and positive impact on tourism within the Shire.</p> <p>The draft Tourism Planning Guidelines (draft Guidelines) has been provided for your information. The document is currently in development and will aid local government in the preparation of their local planning strategy. The draft Guidelines may be of assistance in addressing the tourism planning aspects of the Shire's LPS.</p> <p>Please note that this is a departmental response to tourism planning issues only and does not reflect comments of other branches of the Department of Planning or a formal position of the Western Australian Planning Commission, which may need to be consulted on this proposal.</p>
<p><b>Vidquard Security Systems</b></p> <p>Kevin</p>	<p>What key issues do you believe need to be addressed in undertaking the Local Planning Strategy Review?</p> <ul style="list-style-type: none"> <li>• Security</li> <li>• Street CCTV</li> <li>• Regional Funding</li> <li>• Pensioner security rebate</li> </ul> <p>What suggestions do you have on how to address any issues you identified above?</p> <ul style="list-style-type: none"> <li>• Consultation</li> <li>• Make a submission to Grants Empire</li> </ul>
<p><b>Victoria Location 1261, Springfield, Dongara</b></p> <p>Brian O'Meara – Director, Ophelia Pty Ltd</p>	<p>What key issues do you believe need to be addressed in undertaking the Local Planning Strategy Review?</p> <ul style="list-style-type: none"> <li>• Under the heading of "Social Well Being" should there be currently a need for further Aged Care facility within Dongara, we suggest a development in close proximity to the Medical Centre</li> </ul> <p>What suggestions do you have on how to address any issues you identified above?</p> <ul style="list-style-type: none"> <li>• Part of Victoria Location 1261 (north of Blenheim Rd) could be made available allowing residents of an aged care house easy access to the medical centre</li> </ul> <p>In your opinion, what other significant barriers are impacting the development/subdivision of your land within the Shire?</p> <ul style="list-style-type: none"> <li>• The building buffer zone of 500m from sewerage treatment plant located on water corporation Victoria location 908 should now be lifted. Surely any likelihood of odours would now be resolved after 20 years. The existence of such a buffer has a serious impact on future development activity.</li> </ul> <p>What additional services would you like to see being provided within the Dongara/Port Denison Urban Area?</p> <ul style="list-style-type: none"> <li>• Shire should consider implementing higher density cottage block type lots than the existing 1 hectare on that portion of "Ophelia" Victoria Location 1261 situated on the boundary of the Dongara Golf Course with the added attraction of ocean and town centre views. Such consideration would tend to a much earlier subdivision thereby increasing near town centre population and enabling homeowners to take advantage of the Shire's many and welcome service facilities.</li> </ul>



Submitter	Comments
Cont...	<p>General Comments</p> <p>Ophelia ownership group are fully appreciative and thankful of the Shire's proposed planning strategies which will surely encourage potential residents to be part of a vibrant town and society.</p> <p>Briefly for your information Ophelia p/l purchased Victoria Location 1261 in 1982 some 7-8 years prior to Water Corp deciding to purchase Victoria Location 908 in order to 'wrongfully' building sewerage ponds amidst housing and housing sites. This decision on their part was made in spite of a meeting with 130 residents who quite clearly urged Water Corp to change their intended plan and to move further out to a farming property to overcome the possibility of sewerage odours.</p> <p>On completion of the ponds in 1994 the 500m building buffer was applied much to the frustration of land owners. A meeting in 2005 by a group of nearby disadvantaged landowners with local member Grant Woodhams seeking reduction in the buffer zone was unsuccessful, even though it could be proved odours to the medical centre and our property could not be substantiated.</p> <p>A most puzzling aspect is the presence of the modern medical centre (commenced operations July 1997) on the corner of Ophelia's block and Blenheim Rd, which almost certainly would not have been constructed were there possibility of risk to patients health.</p> <p>We ask the Shire to approach Water Corp on behalf of all landowners in the area to lift the buffer completely, or move the ponds further away from the town centre, or to establish a fully enclosed treatment plant (which we are assured is possible).</p>
<p><b>Lot 30648 Brand Highway, Dongara</b></p> <p>Lynley Rathay – landowner</p>	<p>In your opinion, what other significant barriers are impacting the development/subdivision of your land within the Shire?</p> <ul style="list-style-type: none"> <li>• Possibly size of subdivision restrictions.</li> <li>• Changes to area zoning – individual consideration for development of small block close to town</li> </ul> <p>General Comments:</p> <p>Dongara – Port Denison has always lacked adventure sports like businesses that could utilise its proximity to its wonderful beaches etc. Perhaps we do not get the number of tourists required to make businesses like jet-ski hire, horse back trails, etc viable but I have had friends with family comment that although Kalbarri is a little further off the beaten track, it had more to offer in activities for keeping families entertained while on holiday. Although this is not an area that I personally wish to pursue, you have asked for comments regarding public perception of our area.</p>
<p><b>2 Sheoak road, Springfield</b></p> <p>Brian Lane - landowner</p>	<p>What key issues do you believe need to be addressed in undertaking the Local Planning Strategy Review?</p> <ul style="list-style-type: none"> <li>• TV and radio reception bad</li> </ul> <p>What suggestions do you have on how to address any issues you identified above?</p> <ul style="list-style-type: none"> <li>• Put aerial etc in Dongara instead of receiving signals from Geraldton</li> </ul> <p>What additional services would you like to see being provided within the Dongara/Port Denison Urban Area?</p> <ul style="list-style-type: none"> <li>• Verge trees to be pruned and verge cleaned up</li> </ul>
<p><b>32 Honeymyrtle Close, Springfield</b></p> <p>John Holler - landowner</p>	<p>What key issues do you believe need to be addressed in undertaking the Local Planning Strategy Review?</p> <ul style="list-style-type: none"> <li>• Control / removal of corellas</li> <li>• Increase speed limit of St Dimonials Rd to 80km/hr</li> <li>• Illegal dumping of household rubbish into bushland</li> </ul> <p>What suggestions do you have on how to address any issues you identified above?</p> <ul style="list-style-type: none"> <li>• Corellas need to be continually shot (DEC damage licence)</li> <li>• Change signs?</li> <li>• Illegal dumping could be curbed by giving ratepayers 2 to 4 tip passes per year.</li> </ul> <p>In your opinion, what other significant barriers are impacting the development/subdivision of your land within the Shire?</p> <ul style="list-style-type: none"> <li>• Building envelopes need to be removed / unrestricted / flexible</li> </ul> <p>What additional services would you like to see being provided within the Dongara/Port Denison Urban Area?</p> <ul style="list-style-type: none"> <li>• Full time dentist</li> </ul> <p>General comments</p> <p>If the corellas aren't controlled then the main street Moreton Bay Fig trees will slowly be destroyed.</p>
<p><b>227 Steele Rd, Bonniefield</b></p> <p>Ryan and Karen Carter - landowners</p>	<p>What key issues do you believe need to be addressed in undertaking the Local Planning Strategy Review?</p> <ul style="list-style-type: none"> <li>• Bitumise Steele Road – this is appalling condition. Hasn't even got enough surface to grade</li> <li>• Provide kayak / canoe access to river in town somewhere (perhaps near the bridge)</li> </ul>

Submitter	Comments
<p><b>13 Raywood Rd, Bouvard</b></p> <p>Kavil Fraser – landowner</p>	<p>What key issues do you believe need to be addressed in undertaking the Local Planning Strategy Review?</p> <ul style="list-style-type: none"> <li>• Shopping centre on western side of Brand Highway</li> <li>• Improve airport</li> </ul> <p>What suggestions do you have on how to address any issues you identified above?</p> <ul style="list-style-type: none"> <li>• Rezoning land for future shopping centre</li> <li>• Set aside, rezone land on western side of highway for future airport</li> </ul>
<p><b>31658 Brand Highway, Bookara</b></p> <p>John Terhoeve – landowner &amp; local business owner (semi-retired)</p>	<p>What key issues do you believe need to be addressed in undertaking the Local Planning Strategy Review?</p> <ul style="list-style-type: none"> <li>• Under Item 4. Built environment – negotiate to encourage reopening of the old west end (tourism)</li> <li>• Under item 3/4. Economy – encourage reactivation of the Dongara Chamber of Commerce</li> <li>• Set up an information including viewing platform over south beach (with ample parking for vans etc) near White Tops Rd to encourage travellers to have a longer look</li> </ul> <p>What suggestions do you have on how to address any issues you identified above?</p> <ul style="list-style-type: none"> <li>• Construct a parking bay (similar to current Brand Highway) with a Town / area map and signage (especially south beach relative) and viewing platform over south beach and marina as the SW entry statement to Port Denison – Dongara</li> </ul> <p>General Comments</p> <p>Personally it would be great to have the status quo as far as lifestyle goes however we understand growth is a necessary function to sustain the district.</p>
<p><b>Location 1793, between Dominic's Road and Blenheim Road</b></p> <p>Greg Symons and Tammy Dickson – landowners</p>	<p>We have noticed that there is proposed reserve on the northern end of the property. I know the need for open space is important but our property already has an amount of land that has been devalued by the Water Authority, due to Waste Water Treatment Plant buffer zone, which we can never develop. Therefore we put in a proposal that you move the proposed reserve to the south side of the property in the area of the buffer zone. Since the upgrade of the treatment plant there has never been an off putting smell at all, maybe its time to talk to the Water Authority about shrinking the buffer zone, or removing it all together.</p>
<p><b>Victoria Location 1953</b></p> <p>Ray Masini – co-landowner</p>	<p>My submission relates primarily to the proposed rural living zone that comprises the northern portion of the DSP area.</p> <p>RECOMMENDATIONS</p> <ol style="list-style-type: none"> <li>1. The correct tenure of VL 1953 is recognized and that the draft DSP is reviewed in consideration of that new fundamental planning landscape for the northern portion of the DSP area.</li> <li>2. The review of the DSP could benefit from broadening its consideration of development to include alternate coastal-rural land-uses and to ensure the DSP does not discourage this and other types of innovative and compatible development.</li> <li>3. The plan for the area zoned rural living in the north of the DSP should be revised to accommodate innovative development that is in keeping with the intrinsic character of the district and contemplate subdivision in the area through to typical rural residential to facilitate this.</li> <li>4. If recommendation 4 is not accepted then the area zoned rural living in the north of the DSP should be changed to future residential.</li> <li>5. The importance of the private road on the northern boundary of the DSP should be recognized and consideration given to identifying it as a location for a future public road on the Map on page 51.</li> </ol> <p>Refers to previous submission (19 February 2014)</p> <p>I would like to take the opportunity to clarify one aspect of my submission relating to the public road to access the properties in the northern section of the DSP area.</p> <p>I am not advocating public access to this section of coast, rather an approx.. 1.7 km 'no through road' to provide access/ egress to/from the area as shown in Figure 1. (included in submission)</p> <p>I would also like to take this opportunity to express my support for the submissions of Roxanne and Keith Shadbolt (the co-owners of my property) and Ron and Sue Strickland (my neighbours) and in particular the views they put forward regarding access and the protection of the unique values of this section of coast.</p>
<p><b>Lot 133 Brennand Road, Dongara</b></p> <p>Craig Nelson – landowner</p>	<p>I would like to put forward a submission to allow my block at lot 133 Brennand Rd Dongara to be zoned R5 or R10 to allow me to subdivide the block.</p>

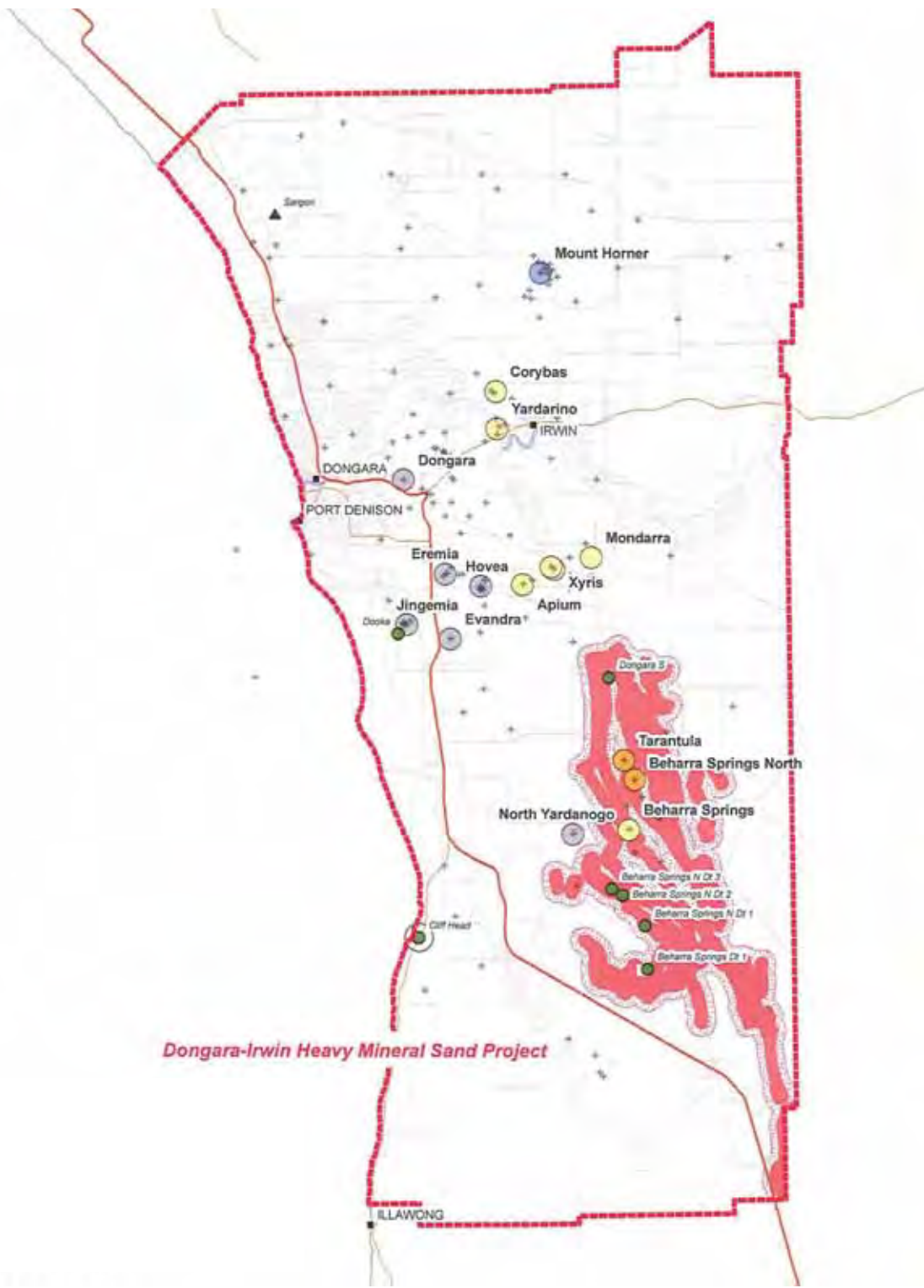
Submitter	Comments
<p><b>7 Cardwell Garden</b></p> <p>Ann and Dave Walker – landowner &amp; local business owner</p>	<p>What key issues do you believe need to be addressed in undertaking the Local Planning Strategy Review?</p> <ul style="list-style-type: none"> <li>• Main street revitalisation – signage, toilets, street parking</li> <li>• Support existing businesses and new</li> <li>• Improve health services</li> </ul> <p>What suggestions do you have on how to address any issues you identified above?</p> <ul style="list-style-type: none"> <li>• Signs to indicate toilets, parking</li> <li>• Road marking</li> <li>• Encourage to shop local</li> <li>• New doctors surgery</li> </ul>
<p><b>23 Tulloch Avenue, Dongara</b></p> <p>Robyn Cooper – landowner and local business owner</p>	<p>What key issues do you believe need to be addressed in undertaking the Local Planning Strategy Review?</p> <ul style="list-style-type: none"> <li>• Public housing or lack of funding of</li> <li>• Walkability of new estates to CBD</li> <li>• Drainage</li> <li>• Preliminary planning to potential development of urban fringe</li> <li>• Transport / road safety issues</li> </ul> <p>What suggestions do you have on how to address any issues you identified above?</p> <ul style="list-style-type: none"> <li>• Outsource funding – government / private / developers</li> <li>• Water savings – grey water / mandatory rain tanks</li> <li>• Aerobic treatment units</li> </ul> <p>In your opinion, what other significant barriers are impacting the development/subdivision of your land within the Shire?</p> <ul style="list-style-type: none"> <li>• GFC</li> <li>• Mining sector downturn</li> <li>• Over supply land (supply and demand)</li> </ul> <p>What additional services would you like to see being provided within the Dongara/Port Denison Urban Area?</p> <ul style="list-style-type: none"> <li>• Improved medical/dental services</li> </ul>

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# Appendix B

## Mineral Resources Mapping

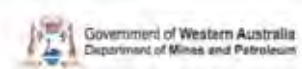
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**Dongara-Irwin Heavy Mineral Sand Project**

- Shire boundary
- Locality
- Major roads
  - highway
  - road (sealed)
  - Cartists
- Commodity
  - Energy (coal)
  - Industrial mineral (gypsum, dolomite)
  - Operating mines (mineral)

- Titanium-circon mineralization
- Category
  - Strategic mineral resource protection areas (SMRPA)
  - 500 m separation area around SMRPA
  - Petroleum wells
  - Oil & gas fields
  - Field type
    - Gas
    - Gas and condensate
    - Oil
    - Oil and gas



Mines, Mineral & Petroleum Deposits

**LOCAL PLANNING STRATEGY  
SHIRE OF IRWIN**

Date: 15 Sept 2014 Designer: MD  
Scale: 1:300,000 @ A3 Drawn: GW  
Drawing No. 714-184 constraints F1-5.dwg

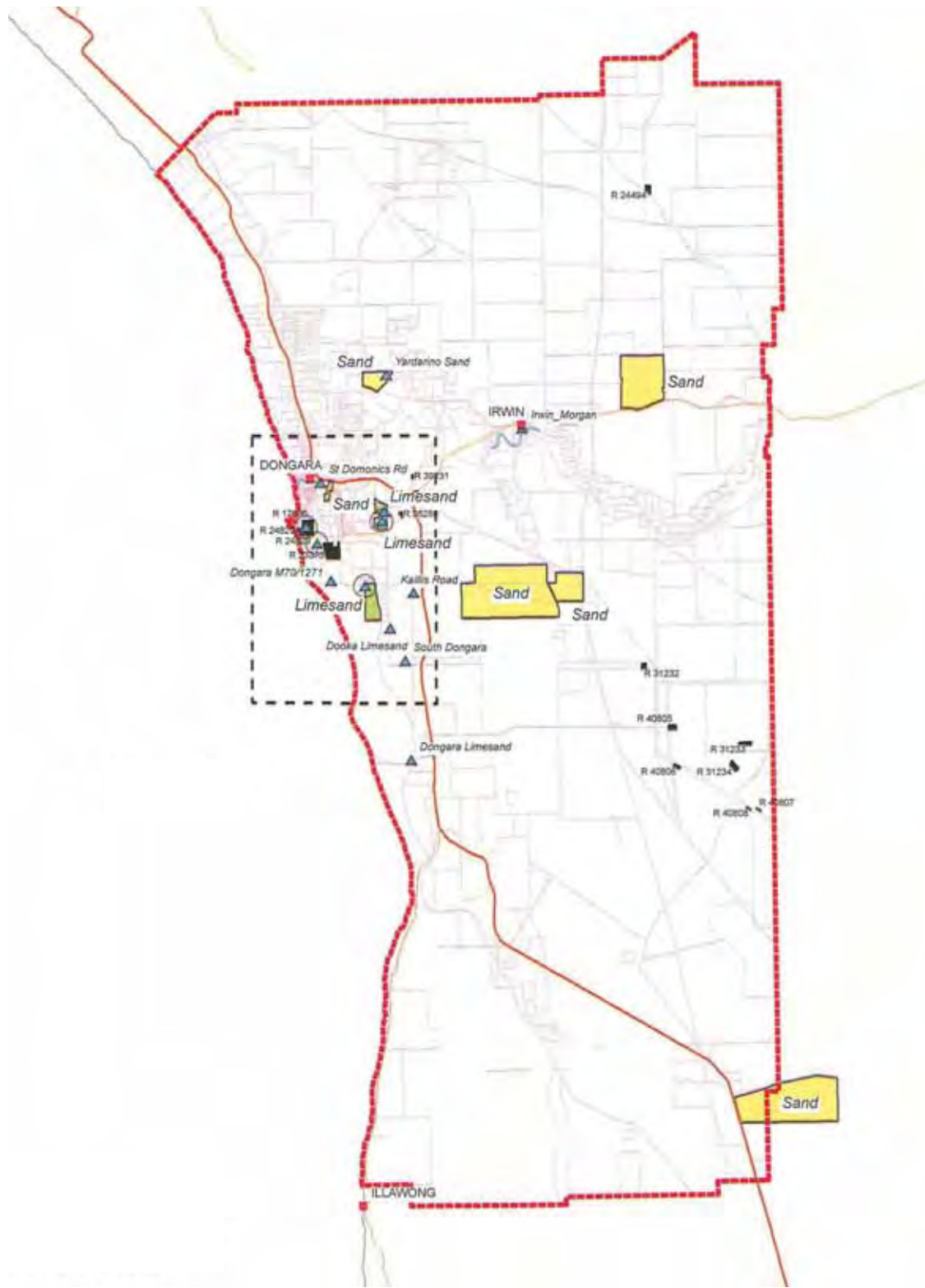
**TOWN PLANNING  
AND URBAN DESIGN**



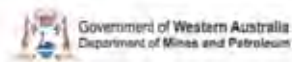
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|---|---|---|
| <ul style="list-style-type: none"> <li> Shire Boundary</li> <li> Locality</li> <li> Major roads</li> <li> Highway</li> <li> Road (scalled)</li> <li> Cablestie</li> </ul> | <ul style="list-style-type: none"> <li><b>Basic raw material (BRM) deposits</b></li> <li><b>Commodity</b></li> <li> Construction materials (coy, sand, limestone, breasht)</li> <li> Operating quarry (BRM)</li> <li> Crown reserves (BRM)</li> <li> Area detailed within Figure 2</li> </ul> | <ul style="list-style-type: none"> <li><b>Extractive industry licenses</b></li> <li><b>Commodity</b></li> <li> Limesand</li> <li> Sand</li> </ul> |
|---|---|---|



## Basic Raw Materials

### LOCAL PLANNING STRATEGY SHIRE OF IRWIN

Date: 15 Sept 2014 Designer: MD  
Scale: 1:300,000 @ A3 Drawn: GW  
Drawing No. 714-184 constraints F1-5.dwg

**TOWN PLANNING  
AND URBAN DESIGN**

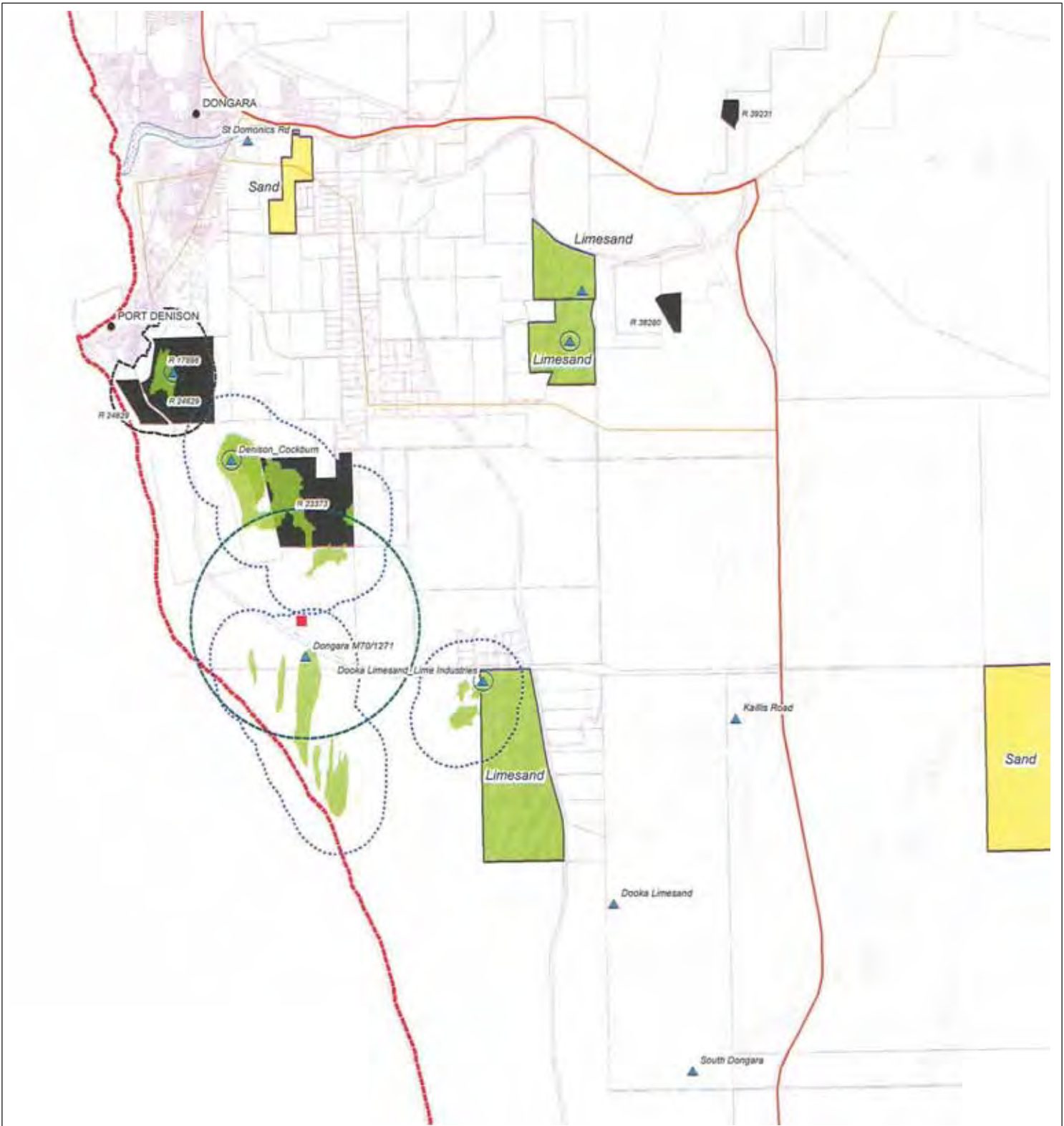


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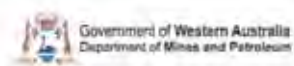
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- |                |  |  |
|----------------|--|--|
| Shire Boundary | Drain reserves (DRM)                                       | Cockburn Cement lime plant                     |
| Locality       | Operating quarry (SRM)                                     | Lime plant (development) exclusion 100m buffer |
| Major road     | Basic raw material (BRM) deposits                          | Western agreed mining area 500m buffer         |
| Highway        | Community  | Western agreed mining area                     |
| Road (sealed)  | Decomposition materials (slag, sand, limestone, lime sand) | Limesand - mobile dunes                        |
| Catchment      | Extensive industry licenses                                | Limesand - mobile dunes 300m buffer            |
|                | Community  |  |
|                | Limesand   |  |
|                | Sand   |  |



**Basic Raw Materials  
Dongara - Port Denison Area  
LOCAL PLANNING STRATEGY  
SHIRE OF IRWIN**

Date: 15 Sept 2014 Designer: MD  
Scale: 1:300,000 @ A3 Drawn: GW  
Drawing No. 714-184 constraints F1-5.dwg

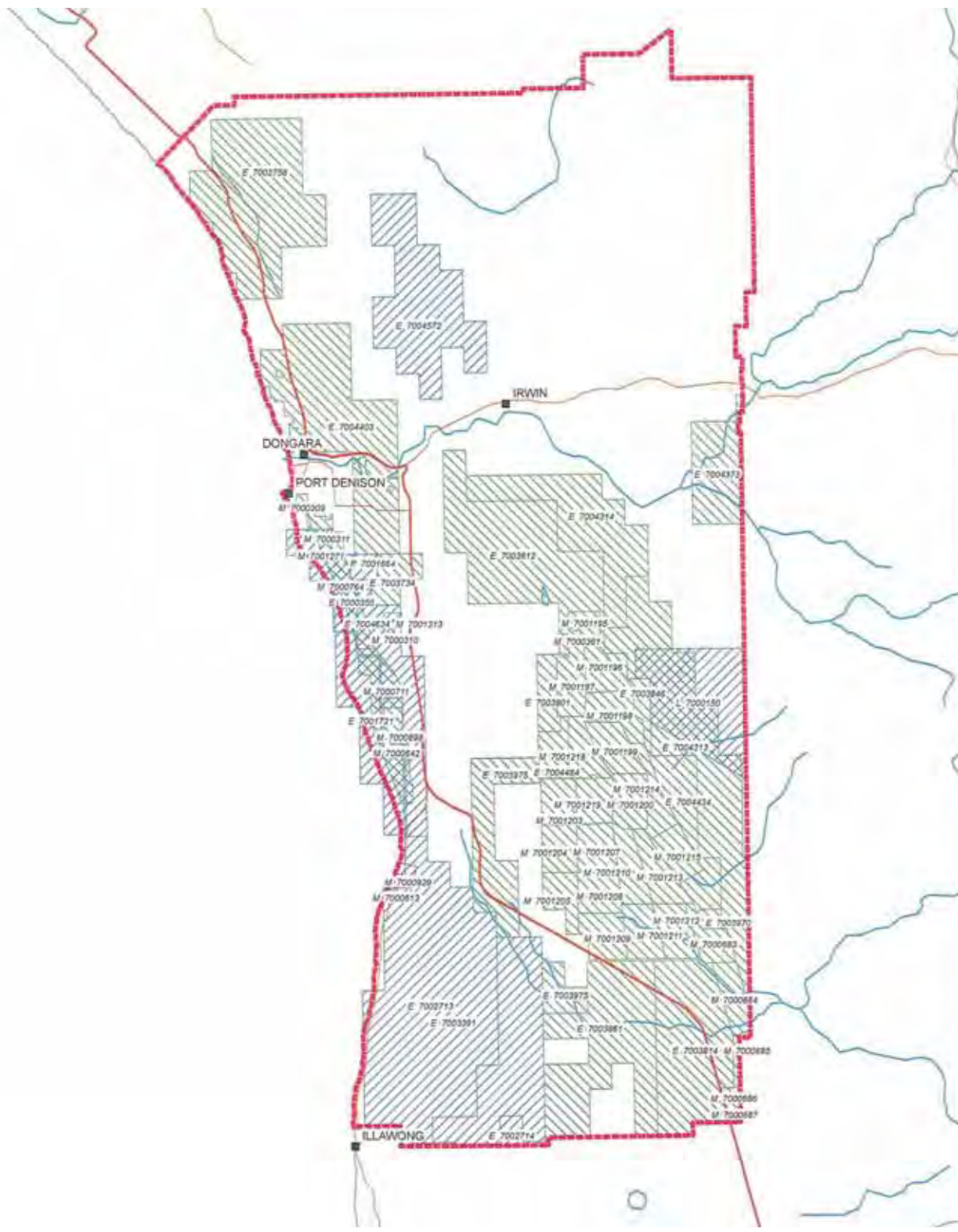
**TOWN PLANNING  
AND URBAN DESIGN**



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- Shire boundary
- Locality
- Major roads
- highway
- road (sealed)
- River, creek
- Mining tenements
- Live
- Pending



