SHIRE OF IRWIN
DONGARA-PORT DENISON
A BRILLIANT BLEND

Industrial Land Use Strategy



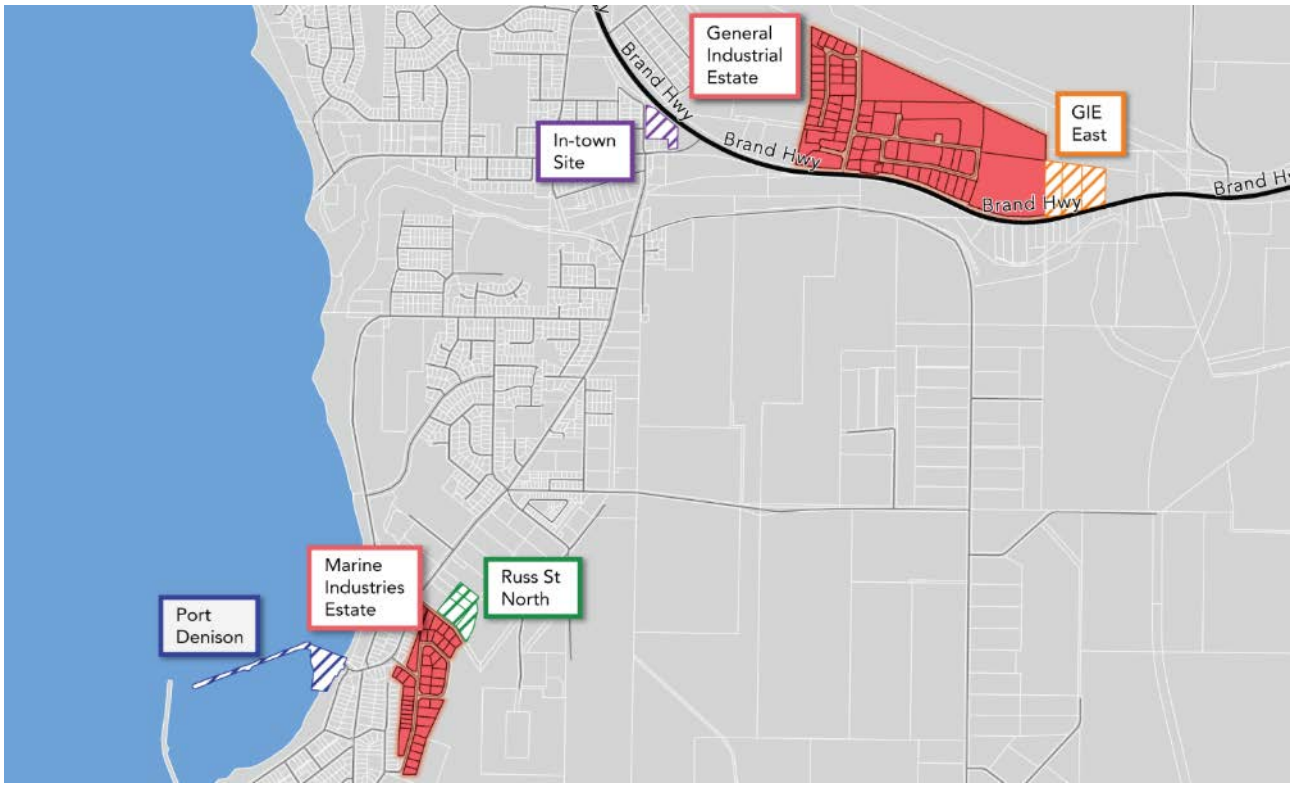
This page is intentionally left blank

Executive Summary

Introduction

- Most of the Shire of Irwin's industrial land is concentrated in two locations (Figure A).
- There is an adequate volume of industrial land available in the Shire to meet expected future demand under a 'Business as Usual' (BaU) scenario.
- However, the Shire sits at the heart of a region expected to experience investment in mining, agribusiness and infrastructure. Together with the evolving nature of industrial activity we may see a dramatic increase in the total volume of industrial land demand; a change in the lot size required, and a change in the nature of services desired.
- The Shire may also benefit from the establishment of an 'industrial incubator' to support one or more of its key industries.
- This Strategy is based on an analysis of these factors and includes actions to ensure there is sufficient, affordable, suitable and well-located industrial land to meet all future demand.