Government of Western Australia  
Department of Mines and Petroleum

Geological Survey of  
Western Australia



### Mining Tenements

#### LOCAL PLANNING STRATEGY SHIRE OF IRWIN

Date: 15 Sept 2014 Designer: MD  
Scale: 1:300,000 @ A3 Drawn: GW  
Drawing No. 714-184 constraints F1-5.dwg

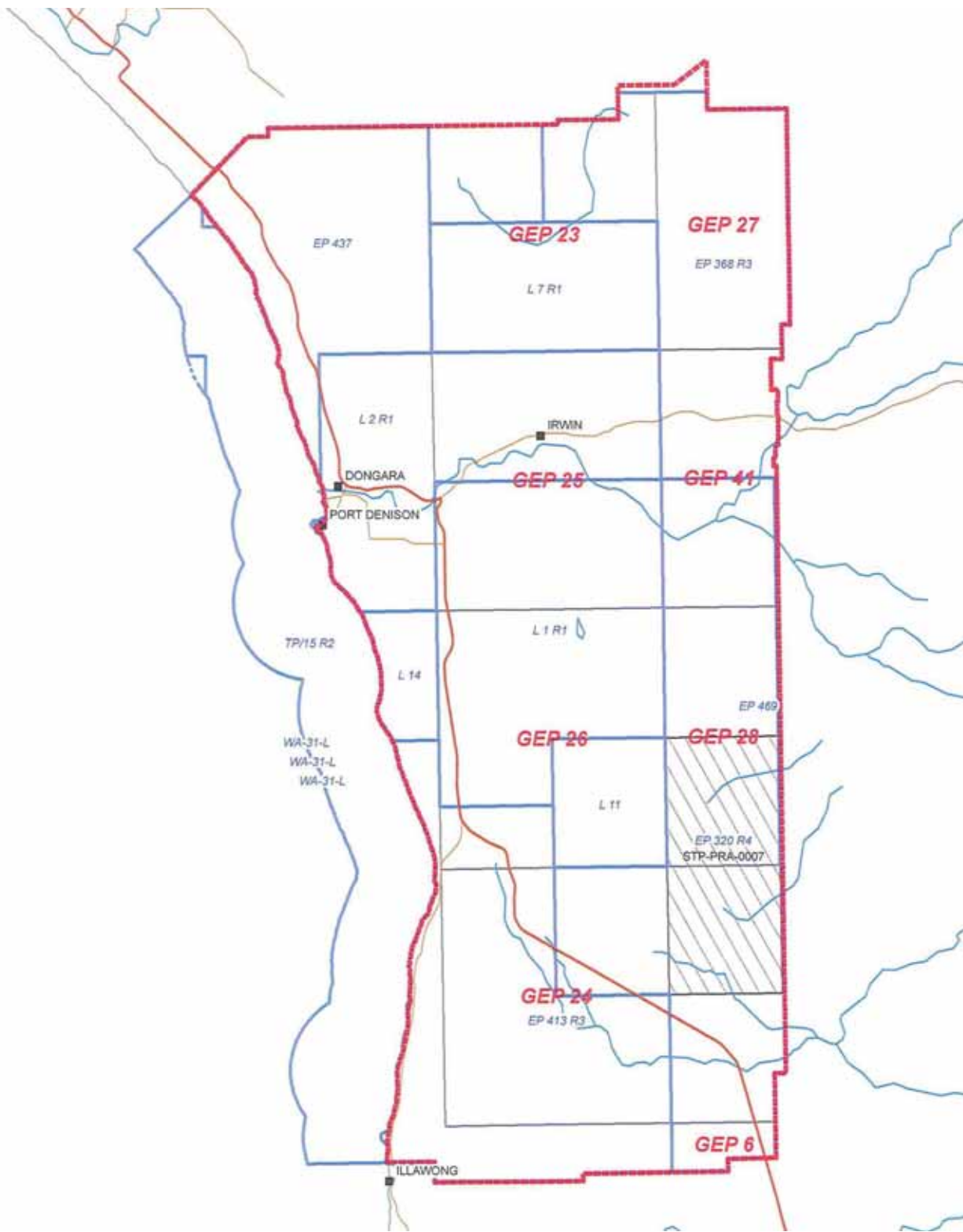
**TOWN PLANNING  
AND URBAN DESIGN**



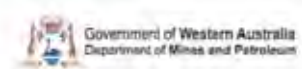
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- Shire boundary
- Petroleum titles
- Petroleum applications
- Geothermal titles
- Locality
- Major roads
- highway
- road (sealed)
- River, creek



**Petroleum & Geothermal Titles**

**LOCAL PLANNING STRATEGY  
SHIRE OF IRWIN**

Date: 15 Sept 2014      Designer: MD  
 Scale: 1:300,000 @ A3      Drawn: GW  
 Drawing No. 714-184 constraints F1-5.dwg

**TOWN PLANNING  
AND URBAN DESIGN**



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# Appendix C

Shire of Irwin Housing Land Audit and Market Analysis

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**The Shire of Irwin's  
Housing Land Audit and  
Housing Market Analysis  
March 2015**



## Summary

This paper provides an analysis of the Shire's demand for and supply of housing land and of the Shire's housing market. While recognising that external market forces, such as the Global Financial Crisis and the boom/bust cycle of mining, may influence the housing market, the main aim of this paper is to investigate the impacts of microeconomic factors such as demand, supply, volumes of sales, costs and prices. It also provides some conclusions about housing land within various zones and some recommendations for strategies to be incorporated within the Draft Local Planning Strategy.

The table below demonstrates the expected demand for houses within each zone for the years 2021, 2025 and 2050. The overall expected demand is based on an average population growth rate of 1.6%. The numbers of houses are derived from the portion of the Shire's housing market shared by each zone between January 2008-2015. The portion of the housing market for each zone is as follows:

- Residential zone – 64%;
- Special Residential – 11%;
- Rural Residential – 14%
- Rural Smallholdings – 7%
- General Farming – 3.5%
- Town Centre – 0.5%

Expected demand for houses within each zone (No's of houses)				Current Potential housing supply (No's of houses)	
				Minimum	Maximum
Zone	2021	2025	2050	2015	
Residential	1,559	1,616	2,436	2,366	8,324
Special Residential	268	278	419	99	198
Rural Residential	341	355	533	190	760
Rural Smallholdings	170	176	266	654	654
General Farming	85	88	133	----	----
Town Centre	12	13	19	44	44
<b>Expected demand</b>	<b>2,435</b>	<b>2,526</b>	<b>3,806</b>	<b>3,362</b>	<b>9,980</b>

The table above also shows the minimum and maximum current potential supply of houses within each zone. The potential supply for the General Farming zone has not been included, due to the general presumption against subdivision of this land for residential purposes. Analysis of the above statistics and the average prices of vacant residential lots and houses (see Table 7 in the main body of the paper) demonstrates:

1. the demand for housing land within the Shire is strongly focussed on the smaller lot sizes provided by the Residential, Special Residential and Rural Residential zones;
2. there are significant oversupplies of housing land within the Residential, Rural Residential and Rural Smallholdings zones.;
3. the impact of the oversupply of residential land in each zone is contributing to a significant fall in vacant land prices and house prices within the Residential and Rural Smallholdings zones; and
4. there is an undersupply of Special Residential land.

Therefore, it is recommended that the following strategies be incorporated into the Draft Local Planning Strategy:

1. the Housing Land Audit be updated annually, with a full audit and the Housing Market Analysis being carried out every 3-5 years or sooner when significant market impacts are observed, in order to monitor the demand for and supply of residential land; and
2. no more housing land is to be released within:
  - a. the Development zone, by way of Local Structure Plans; or
  - b. the Rural Residential and Rural Smallholdings by way of rezoning;
 unless the demand for housing is adequately aligned with the supply of housing land within these zones, after consideration of the Shire's Housing Land Audit and Market Analysis and the District Structure Plan.



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The demand for and supply of housing land in January 2015.....	4
Housing Market Analysis – January 2008-2015.....	5
Housing Demand and Supply Analysis.....	7
Conclusions.....	8
Recommendations.....	9

## Introduction

This paper provides an analysis of the Shire's demand for and supply of housing land and of the Shire's housing market. While recognising that external market forces, such as the Global Financial Crisis and the boom/bust cycle of mining may influence the housing market, the main aim of this paper is to investigate the impacts of microeconomic factors such as demand, supply, costs and prices. It also provides some conclusions about housing land within various zones and some recommendations for strategies to be incorporated within the Draft Local Planning Strategy.

## The demand for and supply of housing land in January 2015

### The demand for housing within the Shire

Taken from the Draft Local Planning Strategy, Table 1 demonstrates the expected demand for new housing up to 2050, based on an expected population growth rate of 1.6% per annum.

Number of existing Dwellings	Demand for houses (based on a 1.6% population growth per annum)		
	2012	2021	2025
2,008 houses (3,815 people)	2,435 houses (4,626 people)	2,526 houses (4,799 people)	3,806 houses (7,231 people)

Table 1: The expected demand for housing within the Shire

### The potential supply of housing land within all zones

Table 2 below shows current and maximum potential dwelling supply from all zones capable of providing for new housing in the Shire, except the General Farming zone. The General Farming zone has not been included, due to the general presumption against subdivision of this land for residential purposes. The minimum potential housing supply across all zones is 3,362. At 1.9 people per house, there is enough vacant land within all existing zones for a population of 6,387 people. This means that, at a growth rate of 1.6% per annum, there would be no need to release additional land for residential development until well into the 2040's. If the Special Residential and Rural Residential areas were subdivided to the smallest sized lots allowed, there would be no need to release further residential land until after 2050. When comparing the expected demand for housing above with the table below, it is clear that there is currently a significant oversupply of housing land across all relevant zones, and careful consideration will be needed prior to the release of more residential land within them and the future Development zones.

Zone	No. of vacant lots	Vacant land	Current potential housing supply	Maximum potential housing supply including future Development zones
Residential	N/A (stats are taken from DSP)		2,366	8,324
Special Residential	38	397,355 ha	99 to 198	198
Rural Residential	78	759,957 ha	190 to 760	760
Rural Smallholdings	135	9,819 ha	654	654
Town Centre	24	3.59 ha	44	44
<b>Total</b>			<b>3,362 to 4,022 houses (6,387 to 7,641 people)</b>	<b>9,980 houses (18,962 people)</b>

Table 2: The potential supply of housing land within all zones

### Subdivision approvals for residential lots

Table 3 below contains data taken from the Western Australian Planning Commissions (WAPC) statistics for final residential subdivision approvals (i.e. approved Deposited Plans). While there are no statistics available to demonstrate how many new titles were actually created from the Deposited Plans, the data presented does provide a strong indication. The table demonstrates that from 2008, there has been a significant decline in the number of lots receiving final approval. Since then, the low number of approvals has remained relatively constant. That said, it should be noted that Council have recently supported a subdivision application for 84 new residential lots. The fall in final approvals since 2008 is unlikely to be solely due to external market forces, as there is a significant oversupply of residential land within the Shire.

The number of residential lots receiving final approval from WAPC								
	2008	2009	2010	2011	2012	2013	2014	All years
<b>Total</b>	67	2	6	2	3	2	0	82

Table 3: Subdivision approvals for residential lots – January 2008-2015

## Housing Market Analysis – January 2008-2015

### Building Approvals for new houses

Table 4 below shows that Building Approvals for new houses across all zones peaked at 65 in 2008 before dropping off to only 22 in 2012. Since then, approvals have been steadily increasing again. The highest demand for housing is in the Residential (161 or 64%) and Rural Residential (36 or 14%) zones, followed by the Special Residential zone. Demand for new houses in the Rural Smallholdings zone (18 or 7%) is only half of that in the Rural Residential zone. The Special Residential zone accommodated 28 approvals (11%). There is very little demand for houses in the General Farming zone (3.5%) and practically no demand for new houses in the Town Centre zone (1 or 0.5%).

Building Approvals for new houses Jan 2008-2015							
	Residential zone	Special Residential zone	Rural Residential zone	Rural Smallholdings zone	General Farming zone	Town Centre zone	Total
2008	39	8	8	6	4		65
2009	17	1	8	5	1		32
2010	19	5	6	1	1	1	33
2011	15	3	4	1	1		24
2012	15	3	1	2	1		22
2013	22	3	6	0	0		31
2014	34	5	3	3	1		46
<b>Total</b>	<b>161</b>	<b>28</b>	<b>36</b>	<b>18</b>	<b>9</b>	<b>1</b>	<b>253</b>

Table 4: Building Approvals for new houses– January 2008-2015

### Average expected construction costs for new houses - January 2008-2015

Table 5 below shows that the average expected construction costs for new houses in 2014 was around \$300,000 and has increased by approximately \$120,000 between 2008 and 2014. While this statistic may have been skewed by some unusual costs in the General Farming zone, it is worth noting that average construction costs in the Residential zone, increased by \$123,457.

Zone	Average expected construction cost for new houses in 2008	Average expected construction costs for new houses in 2014	Average expected construction cost for new houses Jan 2008-15
Residential	\$239,193	\$362,740	\$326,392
Special Residential	\$222,274	\$374,624	\$273,138
Rural Residential	\$270,539	\$283,223	\$239,275
Rural Smallholdings	\$269,893	\$288,909	\$260,602
General Farming	\$25,000	\$90,133	\$326,939
Town Centre	---	---	\$254,154
<b>All</b>	<b>\$205,380</b>	<b>\$308,871</b>	<b>\$280,083</b>

Table 5: Average expected construction costs for new houses – January 2008-2015

### Number of vacant lot and house sales – January 2008-2015

Table 6 below, the most significant number of property sales has occurred within the Residential zone (494). The next highest number of sales occurred within the Rural Residential zone (80). While more lots were sold in the General Farming zone than the Rural Smallholdings zone, relatively few transactions have occurred in the Special Residential and Town Centre zones.

Zone	vacant lot sales	house sales	Total
Residential	176	318	<b>494</b>
Special Residential	25	2	<b>27</b>
Rural Residential	50	30	<b>80</b>
Rural Smallholdings	13	28	<b>41</b>
General Farming	41	13	<b>54</b>
Town Centre	3	18	<b>21</b>
<b>Total</b>	<b>308</b>	<b>409</b>	<b>717</b>

Table 6: Number of vacant lot and house sales – January 2008-2015

### Average prices of vacant residential lots and houses

The prices for houses below include the land on which they are situated. The highest prices occur in the General Farming zone, which is to be expected since some of these properties incorporate large productive farms. In the other zones, highest prices occur within the Rural Smallholdings and Rural Res zone. Average house prices within the Rural Smallholdings zone in 2014 have dropped significantly since 2008 – from \$526,250 to \$345,000. However, the average price across all years in this zone is \$586,521. In the Residential zone, average prices for both vacant lots and houses have dropped significantly since 2008.

Zone	Average prices In 2008		Average prices In 2014		Average prices Jan 2008-15	
	Vacant lots	Houses	Vacant lots	Houses	Vacant lots	Houses
Residential	\$202,272	\$433,530	\$130,775	\$397,377	\$145,243	\$416,890
Special Residential	\$203,000	\$245,000	\$143,333	\$560,000	\$179,180	\$402,500
Rural Residential	\$271,666	\$437,400	\$206,375	\$465,000	\$252,795	\$485,160
Rural Smallholdings	---	\$526,250	\$169,444	\$345,000	\$288,421	\$586,521
General Farming	---	\$3,713,333	\$1,491,667	\$450,000	\$1,126,019	\$4,442,307
Town Centre	---	\$435,000	\$110,000	\$265,000	\$116,666	\$343,638

Table 7: Average prices of vacant residential lots and houses – January 2008-2015

## Housing Demand and Supply Analysis

Table 8 below demonstrates the expected demand for houses within each zone for the years 2021, 2025 and 2050. The overall expected demand is based on an average population growth rate of 1.6%, as shown in Table 1 above. The numbers of houses are derived from the portion of the Shire's housing market shared by each zone between January 2008-2015. The portion of the housing market for each zone is as follows:

- Residential zone – 64%;
- Special Residential – 11%;
- Rural Residential – 14%
- Rural Smallholdings – 7%
- General Farming – 3.5%
- Town Centre – 0.5%

Expected demand for houses within each zone (No's of houses)				Current Potential housing supply (No's of houses)	
Zone	2021	2025	2050	Minimum	Maximum
				2015	
Residential	1,559	1,616	2,436	2,366	8,324
Special Residential	268	278	419	99	198
Rural Residential	341	355	533	190	760
Rural Smallholdings	170	176	266	654	654
General Farming	85	88	133	----	----
Town Centre	12	13	19	44	44
<b>Expected demand</b>	<b>2,435</b>	<b>2,526</b>	<b>3,806</b>	<b>3,362</b>	<b>9,980</b>

Table 8: Housing demand and supply analysis

Table 8 above also shows the minimum and maximum current potential supply of houses within each zone. The potential supply for the General Farming zone has not been included, due to the general presumption against subdivision of this land for residential purposes.

Analysis of the statistics in Table 7 and the average prices of vacant residential lots and houses (see Table 7) demonstrate that:

1. the demand for housing land within the Shire is strongly focussed on the smaller lot sizes provided by the Residential, Special Residential and Rural Residential zones;
2. there are significant oversupplies of housing land within the Residential, Rural Residential and Rural Smallholdings zones.;
3. the impact of the oversupply of residential land in each zone is contributing to a significant fall in vacant land prices and house prices within the Residential and Rural Smallholdings zones; and
4. there is an undersupply of Special Residential land.

## Conclusions

### Residential zone

The Residential zone has witnessed the highest demand for housing, is where most of the vacant lot sales (176) and house sales (318) and has seen a \$123,457 increase in the expected construction costs since 2008. Despite the high demand for houses in the zone, the high volume of sales and an increase in construction costs, there has been significant drop in vacant land and house prices within this zone. While there may be other market forces at play, at the microeconomic level it is certain that the significant oversupply of residential land is adversely affecting property prices within the Residential zone i.e. the oversupply has led to a significant drop in average prices for both vacant lots and houses. It is also certain that the significant oversupply of residential land in other zones is affecting property prices here. The lowered property prices in the residential zone may be the reason for the relatively high numbers of vacant lot and house sales.

### Special Residential zone

The number of Building Approvals (28) for new houses in the Special Residential zone is moderate (the third most popular zone). This zone is an emerging and popular sector of the Shire's Housing Market. The average construction costs for houses in 2014 have increased by around \$50,000 since 2008. Sales activity for vacant lots and houses is fairly low. This is likely due in part to the availability of land within the residential zone, and to the fact that the Moreton Bay Estate (Special Residential) has been a relatively recent addition to the housing stock. Average lot prices have reduced slightly since 2008, probably due to an increased supply from the Moreton Bay Estate. House prices have seen a significant increase in value. However, there have only been 2 recorded sales during the period of January 2008-2015. There is a potential dwelling supply of between 99 to 198 houses in this zone, which generally contributes to the Shire's oversupply of residential land.

### Rural Residential zone

In terms of Building Approvals for new houses and sales of vacant lots and houses, the Rural Residential zone is the second most popular zone (36). Average construction costs have remained relatively stable, when comparing 2008 with 2014, but may have lowered across the period as a whole. While average house prices have generally grown steadily in this zone, the average price for vacant lots has dipped slightly. Depending on lot sizes, vacant land within this zone can supply between 190 and 760 new houses, which contributes to the Shire's oversupply of residential land and suggests there is no need to zone additional Rural Residential land.

### Rural Smallholdings zone

The Rural Smallholdings zone is the fourth most popular zone, with 18 new houses receiving Building Approval. Across the January 2008-15 period, average construction costs within this zone have remained relatively stable at around \$260,000, although there was a \$20,000 increase in 2014. Most vacant lots sales occurred in 2014, due to land release around Padbury Road and Loxton Drives. Otherwise, vacant lot sales were very low (13 - the second lowest of all zones). House sales number 28, which only two less than those sold within the Rural Residential zone. The average price in 2014 was \$169,444, which is significantly lower than across all years - \$288,421. Average house prices have fallen from \$526,250 in 2008 to \$345,000 in 2014. Across the whole period prices appear to have remained stable. However, the sale of a \$5million house in 2013 has skewed this statistic. If not for this sale, average house prices across the period would be \$414,285, which is a drop of over \$100,000 since 2008. The potential dwelling supply from vacant land in this zone is 654, which far outstrips the expected need for 460 houses needed across the Shire over the next 35 years. The significant oversupply of vacant land within the Rural Smallholdings zone, is undoubtedly affecting property values in this zone, as well as the number of sales. The oversupply of vacant residential land in other zones is also likely to be exacerbating this situation.

### General Farming zone

The General Farming zone is unique, in that the demand for housing here is strongly related to agricultural activities and is constrained by stringent subdivision controls, which are aimed at maximising the potential of agriculture to contribute to the State's economic development. Nevertheless, it is worth noting the low demand for Building Approvals, relatively cheap construction costs, steady number of sales and the high property values, which are likely to be related to both building design and the agricultural productivity of the associated land.

### Town Centre zone

The Town Centre zone is also unique, in that future residential growth is constrained by its fairly compact area, commercial and civic development. The supply of vacant residential lots is relatively high (24), given the small area. Despite this supply, Building Approval has been issued for just one house since January 2008 at an estimated construction cost of \$254,154. Three vacant lots and 18 houses have been sold within the area. The average price of vacant lots has remained stable at around \$110,000. However, average house prices have dropped significantly from \$435,000 in 2008 to \$265,000 in 2014. The average house price across all years is \$343,638. It seems likely that the Shire's oversupply of residential land, particularly within the urban areas, is adversely affecting house prices and numbers of sales, but perhaps not the average prices of vacant lots.

## Recommendations

It is recommended that the following strategies be incorporated into the Draft Local Planning Strategy:

1. the Housing Land Audit be updated annually, with a full audit and the Housing Market Analysis being carried out every 3-5 years or sooner when significant market impacts are observed, in order to monitor the demand for and supply of residential land; and
2. no more housing land is to be released within:
  - a. the Development zone, by way of Local Structure Plans; or
  - b. the Rural Residential and Rural Smallholdings by way of rezoning;unless the demand for housing is adequately aligned with the supply of housing land within these zones, after consideration of the Shire's Housing Land Audit and Market Analysis and the District Structure Plan.





# Appendix D

## Land Demand Modelling Paper

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**Local Planning Strategy Review:  
Future Land Demand Paper**

*TPG (for Shire of Irwin)*

**Revised Final Report  
September 2014**



**AECgroup**  
Outcome Driven

## Document Control

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Job Name: SHIRE OF IRWIN Local Planning Strategy  
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Final Report Revision 1.0	11 August 2014	SJC	ARP
Final Report Revision - FINAL	19 August 2014	SJC	ARP
Final Report Revision - FINAL	9 September 2014	SJC	

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# Executive Summary

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## Background

The Shire of Irwin is located 365 kilometres north of Perth and covers a geographical area of 2,222 square kilometres. Dongara and Port Denison are the main town centres (located on the Irwin River) and contain the majority of the Shire's population.

The Shire of Irwin is currently in the process of reviewing its *Local Planning Strategy*. The aim of the review is to provide a contemporary document that establishes a direction for future planning, development and management of land uses within the Shire for the next 15 to 20 years.

## Purpose of Report

This report is the *Employment and Lands Modelling Paper* and will inform the local planning strategy review and future planning scheme outcomes.

This report specifically identifies the anticipated likely future employment projection and the land use type and quantity required to facilitate efficient and productive economic and socio-demographic development in the Shire of Irwin.

## Population Growth

The Shire of Irwin recorded an estimated population of 3,675 residents in 2012 (ABS, 2012a). The population has been growing at an above average 1.7% p.a. over the past 10 years, with an expectation this will continue at an estimated 1.6% p.a. to reach 4,696 residents by 2025 (and 6,884 residents by 2050).

The Shire of Irwin's population is older and ageing at a faster rate than State and regional averages. This has significant implications for future planning for infrastructure and services to support growth of the population.

## Dwelling Capacity

An assessment of the capacity of vacant land zoned for residential purposes within the townsites of Dongara and Port Denison has been undertaken to assess the amount of capacity that the existing land available for residential purposes has to accommodate the projected population growth.

The total vacant zoned residential and rural-residential land within the urban area has the potential to generate up to approximately 2,282 dwellings according to the Dongara-Port Denison District Structure Plan, which is sufficient to accommodate the projected population growth up to the year 2050.

The total future dwelling capacity of existing zoned land and future residential land identified under the Dongara-Port Denison District Structure Plan amounts to an overall potential capacity of 9,806 dwellings, thereby indicating a substantial surplus in residential land supply.

## Opportunities and Challenges

The Shire of Irwin economy is largely reliant on the agriculture and fishing and mining (mineral sands) and resources (oil and gas) industries. Tourism is a key sector for the Shire and a major source of employment, as is the local boat building industry and associated marine sector. Iron ore mining is a key sector for the broader region and the Shire of Irwin is an attractive location and key service base for the transitional FIFO and DIDO population.

Leveraging existing strengths and diversifying the regional economic base will be important for the future sustainability of the Shire. Specific opportunities will need to focus on encouraging new industry and/ or value adding of existing agricultural, fishing and tourism product, as well as harnessing the potential of the local and regional resources sector.

The Shire will also benefit from improved hard and soft infrastructure (such as telecommunications) to attract business and industry, and provision of sufficient community infrastructure to support population growth.

## Projected Employment and Land Requirements

Employment and land demand modelling has been based on detailed socio-economic analysis.

Employment projections indicate by 2025, the Shire of Irwin will have approximately 1,647 employees (and approximately 2,413 employees by 2050). These jobs are anticipated to be driven by growth of the resource sector and associated resource services industries, tourism and population services sectors such as health care, education, retail and accommodation and food services. Construction will also continue to be a key sector of employment for the region.

In order to support this employment and industry growth, suitably zoned employment lands in the right location will be required to accommodate and attract business investment to support sustainable socio-economic growth. Land requirements to support this investment attraction and employment growth across Irwin LGA are detailed in the table below.

Table E.1: Land Projection by Land Type, Irwin LGA (Additional Square Metres from 2011)

Land Type	2011	2016	2021	2025	2050	Av. Ann. % Growth
Commercial Zoned Land	0	2,559	4,748	6,326	17,930	1.6%
Industrial Zoned Land	0	29,201	55,650	73,790	186,145	1.7%
Community Purposes Zoned Land	0	2,439	5,147	7,366	22,641	3.1%
Primary Industry Land <sup>(a)</sup>	0	9,028	13,361	15,688	30,331	0.6%
Utilities	0	383	797	994	2,208	1.4%
Other	0	44	115	152	395	1.2%
<b>Total</b>	<b>0</b>	<b>43,654</b>	<b>79,817</b>	<b>104,316</b>	<b>259,650</b>	<b>1.4%</b>

Note: Industrial Zoned Land = marine industry, light industry and general industry zoned land. Community purposes zoned land = land designated occupied by schools, hospitals, shire offices, other. Primary Industries Land = Land used for agriculture and mining purposes (onsite). (a) Primary Industry Land is difficult to project and should be treated with caution.  
Source: AEC

It is anticipated that the types of activities likely to occupy the additional industrial zoned land include:

- **Construction and construction services.** Activities are likely to include a mix of residential and non-residential, heavy and civil engineering and general construction services such as services for land development and site preparation, building structure services (e.g. concreting), installation services such as plumbing and electrical and others such as plastering and carpentry.
- **Non-metallic mineral product manufacturing.** Activities are likely to include activities to supply the local construction sector such as cement and lime manufacturing.
- **Metal product manufacturing.** Activities are likely to include specialised manufacturing activities to support local industry, such as the emerging oil and gas industry and the local boat manufacturing and marine sectors.
- **Transport.** Including road, water and other transport types of services.
- **Food product manufacturing.**
- **Transport and other machinery and equipment manufacturing.** Likely to be represented mainly by the local boat building and marine sector.

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# 1. Introduction

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## 1.1 Background

The Shire of Irwin is located 365 kilometres north of Perth and covers a geographical area of 2,222 square kilometres. Dongara and Port Denison are the main town centres (located on the Irwin River) and contain the majority of the Shire's population.