Figure A Study Area



Industrial land in the Shire is mostly found in the General Industrial Estate and the Marine Industries Estate. There is also a land parcel in the town centre and potential expansion opportunities adjacent to existing areas.

Demand analysis

- While a 'business as usual' industry growth trajectory is unlikely to result in industrial land demand exceeding the current supply, there are numerous, potentially significant investment prospects for the region that could require substantially more, or better, land than is available.

- Industrial activity is changing. It is increasingly technology-driven, often cleaner and needs higher amenity facilities and environment, including high quality office space.

- The Free Trade Agreements with China, Japan, Korea and Malaysia and local, regional, national and international markets create opportunities for the Shire's industrial areas to service the Asian Century.

- A high quality greenfield industrial precinct could attract external investors and multi-national companies by offering good access to road and rail networks, modern communication networks and a town with an abundance of affordable residential and rural lifestyle lots; new medical centre; new supermarket; beaches; healthy lifestyle; low crime rates; and a community well-skilled in the resources sector.

- The steady population growth in Irwin may also stimulate the need for additional industrial space over time. While some new use can be accommodated in vacant land in the existing industrial estates, these estates will need to expand over time. This means it is essential that there is scope to rezone adjacent lots for future industrial when needed.

- The Shire of Irwin has recently been chosen as the location for the filming of a major movie, and the Shire is working with Screenwest (Western Australia's screen funding and development agency) to become a Film Friendly destination. This will likely add to industrial land being used for art and prop space, also using specialized services such as fabrication, builders and the fishing industry. Initiation of a movie industry in Irwin would complement the Dongara Denison drive-in movie theatre's status as Australia's longest consecutive running drive-in (50 years).

Supply Analysis

- There are 57.3ha of industrial land in Irwin, primarily in two estates. This includes 28ha of vacant land (including 20 serviced vacant lots in the General Industrial Estate) and 9.6ha of under-used land. This will meet projected BaU demand for the next few decades at least.

- There are, though, some very large new project proposals (in mining, agribusiness and tourism) that could seriously strain the supply. Moreover, an investment attraction approach that includes the provision of development-ready lots may further increase demand.

- Minor proposed changes to the Local Planning Scheme will help ensure the Shire retains and improves its industrial land supply to meet demand expectations under all likely scenarios.

- Of interest is the opportunity at the boat harbour for a marine-related business incubator. Further investigation and discussions will be needed to advance this concept.

Strategic objectives

- There are four strategic objectives relevant to ensuring that Irwin has a sufficient quantity of appropriate quality and development-ready land to support the Shire's economy:

    1. **Attract investment** - Focusing on economic development and investment attraction by working with partners to secure new private and public investment and preparing and marketing development-ready infrastructure and sites.

    2. **Plan for growth -** Ensuring that contiguous land can be developed in the future should it be necessary so that new enterprises can locate adjacent to complementary activities. This will put the Shire on a good footing to respond to currently proposed and, as yet unknown, economic opportunities.