In the context of the wider region, Dongara and Port Denison are strategically located within a 45 minute drive from the City of Geraldton - the Batavia Coast's commercial, industry and service centre. Proximity to the major employment centre, in addition to a variety of local industry opportunities and relaxed lifestyle, makes the Shire of Irwin an attractive place to live. However, historically this proximal relationship to Geraldton has also hindered growth, particularly due to the inability of Dongara and Port Denison to attract services that are readily accessible in Geraldton.

The Shire of Irwin economy is largely reliant on the agriculture and fishing and mining (mineral sands) and emerging resources (oil and gas) industries. Tourism is a key sector for the Shire and a major source of employment.

Over the past 10 years, the Shire of Irwin has experienced above average population growth compared to regional and State growth trends. This growth has been driven by establishment and growth of the regional resources sector, the attractiveness of Dongara and Port Denison as a place for residents to live, and the growth of the local tourism sector.

Despite this growth, the Shire of Irwin faces many challenges, including a lack of economic diversity. The Shire of Irwin is currently undertaking the necessary planning to create a local environment that facilitates business investment, economic diversification and jobs growth to support the expanding population.

## 1.2 Project Purpose

In order to respond to, plan for and devise strategies to facilitate growth, the Shire of Irwin is currently reviewing their *Local Planning Strategy*.

The aim of the Local Planning Strategy Review is to provide a contemporary document that establishes a direction for future planning, development and management of land uses within the Shire for the next 15 to 20 years. The Strategy will be used to inform future planning scheme reviews and/ or amendments.

### **Purpose of Report**

This report is the *Employment and Lands Modelling Paper* and identifies the likely future employment scenarios and the land use type and quantity required to facilitate efficient and productive economic and socio-demographic development.

Employment and lands demand Modelling has been based on detailed socio-economic analysis. These forecasts will be used to inform local planning outcomes for the Shire of Irwin.



## 2. Regional Overview

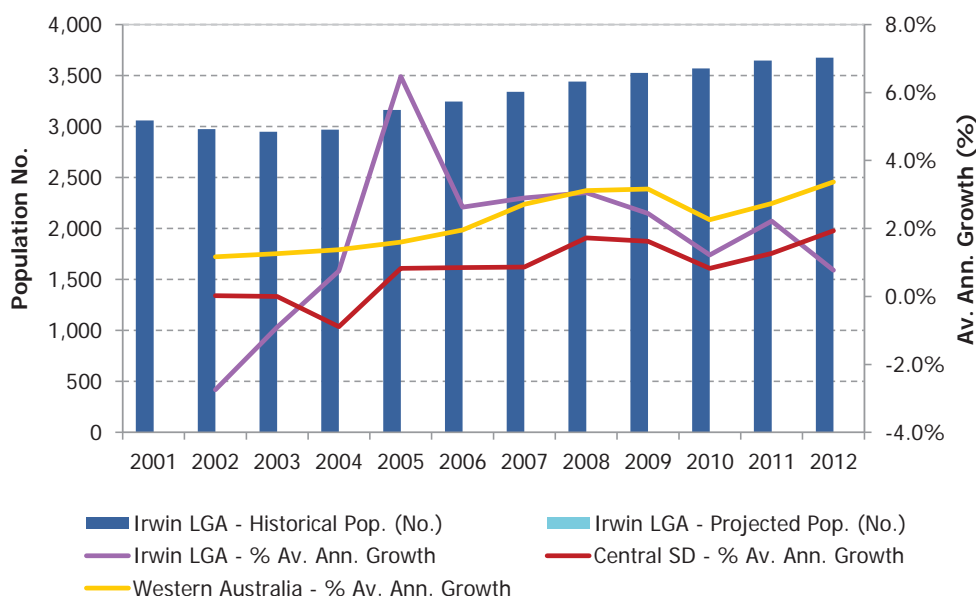
The Shire of Irwin is the southern most LGA of the Batavia Coastline. The Shire of Irwin offers a relaxed community lifestyle set amongst a blend of coastal and rural landscapes. The majority of the Shire’s population is settled in the townships of Dongara and Port Denison on the Irwin River.

In the context of the broader Central Statistical Division (SD) (also broadly known as the Mid West-Gascoyne Region of WA), the Shire of Irwin sits as a vibrant coastal settlement and lifestyle community on the fringe of the vast resource and minerals province that characterises the Central SD.

### 2.1 Population

The Shire of Irwin recorded an estimated population of 3,675 residents in 2012 (ABS. 2012a). The population has been growing at an above average 1.7% p.a. over the past 10 years. The Shire of Irwin’s population is older and ageing at a faster rate than State and regional averages. This has significant implications for future planning for infrastructure and services to support growth of the population.

Figure 2.1: Historical and Projected Population, Irwin LGA 2001-2031p

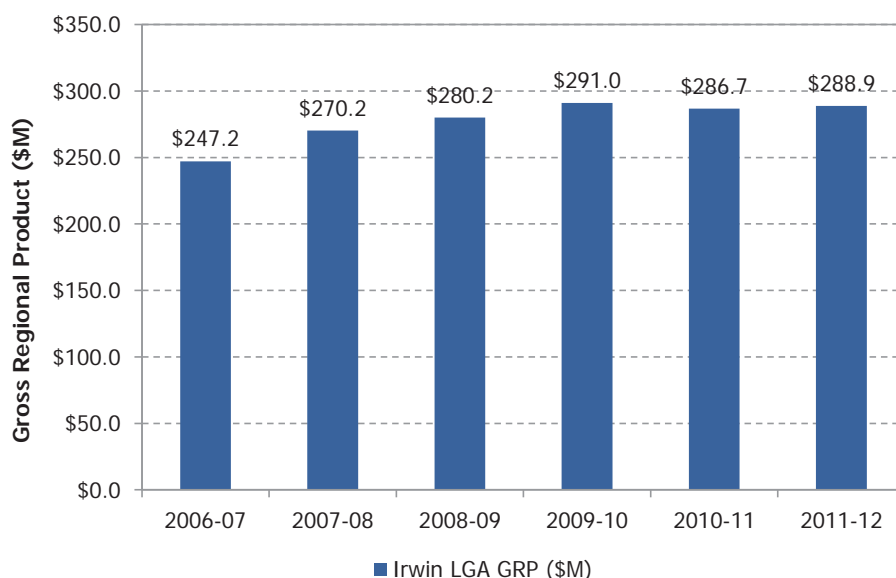


Source: ABS (2012a), WA Tomorrow (2012)

### 2.2 Economy

The Shire of Irwin economy has been founded on strong agriculture and fishing industries. The unique combination of natural and cultural (traditional and European) assets and coastal lifestyle has resulted in a local tourism industry that is seasonal in nature. More recently, mining and resources industries have become a major driver of the local and regional economies.

Figure 2.2: Gross Regional Product, Irwin LGA 2006-07 to 2011-12



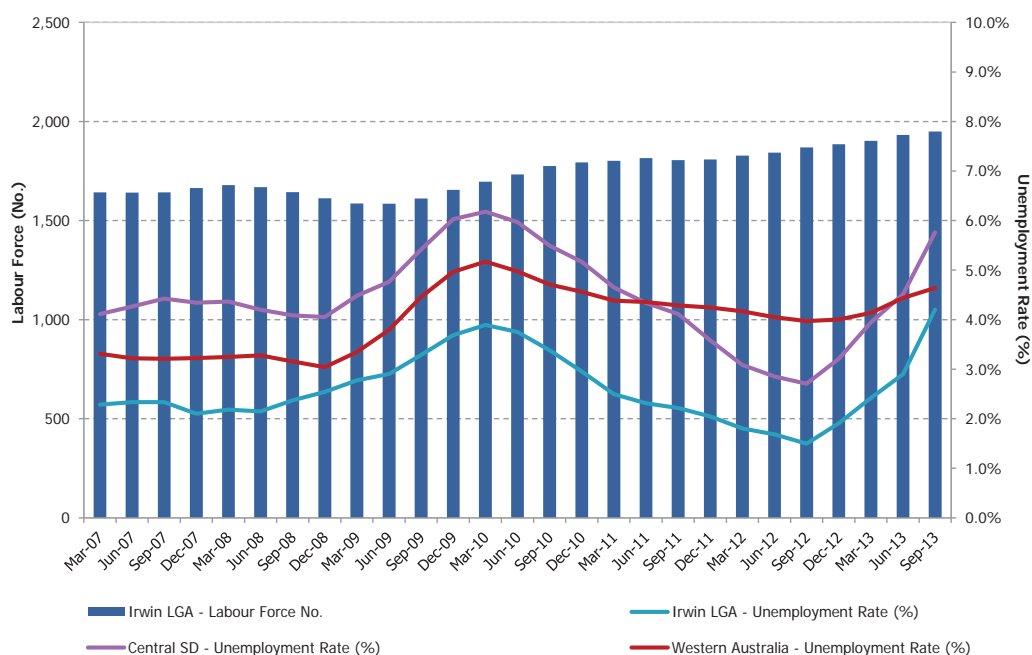
Source: AEC (2013)

### 2.3 Employment

The Shire of Irwin had a labour force of 1,950 in September Quarter 2013. Unemployment has generally fluctuated between a 1.5% and 3.9% over the past five years, increasing to 4.2% in the September Quarter 2013. Unemployment rates in Shire of Irwin continue to remain below broader regional (5.8%) and State (4.6%) levels.

Fluctuations in unemployment and labour force are likely to be influenced by the seasonality of local industry, such as tourism and fishing. The broader regional resource sector is also likely to influence fluctuations in the Shire of Irwin labour market.

Figure 2.3: Labour Force and Unemployment, Irwin LGA September Q 2013



Source: DEEWR (2013)

Despite a growing economy low unemployment rates the Shire faces a number of challenges including a lack of economic diversity, seasonality of its leading sectors (agriculture, fishing and tourism), cyclical nature of the resource sector and a limited ability to attract and retain youth in the area (limiting the capacity, vibrancy and skills availability of the local workforce).

Opportunities for economic development and challenges to be overcome are discussed further in Chapter 3.0.

## 3. Challenges and Opportunities for Growth

The Shire of Irwin's natural assets, including high quality agricultural lands, accessibility to one of the world's few recognised sustainable 'wild fisheries' and the abundance of natural mineral and gas resources, are the cornerstone of the Shire of Irwin's economy.

The meeting of coastal assets with rural landscapes provides an ideal backdrop for a healthy tourism industry, and also make the Dongara-Port Denison townships a preferred settlement location for those seeking a 'sea-change' lifestyle.

### 3.1 Challenges

Existing challenges and responses for the Shire of Irwin include:

Table 3.1: Irwin LGA, Challenges and Potential Responses

Challenge	Description	Responses
Ageing Population	<ul style="list-style-type: none"> <li>Demographics indicate a large and ageing population – this has implications for demand for services (particularly health and aged care services) and the provision of skilled services workers in the region, along with sufficient infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Develop additional aged care/ health services (where possible) to support increasing older age demographic. It is likely that these services will be extensions of regional services provided through Geraldton.</li> </ul>
Community Infrastructure	<ul style="list-style-type: none"> <li>Existing infrastructure may be insufficient to support population increases</li> </ul>	<ul style="list-style-type: none"> <li>Develop additional community infrastructure in response to increasing population. For example, provision of health, education and new recreational facilities (particularly on the foreshore to cater for both resident demand and tourism growth).</li> </ul>
Lack of Economic Diversity	<ul style="list-style-type: none"> <li>The economy is heavily reliant on the mining, tourism and fishing industry. A lack of economic diversity opens the Shire up to economic risk.</li> <li>Seasonality of key industries (e.g. tourism, agriculture, retail) may constrain employment opportunities and deter business attraction/ investment.</li> <li>Cyclical nature of the mining industry also a constraining factor.</li> <li>Increased regulation of the fishing (Rock Lobster) industry (limiting season and volumes of catch) has impacted fishing business in the Shire and may restrict diversification of this industry base.</li> </ul>	<ul style="list-style-type: none"> <li>Develop tourism activities/ products that promote year round visitation and increase visitation across the Shire</li> <li>Develop a Shire tourism brand that markets key points of differentiation compared to other areas</li> <li>Tourism infrastructure/ short stay accommodation development to grow sector and to cater for tourism seasonality and a broader tourism market</li> <li>Promote and support networking of local business to supply mining and other major industry activities</li> <li>Consolidate commercial centre as a focus for activity</li> <li>Increase flexibility in the existing Planning Scheme to encourage development and intensification of existing areas</li> <li>Consider lengthening of tourism and retail business hours in business activity centre (de-regulation of shopping hours) to offer great service level to residents, tourists and the wider service population (including FIFO/DIDO workers).</li> </ul>
Limited and/ or Unreliable Utility and Communications Infrastructure	<ul style="list-style-type: none"> <li>The Shire has limited telecommunications infrastructure and unreliable electricity supply (power outages) - This could be a limiting factor and detractor for business investment.</li> </ul>	<ul style="list-style-type: none"> <li>Where possible, leverage established Geraldton NBN and communications infrastructure.</li> <li>Lobby for funding to extend communications infrastructure throughout the region.</li> <li>Advocate for ongoing investment and upgrade of electricity infrastructure to ensure reliability of supply.</li> <li>Investigate potential 'green energy' solutions to electricity supply in the region.</li> </ul>

Challenge	Description	Responses
Accessibility	<ul style="list-style-type: none"> <li>The Shire is mainly accessed by road (an hour's south of Geraldton and four hours north of Perth).</li> <li>Air passenger transport is mainly provided through the regional airport at Geraldton.</li> <li>There is a lack of suitable Port infrastructure to support the local mining sector (mining products are exported through Geraldton).</li> </ul>	<ul style="list-style-type: none"> <li>Work with Geraldton Regional Airport to leverage and establish stronger linkages with Shire of Irwin visitor tourism market.</li> <li>Ensure that road transport infrastructure, services and information are available to attract travellers south of the Geraldton service centre.</li> <li>Use Port Denison port infrastructure (tourism and fishing industry) as a point of differentiation from Port Geraldton (resource industry export hub).</li> </ul>
Lack of Young-Middle Age Residents	<ul style="list-style-type: none"> <li>Difficulty attracting and retaining young and middle aged adults, primarily as a result of limited career opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>Improve attractiveness of region to youth through improvement of job opportunities – both number and diversity of career opportunities and educational pathways</li> </ul>
Lower Levels of Educational Attainment	<ul style="list-style-type: none"> <li>Lower levels of educational attainment (due to a lack of available education and career pathways) - may impact future supply of skilled workers.</li> </ul>	<ul style="list-style-type: none"> <li>Enhance skills development pathways (links between industry and schools, VET, tertiary education courses/ programs) to meet skills demands of the Shire and broader region</li> </ul>

### **Locational Influences: The Irwin and Geraldton Regional Centres Relationship**

The Dongara-Port Denison service centre is located in close proximity to Geraldton – the Batavia Coast's regional business and service centre. This proximity to Geraldton is both an advantage and a challenge for future growth of the Dongara-Port Denison activity centre.

Proximity to Geraldton means that Dongara-Port Denison benefits right now from easy access to a wide range of business and community services (e.g. health services) and proximity to a large and stable economic base, which offers labour market and business opportunities from which Dongara-Port Denison residents and businesses can easily access and capitalise upon. Proximity to a major service centre contributes to the overall liveability and attractiveness of Dongara-Port Denison as a place to live and invest.

However, whilst there are many existing benefits derived from the relationship with Geraldton, Dongara-Port Denison future growth and status as a 'regional centre' in its own right is in some ways inhibited by proximity to Geraldton. In essence, Geraldton acts as a larger and established competitor for any substantial industry investment or attraction of services.

This phenomenon has been seen for many regional centres and towns across Australia. Some of these smaller townships have prospered, whilst others have experienced declining population and economic trends. The key is to identify what sets the local apart and leverage this competitive advantage. Key examples include Toowoomba (major centre) and Dalby (smaller centre, but with a rich agricultural service centre with capacity to expand into mining services) in south west Queensland and Armidale (major centre) and Uralla (smaller centre, with an interesting history and a focus arts and a culture of creativity) in New South Wales.

Of these, the Toowoomba and Dalby relationship is an example of where Dalby (the smaller centre) has undergone significant changes and experienced regional centre status in its own right (albeit on a smaller scale than its major centre counterpart). This transition occurred primarily due to opportunities in emerging CSG industries in the Surat Basin, and Dalby's ability to harness this opportunity to attract local industry, residents and services.

In the case of Dongara-Port Denison, competition with Geraldton for services will continue. Future attraction of services and achievement of regional centre status is therefore hinged upon the Shire of Irwin's ability to identify and act on economic development opportunities to diversify and grow the economy and find its niche rather than compete directly with Geraldton. Much of this will be dependent upon external factors, however, success will also be reliant upon the proactivity of local government and community in responding to opportunities as they arise and the ability of the Dongara-Port Denison activity centre to differentiate itself from Geraldton through the development of its own regional centre status and brand.

## 3.2 Opportunities

Leveraging existing strengths and diversifying the local economic base will be important for securing the future of the Shire of Irwin.

Agriculture, fishing (and aquaculture) and tourism will continue to feature as leading sectors for the Shire. However, there will be a need to diversify the existing offering by leveraging more productive and innovative technologies, actively engaging with markets and through provision of infrastructure to support industry development and growth.

Emerging resource and energy markets represent a key opportunity for the Shire of Irwin with the towns of Dongara-Denison having the opportunity to attract a range of mining and resource service industries to support the broader industry growth. The Shire's role in the future provision of support services for mineral sands mining, oil and gas industries as well as the renewable energy sector should be considered to establish the nature of Dongara-Port Denison's role in broader regional industry growth.

Support of the above opportunities will ultimately give rise to local employment and business investment opportunities which in turn will support population growth.

### 3.2.1 Key Industry Opportunity Summary

Table 3.2: Growth Opportunities, Irwin LGA

Industry	Description	Key Growth Opportunities
Mining & Resources	<ul style="list-style-type: none"> <li>Largest sector of the economy (by value) (\$136.4 million GRP in 2011-12, 51.5%)</li> <li>The value of the sector declined slightly on previous years (driven by declines in commodity prices)</li> <li>Seventh largest employer (5.0%)</li> <li>Production: Mineral sands extraction, petroleum, gas</li> </ul>	<ul style="list-style-type: none"> <li>Oil and gas discoveries have promoted significant exploration of oil and gas sites in proximity to Dongara. Opportunities to support development of this industry (production phase).</li> <li>Oil and gas industry support services.</li> <li>Mineral sands industry support services.</li> <li>Unconventional gas industry development (fracking).</li> </ul>
Agriculture, forestry & fishing	<ul style="list-style-type: none"> <li>Third largest sector of the economy (by value) (\$23.2 million GRP in 2011-12, 8.8%)</li> <li>Second largest employer (14.8%) (2011)</li> <li>114 agricultural, forestry and fishing businesses (2011-12) (73 of these are agriculture businesses, with the rest being primarily fishing)</li> <li>Production: <ul style="list-style-type: none"> <li>Agriculture: mainly broadacre crops, horticulture, sheep, cattle</li> <li>Fishing: Rock lobster, fishing, abalone, other fishing</li> <li>Aquaculture.</li> </ul> </li> </ul>	<p><b>Agriculture:</b></p> <ul style="list-style-type: none"> <li>Diversification of agriculture production to include more intensive and horticultural production activities, maximising the use of Good Quality Agriculture Lands (GOAL).</li> <li>Join regional efforts to establish a Batavia Coast food 'brand' to assist in in regional export of agriculture product.</li> </ul> <p><b>Fishing &amp; Aquaculture:</b></p> <ul style="list-style-type: none"> <li>Build on existing fishing and aquaculture strengths by supporting local aquaculture innovation and value adding activities in line with broader regional aquaculture initiatives.</li> <li>Actively develop local, national and international markets for local produce (leveraging premium brand and value).</li> <li>Potential opportunities for marine industry support services.</li> </ul>
Construction	<ul style="list-style-type: none"> <li>Second largest sector (by value) (\$31.7 million, 12.0%)</li> <li>Largest employer (16.3%)</li> <li>Drivers: population growth and industry growth (e.g. mining sector development, other non-residential).</li> </ul>	<ul style="list-style-type: none"> <li>Demand for construction likely to be driven by: <ul style="list-style-type: none"> <li>Growth of local industry (e.g. oil and gas, commercial)</li> <li>Population growth</li> <li>Regional infrastructure development to support mining and resource sector growth.</li> </ul> </li> </ul>
Tourism	<ul style="list-style-type: none"> <li>121,219 visitors to Shire of Irwin in 2013: <ul style="list-style-type: none"> <li>Domestic: 42,000 day, 74,000 overnight</li> <li>International: 5,219 visitors</li> </ul> </li> <li>286,149 visitor nights spent in Shire of Irwin in 2013</li> <li>Accommodation and food services is the fourth largest employer (10.1%)</li> <li>Retail trade is the third largest employer (11.8%)</li> <li>Established tourism infrastructure and market in Dongara-Denison</li> </ul>	<p>Opportunities to:</p> <ul style="list-style-type: none"> <li>Develop additional tourism product offerings to grow the sector (e.g. luxury and corporate tourism markets, 4-star hotel)</li> <li>Increase awareness of the region through a greater digital tourism presence.</li> <li>Develop a unique brand and point of difference to attract residents and visitors to Dongara-Port Denison.</li> <li>Increased linkages of local tourism industry with other key industries (e.g. agriculture/food, mining and resources).</li> </ul>
Health Care and Social Assistance	<ul style="list-style-type: none"> <li>Fourth largest sector of the economy (by value) (\$6.2 million, 4.2%)</li> <li>Health care and social assistance is the eighth largest employer (4.5%)</li> <li>Drivers: Population growth, ageing population, increasing propensity of demand/ consumption per capita.</li> </ul>	<ul style="list-style-type: none"> <li>Develop additional aged care/ health facilities, skills and services to support increasing older age demographic.</li> </ul>



## 4. Irwin Future Population & Employment Profile

Based on the Shire of Irwin's opportunities for growth, which have been incorporated into the AEC Land Demand Model, this section identifies:

### The population profile:

- Projected number of persons to 2025 (and 2050 presented in brackets).
- The projected dwellings required to accommodate the population.

### The employment profile:

- Projected employees by industry to 2025 (and 2050 presented in brackets).
- The additional floorspace (square metres) and land required to accommodate industry growth.

These projections will be used to inform used to inform local planning outcomes for the Shire of Irwin.

### 4.1 Methodology

The methodology used for the Growth and Forecast Profile is detailed in **Appendix A**. The methodology utilises a wide range of sources to understand the Shire of Irwin's potential future population and employment profile and subsequent land requirements to promote socio-economic growth.

The Medium Scenario for the assessment is presented in the sections below (WA Tomorrow Projections – Scenario C). Low (WA Tomorrow – Scenario A) and High (WA Tomorrow-Scenario E) modelling scenarios are provided in **Appendix B**.

### 4.2 Population & Dwellings

In 2012, the Irwin LGA population was estimated to be 3,675. Under the Medium Population Scenario (Scenario C) it is estimated that the Irwin LGA will grow by:

- 1,021 persons (or an average of 79 persons per annum to 2025) to reach 4,696 residents by 2025.
- 3,209 persons (or an average of 84 residents per annum) to reach 6,884 residents by 2050.

The Low and High Scenarios indicate that population growth may range between 4,487 and 4,681 residents by 2025 (and 6,766 and 7,122 residents by 2050).

**Table 4.1: Historical and Projected Population, Irwin LGA 2011-2050p (Medium Scenario)**

Catchment	2011	2012	2016	2021	2025	2050	Total Change	Av. Ann. % Growth
Irwin LGA	3,647	3,675	3,991	4,388	4,696	6,884	3,237	1.6%
Central SD	65,283	66,543	70,498	75,694	79,700	107,645	42,362	1.3%
WA	2,353,409	2,432,706	2,624,794	2,845,715	3,026,377	4,422,445	2,069,036	1.6%

Note: The Medium Scenario is modelled on WA Tomorrow Projections – Scenario C.  
Source: ABS (2012a), WA Tomorrow (2012)

There are currently 1.9 persons per household in the local area, this is not anticipated to change significantly moving forward. In order to support this population growth it is anticipated approximately 518 additional dwellings will be required to support the additional population in the region to 2025 (and 1,798 to 2050).



#### 4.2.1 Existing Dwelling Capacity

An assessment of the capacity of vacant land zoned for residential purposes within the townsites of Dongara and Port Denison has been undertaken to assess the amount of capacity that the existing land available for residential purposes has to accommodate the projected population growth.

The total vacant zoned residential and rural-residential land within the urban area has the potential to generate up to approximately 2,282 dwellings according to the Dongara-Port Denison District Structure Plan, which is sufficient to accommodate the projected population growth up to the year 2050.

The total future dwelling capacity of existing zoned land and future residential land identified under the Dongara-Port Denison District Structure Plan amounts to an overall potential capacity of 9,806 dwellings, thereby indicating a substantial surplus in residential land supply.

**Table 4.2: Potential Demand for and Supply of Residential Land (Medium Scenario)**

Catchment	Historical Dwellings		Future Demand				Current Potential Supply (District Structure Plan 2014)
	2011	2012	2016	2021	2025	2050	
Irwin LGA	1,882	2,008	2,102	2,435	2,526	3,806	9,806 dwellings

Note: The Medium Scenario is modelled on WA Tomorrow Projections – Scenario C.  
Source: ABS (2012a), WA Tomorrow (2012)

#### 4.2.2 Current Commercial and Industrial Zoned Land Areas

A calculation of the gross land area relating to commercial and industrial zoned land within the townsites of Dongara and Port Denison has been undertaken and is summarised in the following table:

**Table 4.3: Existing Zoned Commercial and Industrial Zoned Land**

Zone	Land Area (Hectares)
Town Centre	22.5172 ha
Neighbourhood Commercial	0.5938 ha
Service Commercial	4.0999 ha
<b>Sub Total Commercial</b>	<b>27.2109 ha</b>
General Industry	34.1602 ha
Light Industry	10.9547 ha
Marine Based Industry	10.2153 ha
<b>Sub Total Industrial</b>	<b>55.3302 ha</b>

Source: TPG

### 4.3 Employment & Employment Land

Over the next 40 years, the key drivers of the Shire of Irwin economy are anticipated to be the resource sector and associated resource services industries, tourism and population services sectors such as health care, education, retail and accommodation and food services. Construction will also continue to be a key sector for the region in response to local demand and major projects.

Table 4.4 shows projected employment by 1-digit ANZSIC code for all industries and 2-digit ANZSIC code for manufacturing between 2011 and 2050. It is estimated that employment in the Irwin LGA will grow by:

- 455 employees to reach 1,647 employees by 2025 (between 1,623 and 1,658 employees in the low and high scenarios).
- 1,221 employees to reach 2,413 employees by 2050 (between 2,400 and 2,424 employees in the low and high scenarios).

**Table 4.4: Employment Projection by Industry Irwin LGA, 2011-2050p (Medium Scenario)**

Land Type	2011	2016	2021	2025	2050	Total Change	Av. Ann. % Growth
Agriculture, Forestry and Fishing	190	188	192	194	204	15	0.2%
Mining	61	98	106	111	142	81	2.2%
Manufacturing	95	124	136	146	217	121	2.1%
<i>Food Product Manufacturing</i>	25	29	31	33	44	19	1.5%
<i>Beverage and Tobacco Product Manufacturing</i>	1	1	1	1	3	2	4.0%
<i>Textile, Leather, Clothing and Footwear Manufacturing</i>	1	1	1	1	1	0	0.4%
<i>Wood Product Manufacturing</i>	7	8	9	10	14	7	1.8%
<i>Pulp, Paper and Converted Paper Product Manufacturing</i>	0	0	0	0	0	0	n.a.
<i>Printing (including the Reproduction of Recorded Media)</i>	0	0	0	0	0	0	-0.5%
<i>Petroleum and Coal Product Manufacturing</i>	0	0	0	0	0	0	n.a.
<i>Basic Chemical and Chemical Product Manufacturing</i>	1	2	2	2	3	2	3.0%
<i>Polymer Product and Rubber Product Manufacturing</i>	0	0	0	0	0	0	n.a.
<i>Non-Metallic Mineral Product Manufacturing</i>	27	35	39	42	64	37	2.2%
<i>Primary Metal and Metal Product Manufacturing</i>	11	14	15	16	23	11	1.8%
<i>Fabricated Metal Product Manufacturing</i>	9	13	15	17	30	20	3.0%
<i>Transport Equipment Manufacturing</i>	1	1	2	2	4	4	5.3%
<i>Machinery and Equipment Manufacturing</i>	8	13	14	15	22	14	2.6%
<i>Furniture and Other Manufacturing</i>	5	7	7	7	10	4	1.4%
Electricity, Gas, Water and Waste Services	9	10	11	11	15	6	1.3%
Construction	172	183	210	226	325	153	1.6%
Wholesale Trade	5	6	6	7	8	3	1.3%
Retail Trade	140	153	167	177	247	107	1.5%
Accommodation and Food Services	133	147	158	166	220	87	1.3%
Transport, Postal and Warehousing	53	58	65	69	95	42	1.5%
Information Media and Telecommunications	1	1	1	1	2	1	1.6%
Financial and Insurance Services	12	14	16	18	25	13	1.9%
Rental, Hiring and Real Estate Services	21	28	30	32	39	18	1.6%
Professional, Scientific and Technical Services	33	41	47	51	81	47	2.3%
Administrative and Support Services	17	18	20	22	33	16	1.7%
Public Administration and Safety	50	59	75	87	156	106	3.0%
Education and Training	87	93	108	118	196	109	2.1%
Health Care and Social Assistance	62	98	125	149	312	250	4.2%
Arts and Recreation Services	8	9	11	13	30	22	3.4%
Other Services	42	43	46	49	66	24	1.2%
<b>TOTAL EMPLOYMENT</b>	<b>1,192</b>	<b>1,374</b>	<b>1,531</b>	<b>1,647</b>	<b>2,413</b>	<b>1,221</b>	<b>1.8%</b>

Note: The Medium Scenario is modelled on WA Tomorrow Projections – Scenario C. Source: AEC

Additional and suitably zoned employment lands in the right location will be required to attract business investment and support sustainable socio-economic growth and creation of jobs to support the region. Table 4.5 presents the anticipated projected additional land requirements to support population growth forecasts in Table 4.4.

In order to support the above employment projections to 2025 (and to 2050 in brackets) there will be a requirement for:

- An additional 6,326 square meters (17,930 square metres) of Commercial Zoned Land compared to 2011.
- An additional 73,790 square metres (186,145 square metres) of Industrial Zoned Land compared to 2011.
- An additional 7,366 square metres (22,641 square metres) of Community Purposes Zoned Land compared to 2011.

**Table 4.5: Land Projection by Land Type, Irwin LGA (Additional Square Metres)**

Land Type	2011	2016	2021	2025	2050	Av. Ann. % Growth
Commercial Zoned Land	0	2,559	4,748	6,326	17,930	1.6%
Industrial Zoned Land	0	29,201	55,650	73,790	186,145	1.7%
Community Purposes Zoned Land	0	2,439	5,147	7,366	22,641	3.1%
Primary Industry Land <sup>(a)</sup>	0	9,028	13,361	15,688	30,331	0.6%
Utilities	0	383	797	994	2,208	1.4%
Other	0	44	115	152	395	1.2%
<b>Total</b>	<b>0</b>	<b>43,654</b>	<b>79,817</b>	<b>104,316</b>	<b>259,650</b>	<b>1.4%</b>

Note: Industrial Zoned Land = marine industry, light industry and general industry zoned land. Community purposes zoned land = land designated occupied by schools, hospitals, shire offices, other. Primary Industries Land = Land used for agriculture and mining purposes (onsite). (a) Primary Industry Land is difficult to project and should be treated with caution. Note: This estimate is not able to fully account for any existing spare capacity in the facilitates and spaces currently provided in the region.  
Source: AEC

The high and low projection scenarios highlight a total additional land demand by 2025 of between 102,153 square metres and 105,719 square meters (between 259,530 square metres and 260,868 square meters by 2050).

It is anticipated the types of activities likely to occupy the *additional industrial zoned land* include:

- **Construction and construction services** (estimated to represent 38.7% of industrial land requirements). These services could include a mix of residential and non-residential, heavy and civil engineering and general construction services such as services for land development and site preparation, building structure services (e.g. concreting), installation services such as plumbing and electrical and others such as plastering and carpentry.
- **Non-metallic mineral product manufacturing** (15.2% of industrial land requirements). Activities are likely to include activities to supply the local construction sector such as cement and lime manufacturing.
- **Metal product manufacturing** (10.7% of industrial land requirements). Activities are likely to include specialised manufacturing activities to support local industry, such as the emerging oil and gas industry and the local boat manufacturing and marine sectors.
- **Transport** including road, water and other transport types of services (9.0% of land requirements).
- **Food product manufacturing** (6.6% of industrial land requirements).
- **Transport and other machinery and equipment manufacturing** which is likely to be represented mainly by the local boat building and marine sector (5.7% of industrial land requirements).

Additional community purpose zoned land will be required to support growth of the Shire of Irwin community with key activities to be catered for including:

- Health care services (including hospital, general practitioner and allied health services).
- Residential care and social assistance services (including aged care).
- Education facilities (e.g. school infrastructure).
- Government, public administration and emergency services assets.
- Other community infrastructure e.g. sports and recreation and community and cultural facilities.

A benchmarking exercise has been undertaken to provide a guide for future provision of community purpose types of facilities and assets to accommodate future growth in the Shire of Irwin (refer to **Appendix C**).

#### 4.3.1 Potential Land Demand Compared with Existing Vacant Zoned Land Supply

The Shire of Irwin currently has 22,631 square metres of vacant commercial zoned land, indicating an excess of vacant zoned land to accommodate commercial uses to 2050 (additional 17,930 square metres demanded by 2050) (refer to Table 4.6).

**Table 4.6: Commercial Land Projection (sqm)**

Land Type	2016	2021	2025	2050	Current Vacant Zoned Land Under LPS5
Commercial Zoned Land	2,559	4,748	6,326	17,930	22,631

Source: AEC, TPG

The Shire of Irwin is currently estimated to have 56,282 square metres of vacant industrial land (refer to Table 4.7). Industrial land projections indicate that this will only be sufficient to accommodate future demand to 2021, with a total additional 186,145 square metres of industrial land required by 2050.

**Table 4.7: Industrial Land Projection (sqm)**

Land Type	2016	2021	2025	2050	Current Vacant Zoned Land Under LPS5
Industrial Zoned Land	29,201	55,650	73,790	186,145	56,282

Source: AEC, TPG

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## Appendix A: Modelling Methodology

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The modelling methodology utilises the following key phases for determining future employment and land requirements for the Shire of Irwin:

- **Phase 1: Population Projections:** Population projections were developed using Estimated Resident Population (ERP) data from the ABS (2006 to 2012). WA Tomorrow (Series C) population projections were applied to 2026 and then growth was applied at a ‘tapering’ rate to 2031.
- **Phase 2: Employment Projections for Western Australia:** AEC has developed a macro-economic projection model for the Western Australian economy. This model utilises a range of historic relationships and industry trends to project employment by industry at the 1-digit ANZSIC level for Western Australia to 2051.
- **Phase 3: Disaggregating 19 Sector Employment to 72 Sectors:** WA employment forecasts (developed in phase 2) are further disaggregated across 72 sub-industries based on the proportions these industries make up of each of the 19 sectors as estimated using a 2009-10 Input-Output transaction table for Western Australia. The proportion each industry comprises within its parent sector in 2009-10 was assumed to remain constant, with the exception of sub-industries in which research indicated significant shifts are currently occurring or are anticipated to occur in the future.
- **Phase 4: Distributing Western Australian Employment Across Statistical Divisions:** Detailed WA employment projections are further distributed across WA’s Statistical Divisions utilising gravity modelling methods (i.e., gravity ‘pull’ effects based on size) which considers both population growth effects and existing industry size. Coefficients of gravity ‘pull’ for both population and industry were developed and applied to the additional employment in each industry in each time period to allocate the growth (or decline) across SDs. Industry coefficients were developed by identifying the proportion each SD makes of total WA employment in each industry in the previous time period (e.g., for 2016, the 2011 employment in each industry was used). Population coefficients for each SD were developed by identifying the average annual population growth rate of the SD, using population projections developed in Phase 1. Coefficients were rebased to aggregate to 1. Final estimates for SDs were developed through the application of both population and industry coefficients.
- **Phase 5: Distributing Employment Across the Central Statistical Division (SD):** Central SD employment projections from phase 4 were distributed across Destination Zones (at the 72 industry level) within the Central SD. This was achieved by using the same gravity modelling methods employed in phase 4. Industry coefficients were developed by identifying the proportion each DZ makes of total Central SD employment in each industry in the previous time period (e.g., for 2016, the 2011 employment in each industry was used). Population coefficients for each DZ were developed by identifying the average annual population growth rate of the corresponding LGA it is located within, using population projections for each LGA in the Central SD (developed in Phase 1). Coefficients were rebased to aggregate to 1. Final estimates for DZs were developed through the application of both population and industry coefficients.
- **Phase 6: Distributing Employment to Activity Centres:** Employment modelling/ forecasting and distribution was undertaken at the DZ level as this was the lowest geographic level in which data was available. Some DZs contain multiple key Activity Centres, some DZs have one key Activity Centre, and some DZs have no key Activity Centres. To distribute employment at the DZ geographic level to Activity Centres (and employment outside key Activity Centres), estimates were developed of the proportion of employment by industry in each DZ corresponding to each Activity Centre based on a virtual tour of the region, site visits and consultation with local and state government stakeholders.
- **Phase 7: Additional Land Requirements:** The following approach was used to identify additional land requirements in the Irwin LGA:
  - The disaggregated employment projections for the Irwin LGA were combined with assumptions of Gross Floor Area (GFA) requirements per employee across each industry (see Table A.1) to identify land requirements.

- o Estimates of land demand calculated above for 2011 were compared to estimates from the site audit, and corrected to equate to observed demand.
- o This correction was applied to all land demand projections to 2031 to develop gross land demand projections for the Mid West region.
- o A discount rate has been taken into account for land intensification and consolidation across gross land demand (ha) projections as some of the future demand is expected to be accommodated through existing (occupied) zoned lots. This comprises additional demand that can be met through existing vacant buildings and tenancies as well as the potential expansion of buildings/sheds/storage space on existing occupied lots.
- o Subsequently, an allowance has been made for infrastructure, open space and buffers in order to convert gross land requirements to net land requirements (ha).
- o Final estimates were provided as ‘additional square metre’ requirements by individual land use type in the Irwin LGA.

**Table A.1. Industry Correspondences and Land Use Modelling Drivers**

Industry Name (72 Industries)	Industry Name (19 Industries)	Land Use(s)	GFA/ Employee
Agriculture	Agriculture, Forestry and Fishing	PRI	600
Aquaculture	Agriculture, Forestry and Fishing	PRI	600
Forestry and Logging	Agriculture, Forestry and Fishing	PRI	600
Fishing, Hunting and Trapping	Agriculture, Forestry and Fishing	PRI	600
Agriculture, Forestry and Fishing Support Services	Agriculture, Forestry and Fishing	PRI	120
Coal Mining	Mining	PRI/CZL	270/23
Oil and Gas Extraction	Mining	PRI/CZL	270/23
Metal Ore Mining	Mining	PRI/CZL	270/23
Non-Metallic Mineral Mining and Quarrying	Mining	PRI/CZL	270/23
Exploration and Other Mining Support Services	Mining	PRI/CZL	270/30
Food Product Manufacturing	Manufacturing	IZL	110
Beverage and Tobacco Product Manufacturing	Manufacturing	IZL	110
Textile, Leather, Clothing and Footwear Manufacturing	Manufacturing	IZL	100
Wood Product Manufacturing	Manufacturing	IZL	80
Pulp, Paper and Converted Paper Product Manufacturing	Manufacturing	IZL	90
Printing (including the Reproduction of Recorded Media)	Manufacturing	IZL	90
Petroleum and Coal Product Manufacturing	Manufacturing	IZL	170
Basic Chemical and Chemical Product Manufacturing	Manufacturing	IZL	170
Polymer Product and Rubber Product Manufacturing	Manufacturing	IZL	220
Non-Metallic Mineral Product Manufacturing	Manufacturing	IZL	170
Primary Metal and Metal Product Manufacturing	Manufacturing	IZL	130
Fabricated Metal Product Manufacturing	Manufacturing	IZL	110
Transport Equipment Manufacturing	Manufacturing	IZL	100
Machinery and Equipment Manufacturing	Manufacturing	IZL	100
Furniture and Other Manufacturing	Manufacturing	IZL	120
Electricity Supply	Electricity, Gas, Water and Waste Services	UTE	120
Gas Supply	Electricity, Gas, Water and Waste Services	UTE	120
Water Supply, Sewerage and Drainage Services	Electricity, Gas, Water and Waste Services	UTE	120
Waste Collection, Treatment and Disposal Services	Electricity, Gas, Water and Waste Services	UTE	120



Industry Name (72 Industries)	Industry Name (19 Industries)	Land Use(s)	GFA/ Employee
Building Construction	Construction	CZL/IZL	30/80
Heavy and Civil Engineering Construction	Construction	CZL/IZL	30/80
Construction Services	Construction	IZL/OTH	80/0
Wholesale Trade	Wholesale Trade	IZL	120
Retail Trade	Retail Trade	CZL/IZL	30/80
Accommodation	Accommodation and Food Services	CZL	30
Food and Beverage Services	Accommodation and Food Services	CZL	30
Road Transport	Transport, Postal and Warehousing	IZL/OTH	120/0
Rail Transport	Transport, Postal and Warehousing	IZL/OTH	120/0
Water Transport	Transport, Postal and Warehousing	IZL/OTH	120/0
Air and Space Transport	Transport, Postal and Warehousing	IZL/OTH	120/0
Other Transport	Transport, Postal and Warehousing	OTH	30
Postal and Courier Pick-up and Delivery Services	Transport, Postal and Warehousing	IZL	120
Transport Support Services and Storage	Transport, Postal and Warehousing	IZL	120
Publishing (except Internet and Music Publishing)	Information Media and Telecommunications	CZL	100
Motion Picture and Sound Recording Activities	Information Media and Telecommunications	CZL	100
Broadcasting (except Internet)	Information Media and Telecommunications	UTE	100
Internet Publishing and Broadcasting and Services Providers, Websearch Portals and Data Processing Services	Information Media and Telecommunications	UTE	100
Telecommunications Services	Information Media and Telecommunications	UTE	100
Library and Other Information Services	Information Media and Telecommunications	CPZL	100
Finance	Financial and Insurance Services	CZL	23
Insurance and Superannuation Funds	Financial and Insurance Services	CZL	23
Auxiliary Finance and Insurance Services	Financial and Insurance Services	CZL	23
Rental and Hiring Services (except Real Estate)	Rental, Hiring and Real Estate Services	CZL/IZL	23/80
Property Operators and Real Estate Services	Rental, Hiring and Real Estate Services	CZL	23
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	Professional, Scientific and Technical Services	CZL	23
Computer System Design and Related Services	Professional, Scientific and Technical Services	CZL	23
Administrative Services	Administrative and Support Services	CZL	23
Building Cleaning, Pest Control and Other Support Services	Administrative and Support Services	CZL/IZL	23/120
Public Administration	Public Administration and Safety	CPZL	23
Defence	Public Administration and Safety	OTH	80

Industry Name (72 Industries)	Industry Name (19 Industries)	Land Use(s)	GFA/ Employee
Public Order, Safety and Regulatory Services	Public Administration and Safety	CPZL	50
Preschool and School Education	Education and Training	CPZL	70
Tertiary Education	Education and Training	CPZL	70
Adult, Community and Other Education	Education and Training	CPZL	50
Health Care Services	Health Care and Social Assistance	CPZL	23
Residential Care and Social Assistance Services	Health Care and Social Assistance	CPZL	23
Heritage, Creative and Performing Arts	Arts and Recreation Services	CPZL	23
Sports and Recreation Activities	Arts and Recreation Services	CPZL	23
Gambling Activities	Arts and Recreation Services	CZL	23
Repair and Maintenance	Other Services	CZL/IZL	23/80
Personal and Other Services	Other Services	CZL/CPZL	30/50
Private Households Employing Staff and Undifferentiated Goods- and Service-Producing Activities of Households for Own Use	Other Services	OTH	0

Source: ABS (2008), AEC

## Appendix B: Low and High Modelling Scenarios

The Low Scenario (WA Tomorrow – Scenario A) and High Scenario (WA Tomorrow – Scenario E) are presented in the tables below including:

- Population projections to 2050.
- Employment projections (by industry) to 2050.
- Projected land requirements (by type) to 2050.

### Population

**Table B.1: Historical and Projected Population, Irwin LGA 2011-2050p (Low Scenario <sup>(a)</sup>)**

Catchment	2011	2012	2016	2021	2025	2050	Av. Ann. % Growth
Irwin LGA	3,647	3,675	3,754	4,226	4,487	7,122	1.7%
Central SD	65,283	66,543	69,120	73,168	76,443	101,750	1.1%
WA	2,353,409	2,432,706	2,588,778	2,791,269	2,957,654	4,227,858	1.5%

Note: (a) The Low Scenario is modelled on WA Tomorrow Projections – Scenario A.  
Source: ABS (2012a), WA Tomorrow (2012)

**Table B.2: Historical and Projected Population, Irwin LGA 2011-2050p (High Scenario <sup>(a)</sup>)**

Catchment	2011	2012	2016	2021	2025	2050	Av. Ann. % Growth
Irwin LGA	3,647	3,675	3,997	4,383	4,681	6,766	1.6%
Central SD	65,283	66,543	70,880	75,581	79,552	107,292	1.3%
WA	2,353,409	2,432,706	2,654,632	2,891,969	3,089,659	4,592,235	1.7%

Note: (a) The High Scenario is modelled on WA Tomorrow Projections – Scenario E.  
Source: ABS (2012a), WA Tomorrow (2012)

### Employment

**Table B.3: Employment Projection by Industry Irwin LGA, 2011-2050p (Low Scenario<sup>(a)</sup>)**

Land Type	2011	2016	2021	2025	2050	Total Change	Av. Ann. % Growth
Agriculture, Forestry and Fishing	190	188	192	194	205	16	0.2%
Mining	61	98	106	111	142	81	2.2%
Manufacturing	95	121	134	144	214	118	2.1%
<i>Food Product Manufacturing</i>	25	28	31	32	42	18	1.4%
<i>Beverage and Tobacco Product Manufacturing</i>	1	1	1	1	2	2	3.7%
<i>Textile, Leather, Clothing and Footwear Manufacturing</i>	1	1	1	1	1	0	0.3%
<i>Wood Product Manufacturing</i>	7	8	9	10	13	7	1.8%
<i>Pulp, Paper and Converted Paper Product Manufacturing</i>	0	0	0	0	0	0	n.a.
<i>Printing (including the Reproduction of Recorded Media)</i>	0	0	0	0	0	0	-0.7%
<i>Petroleum and Coal Product Manufacturing</i>	0	0	0	0	0	0	n.a.
<i>Basic Chemical and Chemical Product Manufacturing</i>	1	1	2	2	3	2	2.9%
<i>Polymer Product and Rubber Product Manufacturing</i>	0	0	0	0	0	0	n.a.
<i>Non-Metallic Mineral Product Manufacturing</i>	27	35	39	42	64	37	2.2%
<i>Primary Metal and Metal Product Manufacturing</i>	11	14	15	16	23	11	1.8%
<i>Fabricated Metal Product Manufacturing</i>	9	13	15	16	30	20	3.0%
<i>Transport Equipment Manufacturing</i>	1	1	2	2	4	4	5.2%

Land Type	2011	2016	2021	2025	2050	Total Change	Av. Ann. % Growth
<i>Machinery and Equipment Manufacturing</i>	8	12	14	15	22	14	2.6%
<i>Furniture and Other Manufacturing</i>	5	6	7	7	9	4	1.3%
Electricity, Gas, Water and Waste Services	9	10	11	11	15	6	1.3%
Construction	172	181	211	228	328	156	1.7%
Wholesale Trade	5	5	6	6	8	3	1.2%
Retail Trade	140	145	164	173	241	101	1.4%
Accommodation and Food Services	133	141	154	162	216	83	1.2%
Transport, Postal and Warehousing	53	57	66	69	97	43	1.5%
Information Media and Telecommunications	1	1	1	1	2	1	1.6%
Financial and Insurance Services	12	14	16	17	25	13	1.8%
Rental, Hiring and Real Estate Services	21	25	28	30	36	16	1.5%
Professional, Scientific and Technical Services	33	41	47	51	81	47	2.3%
Administrative and Support Services	17	18	20	22	34	16	1.7%
Public Administration and Safety	50	54	77	89	175	125	3.3%
Education and Training	87	89	109	118	194	108	2.1%
Health Care and Social Assistance	62	76	113	134	293	231	4.1%
Arts and Recreation Services	8	8	11	13	29	21	3.4%
Other Services	42	43	47	49	66	24	1.2%
<b>TOTAL EMPLOYMENT</b>	<b>1,192</b>	<b>1,317</b>	<b>1,516</b>	<b>1,623</b>	<b>2,400</b>	<b>1,208</b>	<b>1.8%</b>

Note: (a) The Low Scenario is modelled on WA Tomorrow Projections – Scenario A.  
Source: AEC

**Table B.4: Employment Projection by Industry Irwin LGA, 2011-2050p (High Scenario<sup>(a)</sup>)**

Land Type	2011	2016	2021	2025	2050	Total Change	Av. Ann. % Growth
Agriculture, Forestry and Fishing	190	188	192	194	204	15	0.2%
Mining	61	98	106	111	142	81	2.2%
Manufacturing	95	124	137	147	217	122	2.1%
<i>Food Product Manufacturing</i>	25	29	31	33	44	19	1.5%
<i>Beverage and Tobacco Product Manufacturing</i>	1	1	1	1	3	2	4.1%
<i>Textile, Leather, Clothing and Footwear Manufacturing</i>	1	1	1	1	1	0	0.5%
<i>Wood Product Manufacturing</i>	7	8	9	10	14	7	1.8%
<i>Pulp, Paper and Converted Paper Product Manufacturing</i>	0	0	0	0	0	0	n.a.
<i>Printing (including the Reproduction of Recorded Media)</i>	0	0	0	0	0	0	-0.5%
<i>Petroleum and Coal Product Manufacturing</i>	0	0	0	0	0	0	n.a.
<i>Basic Chemical and Chemical Product Manufacturing</i>	1	2	2	2	3	2	3.0%
<i>Polymer Product and Rubber Product Manufacturing</i>	0	0	0	0	0	0	n.a.
<i>Non-Metallic Mineral Product Manufacturing</i>	27	35	39	42	64	37	2.2%
<i>Primary Metal and Metal Product Manufacturing</i>	11	14	15	16	23	11	1.8%
<i>Fabricated Metal Product Manufacturing</i>	9	13	15	17	30	20	3.0%
<i>Transport Equipment Manufacturing</i>	1	1	2	2	4	4	5.2%
<i>Machinery and Equipment Manufacturing</i>	8	13	14	15	22	14	2.7%
<i>Furniture and Other Manufacturing</i>	5	7	7	8	10	4	1.5%
Electricity, Gas, Water and Waste Services	9	10	11	11	15	6	1.3%
Construction	172	184	210	227	326	154	1.7%
Wholesale Trade	5	6	6	7	8	3	1.3%

Land Type	2011	2016	2021	2025	2050	Total Change	Av. Ann. % Growth
Retail Trade	140	154	169	179	248	108	1.5%
Accommodation and Food Services	133	148	159	167	221	88	1.3%
Transport, Postal and Warehousing	53	58	65	69	95	41	1.5%
Information Media and Telecommunications	1	1	1	1	2	1	1.6%
Financial and Insurance Services	12	14	17	18	26	13	1.9%
Rental, Hiring and Real Estate Services	21	28	31	32	39	18	1.6%
Professional, Scientific and Technical Services	33	42	47	51	81	48	2.3%
Administrative and Support Services	17	18	20	22	33	16	1.7%
Public Administration and Safety	50	59	75	86	153	103	2.9%
Education and Training	87	94	109	120	198	112	2.1%
Health Care and Social Assistance	62	101	130	154	318	256	4.3%
Arts and Recreation Services	8	9	11	13	30	22	3.4%
Other Services	42	43	46	49	66	24	1.2%
<b>TOTAL EMPLOYMENT</b>	<b>1,192</b>	<b>1,380</b>	<b>1,544</b>	<b>1,658</b>	<b>2,424</b>	<b>1,232</b>	<b>1.8%</b>

Note: (a) The High Scenario is modelled on WA Tomorrow Projections – Scenario E.  
Source: AEC

## Land Requirements

Table B.5: Land Projection by Land Type, Irwin LGA (Additional Square Metres) (Low Scenario<sup>(c)</sup>)

Land Type	2011 <sup>(b)</sup>	2016	2021	2025	2050	Av. Ann. % Growth
Commercial Zoned Land	0	1,559	4,309	5,749	17,196	1.6%
Industrial Zoned Land	0	25,161	54,901	72,470	186,219	1.7%
Community Purposes Zoned Land	0	974	4,801	6,823	22,556	3.1%
Primary Industry Land <sup>(a)</sup>	0	9,121	13,653	15,987	30,929	0.6%
Utilities	0	300	779	971	2,227	1.4%
Other	0	39	116	152	403	1.2%
<b>Total</b>	<b>0</b>	<b>37,154</b>	<b>78,559</b>	<b>102,153</b>	<b>259,530</b>	<b>1.4%</b>

Note: Industrial Zoned Land = marine industry, light industry and general industry zoned land. Community purposes zoned land = land designated occupied by schools, hospitals, shire offices, other. Primary Industries Land = Land used for agriculture and mining purposes (onsite).  
(a) Primary Industry Land is difficult to project and should be treated with caution. (b) The 2011 column has zero's as this indicates the commencement of the count of additional floorspace required. (c) The Low Scenario is modelled on WA Tomorrow Projections – Scenario A  
Source: AEC

Table B.6: Land Projection by Land Type, Irwin LGA (Additional Square Metres) (High Scenario<sup>(c)</sup>)

Land Type	2011 <sup>(b)</sup>	2016	2021	2025	2050	Av. Ann. % Growth
Commercial Zoned Land	0	2,680	4,956	6,526	18,131	1.6%
Industrial Zoned Land	0	29,662	56,581	74,655	186,894	1.7%
Community Purposes Zoned Land	0	2,575	5,463	7,668	22,920	3.2%
Primary Industry Land <sup>(a)</sup>	0	9,034	13,391	15,712	30,315	0.6%
Utilities	0	385	809	1,005	2,216	1.4%
Other	0	44	116	152	393	1.2%
<b>Total</b>	<b>0</b>	<b>44,380</b>	<b>81,315</b>	<b>105,719</b>	<b>260,868</b>	<b>1.4%</b>

Note: Industrial Zoned Land = marine industry, light industry and general industry zoned land. Community purposes zoned land = land designated occupied by schools, hospitals, shire offices, other. Primary Industries Land = Land used for agriculture and mining purposes (onsite).  
(a) Primary Industry Land is difficult to project and should be treated with caution. (b) The 2011 column has zero's as this indicates the commencement of the count of additional floorspace required. (c) The High Scenario is modelled on WA Tomorrow Projections – Scenario E.  
Source: AEC

## Appendix C: Population Forecasts and Community Facility Requirements

In 2012, the Irwin LGA population was estimated to be 3,675. Under the Medium Population Scenario (Scenario C) it is estimated that the Irwin LGA will grow by 1,021 persons (or an average of 79 residents per annum) to reach 4,696 residents by 2025 and then a further 2,188 residents to reach a total of 6,884 residents by 2050.

**Table C.1: Historical and Projected Population, Irwin LGA 2011-2050p (Medium Scenario)**

Catchment	2011	2012	2016	2021	2025	2050	Av. Ann. % Growth
Irwin LGA	3,647	3,675	3,991	4,388	4,696	6,884	1.6%
Central SD	65,283	66,543	70,498	75,694	79,700	107,645	1.3%
WA	2,353,409	2,432,706	2,624,794	2,845,715	3,026,377	4,422,445	1.6%

Note: The Medium Scenario is modelled on WA Tomorrow Scenario C.  
Source: ABS (2012a), WA Tomorrow (2012)

In catering for population growth in a regional and remote community, it is important to acknowledge that attracting people to live and work in the Shire of Irwin is linked to the natural amenity and lifestyle that can be offered to current and future residents. This includes the availability and accessibility of the LGAs community assets and services in contributing to overall quality of life for regional communities.

Based on community benchmarks (community assets for 1,000 population) and the projected population (Table C.1.), Table C.2. shows the future community asset requirements for the Shire of Irwin (note these are based on current benchmarking trends).

**Table C.2. Community Benchmark Assessment and Demand Assessment, Irwin LGA**

Community Facility	Benchmark		Estimate - Irwin LGA	
	Indicator	Unit	2025	2050
<b>Local Government</b>				
Open Space (Parks & Gardens)	1,000	Capita per Facility	5	7
Children's' Play Equipment	1,000	Capita per Facility	5	7
BBQ's & Shelters	2,500	Capita per Facility	2	3
Dog Exercise Areas	6,000	Capita per Facility	1	1
Boat Ramps	6,000	Capita per Facility	1	1
Wharves/Jetties/Pontoons	6,000	Capita per Facility	1	1
Library Lounge	10,000	Capita per Facility	0	1
<b>Sports Facilities</b>				
Sub-District Ovals	3,500	Capita per Facility	1	2
AFL Fields	3,000	Capita per Facility	2	2
Football Field (rugby league)	3,000	Capita per Facility	2	2
Football Field (rugby union)	3,000	Capita per Facility	2	2
Cricket Oval	3,000	Capita per Facility	2	2
Soccer Field	1,000	Capita per Facility	5	7
Hockey Field	3,000	Capita per Facility	2	2
Cricket Practice Nets	3,000	Capita per Facility	2	2
Sports Change Rooms	4,500	Capita per Facility	1	2
Tennis Court	1,000	Capita per Facility	5	7
Netball (Outdoor)	1,000	Capita per Facility	5	7
Basketball	1,000	Capita per Facility	5	7
Local Hard Courts	8,750	Capita per Facility	1	1
Sub-District Indoor Recreation Centre	10,000	Capita per Facility	0	1
Skate Park	7,000	Capita per Facility	1	1

Community Facility	Benchmark		Estimate - Irwin LGA	
	Indicator	Unit	2025	2050
BMX Tracks	7,000	Capita per Facility	1	1
Sub-District Wheeled Sports Facilities	8,500	Capita per Facility	1	1
<b>Health</b>				
Public Hospital Beds	385	Capita per Facility	12	18
Private Hospital Beds	588	Capita per Facility	8	12
Local Community Health Centre	3,000	Capita per Facility	2	2
Neighbourhood Community Health Centre	10,000	Capita per Facility	0	1
Children's Healthcare Centre (0-5)	5,000	Capita per Facility	1	1
Chemist	2,500	Capita per Facility	2	3
Self Care Units	2	per 1,000 Private Dwellings	1	2
<b>Education</b>				
Kindergarten	10,000	Capita per Facility	0	1
Preschool	1.3%	% Population Enrolled	61	89
Primary School (Government)	7.0%	% Population Enrolled	327	480
Primary School (Non-Government)	3.0%	% Population Enrolled	143	209
Secondary School (Government)	3.2%	% Population Enrolled	152	223
Secondary School (Non-Government)	2.4%	% Population Enrolled	112	164
<b>Community Services</b>				
Local Leisure Centre	8,750	Capita per Facility	1	1

Note: The above estimates are based on benchmarks and should be used with caution.