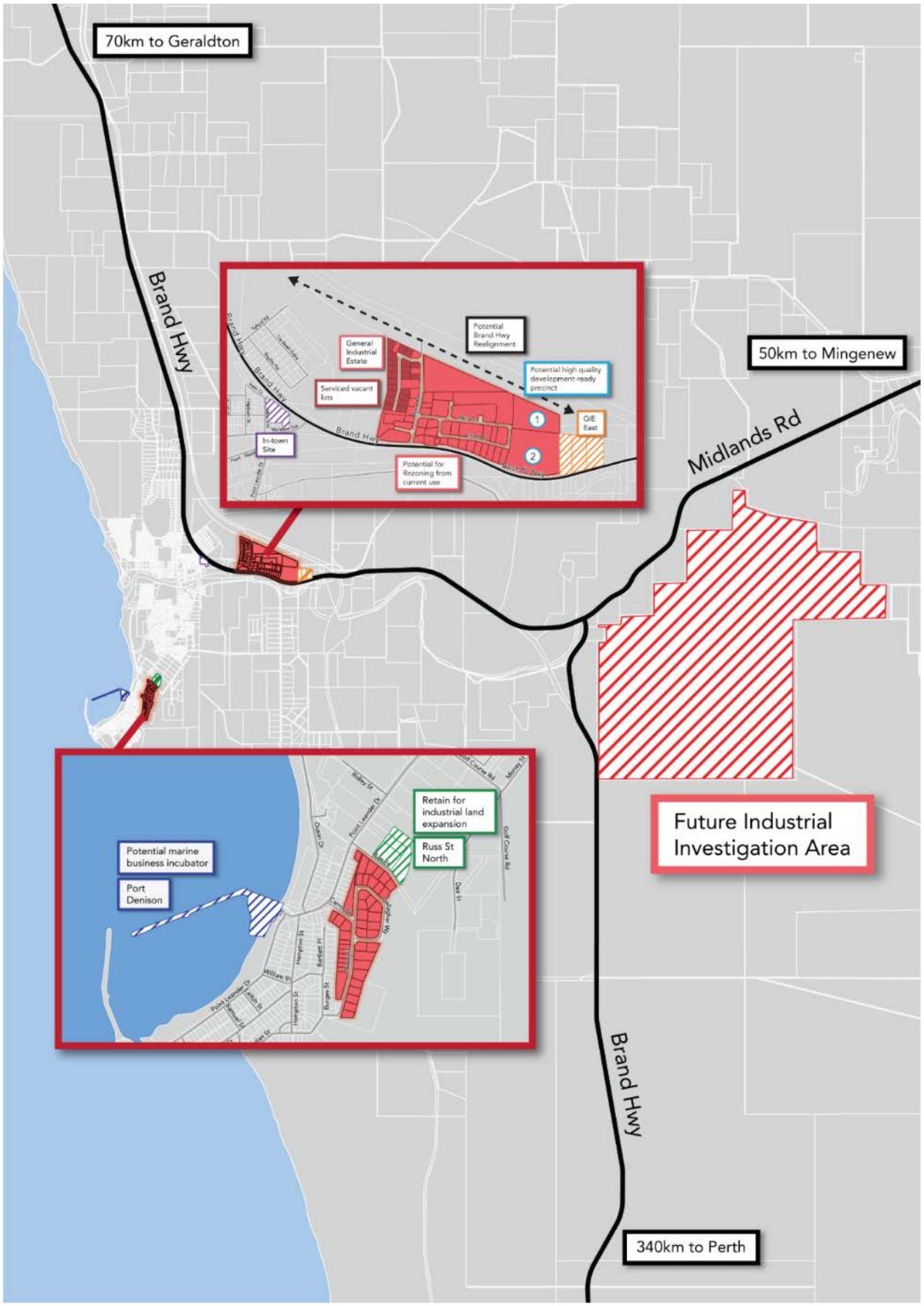
    3. **Create clusters -** Retaining the activity-based character of the land (i.e. marine industries estate for marine industries) so that businesses can cluster into economically efficient precincts.

    4. **Provide amenities -** Encouraging gradual enhancement of amenities over time so that the industrial estates continuously improve and match the changing expectations of industry, particularly technology companies.

Priority actions

- Key actions, sites and assets are illustrated in Figure B.
- Details of the 16 recommended priority actions are shown in Table A.

Figure B Overview of the Strategy



Source: Geografia, 2017

Table A Priority Actions

Objective/s	Action	Rationale	Relevant to…
• Economic development and investment attraction	1. Shire and its EDAC to liaise with the Departments of Water, and Agriculture and Food to progress investigation into an adequate groundwater source for a major irrigated horticulture area.	Irrigated horticulture area may be an economic opportunity for the region. If activity expands, it will have a significant impact on industrial land demand.	
• Economic development and investment attraction	2. Shire and its EDAC to build the relationship with the oil and gas and mineral sands industries to maximise business, employment and economic opportunities in the local area.	These industry sectors provide a realistic opportunity for economic development in the region and drive significant industrial land demand.	
• Economic development and investment attraction	3. Shire and its EDAC to investigate and promote tourism, lifestyle and urban development opportunities in the Shire, which will help generate demand for building and construction and a wide variety of industrial and commercial services to be in the General Industrial Estate.	Population growth will increase the size of the population servicing labour pool, thereby making the pool more competitive. This has a positive feedback on further investment. The increased size of the population servicing sector will increase demand for industrial land, and is likely to absorb some of the surplus lots in the General Industrial Estate.	
• Economic development and investment attraction	4. Shire and its EDAC engage with Main Roads WA and other relevant parties over the possible Dongara to Northampton Highway and related proposed Brand Highway realignment at Dongara to minimise negative impacts on the Shire's industrial businesses and to explore positive opportunities.	Bypass projects can have a negative economic impact on effected towns. Stakeholders need to be proactive to minimise this effect. There may also be opportunities for capturing some of the construction work on behalf of local businesses.	

Objective/s	Action	Rationale	Relevant to…
• Economic development and investment attraction	5. Investigate the potential for an agribusiness-focused incubator in the region. A virtual incubator is a possibility for this industry.	With the possible development of an irrigated agriculture and horticulture area, there is scope to develop value-added products and services. Case study evidence suggests a 'virtual' incubator is a cost-effective way to assist local innovators to commercialise their products. While a virtual incubator creates no industrial land demand, the flow-on activities may do so.	
• Economic development and investment attraction	6. Ensure that the economic development work of Council includes a conduit for local industrial estate tenants to be informed of opportunities and plans.	Stakeholders report that there are information gaps in relation to Council, and other, plans for industrial land and economic development in the Shire. Better working relations between public and private sector agencies is more conducive to long-term planning and investment.	
• Economic development and investment attraction • Amenity	7. Undertake a detailed investigation of the potential for a marine industry incubator at the Geraldton Fisherman's Cooperative building. This incubator would cover: using by-products of the aquaculture industry; improving aquaculture management (sustainable farming practices), harvesting technology and packaging; and developing new products.	There are case studies of successful marine industry incubators in other parts of the world. However, their success has been contingent on being driven by local operators/stakeholders and based on extensive research, analysis and discussions. These incubators are in high amenity buildings adjacent to boat harbours.	

Objective/s	Action	Rationale	Relevant to…
• Economic development and investment attraction • Amenity	8. Council, and government agencies should collaborate to investigate the market demand for, promote and incentivise a high quality, development-ready greenfield industrial precinct at 30262 Brand Highway. 9. Ensure the development presents with high amenity through a Local Planning Policy to encourage high technology, advanced manufacturing - or similar - related to one of Irwin's competitive sectors (e.g. agribusiness or mining).	A lack of serviced, large lots with good visibility and Highway access may be an impediment to capturing investment opportunities from relatively footloose enterprises (i.e. those that have a choice about where to locate and so will gravitate towards development-ready land. Additionally, as it would be at the entry to the town, this site will need to be developed in a way that is visually attractive.	
• Economic Development and investment attraction • Creating Clusters	10. The Council and its EDAC to discuss with the Departments of Transport and Planning and the Geraldton Fishermen's Co-operative to determine the preferred option to regularise the zoning of the 'co-op' site and to facilitate its possible use as an incubator for marine related activities. 11. Consider amending Local Planning Scheme No. 5 to rezone the 'co-op' site from 'Ocean' and 'Local Reserve' to 'Port Installation' or 'Public Purposes – special uses' reserve.	If a decision is made to develop an incubator at the co-op site, the zoning irregularity needs to be addressed.	
• Planning for growth	12. Support identification of the 'Industrial Investigation Area' in the Shire's Local Planning Strategy pending the outcome of the analysis of the Irwin River Valley prospective groundwater source for large-scale irrigated horticulture and of possible mineral processing, using locally sourced energy resources.	There are several major projects that could significantly increase demand for very large lot industrial land, which would ideally be accommodated at the Industrial Investigation Area. However, until these major projects are underway and the demand implications are clearer, it is premature to rezone the land from its current use.	

Objective/s	Action	Rationale	Relevant to…
• Planning for Growth	13. Provide for future expansion of the General Industrial Estate to the north (south of the possible realignment of Brand Highway adjacent the railway) and to the east as identified in the Shire's Local Planning Strategy.	This is well located land and contiguous with the existing industrial estate and, therefore, should be retained in the event of future demand growth.	
• Planning for Growth • Creating Clusters	14. Rezone the existing 'Marine based industry' area to 'Light industry' in keeping with the Planning and Development (Local Planning Schemes) Regulations 2015 - including the portion of land north of Russ Street to provide for future expansion of the industrial area near the Port Denison Harbour.	Consistency in planning schemes provides more certainty to the business community. It is important that the Estate is reserved for marine industries to help maintain and strengthen the cluster effects.	
• Creating Clusters	15. Council to ensure a marine-based industry focus of activity is retained in the Marine Industries Estate.	It is essential that all future uses in the Marine Industries Estate are marine-based industries to maintain and strengthen the cluster effects.	
• Creating Clusters	16. Encourage and facilitate relocation of the existing concrete services business from near the Dongara town centre entry to the General Industrial Estate.	Consolidation of industrial uses improves economic efficiency and once removed from the in-town site, it will provide opportunity to enhance urban amenity, which will become increasingly important to the town's prospects as tourism activity increase.	