Source: ABS (2012a), WA Tomorrow (2012), Various Local Government Areas and State Government Departments, AEC

## Appendix D: Aspirational Targets

In 2014, the Mid-West Development Commission released its Regional Blueprint (MWDC, 2014). As part of the Blueprint an aspirational growth target for the region was established.

For the Shire of Irwin this 'aspirational' target (very high growth expectation) suggested that the Shire had the potential to achieve a population of 5,600 persons by 2025 and 11,900 persons by 2050 (an average annual growth of 3.1% per annum over the next 35 years).

This assumption was made based on a number of major projects going ahead within the region (such as the Oakajee Project) thereby providing the catalyst for stimulating significant levels of economic growth in the Shire of Irwin and the broader Mid West Region.

Table D.1 shows the population growth expectation for the Aspirational Target Scenario.

**Table D.1: Historical and Projected Population, Irwin LGA 2011-2050p (Aspirational Target)**

Catchment	2011	2012	2016	2021	2025	2050	Av. Ann. % Growth
Irwin LGA	3,647	3,675	4,149	4,901	5,600	11,900	3.1%

Note: (a). This is an Aspirational Target with population growth derived from the population targets provided by the Mid West Development Commission for 2025 and 2050.

Source: ABS (2012a), MWDC (2014), AEC

The tables below provide an outline of the likely employment profile (Table D.2) and land required (Table D.3) to support this level of population growth. The 'Aspirational Target Scenario' is considered to be highly optimistic and should be treated with caution.

### Employment

Table D.2 Employment Projections assumes the economic structure in the Aspirational Scenario is the same as the economic structure in the Medium Scenario.

If the Aspirational Target level of growth were achieved it is highly likely the local and regional economy would undergo significant structural changes in order to respond to growth. The estimates below do not attempt determine the nature of this likely change in economic structure. These estimates are therefore indicative only and should be used with caution.

**Table D.2: Employment Projection by Industry Irwin LGA, 2011-2050p (Aspirational Target)**

Land Type	2011	2016	2021	2025	2050	Total Change	Av. Ann. % Growth
Agriculture, Forestry and Fishing	190	182	188	197	300	110	1.2%
Mining	61	95	104	113	209	147	3.2%
Manufacturing	95	120	133	149	318	223	3.1%
<i>Food Product Manufacturing</i>	25	28	31	33	64	39	2.5%
<i>Beverage and Tobacco Product Manufacturing</i>	1	1	1	1	4	3	5.1%
<i>Textile, Leather, Clothing and Footwear Manufacturing</i>	1	1	1	1	1	0	1.4%
<i>Wood Product Manufacturing</i>	7	8	9	10	20	13	2.8%
<i>Pulp, Paper and Converted Paper Product Manufacturing</i>	0	0	0	0	0	0	n.a.
<i>Printing (including the Reproduction of Recorded Media)</i>	0	0	0	0	0	0	0.5%
<i>Petroleum and Coal Product Manufacturing</i>	0	0	0	0	1	1	n.a.
<i>Basic Chemical and Chemical Product Manufacturing</i>	1	1	2	2	4	3	4.0%
<i>Polymer Product and Rubber Product Manufacturing</i>	0	0	0	0	0	0	n.a.
<i>Non-Metallic Mineral Product Manufacturing</i>	27	34	38	43	94	67	3.2%
<i>Primary Metal and Metal Product Manufacturing</i>	11	14	15	17	33	22	2.8%
<i>Fabricated Metal Product Manufacturing</i>	9	12	15	17	44	34	4.0%



Land Type	2011	2016	2021	2025	2050	Total Change	Av. Ann. % Growth
Transport Equipment Manufacturing	1	1	2	2	7	6	6.3%
Machinery and Equipment Manufacturing	8	12	14	15	33	25	3.7%
Furniture and Other Manufacturing	5	6	7	8	14	9	2.4%
Electricity, Gas, Water and Waste Services	9	10	11	12	21	13	2.3%
Construction	172	178	205	231	477	305	2.6%
Wholesale Trade	5	6	6	7	12	7	2.3%
Retail Trade	140	148	163	180	363	223	2.5%
Accommodation and Food Services	133	143	155	169	323	190	2.3%
Transport, Postal and Warehousing	53	56	64	71	139	86	2.5%
Information Media and Telecommunications	1	1	1	1	2	1	2.6%
Financial and Insurance Services	12	14	16	18	37	25	2.9%
Rental, Hiring and Real Estate Services	21	27	30	32	57	36	2.6%
Professional, Scientific and Technical Services	33	40	46	52	119	85	3.3%
Administrative and Support Services	17	18	20	22	49	31	2.7%
Public Administration and Safety	50	57	74	88	229	179	4.0%
Education and Training	87	90	105	121	288	201	3.1%
Health Care and Social Assistance	62	95	122	152	457	396	5.3%
Arts and Recreation Services	8	9	11	13	44	36	4.4%
Other Services	42	42	45	50	97	55	2.2%
<b>TOTAL EMPLOYMENT</b>	<b>1,192</b>	<b>1,331</b>	<b>1,501</b>	<b>1,678</b>	<b>3,540</b>	<b>2,348</b>	<b>2.8%</b>

Note: (a) Aspirational Targets are based on the MWDC Blueprint population targets. Employment has been derived using projected average age and application of an average participation rate of the population aged 15 to 65 years.  
Source: AEC

## Land Requirements

Table D.3 Land Projection shows the additional square metre requirements to accommodate the additional employment (Table D.2). As for the Employment Projections, the Land Projections assume consistency of land use structures and types of industry activity occurring in the Shire of Irwin and does not account for any significant changes in economic activity that may occur in an 'Aspirational Target' (very high growth) scenario.

These estimates are therefore indicative only and should be used with caution.

**Table D.3: Land Projection by Land Type, Irwin LGA (Additional Square Metres) (Aspirational Target)**

Land Type	2011 <sup>(b)</sup>	2016	2021	2025	2050	Av. Ann. % Growth
Commercial Zoned Land	0	1,855	4,254	7,154	34,938	2.6%
Industrial Zoned Land	0	23,149	51,533	83,033	370,281	2.8%
Community Purposes Zoned Land	0	1,999	4,662	7,664	35,840	4.1%
Primary Industry Land <sup>(a)</sup>	0	4,796	10,590	19,683	104,219	1.6%
Utilities	0	170	489	819	3,818	2.0%
Other	0	505	643	792	2,199	3.8%
<b>Total</b>	<b>0</b>	<b>32,474</b>	<b>72,171</b>	<b>119,146</b>	<b>551,296</b>	<b>2.4%</b>

Note: Industrial Zoned Land = marine industry, light industry and general industry zoned land. Community purposes zoned land = land designated occupied by schools, hospitals, shire offices, other. Primary Industries Land = Land used for agriculture and mining purposes (onsite).  
(a) Primary Industry Land is difficult to project and should be treated with caution. (b) The 2011 column has zero's as this indicates the commencement of the count of additional floorspace required.  
Source: AEC



Economics, Planning & Development  
Business Strategy & Finance  
Community Research & Strategy  
Design, Marketing & Advertising  
Information & Knowledge Management

# Appendix E

## Infrastructure Capacity Report

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**INFRASTRUCTURE**  
**CAPACITY**

**Shire of Irwin  
Local Planning  
Strategy Review  
Growth Plans Options**

# Porter



**INFRASTRUCTURE**  
**CAPACITY**

**Shire of Irwin  
Local Planning  
Strategy Review  
Growth Plans Options**

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**APPENDIX 1 – Scenario 2050 – Growth Areas**

**APPENDIX 2 – Ultimate Scenario – Growth Areas**

**APPENDIX 3 – Water Corporation – Current Planning**

**APPENDIX 4 – MRWA Road Hierarchy**

**APPENDIX 5 – Department of Transport – Current Planning**



## 1.0 INTRODUCTION

This report follows on from the initial infrastructure review of the Shire of Irwin completed by Porter Consulting Engineers (PCE) in February 2014 and should be referenced in regards to the background of the current situation. This Growth Plan Options report summarises the impacts on various services for two growth scenarios.

The information presented in this report is based upon information supplied by Authorities, where available, and on site investigations. Due to the limitation of this investigation, detailed responses could not be obtained from all service authorities. Therefore, information presented will be subject to further review as the project develops.

Two scenarios have been investigated as part of this report:

1. **2050**; under this scenario the population of Dongara and Port Denison increases from 2,765 to approximately 7,000. This represents a population increase of approximately 250%. TPG Planners have prepared a growth plan for this development, located within **Appendix A**.
2. **Ultimate**; under this scenario the population of Dongara and Port Denison increases from 3,765 to an ultimate projected population of 20,000. This growth plan is shown within **Appendix B**.

## **2.0 WATER SUPPLY**

### **2.1 Current Situation**

According to census data obtained in 2011, the population of the Shire of Irwin is 3,566 with the population of Dongara and Port Denison at 2,765. The Towns of Dongara and Port Denison are connected to scheme water but the surrounding rural residential and rural areas are not.

The Towns of Dongara and Port Denison are supplied with scheme water sourced from the Allanooka groundwater supply fields, which are part of the Arrowsmith groundwater area. The Arrowsmith groundwater area covers the Northern Perth Basin. The groundwater resources of the Arrowsmith groundwater area are the unconfined superficial and surficial aquifers, fractured rocks and the semi-confined to confined aquifers of Leederville–Parmelia, Yarragadee, Cattamarra, Eneabba, Lesueur, and Otorowiri.

Water supply to the town sites of Dongara and Port Denison is sourced from the Allanooka Groundwater Bore field which is part of the Arrowsmith groundwater area. Groundwater is pumped into the Allanooka Reservoir which is located approximately 21km north of the Dongara town site.

A 150mm diameter asbestos cement pipe is used to transport water from the Allanooka Reservoir to the Water Corporation controlled water tanks located off Water Supply Road, approximately 5km north of the Dongara town site. There is one 2,500KL water tank and one 2,500KL water tank at this Water Corporation site.

One 375mm diameter asbestos cement distribution main and one 250mm diameter reinforced concrete distribution main transports water from the Water Corporation water tanks, at Water Supply Road, to service the Dongara and Port Denison town sites.

Currently, at peak demand, residents of Dongara and Port Denison use approximately 645kl/day, of which 445kl is used by residents and 200kl for non-residential uses. Therefore, the Water Corporation tanks at Water Supply Road have approximately 7 days of emergency water supply should any critical failure of water supply to the tanks occur.

### **2.2 Scenario 2050**

The Water Corporation have already planned to construct additional water storage to supply the future growth and demand for water of Dongara and Port Denison. There are currently two 2.5ML water storage tanks with plans to construct an additional 2.5ML tank by 2017 and a further 3.0ML tank beyond 2017. With current Department of Water *State Water Plan* target of 125kl per person per year by 2030, the Water Corporation planned additional 5.5ML of storage should be suitable for the expected population growth of this scenario.

It has been identified by the Water Corporation that the following critical water infrastructure upgrades are required as part of this development scenario:

- The upgrade of water distribution main from the existing water supply tanks to the town site.
- Extension of water infrastructure through the Race Course Estate Precinct. This infrastructure is planned by the Water Corporation for construction prior to 2017.
- Water booster pump installed to boost pressure to the Race Course Estate Precinct. Water Corporation has plans to construct this booster pump prior to 2017.
- Installation of isolation valves to separate catchments of the Race Course Estate Precinct and the existing water infrastructure to redistribute water pressures in the system and maintain service levels.
- Extension of water distribution infrastructure through to Port Denison.

Water Corporation current planning is located within **Appendix 3**.

### **2.3 Ultimate Scenario**

The Water Corporation do not have any plans for upgrading supply of water to Dongara or Port Denison under the Ultimate population growth scenario. Water Corporation's current land holdings, at the existing water supply tanks, are limited and only likely to incorporate water tank capacity up to 10.5ML. Water Corporation will likely be required to source additional land that water storage can be located on for water demand above the 2050 growth scenario. Water storage may expand at the existing facility or new storage constructed closer to the town sites. Water Corporation has confirmed that they are currently reviewing the water supply to Shire of Geraldton and the Shire of Irwin. Until this review is completed, Water Corporation cannot confirm what the requirements will be for supply of water under the Ultimate Growth Scenario.

It is expected that water supply, under this growth scenario, would require a combination of supply methods such as ground water extraction, rain water catchment at the resident level and possibly potential desalination facilities.

Existing infrastructure within Dongara and Port Denison will, at a minimum, need to be extended through to the proposed development Precincts of St Dominic's, Francisco Road North Precinct and South Port Denison. Existing water infrastructure upgrades required to meet the demand of the site is unknown until Water Corporation can confirm how the growth areas are to be supplied with water. It is highly likely that significant upgrades to the water distribution network will be required to meet the water demand generated under this growth scenario.

Water Corporation has planned for water infrastructure upgrades to the Francisco Road North Precinct. These plans include the construction of a booster pump, 200mm diameter water distribution main through the spine of the development, with 150mm diameter reticulation connections to the remaining areas of the precinct.

## **3.0 SEWER INFRASTRUCTURE**

### **3.1 Current Situation**

Water Corporation controlled wastewater service is available within the towns of Dongara and Port Denison within the Shire of Irwin. These two towns have eight pump stations which collect wastewater from the Water Corporation gravity reticulated sewage system and pump wastewater to the Dongara Wastewater Treatment Plant (WWTP) on Bienheim Road.

The Dongara WWTP previously comprised of a facultative lagoon, a secondary lagoon, a tertiary pond and an infiltration area which was serviced by infiltration channels and a sprinkler based effluent disposal system that discharges to an area to the south of the lagoons. This wastewater treatment system had capacity to process 350m<sup>3</sup> of wastewater per day.

Prior to 2010, wastewater generation reached an estimated 390m<sup>3</sup> of wastewater per day. This is supported by anecdotal evidence from the Shire of Irwin that the lagoons overtopped on a regular basis.

In 2009 the Dongara WWTP was upgraded to incorporate one aeration lagoon, three aerated sedimentation lagoons in series, a disinfection system and a pump station. Existing old infrastructure for the infiltration of treated wastewater has remained onsite for use in emergency situations. Capacity of the upgraded facility is expected to be 1200m<sup>3</sup> of wastewater per day.

Treated wastewater from the plant is currently transported to the adjacent Dongara Golf Course for use as irrigation to the greens under Department of Environment Regulation, License Number L7685/1993/6. Water quality testing is conducted on a monthly basis.

Solid waste collected from the de-sludging process of the Dongara WWTP is disposed of at the Dongara tip and covered with fill material as per the current management conditions of the environmental license.

According to the current Town Planning Scheme No 4 there is a 500m odour buffer around the Dongara WWTP.

Residents of the Shire of Irwin not serviced by the Dongara WWTP are required to process their wastewater onsite. This has previously been achieved by the installation of leach drains. Due to the ground conditions surrounding the Town of Dongara it is now considered unacceptable to install leach drains and these are to be replaced with Aerobic Treatment Units (ATU's). ATU's require an area for infiltration of treated wastewater on the resident's property. Where the resident is not capable of supplying a suitably sized area for treated wastewater infiltration, then connection to sewer reticulation is required.

### **3.2 Scenario 2050**

There is capacity within the Dongara WWTP for population growth of the Dongara and Port Denison town sites. Current population of the Dongara and Port Denison towns is 2,765

generating approximately 390m<sup>3</sup> of wastewater per day from approximately 1300 residential households. The capacity of the upgraded Dongara WWTP is 1,200m<sup>3</sup> of wastewater per day which represents a capacity to service a population of approximately 8,500 or population increase of 300%. Therefore, the Dongara WWTP has capacity to meet the potential sewer requirement that would be experienced under this 2050 growth scenario.

Water Corporation has confirmed that they cannot guarantee that service can be provided within the Water Corporation recommended coastal setback area. This area would include the small portion of land at the end of Church Street. Water Corporation correspondence is located within **Appendix 3**.

The Water Corporation has the following planned upgrades to the wastewater infrastructure within the Shire of Irwin that will be required under this 2050 growth scenario:

- St Dominics Precinct has Water Corporation pressure mains planned to be constructed through the site. This will need to be allowed for within any future plans for development.
- The Race Course Estate Precinct will require an additional three pump stations to service the Precinct.
- Pressure main upgrade will be required for the proposed residential development north of Brand Highway.
- Pump station 6 at Clarkson Street is planned to be decommissioned and a new pump station constructed on the Department of Lands site at 96 Clarkson Street.

Water Corporation current planning is located within **Appendix 3**.

Water Corporation has recommended compatible land uses for location within WWTP odour buffers. Water Corporation has prepared a table outlining their recommendations and is located within **Appendix 3**.

### **3.3 Ultimate Scenario**

Water Corporation has no plans to upgrade the Dongara WWTP at this time. However, under this ultimate scenario the existing WWTP will need to be upgraded or a new WWTP constructed to service the expected population growth.

The Water Corporation has the following planned upgrades to the wastewater infrastructure within the Shire of Irwin:

- *St Dominics Precinct* - this area has been identified as having issues with wastewater conveyance resulting in likely fill or cut to fill in order to service the precinct. A pressure main route will need to be planned for through the precinct area to transfer flows from this precinct and the area immediately north of the Irwin River to the Irwin WWTP. Additionally, a new wastewater pressure main route is required from Point Leander Drive WWPS to travel along Point Leander Drive from Russ Street and along Blenheim Drive to the Irwin WWTP.
- *Race Course Estate Precinct* – This precinct will ultimately require 3 new WWPS in order to be serviced, but at this stage has not been included within the current future urban residential wastewater planning area.

- 
- *Francisco Road North Precinct* – Water Corporation has no current sewer planning information for the Francisco Road North Precinct. It is expected that additional pump stations, pressure mains and gravity sewer distribution/reticulation mains will be required to be constructed as part of the development of this area.
  - *South Port Denison Precinct* – This area is within the Water Corporation’s wastewater planning area and will ultimately require an additional 7 WWPS at full development.

## **4.0 POWER SUPPLY**

### **4.1 Current Situation**

The Shire of Irwin is connected to the Southwest Interconnected Grid. Western Power online capacity mapping tool indicates that the Southwest Interconnected Grid has limited capacity in the region in the order of less than 5 MVA.

The following power infrastructure surrounds the Towns of Dongara and Port Denison:

- Walkaway Wind Farm, approximately 40km north, has a capacity to produce 89.1 megawatts through 54 wind turbines.
- Mungarra Terminal natural gas power station located approximately 50km north has a capacity to produce 112 megawatts through three turbines.
- Mumbida Wind Farm is located approximately 30km north of Dongara and has a capacity to produce 55 megawatts through 22 wind turbines. Construction completed in March 2013.
- Three Springs 330kV terminal located approximately 50km south east.

The Shire of Irwin is supplied power via the 32kV high voltage network. Power is supplied to users within the Shire through a combination of low voltage overhead and underground reticulation power lines. 132kV high voltage transmission lines run through the Shire as part of the Southwest interconnected grid.

Western Power has just completed the construction of the Geraldton isolation transformer, which has increased the capacity and is helping to improve power quality by addressing load imbalance issues in the Dongara and Narrngulu West areas.

### **4.2 Scenario 2050**

Western Power has planned for the following infrastructure over the next 10 years:

- Mid-West Energy Project – Southern Section Stage 1 – Construction has commenced.
- Mid-West Energy Project – Northern Section – no plans to commence construction within the next 10 years unless demand requires.
- Three Springs substation upgrade (busbar reinforcement), expected to commence construction in the summer of 2017/18.
- Eneabba 330KV terminal expected commencing construction in the summer of 2017/18.

Private power stations have been proposed for the areas of Three Springs and Dongara:

- ERM Power Limited has all required approvals for the construction of a gas fired power station east of the Three Springs town site. The proposed power station is planned to produce an estimated 330 megawatts and connect into the recently constructed Three Springs 330kV terminal.
- Eneabba Gas Limited has all required approvals for the construction of a gas-fired power station approximately 8km east of the Dongara town site. The proposed power

station is planned to have a base capacity of 168 megawatts and an overall capacity of 399 megawatts.

The Mid-West energy project involves the upgrading of the Southwest Interconnected Grid through the construction of a 330kV high voltage transmission line from Pinjara through to Eneabba and Three Springs. Upgrading this network is expected to increase the capacity of the network by an additional 500 MW. This network upgrade is critical for the construction of any future power generation expecting to connect to the Southwest interconnected grid.

The Three Springs busbar reinforcement project is designed to reduce thermal overload and increase the thermal capacity of the infrastructure in the immediate area.

Western Power has forecast a reduction in loads for the Geraldton area for the near future with a sharp increase expected with the Oakajee port and some mining operations coming online in the future.

Considering the quantum of planned power infrastructure within the Shire of Irwin and surrounding areas, it is unlikely that Dongara and Port Denison will have any issues with power supply. However, development of the growth plan area under this scenario will require extension of existing Western Power infrastructure. The extent of this infrastructure extension will only be known at the individual development level and closer to the time of construction.

### **4.3 Ultimate Scenario**

It is expected that any future population growth of the Dongara and Port Denison Town sites would occur slowly which would allow time for the Southwest Interconnected grid to be upgraded. According to the Australian Bureau of Statistics, the Greater Perth area (which is supplied power by the Southwest Interconnected Grid) has a population of over 1.97 million. A population of 20,000, as projected under this Ultimate growth scenario, will require 0.01% of the power generated to service the Southwest Interconnected Grid. Therefore, it is highly unlikely that Dongara and Port Denison will have any future power supply issues at a regional level.

At a local level it is expected that existing power infrastructure will need to be upgraded to service the proposed growth areas. The extent of the required infrastructure upgrades, under this growth scenario, is unknown at this time.



## **5.0 TELECOMMUNICATIONS**

### **5.1 Current Situation**

There is a Telstra cable network throughout Dongara and Port Denison. A Telstra exchange is located at the back of the Shire offices in Dongara.

According to the Telstra, Optus and Vodafone network coverage maps, Dongara and Port Denison have good coverage. Rural areas of the Shire of Irwin can experience between good to no coverage.

### **5.2 Scenario 2050**

The National Broadband Network (NBN) is an Australian Government initiative which will deliver high-speed broadband to all Australians. The NBN is a new, wholesale-only, open access, high-speed broadband network. The NBN will involve connecting 93 per cent of Australian homes, schools and businesses to a high-speed fibre network, capable of providing broadband speeds of up to 1 gigabit per second.

The remaining premises will be connected via a combination of next-generation fixed wireless and satellite technologies providing peak speeds of 12 Megabits per second (Mbps).

The programme for delivery of the NBN network is unknown at this time. However, it has been promoted that significant portions of the network will be completed by 2019. It is highly likely that the Shire of Irwin will receive NBN either hardwired or via High-speed wireless network.

### **5.3 Ultimate Scenario**

Refer section 5.2.

## **6.0 GAS**

### **6.1 Current Situation**

The residents of the Shire of Irwin are not connected to a gas service. Neither ATCO Gas nor APA Group has gas infrastructure servicing the Shire of Irwin or the towns of Dongara and Port Denison.

The following gas infrastructure exists within the Shire of Irwin:

- Dongara Gas bores which are located approximately 8km east of the Dongara town centre, off the Brand Highway. The Dongara Gas bores are connected to the Parmelia Gas pipeline.
- Beharra Springs gas bores which are located approximately 30km south west of the Dongara town centre. The Beharra Springs bores are connected to the Parmelia gas pipeline.
- Parmelia gas pipeline, built in 1972, running from the Dongara Gas bores to Pinjarra with an approximate pipe diameter of 350mm.
- Dampier to Bunbury Natural Gas Pipeline (DBNGP) running from Dampier to Bunbury with a pipe diameter of approximately 650mm.
- Origin Energy gas pipeline running along the north side of Kailis Drive.

### **6.2 Scenario 2050**

ATCO Gas has no plans to connect the Shire of Irwin to a gas service. ATCO Gas has confirmed that there would be a requirement to have a significant commercial or industrial industry established within Dongara or Port Denison to warrant the construction of a pressure reducing valve (gateway) off the Parmelia gas pipeline. Generally the cost for the construction of this valve, gas main to Dongara and Port Denison and the cost for installation of gas infrastructure within the towns would have to be paid off through sale of gas to the Shire of Irwin users.

### **6.3 Ultimate Scenario**

Refer Section 6.2.

## 7.0 ROAD & RAIL NETWORK

### 7.1 Current Situation

Dongara and Port Denison are accessed primarily via the Brand Highway which is located to the east and runs north and south along the coast. The Brand Highway is used significantly by heavy vehicles.

The road network for the Shire is in relatively good condition. Each road within the major town sites have been constructed to industry standards. The Shire has a full time construction and maintenance team that upgrade, resurface and maintain all roads. The Shire has a maintenance program and allocated budgets for road upgrades and maintenance for the next ten years.

Roads outside the towns of Dongara and Port Denison are generally unsealed gravel roads that are frequently graded to reform and remove corrugations.

Special rural zoning lots require sealed roads with verge table drains and drainage basins.

Urban residential roads are generally sealed and kerbed, with piped drainage discharging to the Shire's drainage network or drainage basins.

Port Denison has a five-legged roundabout that forms the intersection of Point-Leander Road with Blenheim Road, Golf Course Road and Pearse Road.

Kailis Drive forms one of the three main access roads to Dongara and Port Denison. Kailis Drive is an 8m wide sealed road that connects to the Brand Highway and enters Port Denison from the south. Currently Kailis Drive has a potential safety issue where a sizable sand dune is blowing across the road. This has potential to cause an obstruction to commuters, especially after major storm events where the dune system may significantly move in a short period of time.

The intersection of Moreton Terrace and Martin Street has been identified as posing a constraint on the type and size of vehicles using the intersection. This intersection has been constructed with a 10m diameter annulus and a 6m circulating lane. This design would allow for a maximum size vehicle of a rubbish truck to effectively navigate through the intersection without mounting the annulus. For a standard coach bus of 14.5m long, the roundabout would need to be designed with a 13.5m annulus with a 7.5m circulating lane. Currently school buses are mounting the annulus and breaking the kerbing as the roundabout was not designed for this vehicle size.

The intersection of Francisco Road and Brand Highway has been identified as a safety concern to the Shire of Irwin. The critical movement at this intersection is the right turn from Francisco Road moving south onto Brand Highway. This movement is of concern as the north leg of Brand Highway has a rise over a small localized high spot before entering the intersection. Therefore, there is limited safe intersecting sight distance (SISD) to give the critical movement time to enter the intersection safely and allow the south bound movement

on Brand Highway to stop in time (if required). It has been identified that the SISD is around 200m for this intersection. A Road Safety Audit should be conducted to alleviate the concerns of the community and the Shire of Irwin, or identify safety improvements required at the intersection. MRWA are aware of the issue and have plans for upgrade or potential relocation.

The Point-Leander Drive bridge, across the Irwin River, is approximately a 7m wide single carriageway (one 3.5m lane for each direction). This section of road is considered one of the main restrictions to the road network as the bridge crossing is effectively the only crossing from Dongara to Port Denison over the Irwin River.

There are two railway lines that pass through the Shire of Irwin:

- Perth to Mingenew to Dongara to Geraldton narrow gauge line under the jurisdiction of Brookfield Rail. This line is currently in operation with predominant use by grain trains that are operated by Watco for CBH Group.
- Dongara to Eneabba narrow gauge line is under the jurisdiction of Brookfield Rail and is currently out of service following Iluka suspending mining operations at Eneabba.

There are no planned upgrades to any rail infrastructure within the Shire of Irwin. Recent upgrades have occurred to the Mullewa line to Geraldton to allow the increase in transport from 3 million tons per annum (mtpa) to 25 mtpa by Brookfield Rail.

## **7.2 Current Planning**

Main Roads WA (MRWA) has advised that there are two significant road upgrade projects planned for within the Shire of Irwin:

- The Brand Highway bypass of the Town of Dongara. This bypass is planned to occur outside the next ten year horizon. The alignment of the proposed bypass is to occur adjacent to the existing train line that runs north-south. MRWA has advised that there would be limited access to Brand Highway from the Town with the only access to be at each end of the bypass. MRWA stated that they would consider an application from the Shire to have one of the accesses relocated.
- The intersection of Brand Highway and Midlands Road. This intersection is considered important to MRWA and upgrading is likely to occur within the next 10 years. Upgrade of this intersection is expected to include a continuous path which prioritizes Brand Highway with Midlands Road intersecting Brand Highway at a T-intersection. Brand Highway would need to be realigned incorporating a bridge across the Irwin River.

The Shire of Irwin has plans to revitalize the town centre and has engaged a consultant to produce the 'Dongara Town Centre Revitalization Plan'. This plan has the following significant proposed changes:

- Closing the existing access from Brand Highway to Moreton Terrace and opening access to Brand Highway from Martin Street.

- Converting the section of Moreton Terrace from Martin Street to Waldeck Street to one way with traffic flow in the westbound direction.
- Extension of Irwin Crescent around the north side of the Dongara Town oval to Waldeck Street.

The Shire is considering the option of extending St Dominics Road north across the Irwin River for the purpose of alleviating future pressure on the Point-Leander Drive Irwin River crossing.