Contents

Page

1 Background 1

1.1 The quantity of industrial land in Irwin 1
1.2 The changing global economy and its impact on Australia 3
1.3 The Shire of Irwin's economic profile 5

2. Demand Analysis 11

2.1 Innovation, incubators and industrial land 11
2.2 New demand for industrial land in Irwin 14
2.3 Potential scenarios for demand growth in Irwin 23

3. Supply Analysis 27

3.1 Current supply of industrial land 27
3.2 Supply characteristics 30
3.3 Development requirements and priorities 36
3.4 Summary: a supply-side stimulus 38
3.5 Potential location of a business incubator 40

4. The Strategic Plan 44

4.1 Strategic objectives 44
4.2 Priority actions 44

Appendix 50

How this document was prepared 50

Figures

Page

Figure 1 Industrial Land Breakdown – Shire of Irwin 1
Figure 2 Dongara Industrially Zoned Land (Study Areas) 2
Figure 3 Top Ten Economies by Nominal GDP ($USb) – 2014 Actual and 2050 Forecast 3
Figure 4 CSIRO Meganiche Opportunities 4
Figure 5 Comparative Employment by Industry 8
Figure 6 Population 1954-2026 (Shire of Irwin) 9
Figure 7 Large Vacant Lots, General Industrial Estate 10
Figure 8 Irwin River Valley – Prospective Groundwater for Horticulture Development 17
Figure 9 Major Resource Projects (Mid West Region) 18
Figure 10 Major Resource Projects (Dongara) 19
Figure 11 Dongara to Northampton Highway Alignment Options (South) 23
Figure 12 Potential Land Demand Trajectory 25
Figure 13 Example Vacant Land in General Industrial Estate 28
Figure 14 Irwin Industrial Land (with potential expansion sites marked out) 29
Figure 15 General Industrial Estate (Detailed) 31

Figure 16 Marine Industries Estate (Detailed) 33
Figure 17 Future Industrial Investigation Area 35
Figure 18 Preparing for a Marine-Related Business Incubator, Port Denison 42
Figure 19 Overview of the Strategy 45

Tables

Page

Table 1 World Average Annual Growth Rate Food Demand & Production 4
Table 2 Enterprises by Industry – Shire of Irwin 6
Table 3 Industrial Land by Activity and Area 7
Table 4 Total Estimated Lot Demand and Potential Supply by Industry Type 26
Table 5 Zone/Use Development Table 37
Table 6 Priority Actions 46

Case Studies

Page

Case Study 1 The Iceland Ocean Cluster (IOC) 12
Case Study 2 The New England Ocean Cluster (NEOC) 12
Case Study 3 Greentown Labs 13
Case Study 4 The Great Lakes Ag-Tech Business Incubator (GLATBI) 13
Case Study 5 Enterprise Park, Wangara, WA 39
Case Study 6 Caledonian Court, Ararat, VIC 40

1 Background

Most of the Shire of Irwin's industrial land is concentrated in two locations: on the Brand Highway (mixed use); and in Port Denison (boat building and repairs). Previous research found there is an adequate supply of industrial land to support expected demand over the short-medium term. Changing industrial activity and the potential for new, major projects may, however, increase demand, and affect the desired lot size and service needs, over the longer term. The establishment of an accessible greenfield site and an 'industrial incubator' may also accelerate development in the Shire.

1.1 The quantity of industrial land in Irwin

There are two main industrial estates in Dongara (Figure 2):

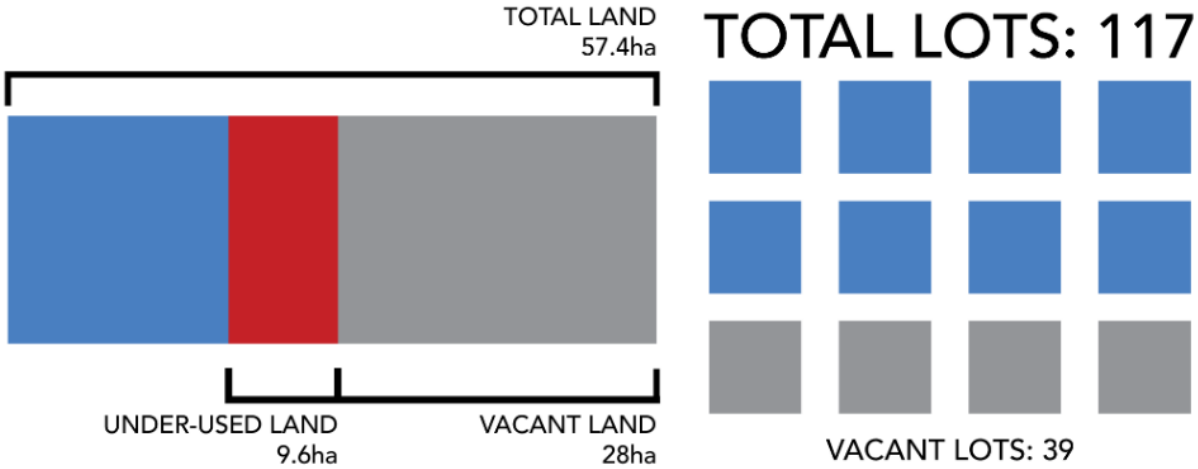
1. The General Industrial Estate off the Brand Highway.
2. The Marine Industries Estate off Point Leander Drive.

In addition, there are also industrial activities occurring in two areas outside these estates[1]:

1. In Dongara town centre, on or around the Brand Highway.
2. At the pier in Port Denison.

These estates and parcels total around 57ha of industrial land, comprised of 117 lots (Figure 1).

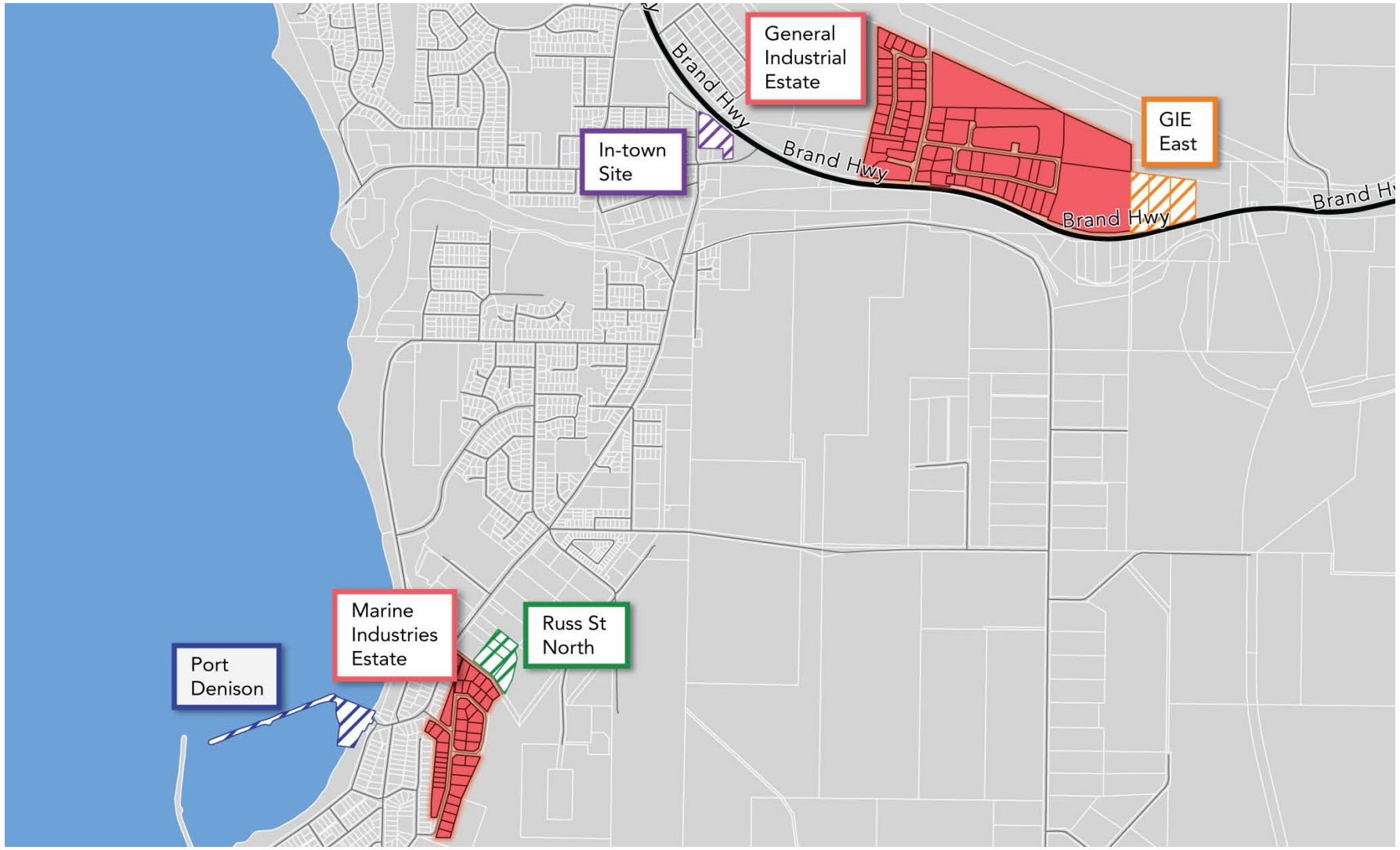
Figure 1 Industrial Land Breakdown – Shire of Irwin