There is current planning from the Department of Transport to expand the berth capacity of the port of Port Denison. Additionally, there are plans to increase the capacity of the servicing jetty to cater for larger boats. This would increase the traffic generated by the port activities and apply additional pressure to the road network, especially between Dongara and Port Denison.

According to MRWA, Roads Information Mapping System, the current Shire of Irwin Road Hierarchy is as follows:

- Brand Highway – State Road (Primary Distributor)
- Indian Ocean Drive – State Road (Primary Distributor)
- Midlands Road – State Road (Primary Distributor)
- Allanooka Springs Road – Regional Distributor
- Tandanooka West Road – Local Distributor (Rural)
- Tabletop Road – Local Distributor (Rural)
- Milo Road – Local Distributor (Rural)
- Warradong Springs Road – Local Distributor (Rural)
- Kailis Drive – Local Distributor (Urban)
- Hunt-Waldeck Street – Local Distributor (Urban)
- Moreton Terrace – Local Distributor (Urban)
- Point-Leander Drive – Local Distributor (Urban)

MRWA defines their road hierarchy as follows:

- Primary Distributors provide regional and inter-regional traffic movement and carry large volumes of generally fast moving traffic. Some are strategic freight routes and all are State Roads; managed by MRWA.
- Regional Distributor roads link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas; managed by local government.
- Local Distributor (Rural) roads connect to other Rural Distributor and to Rural Access Roads and designed for efficient movement of people and goods within regional areas; managed by local government.
- Local Distributor (Urban) roads carry traffic within a cell and link District Distributors or Regional Distributors at the boundary, to access roads.

A copy of the MRWA Current Planning is included at **Appendix 4**.

### 7.3 Scenario 2050 / Ultimate

Population increase within the Dongara and Port Denison will have an effect of applying pressure to the road network. Under these two growth scenario, the following intersections will likely need to be upgraded prior to the proposed Brand Highway Bypass (to be confirmed through detailed investigations):

<b>Intersection</b>	<b>Scenario 2050</b>	<b>Scenario Ultimate</b>
Brand Highway / Francisco Road	Upgrade Brand Highway to include a Channelized Right-Turn (CHR) lane.	-
Brand Highway / Philbey Road	Upgrade Brand Highway to include a CHR lane. Increase width of Philbey Road to allow additional storage of right turning vehicles	-
Brand Highway / Waldeck Street	Upgrade of Brand Highway to include an auxiliary left-turn lane (AUL).	-
Brand Highway / Tyford Road	Upgrade of Brand Highway to include an AUL lane. Upgrade of Brand Highway to include a CHR lane. Increase width of Tyford Road to allow additional storage of right turning vehicles.	-
Brand Highway / Moore Road	Upgrade of Brand Highway to include a CHR lane. Increase width of Moore Road to allow additional storage of right turning vehicles.	-
Brand Highway / Kailis Drive	Upgrade of Brand Highway to include a CHR.	-
Church Street / Flanagan Way	Upgrade of Church Street to include a CHR.	Upgrade of intersection to a roundabout
Moreton Terrace / Church St	Upgrade Roundabout	Upgrade Roundabout with potential modification to incorporate traffic Lights
Moreton Terrace / Martin Street / Point-Leander Drive – Town Centre Revitalisation – Concept 1	Remove Roundabout	Potential modification to incorporate traffic lights with multiple lanes.
Moreton Terrace / Martin Street / Point-Leander Drive – Town Centre Revitalisation	Potential modification to incorporate traffic lights with multiple lanes.	Potential modification to incorporate lights with multiple lanes.

– Concept 2		
Point-Leander Drive Bridge	-	Construction of Multiple Lanes
Point-Leander Drive / Ocean Drive	Increase width of Ocean Drive to allow additional storage of right turning vehicles.	Upgrade of intersection to a roundabout
Point-Leander Drive / Dawson Avenue	Upgrade of intersection to a roundabout	-
Point-Leander Drive / Blenheim Road / Golf Course Road / Pearce Road	-	Close Blenheim Road and potentially incorporate traffic lights.
Point-Leander Drive / Kailis Drive	-	Upgrade of intersection to a roundabout

All the above intersections upgrade will require detailed investigation and intersection modelling to confirm the type of upgrade and the likely time of implementation. These scenario intersection upgrades have been identified as possible long term issue to the Shire only.

Under the ultimate scenario, there will be significant pressure placed on the intersection of Moreton Terrace and Point-Leander Drive, and the Point-Leander Drive bridge across the Irwin River. One method to alleviate this pressure is the construction of another bridge across the Irwin River. One logical location for this bridge would be the eastern side of the proposed development of St Dominics Precinct and extend St Dominics Road across to link with the Brand Highway.

Under both growth scenarios, the Towns of Dongara and Port Denison will not be large enough to support a dedicated rail service. Any future rail service will need to be promoted by the City of Geraldton with services extended to Dongara and Port Denison along the existing rail.

## 8.0 DRAINAGE

### 8.1 Current Situation

The Shire of Irwin is located on the coast. Natural sand dunes run for the length of the coast in the Shire. These sand dunes act as natural barriers stopping stormwater from direct overland flow to the Indian Ocean. Stormwater mainly infiltrates into the sandy ground or is collected by the two main rivers, namely the Greenough River and Irwin River. The majority of stormwater within the Shire of Irwin is collected by the Irwin River and transported through Dongara and Port Denison to the Indian Ocean.

In February 2014 the Dongara District Structure Plan District Water Management Strategy (GHD 2014) was prepared for the Shire of Irwin. This report undertakes a detailed investigation into the surface water, groundwater and salinity issues in the town and should be referenced for detailed information in relation to these items.

Stormwater collected within Dongara and Port Denison drains into drainage sumps or directly discharges into the Irwin River, and in some locations into sensitive wetland areas.

### 8.2 Scenario 2050 / Ultimate

It is expected that stormwater drainage will be controlled through the construction of a pit and pipe drainage network, discharging into drainage sumps. This drainage network will be designed and constructed at the time development applications are received by the Shire of Irwin.

The Shire has adopted current design standards for future developments constructed within Dongara and Port Denison. This includes current standards for water sensitive urban design controlling:

- water conservation and efficiency;
- water quantity management; and
- water quality management.

These standards are outlined within the Western Australian Department of Water publication 2008 Better Urban Water Management.

As growth and development areas have been identified as part of this Scenario 2050, a Development Contribution Plan (DCP) should be prepared for each of the four main identified Precincts. This DCP could allow for land in localised low areas to be utilised into POS that also acts as drainage basins for stormwater infiltration. If these plans were in place, development of these lands could be less expensive and therefore more likely to occur.

Identified localised low points are:

- Around Hidden Valley Close
- The Irwin Race Course
- Sea Ripple Road



- Lot 15 Francisco Road.
- General Localised lows of St Dominics Precinct
- General Localised Lows around South Port Denison Precinct

## **9.0 AIRPORT**

### **9.1 Current Situation**

The aerodrome is located on the southern outskirts of Port Denison, and is operated by the Western Australian Department of Transport and funded by Royalties for Regions, Regional Airport Development Scheme. The aerodrome has recently been resurfaced with asphalt, which was funded by an oil and gas company using the aerodrome for daily flights to their offshore oil rig. The air strip is approximately 18m wide and 1.2km long. It has a single lane access off Kailis Drive

The aerodrome is not a Certified or Registered Aerodrome under CASA guidelines and as such it is only permitted to accept charter operations up to 30 passengers. The aerodrome would require additional upgrades to reach Registered Aerodrome Status and would need to be considered as part of the Ultimate Scenario to service a population of 20,000 people.

### **9.2 Scenario 2050 / Ultimate**

The Western Australian Department of Transport has no plans for expansion or relocation of the Port Denison Aerodrome.

## **10.0 PORT**

### **10.1 Current Situation**

The Port of Port Denison has two boat ramps and three jetties. There are facilities to refuel boats and the port is enclosed by two rock barriers. The Port is controlled by the Western Australian Department of Transport.

At certain times in the year and subject to ocean currents, the Port has limited flushing which stagnates the water resulting in decomposing seaweed emitting an unpleasant odour.

### **10.2 Scenario 2050**

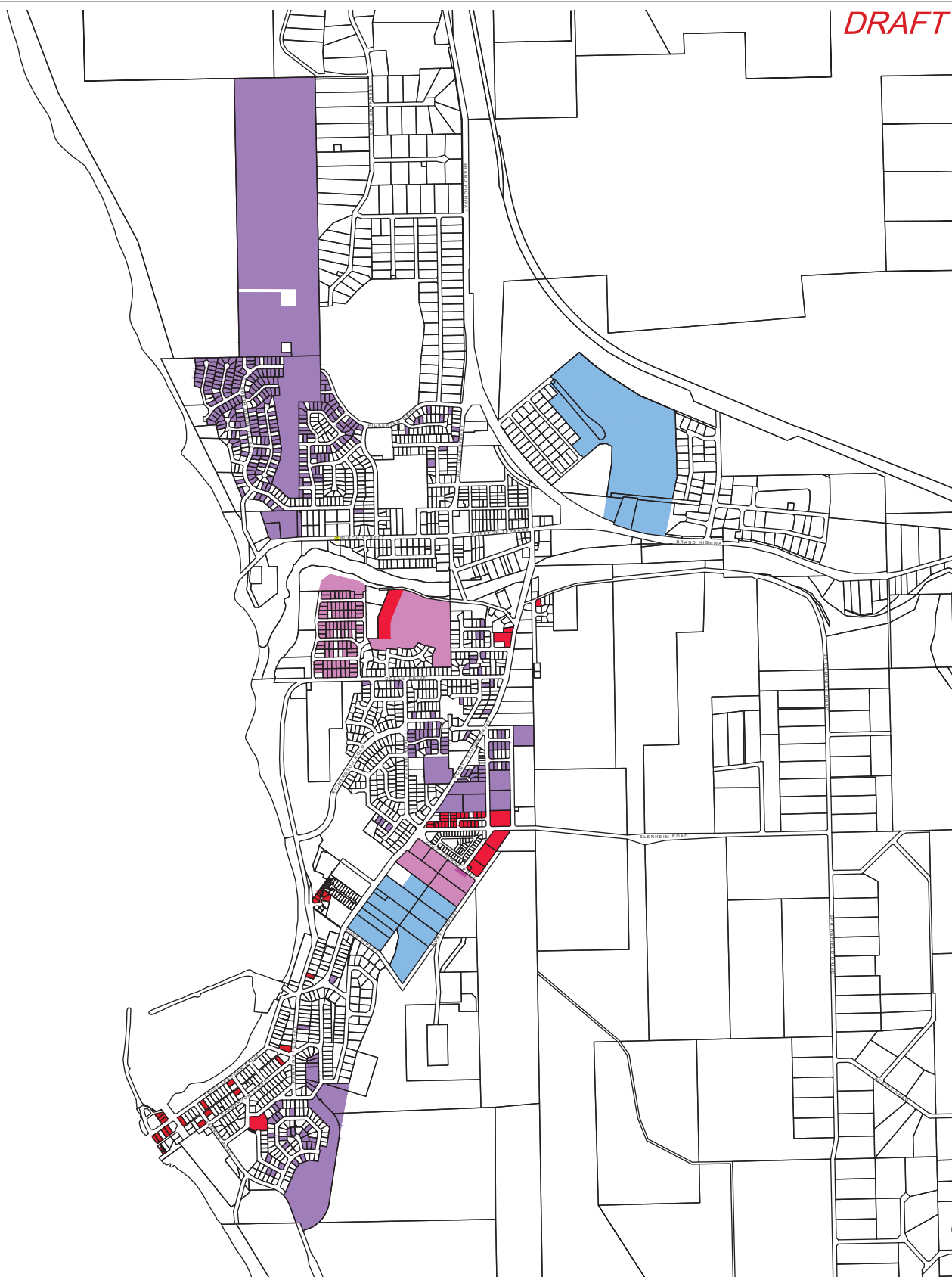
The Western Australian Department of Transport has plans to expand the capacity of both the refuelling areas and the berth numbers. Refer **Appendix 5** for the Department of Transport current concept plan for the redevelopment of the Port.

Additionally, as part of the Department of Transport's plan for redevelopment of the Port of Port Denison, a child friendly swimming area is to be included.

### **10.3 Ultimate Scenario**

The Department of Transport has no plans for development of the Port beyond 2050.

**APPENDIX 1**  
**SCENARIO 2050 – GROWTH AREAS**



LEGEND  
Vacant Land zoned Residential / Special Residential

- Special Residential
- R12.5
- R15
- R20
- R30
- R50

Density Code	Average (m <sup>2</sup> )	Area (ha)	Approx. No. of Potential Dwellings*
R12.5	800	110.2417	1059
R15	666	22.2480	262
R20	450	0.0971	2
R30	300	7.8908	239
R50	180	1.8705	103
Special Residential	2000	46.1726	161
<b>Total</b>		<b>188.5207</b>	<b>1826</b>

\* Dwelling calculations based on lot area divided by r-code density average (minus 30% for roads etc. for larger lots)



This concept has been prepared for the purpose of meeting client specifications. The drawing does not constitute an invitation, agreement or contract (or any part thereof) of any kind whatsoever.

Although care has been taken in the compilation of this drawing by The Planning Group WA Pty Ltd, all parties associated with the proposed property development disclaim all responsibility for any errors or omissions. The right is reserved to change the plan at any time.

Liability is expressly disclaimed by The Planning Group WA Pty Ltd for any loss or damage which may be sustained by any person acting on any visual impression gained from this drawing.



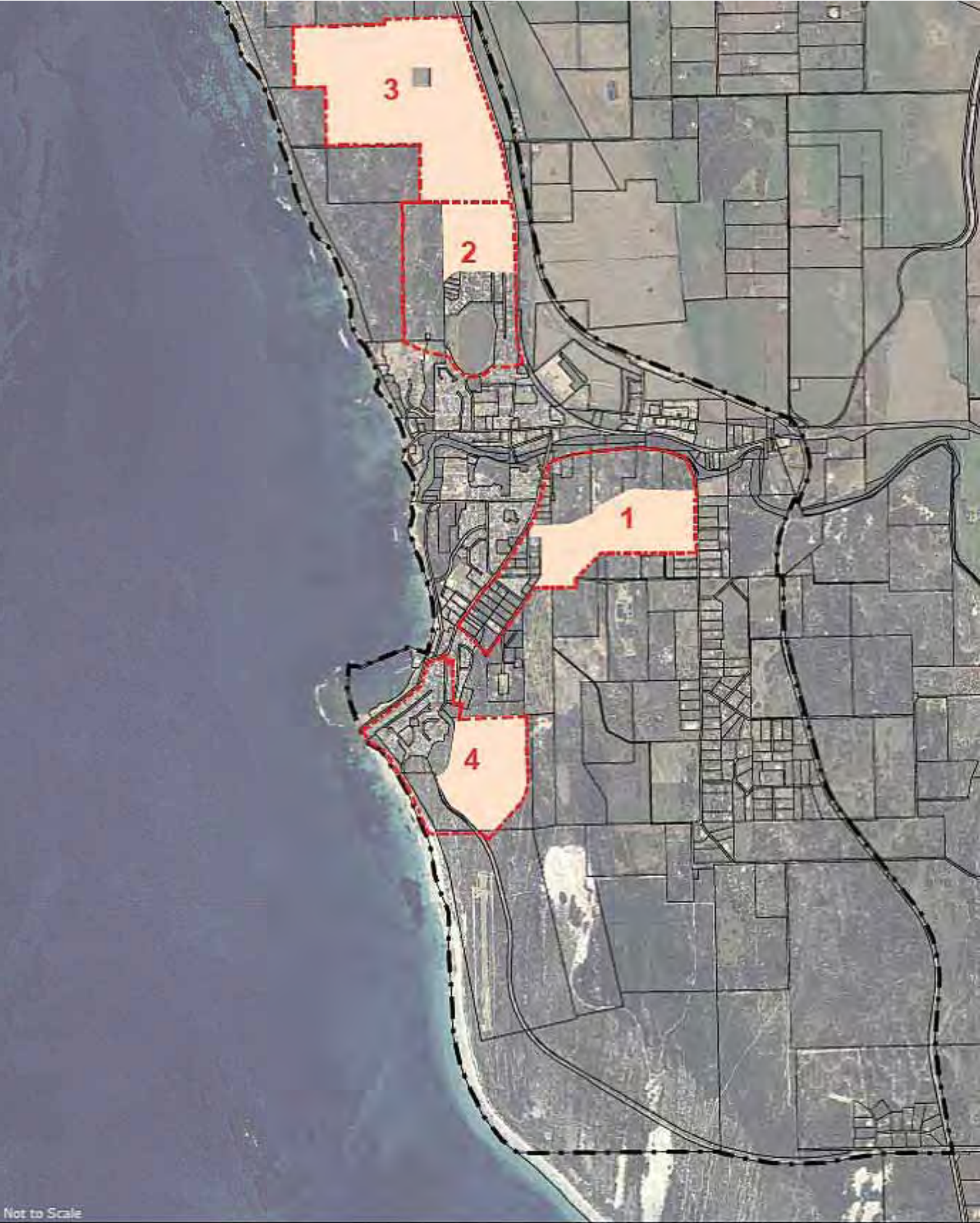
VACANT LAND ZONED RESIDENTIAL / SPECIAL RESIDENTIAL TOWNSITE MAP  
LOCAL PLANNING STRATEGY  
SHIRE OF IRWIN

Date: 25 Mar 2014 Designer: MD  
Scale: 1:20,000 @ A3 Drawn: GW  
Drawing No. 714-184 vacant land.dwg

TOWN PLANNING AND URBAN DESIGN



**APPENDIX 2**  
**ULTIMATE SCENARIO – GROWTH AREAS**



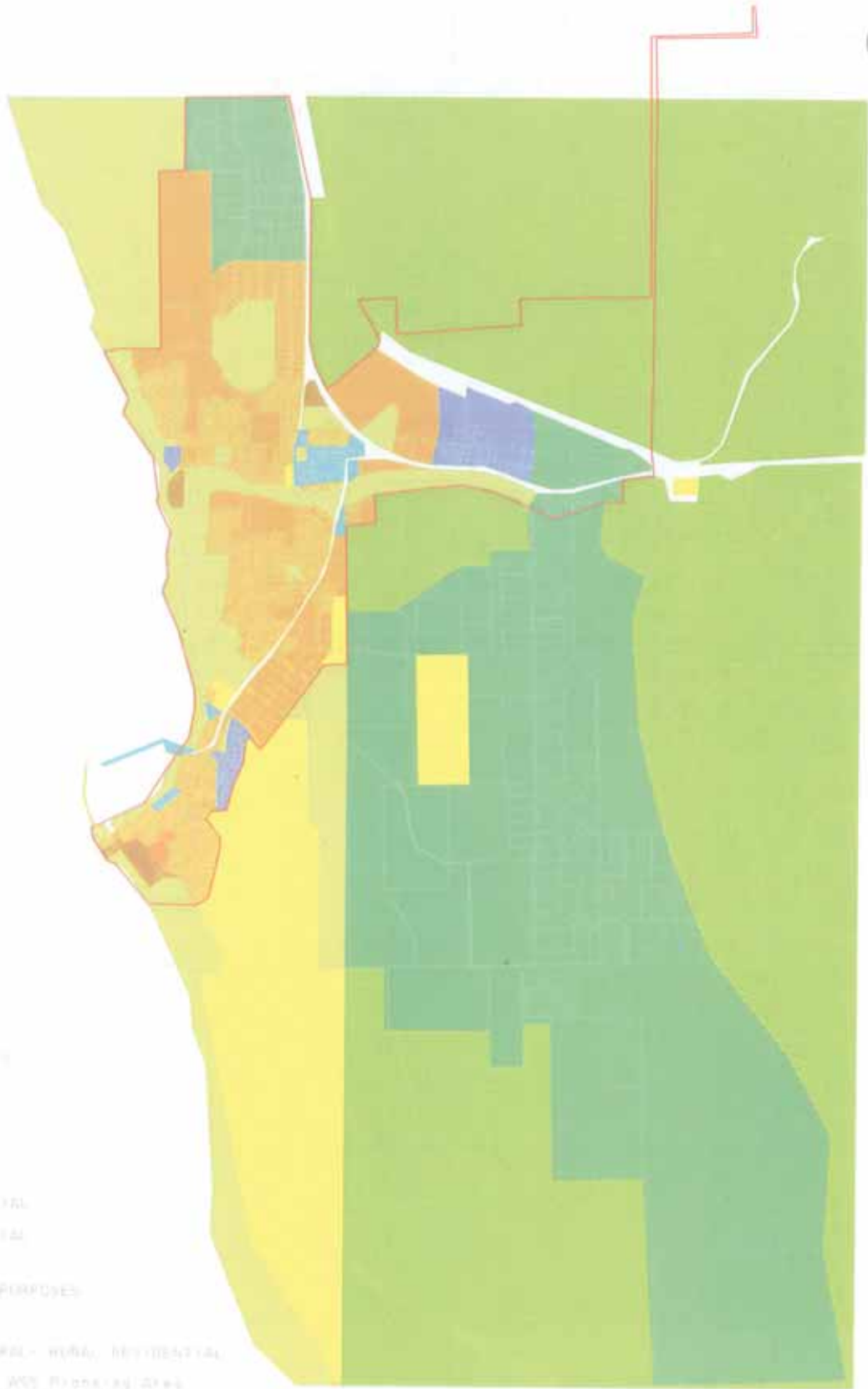
Not to Scale

**LEGEND:**

- Study Boundary
- Future Urban / Residential
- Precinct Boundary
- 1: St. Dominics Precint
- 2: Race course Estate Precint
- 3: Francisco Road North Precint
- 4: South Port Denison Precint

**APPENDIX 3**  
**WATER CORPORATION – CURRENT PLANNING**





**LEGEND**

- R1 - RTI
- R20
- R30
- R40
- R50
- INDUSTRIAL
- COMMERCIAL
- P.O.P
- PUBLIC PURPOSES
- RURAL
- SEMI-RURAL - RURAL RESIDENTIAL
- Dongara WSC Planning Area Boundary

THE INFORMATION CONTAINED HEREIN IS SUBJECT TO CHANGE WITHOUT NOTICE AND SHOULD BE USED IN CONJUNCTION WITH THE APPLICABLE REPORT

Figure 2-1



Dongara - Denison  
2037 Land Use



Future booster zone (pink) - post 2017

Reticulation in development (Lot 130 Brebbard Rd) should have a DN200 spine, with DN150 connections to nearby reticulation at high elevation

Initial booster zone (yellow) up to approx 2017

See inset 1

See inset 2

**LEGEND**

CIP Projects  
 Within 5 years / Beyond 5 years

Key Transfer or Distribution Mains  
 Existing  
 Planned

Existing/Planned Ground Tank

Closed Valve separating key mains



DONGARA CIP  
 Distribution and Storage

Figure 6.1

This information is intended to be used as a guide only. It is not intended to be used as a basis for any legal or financial liability.

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DATE

SCALE 1:1000



**LEGEND**

LAND ZONING			

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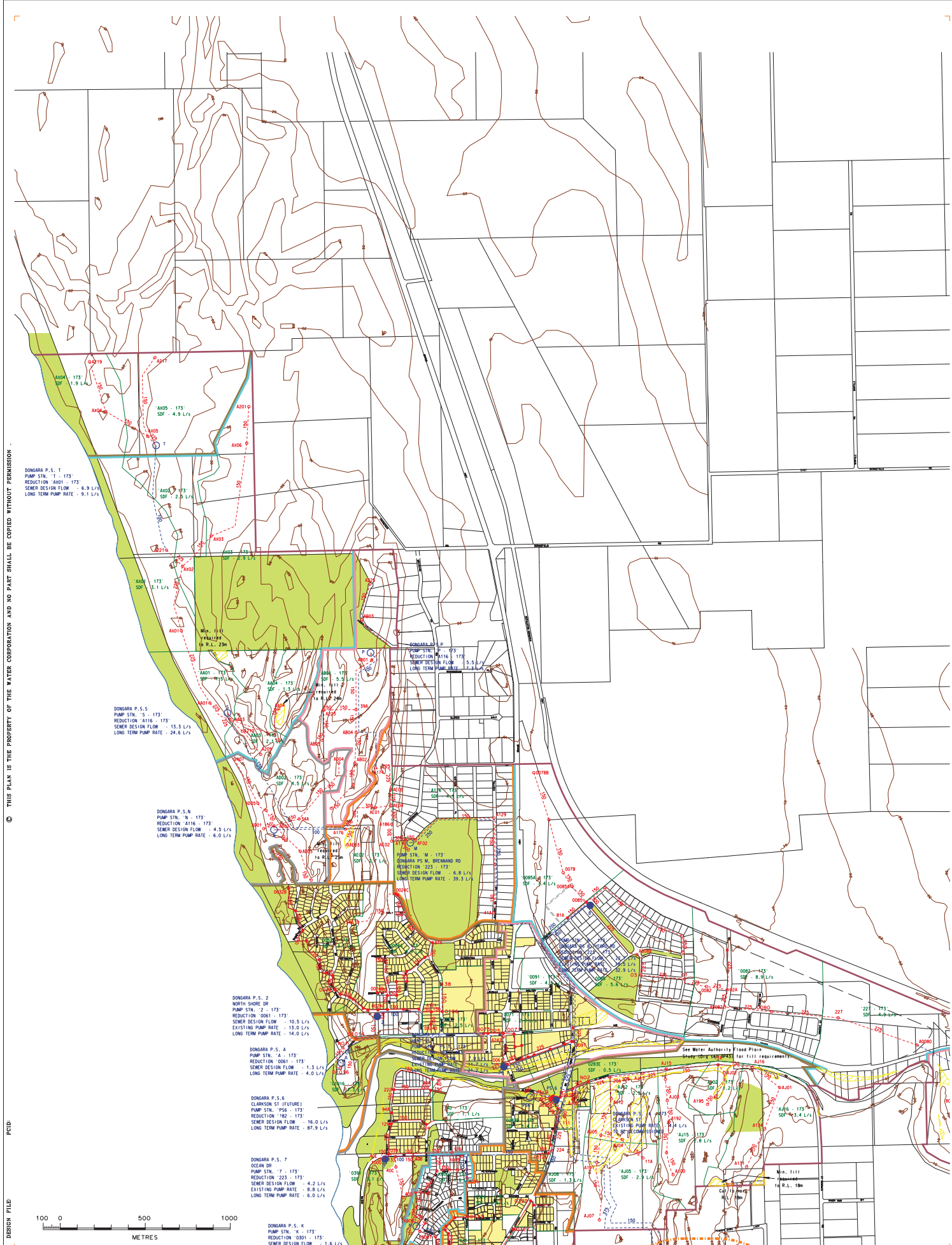
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ISSUED WITH THE AUTHORITY OF THE MANAGER  
 INFRASTRUCTURE PLANNING BRANCH  
 545 NEWCASTLE STREET, LEEDSVILLE 5007  
 WESTERN AUSTRALIA  
 TELEPHONE 080 9428 2425 FAX 080 9428 0179

**WASTEWATER SCHEME PLANNING SERIES**  
**DONGARA - DENISON - SD173**  
**CONCEPTUAL PLANNING**  
**LONG TERM LAND USE PLAN**

PLANNED BY <b>HASTON</b>	DESIGNED BY <b>HASTON</b>	APPROVED BY <b>R. NICHOLSON</b>
SCALE 1:50 000	ISSUED JUNE 2012	FILE NO. 473 2006 16714 V01 A3