Source: Shire of Irwin, 2016; Geografia, 2016

[1] There is also land, not currently used (or zoned) for industrial activity in both the area marked 'GIE East' and the marine-based industry lots labelled 'Russ St North' in Figure 2. Additional outlier activities are not included in this study.

Figure 2 Dongara Industrially Zoned Land (Study Areas)



The two main industrial estates in are shown here, as well as potential future general industrial land (GIE East); an isolated in-town site; land for potential expansion of marine industries (Russ St North); and public purpose land at Port Denison. Source: Shire of Irwin; Geografia, 2016

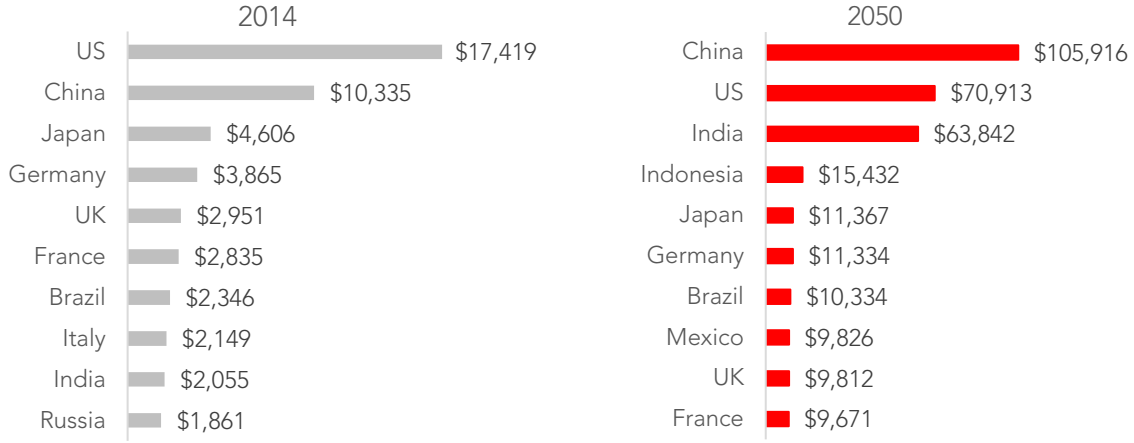
1.2 The changing global economy and its impact on Australia

Along with climate change, job automation and ageing, population growth in Asia (including in Australia itself) has been, and will continue to be, one of the most important influences on Australia's economy over the next few decades. During the 20th Century, Asia's population quadrupled from 1 billion to 4.3 billion people and it is expected to climb to 5.2 billion by 2050 (UN, 2014).

Asia's population is not only growing, it is also becoming more affluent. There are currently some 520 million middle-class residents in the Asia-Pacific region. This is projected to increase to 1.75 billion by 2020. By 2030 two-thirds of the world's middle-class will reside in Asia.

Given the growth in the population and the shift from low to middle and high income status, it is no surprise that, by 2050, four of largest five national economies will be in Asia (Figure 3). Three of these are already significant WA trading partners.