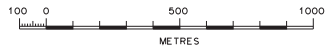
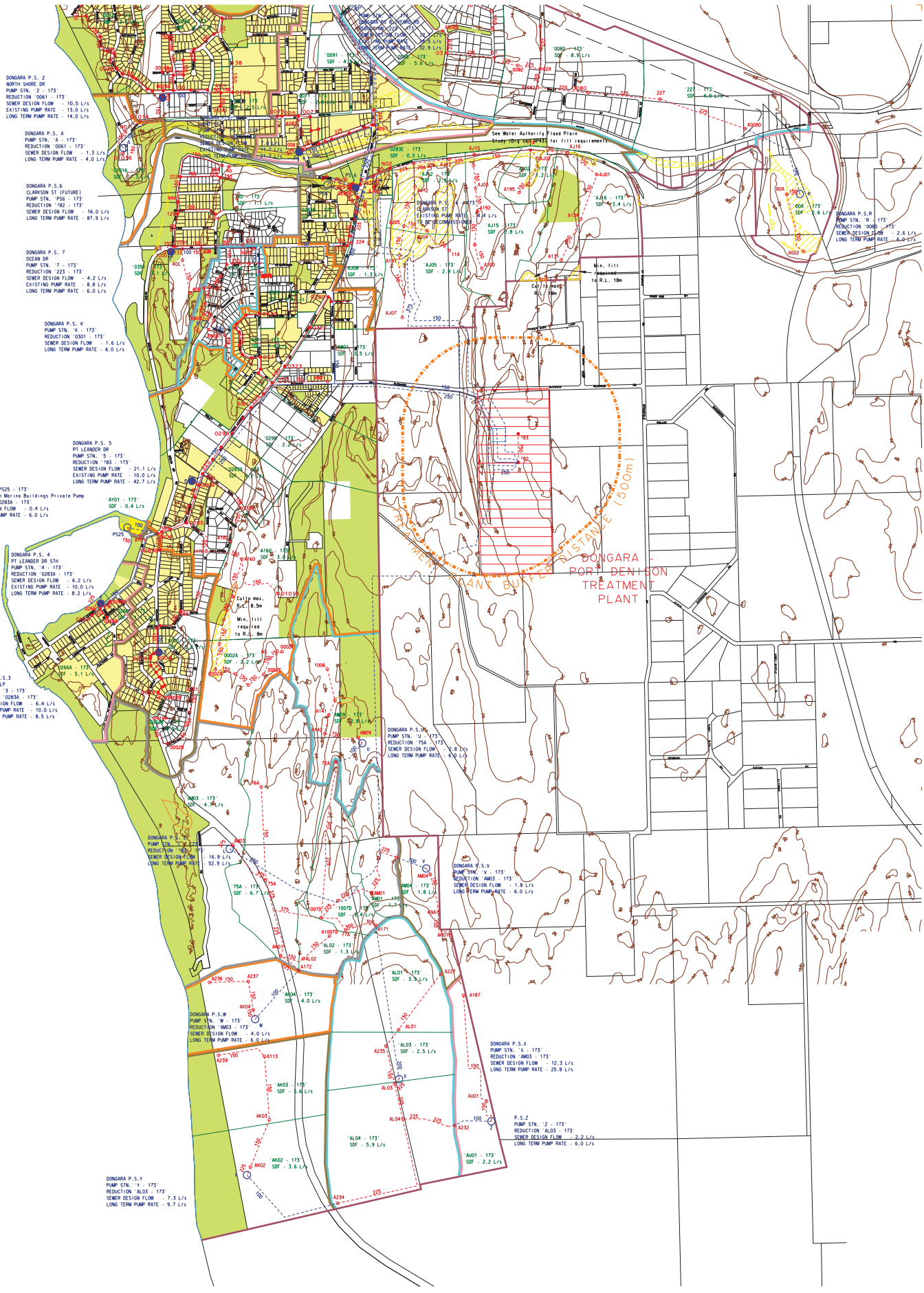
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<b>LEGEND</b> <ul style="list-style-type: none"> <li><span style="color: blue;">●</span> EXISTING PUMPING STATION</li> <li><span style="color: blue;">—</span> EXISTING PRESSURE MAIN</li> <li><span style="color: red;">—</span> EXISTING GRAVITY SEWER</li> <li><span style="color: blue;">—</span> PROPOSED PUMPING STATION</li> <li><span style="color: blue;">—</span> PROPOSED PRESSURE MAIN</li> <li><span style="color: red;">—</span> PROPOSED GRAVITY SEWER</li> </ul>		<b>NOTATION</b> <ul style="list-style-type: none"> <li><span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> CATCHMENT NODE</li> <li><span style="border-bottom: 1px dashed black; width: 10px; display: inline-block;"></span> SEWER DUCTILE NUMBER</li> <li><span style="border-bottom: 1px solid black; width: 10px; display: inline-block;"></span> '7001 - 121'</li> <li><span style="border-bottom: 1px solid black; width: 10px; display: inline-block;"></span> SDF - LS &amp; AVERAGE DAILY FLOW RATE</li> <li><span style="background-color: yellow; border: 1px solid black; width: 10px; height: 10px; display: inline-block;"></span> CUT / FILL</li> </ul>		<b>SHEET INDEX</b> 		<p>ISSUED WITH THE AUTHORITY OF THE MANAGER          INFRASTRUCTURE PLANNING BRANCH          659 NEWCASTLE STREET, LEEDERVILLE 6007          WESTERN AUSTRALIA          TELEPHONE 080 9420 2420, FAX 080 9420 3179</p>		<b>WASTEWATER SCHEME PLANNING SERIES</b> <b>DONGARA DENISON - SD173</b> <b>CONCEPTUAL PLANNING</b> <b>LONG TERM SCHEME - SHEET 1 OF 2</b>		PLANNING BY: L. BASTOW SCALE: 1:10 000 COMPILLED BY: L. BASTOW VERSION: JUNE 2012 ACCEPTED BY: R. NICHOLSON FILE NO: JTI 5008 16714 VOL 1	
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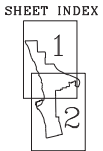
DESIGN FILE: PCID:



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LEGEND	
	EXISTING PUMPING STATION
	EXISTING PRESSURE MAIN
	EXISTING GRAVITY SEWER
	PROPOSED PUMPING STATION
	PROPOSED PRESSURE MAIN
	PROPOSED GRAVITY SEWER
	PARKS AND PUBLIC OPEN SPACE
	EXISTING SEWERED AREAS
	SEWERED BY PRIVATE PS
	NODE CATCHMENT
	PS AND SEWER CATCHMENTS
	SEWER DISTRICT CATCHMENT
	WWT/PS CATCHMENT

NOTATION	
	CATCHMENT NODE
	SEWER DUCTILE NUMBER
	SEWER DUCTILE NUMBER SDF - L/S & AVERAGE DAILY FLOW RATE
	CUT / FILL



ISSUED WITH THE AUTHORITY OF THE MANAGER  
INFRASTRUCTURE PLANNING BRANCH  
659 NEWCASTLE STREET, LEEDERVILLE 6007  
WESTERN AUSTRALIA  
TELEPHONE 080 9420 9420, FAX 080 9420 3179

WASTEWATER SCHEME PLANNING SERIES

DONGARA DENISON - SD173  
CONCEPTUAL PLANNING  
LONG TERM SCHEME - SHEET 2 OF 2

PLANNING BY L. BASTOW	COMPILED BY L. BASTOW	ACCEPTED BY R. NICHOLSON
SCALE 1:10 000	VERSION JUNE 2012	FILE NO. J71 2008 16714 V01

Stuart Murphy

---

From: Mark Willson <Mark.Willson@watercorporation.com.au>  
Sent: Friday, 19 September 2014 5:18 PM  
To: stuart@portereng.com.au  
Subject: Shire of Irwin - LPS - Local Planning Strategy Review  
Attachments: PM-#8703974-v4-  
Information\_sheet\_-\_Defining\_ouour\_buffers\_to\_wastewater\_treatment\_plants.PDF; PM-#8703967-v2-Information\_sheet\_-\_Compatible\_land\_use\_in\_buffers.PDF; PM-#8703979-v1-  
Information\_sheet\_-\_Land\_use\_opportunities\_in\_the\_buffers\_of\_wastewater\_treatment\_plants.PDF; 201409191712.pdf; 201409191714.pdf

Stuart,

Below is a summary of information recently provided to the Shire and Emerge Associates.

Please find attached updated mark up on letter & plan response provided to the Shire on the Dongara - Port Denison District Structure Plan at beginning of the year. The water planning should be formally completed by the end of the year, the markups explain which areas have been included in the planning.

#### **WWTP Buffer Information Sheets**

Compatible landuse in the buffer of the wwtp should be considered. Please refer to the attached information sheets. The Corporation are currently in the process of promoting the buffers as precincts for compatible use, which may also benefit from water reuse.

Defining Odour Buffers for WWTP

Determining a compatible landuse buffer

Landuse opportunities in the buffers of wastewater treatment plants

#### **Recommended Coastal Set Back Area**

The Corporation request that any Coastal Study commissioned by the Shire to determine setbacks for existing areas, and or protection measures should be referred to the Corporation when in draft form in order to ensure that any Corporation assets that are at risk are identified. Recent discussion with other local authorities has lead to an understanding that the Corporation cannot assume that existing coastal road reserves are protection against future events.

Please find the following comments on areas which are effected by recommended setbacks and the impacts of coastal sea level rise provided previously.

- The small catchment at the western end of Church St – It should not be assumed that the Corporation will be service provider for this area as the majority of the area is within the recommended coastal setback.(even though it is in the Corporations concept planning)
  - The wwps at the end of Samuel Street is within 30m of the high tide mark and only at approx. 2.6m AHD.

Please call if you wish to discuss further.

Regards

Mark

**Mark Willson**

Development Planner  
Development Services

**Water Corporation**

**T:** (08) 9923 4910 | **F:** (08) 9923 4966

[www.watercorporation.com.au](http://www.watercorporation.com.au)



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# Determining compatible land uses for buffers

Development Services –  
Land Planning information sheet

## Introduction

The Water Corporation has identified buffers for many of its infrastructure assets. These aim to provide protection from incompatible land uses for environmental, operational, public safety or amenity reasons.

This information sheet outlines the different types of buffers and assets and provides a land use compatibility table to help determine appropriate land uses for buffers.

## Buffer types and purposes

The different types of buffers and their purposes are outlined below:

### Odour buffers

These are provided to wastewater treatment plants and wastewater pump stations. Odour can create a nuisance which affects peoples' amenity. Buffers protect sensitive land uses from the impacts of odour and help prevent conflict.

### Chlorine buffers

These are provided to chlorine storage areas located mainly at water and wastewater treatment plants. In these cases the buffer is provided to guard against the risk of chlorine leaks which can provide a risk to human health and safety.

### Noise buffers

These are sometimes provided to noise generating infrastructure.

### Cathodic protection buffers

These are provided to prevent the premature corrosion of metal e.g. steel reinforcement in buildings.

### Wellhead protection buffers

These are provided to prevent contamination of groundwater in the vicinity of a public water supply area.

Often buffers will be contained in other buffers. For example, noise and chlorine buffers for wastewater treatment plants are often contained in odour buffers because the size of odour buffers is greater.



**Figure 1 – Wastewater treatment plants provide essential services but from time to time may generate odour and need buffers to prevent land use conflict**



**Figure 2 - Good planning should ensure compatible land use is located in buffers**



The Water Corporation has mapped the location of different buffers to its infrastructure. These are used for a variety of purposes ranging from planning upgrades to existing infrastructure to the assessment of development applications.

### **Determining compatible land uses**

A useful tool for helping to determine appropriate land uses in buffers is the land use compatibility table (attached). This table has been developed by the Water Corporation using more than two decades of research and experience.

The land use compatibility table identifies those uses which may be supported in the different buffers.

The definitions of each of the land uses is based on those provided in the [Model Scheme Text of the Western Australian Planning Commission \(WAPC\)](#). Where a use cannot be reasonably categorised using an existing definition, then you should contact the Land Planning team at the Water Corporation for advice.

### **Resources**

1. [Environmental Protection Authority \(2005\) Separation Distances between Industrial and Sensitive Land Uses. Guidance Statement No. 3.](#)
2. [Western Australian Planning Commission \(WAPC\) \(2009\) Statement of Planning Policy No. 4.1 – State Industrial Buffer \(Amended\) \(Draft\).](#)
3. Water corporation Land Planning team. Email: [landplanning@watercorporation.com.au](mailto:landplanning@watercorporation.com.au)

### **Attachment**

Land use compatibility table



**Figure 3 – A local park is used to provide a buffer to this wastewater pump station**

## Land use compatibility table

Land use categories	Odour Buffers	Chlorine Buffers	Noise Buffers	Wellhead Protection Zones (P1)	Wellhead Protection Zones (P2)	Wellhead Protection Zones (P3)
<i>Permitted use ✓ Discretionary use ? Not permitted ✗</i>						
Aged and dependant person dwelling	✗	✗	✗	✗	✗	✓
Agriculture - extensive	✓	✓	✓	?	?	✓
Agriculture - intensive	✓	✓	✓	✗	?	✓
Agro-forestry	✓	✓	✓	✗	?	✓
Amusement parlour	✗	✗	✗	✗	✗	✓
Ancillary accommodation	✗	✗	✗	✗	✗	✓
Animal establishment	✓	✓	✓	✗	?	?
Animal husbandry intensive	✓	✓	✓	✗	?	?
Bed and breakfast	✗	✗	✗	?	?	✓
Betting agency	✗	✗	✗	✗	?	✓
Caravan park	✗	✗	✗	✗	✗	?
Caretakers dwelling	✗	✗	✗	?	?	✓
Car park	✓	✓	✓	✗	✗	✓
Cemetery	✓	✓	✓	✗	✗	?
Childcare premises	✗	✗	✗	✗	?	✓
Cinema / theatre	✗	✗	✗	✗	✗	✓
Civic use	✗	✗	✗	✗	?	✓
Club premises	✗	✗	✗	✗	?	✓
Community purpose	✗	?	?	✗	?	?
Consulting rooms	✗	✗	✗	✗	?	✓
Convenience store	✗	✗	✗	✗	?	✓
Corrective institution	✗	✗	?	✗	✗	?
Dwelling	✗	✗	✗	?	?	✓
Education establishment	✗	✗	?	✗	?	✓
Exhibition centre	✗	✗	✗	✗	✗	✓
Family day care	✗	✗	✗	✗	✓	✓
Fast food outlet	✗	✗	✗	✗	✗	✓
Fuel depot	✓	✓	✓	✗	✗	?
Funeral parlour	✗	✗	✗	✗	✗	✓
Grouped dwelling	✗	✗	✗	✗	✗	✓
Home business	✗	✗	✗	✗	✓	✓
Home occupation	✗	✗	✗	?	✓	✓
Home office	✗	✗	✗	?	✓	✓
Home store	✗	✗	✗	✗	?	✓
Hospital	✗	✗	✗	✗	✗	✓

Land use categories	Odour Buffers	Chlorine Buffers	Noise Buffers	Wellhead Protection Zones (P1)	Wellhead Protection Zones (P2)	Wellhead Protection Zones (P3)
Hotel	x	x	x	x	x	?
Industry	✓	✓	✓	?	?	?
Industry - cottage	?	?	✓	?	?	?
Industry - extractive	✓	✓	✓	?	?	?
Industry - general	✓	✓	✓	?	?	?
Industry - light	?	?	✓	?	?	?
Industry - mining	✓	✓	✓	?	?	?
Industry - rural	✓	✓	✓	?	?	?
Industry - service	?	?	✓	?	?	?
Lunch bar	x	x	x	x	?	✓
Marina	?	?	✓	x	x	?
Marine filling station	✓	✓	✓	x	x	?
Market	x	x	x	x	x	✓
Medical centre	x	x	x	x	x	✓
Motel	x	x	x	x	x	✓
Motor vehicle repair	✓	✓	✓	x	x	?
Motor vehicle wash (carwash)	✓	✓	✓	x	x	?
Motor vehicle, boat or caravan sales	x	?	?	x	x	✓
Multiple dwellings	x	x	x	x	x	✓
Night club	x	x	✓	x	x	✓
Office	x	x	x	x	?	✓
Park home park	x	x	x	x	x	?
Place of worship	x	x	x	x	x	✓
Plantation	✓	✓	✓	?	?	✓
Public open space	✓	✓	✓	✓	✓	✓
Public utilities	✓	✓	✓	✓	✓	✓
Reception centre	x	x	x	x	x	✓
Recreation private	x	?	?	x	x	✓
Residential building	x	x	x	?	?	✓
Restaurant	x	x	x	x	x	✓
Restricted premises	x	x	x	x	x	✓
Rural pursuit	?	?	?	x	?	?
Rural residential	x	x	x	?	?	✓
Service station	✓	✓	✓	x	x	?
Shop	x	x	x	x	?	✓
Showroom	x	x	x	x	x	✓
Single house	x	x	x	✓	✓	✓
Storage (warehouse)	✓	✓	✓	x	?	✓
Tavern	x	x	x	x	x	✓
Telecommunications	✓	✓	✓	?	?	?

Land use categories	Odour Buffers	Chlorine Buffers	Noise Buffers	Wellhead Protection Zones (P1)	Wellhead Protection Zones (P2)	Wellhead Protection Zones (P3)
Veterinary centre	?	?	✓	✗	?	?
Winery	?	?	?	✗	?	?

### Discretionary uses

Odour / chlorine /noise – direction should be sought from the Water Corporation’s Land Planning team by emailing [landplanning@watercorporation.com.au](mailto:landplanning@watercorporation.com.au)

Wellhead protection zones – refer to the Department of Water’s Water Quality Protection Note [Land use Compatibility in Public Drinking Water Source Areas](#). Direction from the Land Planning team should be sought in the need of further clarification.

Your Ref:  
Our Ref: JT1 2012 06447 v01  
Enquiries: Mark Willson  
Direct Tel: 9923 4910



28 February 2014

Shire of Irwin  
Waldeck St  
Dongara WA 6525

Attention: Geoff Peddie

Dear Sir

**Shire of Irwin  
Dongara and Port Denison District Structure Plan**

Thank you for the opportunity to provide comment regarding the proposed DDP.

The Corporation has assessed the proposal and has no objections. The Water Corporation has previously provided information to GHD planners in order to assist with the proposal. Please find the following additional advice following review of the proposed DDP.

**Summary**

Water scheme planning for the GRWWS which includes Geraldton and Dongara is currently under review and due for completion by end of this year 2014. The current planning identifies two water pump station booster zones and the Dongara - Denison Wye Farm Rd Tank Water Zone to supply the required pressures in the scheme. The new areas proposed for development from when the current planning was completed, will likely require expansion of existing booster zones or new zones created with separate booster pump stations.

Wastewater conveyance planning has only recently been completed in 2012, adopting information provided in the shires scheme and strategy at the time. The new areas proposed for development for development may require additional wastewater pump stations.

General information has been divided into the precinct areas referred to in the Dongara and Port Denison District Structure Plan to assist with understanding the current information on servicing advice for water and wastewater.

**1. St Dominics Precinct**

- Wastewater conveyance planning - Planning has identified an area of fill or cut and fill in order for it to be served by reticulation.
- Water scheme planning - The majority of area has not been included in water scheme planning for the proposed land use. All the future urban area has not yet been included.
- A new wastewater pressure main route needs to be allowed for / reserved through the precinct area during detailed planning/scoping to develop the area. The pressure main will transfer flows from this precinct area and the north of the Irwin to the wwtp in the south.
- A new wastewater pressure main route is required from Pt Leander Dr wwps, along Pt Leander Dr. from Russ St and along Blenheim Dr to the wwtp.

✓ NB WS INCLUDED

## 2. Race Course Estate Precinct

FUTURE  
RECORDING OF VOLUMES TO  
INCLUDE THIS BEEN INCLUDED  
IN WATER PLANNING

- Wastewater conveyance planning – All of the future urban res. area has not been included in the current planning. The precinct ultimately requires 3 new wwps in order to be served.
- Water scheme planning – The area ultimately requires two new booster pump stations zones in order to be served. One of these booster zones overlaps with precinct 3.

## 3. Francisco Road North Precinct

- Wastewater conveyance planning – The majority of this area is not included in the current planning.
- The number of wastewater pump stations is not known, for this area.
- Water scheme planning – The majority of this area is not included in the current planning. It likely to require either increasing the area/size of one of the currently planned booster pump stations zones, or identifying new zones. ✓ NOW INCLUDED.

## 4. South Port Denison Precinct

- Wastewater conveyance planning – The future urban
- Water scheme planning – The future urban res. area has not been included in the current planning. ✓ NOW INCLUDED.

### **Wastewater Reuse and Water Efficiency**

The Dongara - Port Denison wastewater treatment plant was designed / commissioned in 2010, which included a treated wastewater reuse system to supplement the bore water used to irrigate the golf course. The reuse system takes the majority of the treated wastewater for reuse.

Please find a summary of the daily average flows for Dongara and Port Denison in order to provide an overall picture of water use in Dongara, when considering overall district and local water strategies and water management plans for individual areas.

645 kl/day From bore fields to town for use  
520 kl/day Wastewater inflow to Dongara wastewater treatment plant  
390 kl/day Reuse water from wastewater treatment plant, passes via the shire tanks to irrigate golf course.

445 kl/day Residential households (approx. 1300 services)  
200 kl/day Non-residential (approx. 300 services)

### **Wastewater Treatment Plant Buffer**

Please find the attached information recently completed on wastewater treatment plant buffers for your information.

Should you have any queries or require any further information please contact the undersigned.

Regards,   
Mark Willson, Development Services Branch

### **Attachments:**

Dongara Denison District Structure Plan – Marked up with Corporation Comments  
Defining odour buffers for wastewater treatment plants  
Determining compatible landuse for buffers  
Landuse opportunities in the buffers of wastewater treatment plants



Figure 17: Dongara - Port Denison District Structure Plan

**APPENDIX 4**  
**MRWA – CURRENT PLANNING**



# Regional Priority Projects Mid West Region

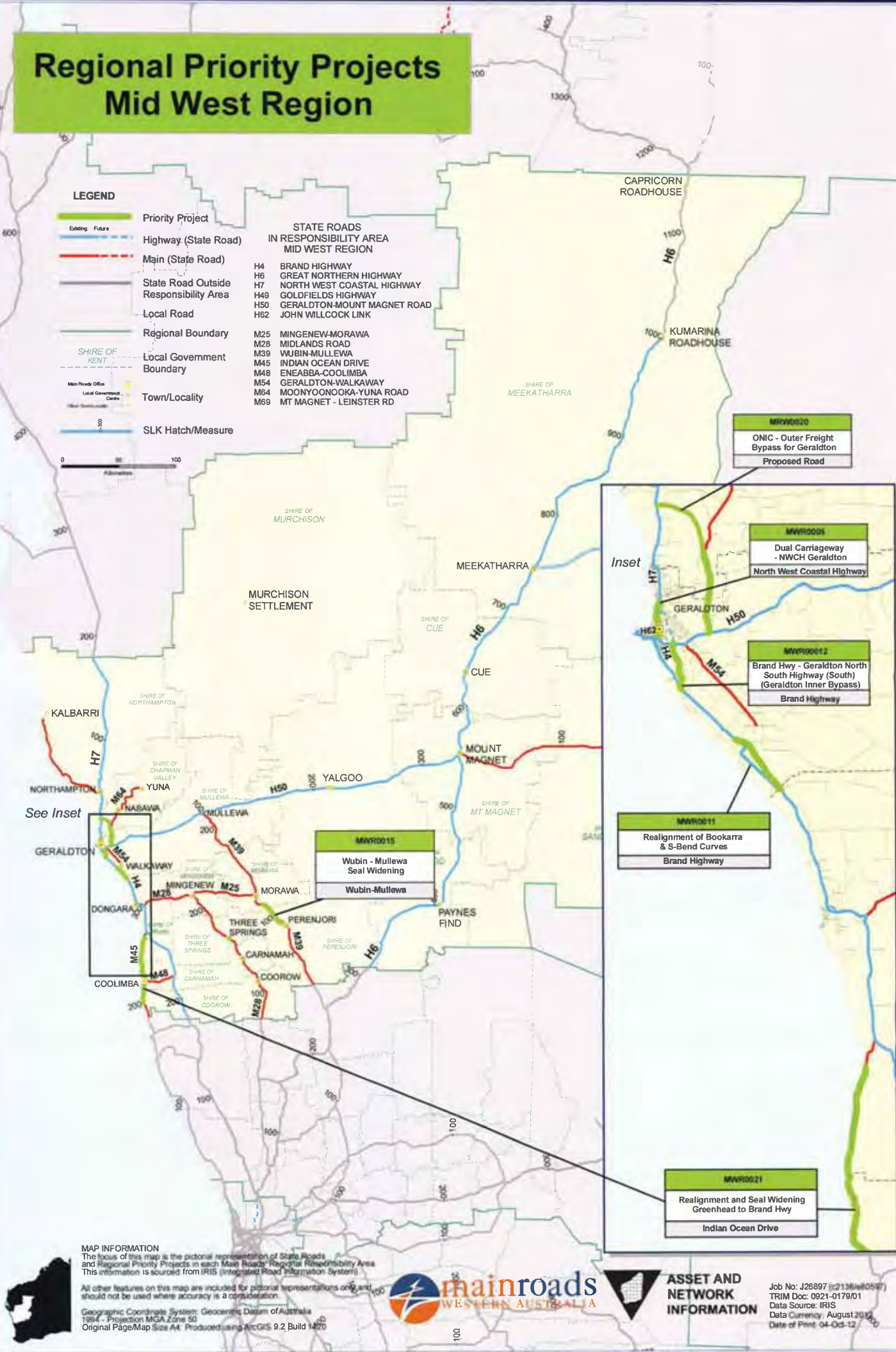
## LEGEND

- Priority Project
- Existing Highway (State Road)
- Future Highway (State Road)
- Main (State Road)
- State Road Outside Responsibility Area
- Local Road
- Regional Boundary
- Local Government Boundary
- Town/Locality
- SLK Hatch/Measure

**STATE ROADS  
IN RESPONSIBILITY AREA  
MID WEST REGION**

H4	BRAND HIGHWAY
H6	GREAT NORTHERN HIGHWAY
H7	NORTH WEST COASTAL HIGHWAY
H49	GOLDFIELDS HIGHWAY
H50	GERALDTON-MOUNT MAGNET ROAD
H62	JOHN WILLCOCK LINK

M25	MINGENEW-MORAWA
M28	MIDLANDS ROAD
M39	WUBIN-MULLEWA
M45	INDIAN OCEAN DRIVE
M48	ENEABBA-COOLIMBA
M54	GERALDTON-WALKAWAY
M64	MOONYOONOOKA-YUNA ROAD
M69	MT MAGNET - LEINSTER RD



**MRW0015**  
Wubin - Mullewa  
Seal Widening  
Wubin-Mullewa

### MAP INFORMATION

The focus of this map is the pictorial representation of State Roads and Regional Priority Projects in each Main Roads Regional Responsibility Area. This information is sourced from IRIS (Integrated Road Information Systems).

All other features on this map are included for pictorial representations only and should not be used where accuracy is a consideration.

Geographic Coordinate System: Geocentric Datum of Australia 1984 - Projection MGA Zone 50  
Original Page/Map Size A4. Produced using ArcGIS 9.2 Build 14270



**ASSET AND  
NETWORK  
INFORMATION**

Job No: J26897 (c2136w0597)  
TRIM Doc: 0921-0179/01  
Data Source: IRIS  
Data Currency: August 2012  
Date of Print: 04-03-12

**APPENDIX 5**  
**DEPARTMENT OF TRANSPORT – CURRENT PLANNING**





# Appendix F

Central Regions Land Capacity Analysis (2016)





Department of  
Planning

# Central Regions Land Capacity Analysis

Shire of Irwin

February 2016

# Central Regions Land Capacity Analysis

## Shire of Irwin

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# Central Regions Land Capacity Analysis

## Shire of Irwin

### 1. Introduction

The Central Regions Land Capacity Analysis provides a broad overview of the existing and future land capacity of settlements in the Mid West, Gascoyne and Goldfields-Esperance regions with respect to forecast population growth. In particular, it examines land identified for residential, commercial and industrial development.

The purpose of this document is to present the land-use mapping and associated analysis as it relates to the applicable settlements in the Shire of Irwin local government area.

Notably, the analysis suggests there is sufficient land capable of substantial further development (based on the current extents of zoned residential land and land identified for future residential purposes) to cater for the population growth anticipated in the *Western Australia Tomorrow 2026* population forecasts for the Shire of Irwin.

The information presented in this document may provide a basis for a range of regional and local strategic planning including:

- to assist regional planning and provide direction for strategic infrastructure coordination;
- to inform the preparation and/or review of local planning strategies, schemes and structure plans; and
- for more detailed land supply analysis, including further investigation into the infrastructure requirements to service potential development of the future land supply.

Given the dynamic nature of planning and development, it is intended that this paper will be amended periodically to reflect future updates to local planning instruments as relevant.

Notwithstanding this, the information contained in this document has been prepared for guidance purposes only.

### 2. Settlement land-use mapping

The Department of Planning (DoP) has prepared mapping that captures the spatial extents of current and future land use in applicable settlements. Within the Shire of Irwin, this includes:

- Dongara-Denison (**Map 1**); and
- Dongara-Denison surrounds (**Map 2**).

Further context on how this mapping has been developed is provided below.

#### 2.1 Current and future land use

For the purpose of this study, the mapping categorises current and future land uses into broad land-use types. It effectively rationalises and consolidates existing zones and reserves in local planning schemes with intended future land uses identified in a number of strategic documents, including local planning strategies and structure plans.

The areas identified on the maps are based on the general consideration of:

- current zonings and reservations within applicable local planning schemes; and
- other strategic planning documents including local planning strategies, structure plans, layout plans and/or growth plans where relevant.

With respect to this, the extent of current land uses generally reflect that of applicable existing zones and reserves in current local planning schemes; and future land uses generally reflect where land has been identified in other documents for a different (typically more intensive) land use than that identified in the current scheme.









# Central Regions Land Capacity Analysis

## Shire of Irwin

Planning instruments that have informed the preparation of the settlement land-use mapping within the Shire of Irwin include the:

- Shire of Irwin Local Planning Scheme No. 5;
- Shire of Irwin Local Planning Strategy 2007; and
- Dongara–Port Denison District Structure Plan 2014.

As a general guide, a broad description of what each land-use category considers is provided below:

	<b>Residential</b>	Areas that are predominantly currently zoned in relevant local planning schemes for residential land uses
	<b>Future residential</b>	Areas that have been identified predominantly for future residential land uses through relevant strategic planning processes
	<b>Rural residential</b>	Areas that are predominantly currently zoned in relevant local planning schemes for rural residential land uses
	<b>Future rural residential</b>	Areas that have been identified predominantly for future rural residential land uses through relevant strategic planning processes
	<b>Rural smallholdings</b>	Areas that are predominantly currently zoned in relevant local planning schemes for rural smallholdings land uses
	<b>Future rural smallholdings</b>	Areas that have been identified predominantly for future rural smallholdings land uses through relevant strategic planning processes
	<b>Commercial</b>	Areas that are predominantly currently zoned in relevant local planning schemes for commercial land uses
	<b>Future commercial</b>	Areas that have been identified predominantly for future commercial land uses through relevant strategic planning processes

# Central Regions Land Capacity Analysis

Shire of Irwin

	<b>Industrial</b>	Areas that are predominantly currently zoned in relevant local planning schemes for industrial land uses
	<b>Future industrial</b>	Areas that have been identified predominantly for future industrial land uses through relevant strategic planning processes
	<b>Rural</b>	Areas that are predominantly currently zoned in relevant local planning schemes for rural land uses
	<b>Future rural</b>	Areas that have been identified predominantly for future rural land uses through relevant strategic planning processes
	<b>Infrastructure and public purposes</b>	Areas that are predominantly currently reserved in relevant local planning schemes for infrastructure and/or public purposes
	<b>Future infrastructure and public purposes</b>	Areas that have been identified predominantly for future infrastructure and/or public purposes through relevant strategic planning processes
	<b>Recreation</b>	Areas that are predominantly currently reserved in relevant local planning schemes for recreation purposes
	<b>Future recreation</b>	Areas that have been identified predominantly for future recreation purposes through relevant strategic planning processes
	<b>Conservation</b>	Areas that are predominantly currently reserved in relevant local planning schemes for conservation purposes
	<b>Future conservation</b>	Areas that have been identified predominantly for future conservation purposes through relevant strategic planning processes
	<b>Special land use</b>	Areas that are currently zoned in relevant local planning schemes for specific purposes that do not align with other broad land-use categories as described, or where their inclusion may unduly distort the results of the associated analysis
	<b>Investigation area</b>	Areas that have been identified through relevant strategic planning processes where alternative future land uses may be considered subject to further investigation. This may include areas from plans in preparation or in draft form

# Central Regions Land Capacity Analysis

## Shire of Irwin

### 2.2 Development status

To gain a general understanding of the potential capacity of currently zoned and potential future-zoned land within each settlement, a broad assessment has been undertaken of the development status of applicable land identified for **residential, commercial, industrial, rural residential** and **rural smallholdings** purposes. Generally, the assessment involved a visual interpretation of aerial photography and cadastral information.

This assessment has been undertaken for those settlements where the applicable land uses occur within the map extents.

Applicable areas within the map extents have been assessed and considered as being 'developed' or 'capable of substantial further development' as described below.

**Developed:** 'developed' land is broadly considered as land where development exists or where the necessary infrastructure and services to accommodate development exist. Subdivision is generally consistent with its zoning, however existing urban areas that could potentially accommodate increases in density through urban infill are considered to be 'developed.'

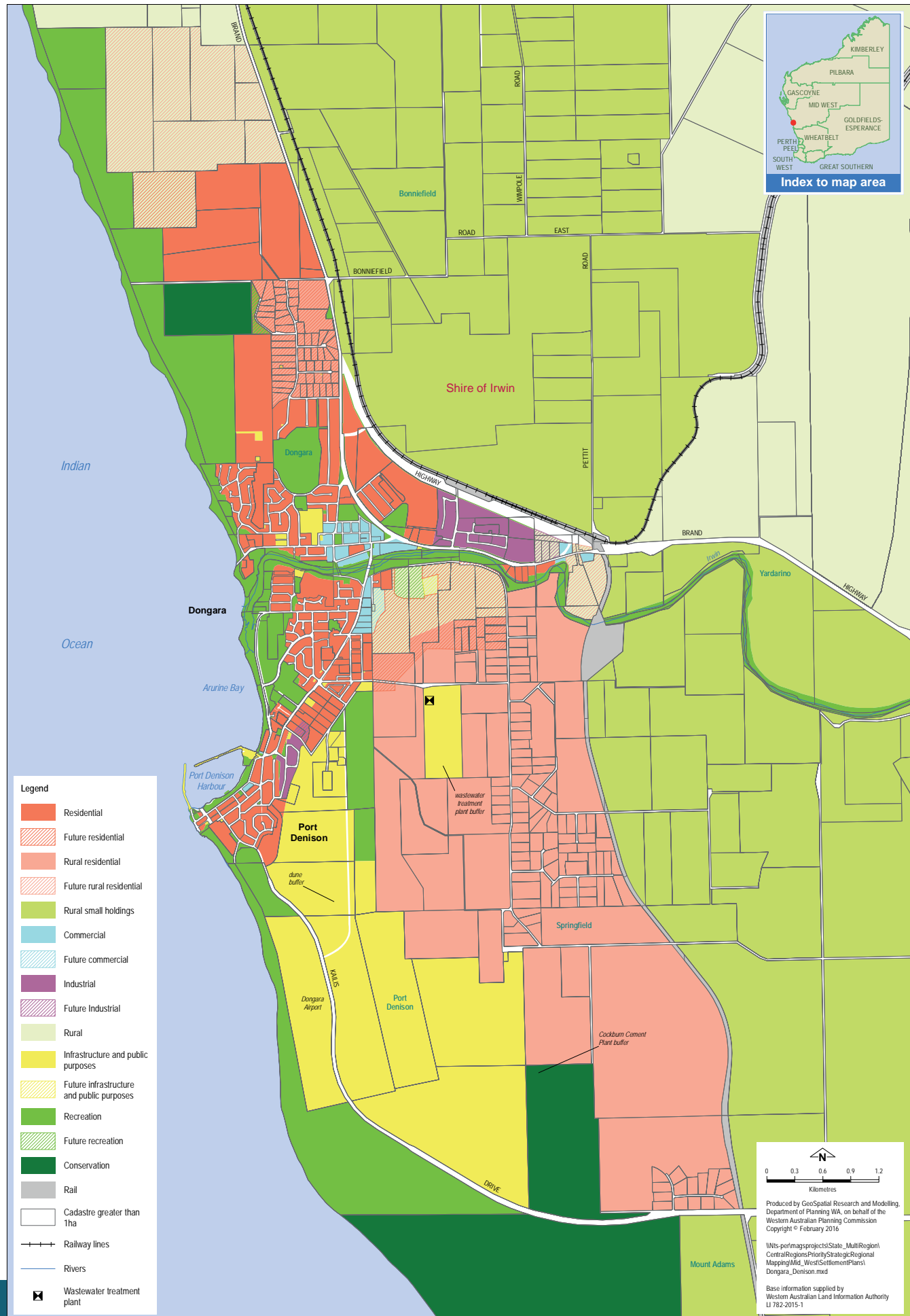
**Capable of substantial further development:** Land 'capable of substantial further development' consists of undeveloped or underdeveloped land on greenfield sites, where subdivision reflective of its zoning is yet to exist. In some instances however, land may have conditional subdivision approval or be part of a broader structure planning process that still needs to be finalised. It is important to note that the development of areas that are currently considered to be capable of substantial further development may be subject to a number of constraints; including scheme amendments, structure planning, infrastructure provision, environmental and heritage issues.

**Table 1** summarises the development status of each applicable land-use category for all relevant settlements, representing a set of total figures for the entire local government area. It consolidates all data from **Tables 2 and 3**, which summarise the development status of each applicable land-use category as it relates to the individual settlements.

# Central Regions Land Capacity Analysis

## Shire of Irwin

Map 1: Dongara-Denison land use map



**Legend**

- Residential
- Future residential
- Rural residential
- Future rural residential
- Rural small holdings
- Commercial
- Future commercial
- Industrial
- Future Industrial
- Rural
- Infrastructure and public purposes
- Future infrastructure and public purposes
- Recreation
- Future recreation
- Conservation
- Rail
- Cadastre greater than 1ha
- Railway lines
- Rivers
- Wastewater treatment plant

Kilometres

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 Western Australian Planning Commission  
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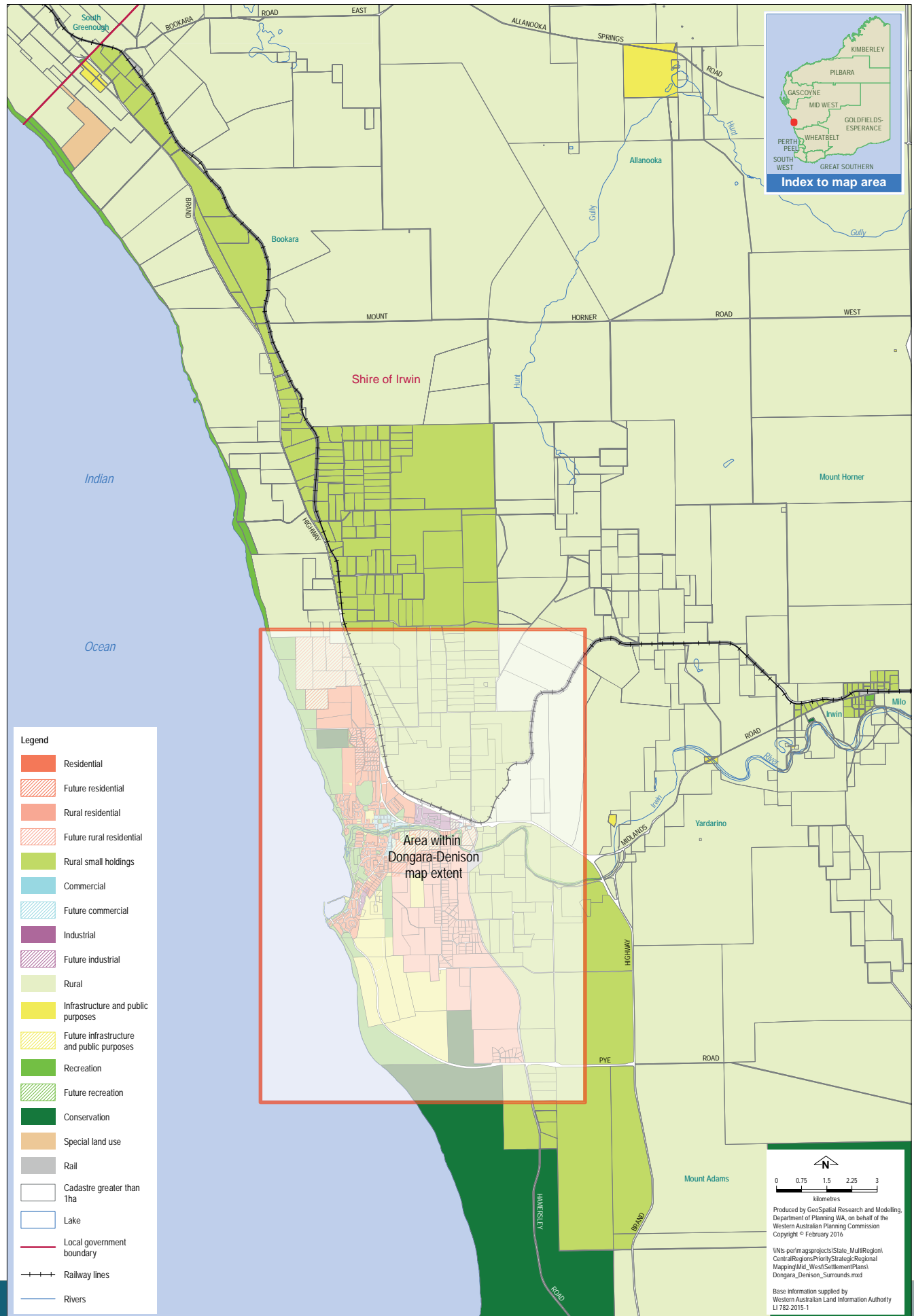
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 Dongara\_Denison.mxd

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 Western Australian Land Information Authority  
 LI 782-2015-1

# Central Regions Land Capacity Analysis

## Shire of Irwin

Map 2: Dongara-Denison surrounds land use map



# Central Regions Land Capacity Analysis

## Shire of Irwin

**Table 1: Shire of Irwin - development status of land in relevant settlements**

	Total	Developed (ha)	Capable of substantial further development (ha)
Residential	545	206	339
Future residential	256	0	256
<b>Residential and future residential</b>	<b>801</b>	<b>206</b>	<b>595</b>
Rural residential	1,364	382	982
Future rural residential	274	0	274
<b>Rural residential and future rural residential</b>	<b>1,638</b>	<b>382</b>	<b>1,256</b>
Rural smallholdings	10,663	3,718	6,945
Future rural smallholdings	0	0	0
<b>Rural smallholdings and future rural smallholdings</b>	<b>10,663</b>	<b>3,718</b>	<b>6,945</b>
Commercial	32	20	12
Future commercial	5	0	5
<b>Commercial and future commercial</b>	<b>37</b>	<b>20</b>	<b>17</b>
Industrial	54	28	26
Future industrial	8	0	8
<b>Industrial and future industrial</b>	<b>62</b>	<b>28</b>	<b>34</b>

# Central Regions Land Capacity Analysis

## Shire of Irwin

**Table 2: Dongara-Denison - development status of land**

	Total	Developed (ha)	Capable of substantial further development (ha)
Residential	545	206	339
Future residential	256	0	256
<b>Residential and future residential</b>	<b>801</b>	<b>206</b>	<b>595</b>
Rural residential	1,364	382	982
Future rural residential	274	0	274
<b>Rural residential and future rural residential</b>	<b>1,638</b>	<b>382</b>	<b>1,256</b>
Rural smallholdings	4,165	2,002	2,163
Future rural smallholdings	0	0	0
<b>Rural smallholdings and future rural smallholdings</b>	<b>4,165</b>	<b>2,002</b>	<b>2,163</b>
Commercial	32	20	12
Future commercial	5	0	5
<b>Commercial and future commercial</b>	<b>37</b>	<b>20</b>	<b>17</b>
Industrial	54	28	26
Future industrial	8	0	8
<b>Industrial and future industrial</b>	<b>62</b>	<b>28</b>	<b>34</b>



# Central Regions Land Capacity Analysis

## Shire of Irwin

**Table 3: Dongara-Denison surrounds - development status of land**

	Total	Developed (ha)	Capable of substantial further development (ha)
Residential	0	0	0
Future residential	0	0	0
<b>Residential and future residential</b>	<b>0</b>	<b>0</b>	<b>0</b>
Rural residential	0	0	0
Future rural residential	0	0	0
<b>Rural residential and future rural residential</b>	<b>0</b>	<b>0</b>	<b>0</b>
Rural smallholdings	6,498	1,716	4,782
Future rural smallholdings	0	0	0
<b>Rural smallholdings and future rural smallholdings</b>	<b>6,498</b>	<b>1,716</b>	<b>4,782</b>
Commercial	0	0	0
Future commercial	0	0	0
<b>Commercial and future commercial</b>	<b>0</b>	<b>0</b>	<b>0</b>
Industrial	0	0	0
Future industrial	0	0	0
<b>Industrial and future industrial</b>	<b>0</b>	<b>0</b>	<b>0</b>

# Central Regions Land Capacity Analysis

## Shire of Irwin

### 3. Capacity analysis

The assessment of the development status of current and future land uses enables a broad-level capacity analysis of the residential development potential of land within the Shire of Irwin. The Department of Planning has prepared such an analysis that:

- estimates the potential additional population yield of current and future residential, rural residential and rural smallholdings lands for each relevant settlement; and
- considers possible implications with regard to the local government area's residential land situation in the context of the *Western Australia Tomorrow 2026* population forecasts.

With respect to this, the tables in section 3.1 summarise the estimated additional capacity of each applicable land-use category for relevant settlements within the Shire of Irwin. Further analysis is presented in section 3.2 that relates this information to the *Western Australia Tomorrow 2026* population forecasts.

In interpreting the outputs of the analysis, it is important to note that additional capacity is assumed to be accommodated exclusively in areas that are currently considered as being capable of substantial further development. This means that the estimates generally do not account for possible land capacity increases due to infill and/or redevelopment of existing developed areas, and from this perspective are considered broad in nature and is likely to underestimate the potential overall capacity.

A capacity analysis for commercial and industrial lands necessarily requires assumptions to be made on employment density. There are currently limitations in the available data required in order to make reasonable assumptions in this regard. In particular, relatively small statistical sample sizes – something that is prevalent in regional areas – compromise the reliability of using the available

data for such an application. It is considered that further investigation is required to ascertain representative rates of employment density for commercial and industrial lands in regional areas, and accordingly a capacity analysis of commercial and industrial lands is not included in this paper at this stage.

#### 3.1 Potential capacity of residential, rural residential and rural smallholdings lands

For *residential*, *rural residential* and *rural smallholdings* land uses, potential capacity has been calculated according to scenarios that assume different average development densities that are applicable to each of those land uses. Potential additional lot and population yields have been estimated for each respective current and future land use category as they relate to each relevant settlement in the Shire of Irwin.

**Table 4** presents the total potential additional lot and population yields for all relevant settlements across the local government area.

**Tables 5 and 6** present the potential additional lot and population yields for individual settlements relevant to this analysis.

(Note: Table 4 consolidates all data from Tables 5 and 6, and essentially represents a set of total figures for the entire local government area.)

# Central Regions Land Capacity Analysis

## Shire of Irwin

**Table 4: Shire of Irwin - estimated capacity of residential, rural residential and rural smallholdings lands deemed capable of substantial further development in relevant settlements**

Estimated capacity of residential, rural residential and rural smallholdings lands deemed capable of substantial further development				Estimated potential population yield from additional lots <sup>2</sup>
Relevant land-use categories	Area (ha)	Average density / average lot size	Potential lot yield <sup>1</sup>	
Residential	339	R10	2,204	5,510
		R20	4,407	11,018
		R30	6,611	16,528
Future residential	256	R10	1,664	4,160
		R20	3,328	8,320
		R30	4,992	12,480
<b>Residential and future residential</b>	<b>595</b>	<b>R10</b>	<b>3,868</b>	<b>9,670</b>
		<b>R20</b>	<b>7,735</b>	<b>19,338</b>
		<b>R30</b>	<b>11,603</b>	<b>29,008</b>
Rural residential	982	1 ha	737	1,843
		2 ha	368	920
		4 ha	184	460
Future rural residential	274	1 ha	206	515
		2 ha	103	258
		4 ha	51	128
<b>Rural residential and future rural residential</b>	<b>1,256</b>	<b>1 ha</b>	<b>943</b>	<b>2,358</b>
		<b>2 ha</b>	<b>471</b>	<b>1,178</b>
		<b>4 ha</b>	<b>235</b>	<b>588</b>
Rural smallholdings	6,945	8 ha	651	1,628
		20 ha	260	650
		40 ha	130	325
Future rural smallholdings	0	8 ha	0	0
		20 ha	0	0
		40 ha	0	0
<b>Rural smallholdings and future rural smallholdings</b>	<b>6,945</b>	<b>8 ha</b>	<b>651</b>	<b>1,628</b>
		<b>20 ha</b>	<b>260</b>	<b>650</b>
		<b>40 ha</b>	<b>130</b>	<b>325</b>

<sup>1</sup> For residential land, the 35 per cent of land necessary to support land requirements for public open space and streets (Liveable Neighbourhoods, 2007) has been factored into these figures. For rural residential and rural smallholdings lands, a 25 per cent allowance from gross land areas has been applied to account for the relevant land requirements to support development for these particular land uses.

<sup>2</sup> The population yield per dwelling is calculated at 2.5 people per dwelling unit (average people per household for the Mid West SA3 – Australian Bureau of Statistics, 2011 Census).

# Central Regions Land Capacity Analysis

## Shire of Irwin

**Table 5: Dongara-Denison - estimated capacity of residential, rural residential and rural smallholdings lands deemed capable of substantial further development**

Estimated capacity of residential, rural residential and rural smallholdings lands deemed capable of substantial further development				Estimated potential population yield from additional lots <sup>2</sup>
Relevant land-use categories	Area (ha)	Average density / average lot size	Potential lot yield <sup>1</sup>	
Residential	339	R10	2,204	5,510
		R20	4,407	11,018
		R30	6,611	16,528
Future residential	256	R10	1,664	4,160
		R20	3,328	8,320
		R30	4,992	12,480
<b>Residential and future residential</b>	<b>595</b>	<b>R10</b>	<b>3,868</b>	<b>9,670</b>
		<b>R20</b>	<b>7,735</b>	<b>19,338</b>
		<b>R30</b>	<b>11,603</b>	<b>29,008</b>
Rural residential	982	1 ha	737	1,843
		2 ha	368	920
		4 ha	184	460
Future rural residential	274	1 ha	206	515
		2 ha	103	258
		4 ha	51	128
<b>Rural residential and future rural residential</b>	<b>1,256</b>	<b>1 ha</b>	<b>943</b>	<b>2,358</b>
		<b>2 ha</b>	<b>471</b>	<b>1,178</b>
		<b>4 ha</b>	<b>235</b>	<b>588</b>
Rural smallholdings	2,163	8 ha	203	508
		20 ha	81	203
		40 ha	41	103
Future rural smallholdings	0	8 ha	0	0
		20 ha	0	0
		40 ha	0	0
<b>Rural smallholdings and future rural smallholdings</b>	<b>2,163</b>	<b>8 ha</b>	<b>203</b>	<b>508</b>
		<b>20 ha</b>	<b>81</b>	<b>203</b>
		<b>40 ha</b>	<b>41</b>	<b>103</b>

<sup>1</sup> For residential land, the 35 per cent of land necessary to support land requirements for public open space and streets (Liveable Neighbourhoods, 2007) has been factored into these figures. For rural residential and rural smallholdings lands, a 25 per cent allowance from gross land areas has been applied to account for the relevant land requirements to support development for these particular land uses.

<sup>2</sup> The population yield per dwelling is calculated at 2.5 people per dwelling unit (average people per household for the Mid West SA3 – Australian Bureau of Statistics, 2011 Census).

# Central Regions Land Capacity Analysis

## Shire of Irwin

**Table 6: Dongara-Denison surrounds - estimated capacity of residential, rural residential and rural smallholdings lands deemed capable of substantial further development**

Estimated capacity of residential, rural residential and rural smallholdings lands deemed capable of substantial further development				Estimated potential population yield from additional lots <sup>2</sup>
Relevant land-use category/ies	Area (ha)	Average density / average lot size	Potential lot yield <sup>1</sup>	
Residential	0	R10	0	0
		R20	0	0
		R30	0	0
Future residential	0	R10	0	0
		R20	0	0
		R30	0	0
<b>Residential and future residential</b>	<b>0</b>	<b>R10</b>	<b>0</b>	<b>0</b>
		<b>R20</b>	<b>0</b>	<b>0</b>
		<b>R30</b>	<b>0</b>	<b>0</b>
Rural residential	0	1 ha	0	0
		2 ha	0	0
		4 ha	0	0
Future rural residential	0	1 ha	0	0
		2 ha	0	0
		4 ha	0	0
<b>Rural residential and future rural residential</b>	<b>0</b>	<b>1 ha</b>	<b>0</b>	<b>0</b>
		<b>2 ha</b>	<b>0</b>	<b>0</b>
		<b>4 ha</b>	<b>0</b>	<b>0</b>
Rural smallholdings	4,782	8 ha	448	1,120
		20 ha	179	448
		40 ha	90	225
Future rural smallholdings	0	8 ha	0	0
		20 ha	0	0
		40 ha	0	0
<b>Rural smallholdings and future rural smallholdings</b>	<b>4,782</b>	<b>8 ha</b>	<b>448</b>	<b>1,120</b>
		<b>20 ha</b>	<b>179</b>	<b>448</b>
		<b>40 ha</b>	<b>90</b>	<b>225</b>

<sup>1</sup> For residential land, the 35 per cent of land necessary to support land requirements for public open space and streets (Liveable Neighbourhoods, 2007) has been factored into these figures. For rural residential and rural smallholdings lands, a 25 per cent allowance from gross land areas has been applied to account for the relevant land requirements to support development for these particular land uses.

<sup>2</sup> The population yield per dwelling is calculated at 2.5 people per dwelling unit (average people per household for the Mid West SA3 – Australian Bureau of Statistics, 2011 Census).

# Central Regions Land Capacity Analysis

## Shire of Irwin

Based on the potential population yield calculations in **Table 4**, estimated total population figures for the Shire of Irwin are provided for low, medium and high density development scenarios, which are presented in **Table 7**. Within each scenario, two subsets are considered:

- 'A' considers the potential additional population yield of all residential, rural residential and rural smallholdings land capable of further development at the average density or lot sizes attributable to that particular scenario; and
- 'B' considers the potential additional population yield of all residential, future residential, rural residential, future rural residential, rural smallholdings and future rural smallholdings land capable of further development at the average density or lot sizes attributable to that particular scenario.

These figures assume that all additional population in the local government area is accommodated on residential, rural residential and rural smallholdings lands deemed capable of substantial further development within the settlements considered.

**Table 7: Shire of Irwin - estimated potential population capacity**

Scenario <sup>1</sup> (average density of residential land / average lot size of rural residential land / average lot size of rural smallholdings land)		Current population <sup>2</sup>	Estimated potential population yield from additional lots <sup>3</sup>	Estimated total population <sup>4</sup>
<b>1. Low density scenario</b> (R10 / 4 ha / 40 ha)	<b>1A</b>	3,764	6,295	<b>10,059</b>
	<b>1B</b>	3,764	10,583	<b>14,347</b>
<b>2. Medium density scenario</b> (R20 / 2 ha / 20 ha)	<b>2A</b>	3,764	12,588	<b>16,352</b>
	<b>2B</b>	3,764	21,166	<b>24,930</b>
<b>3. High density scenario</b> (R30 / 1 ha / 8 ha)	<b>3A</b>	3,764	19,999	<b>23,763</b>
	<b>3B</b>	3,764	32,994	<b>36,758</b>

<sup>1</sup> Scenarios consider the estimated potential population capacity of the Shire of Irwin through estimating the potential additional population capacity of land within all relevant settlements with a residential land use that has been deemed capable of substantial further development.

<sup>2</sup> Shire of Irwin 2014 Preliminary Estimated Residential Population (Australian Bureau of Statistics, 3218.0 – Regional Population Growth 2013-14).

<sup>3</sup> As per the relevant assumptions as described for **Table 4**.

<sup>4</sup> The 'estimated total population' is the sum of the 'current population' and the 'estimated potential population yield from additional lots' column.

# Central Regions Land Capacity Analysis

## Shire of Irwin

### 3.2 Comparison of potential capacity estimates with the *Western Australia Tomorrow 2026* population forecasts

*Western Australia Tomorrow* (Western Australian Planning Commission, 2015) contains population forecasts produced by the State Demographer and are considered to be the State's official population forecasts.

**Table 8** presents the *Western Australia Tomorrow 2026* population forecasts for the Shire of Irwin. For further information on these forecasts, please refer to <http://www.planning.wa.gov.au/publications/6194.asp>.

The figures in the 'additional population' column are the difference between the 2026 forecast population and the Australian Bureau of Statistics 2014 Preliminary Estimated Residential Population for the Shire of Irwin (3,764).

Significantly, these forecasts provide a point of comparison for interpreting the potential capacities of residential land as determined through this analysis.

**Table 8: Shire of Irwin - Western Australia Tomorrow 2026 population forecasts (WAPC, 2015)**

WA Tomorrow forecast bands	2026 forecast population	Additional population
Band A	4,350	586
Band B	4,470	706
Band C	4,550	786
Band D	4,640	876
Band E	4,760	996

### 3.2.1 Estimated additional residential land requirements to accommodate population forecasts

**Table 9** presents estimates for the amount of residential land that would be required to accommodate the additional population for each of the population forecasts. Estimates are presented according to three different average densities of residential development, being R10, R20 and R30.

These estimates are compared to the total of all current residential and future residential land identified in relevant Shire of Irwin settlements as being capable of substantial further development. The figures under the 'surplus' column indicate the magnitude of the potential surplus of residential land from the extents currently identified once the additional forecast population has been allowed for. A negative figure in this column indicates a shortfall in the identified areas of residential lands with respect to that required to accommodate the additional population from the relevant forecast.

The estimates in **Table 9** assume:

- all population growth occurs on residential and future residential land that has been identified as being capable of substantial future development in this analysis. To keep the calculations relatively straightforward, they do not consider additional population being accommodated on rural residential or rural smallholdings lands, nor do they take into account potential increases in population occurring due to infill development. They therefore likely overestimate residential land requirements;
- a 35 per cent allowance from gross land areas for various requirements to support development (e.g. public open space, streets, other infrastructure); and
- the number of people per dwelling remains constant.

# Central Regions Land Capacity Analysis

## Shire of Irwin

Based on the current extents of zoned residential land and land identified for future residential purposes, this analysis suggests that there is a sufficient amount of land capable of substantial further development to cater for the population growth anticipated in the *Western Australia Tomorrow 2026* population forecasts for the Shire of Irwin.

Please note that this component of the analysis only considers the local government as a whole as opposed to each individual settlement. This is primarily due to the alignment of available data inputs at this geographic scale.

**Table 9: Shire of Irwin - estimated additional residential land requirements to accommodate population forecasts**

Residential <sup>1</sup>								
WA Tomorrow forecast bands	Additional population	Current and future land capable of substantial further development (ha) <sup>2</sup>	R10 average density		R20 average density		R30 average density	
			Est. land required to accom. additional population (ha) <sup>3</sup>	Surplus (ha) <sup>4</sup>	Est. land required to accom. additional population (ha) <sup>3</sup>	Surplus (ha) <sup>4</sup>	Est. land required to accom. additional population (ha) <sup>3</sup>	Surplus (ha) <sup>4</sup>
Band A	586	595	36	559	18	577	12	583
Band B	706	595	43	552	22	573	14	581
Band C	786	595	48	547	24	571	16	579
Band D	876	595	54	541	27	568	18	577
Band E	996	595	61	534	31	564	20	575

<sup>1</sup> These estimates assume that all population growth occurs on residential and future residential land that has been identified as being capable of substantial future development in this analysis. To keep the calculations relatively straightforward, they do not consider additional population being accommodated on rural residential or rural smallholdings lands, nor do they take into account potential increases in population occurring due to infill development. The estimates are therefore likely to overestimate residential land requirements.

<sup>2</sup> Total area of current and future residential lands capable of substantial further development for entire local government area as per relevant figures from **Table 1**.

<sup>3</sup> A 35 per cent allowance from gross land areas to support land requirements for public open space and streets (Liveable Neighbourhoods, 2007) and a population yield per dwelling of 2.5 people per dwelling unit (average people per household for the Mid West SA3 – ABS 2011 Census) have been factored into the estimated areas of residential land required to accommodate forecast additional populations.

<sup>4</sup> A positive figure in this column indicates that the additional population under the relevant population forecast should be able to be accommodated within the areas of residential and future residential land currently identified, without additional residential land being required. A negative figure represents the shortfall in the identified areas of residential lands with respect to that required to accommodate the additional population.