Figure 3 Top Ten Economies by Nominal GDP ($USb) – 2014 Actual and 2050 Forecast



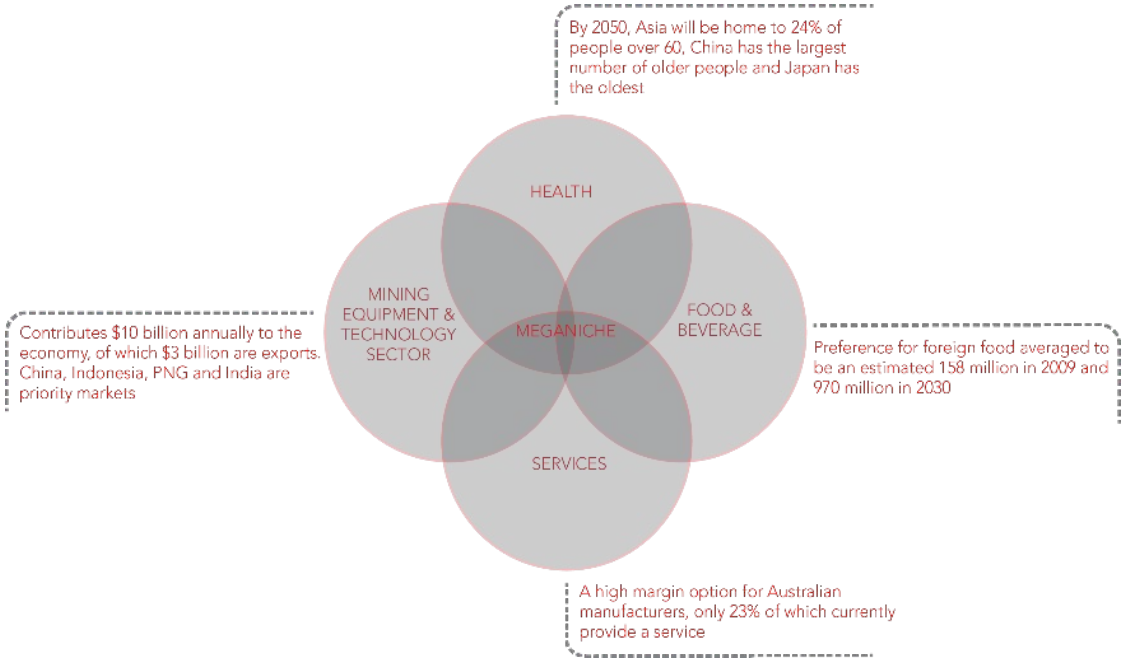
Source: Economist Intelligence Unit, 2015

In terms of both population and economic growth, the Asian region is, and will increasingly be, the key international market for WA's mineral resources, tourism attractions and agricultural outputs.

1.2.1 Making for Asia, particularly food and fibre

The CSIRO has identified four 'niches' as Australia's best economic opportunities (Figure 4). The confluence of these creates a 'meganiche'. Of these niches, the Shire is particularly well placed to contribute to one: food and beverage, particularly if it can improve its water security through the proposed 'Water for Food' project (see Section 2).

Figure 4 CSIRO Meganiche Opportunities



Source: Make for Asia, Telstra & CSIRO, 2015

World agricultural trade is a trillion-dollar market. Four important features of this market have a bearing on agribusiness growth prospects in the Shire:

1. **Overall demand to increase**. The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), estimates that world food and fibre demand in 2050 will be 77% higher than in 2007.
2. **Demand to outstrip supply.** The increasing global demand is expected to outstrip production volumes over the next few decades (Table 1).
3. **Demand growth from Asia**. Much of the additional food demand will come from Asia.
4. **A switch to middle class consumption patterns**. As noted above, the Asian middle class is growing, resulting in greater demand for high quality protein, sugar and dairy products.

Table 1 World Average Annual Growth Rate Food Demand & Production

Location	1990-2007	2007-2030	2030-2050
Demand			
World	2.3%	1.4%	0.8%
South Asia	2.7%	2.0%	1.3%
East Asia	4.4%	1.4%	0.5%
Production			
World	2.2%	1.3%	0.8%
South Asia	2.5%	1.9%	1.3%
East Asia	4.1%	1.3%	0.5%

Source: Food and Agricultural Organisation, 2012

It is generally understood that Australia will respond to this demand, not so much by supplying at scale, but rather by providing high quality products. This will increase activity in food production, processing and exporting across Australia, particularly in locations that can draw on: a mix of agricultural commodities; reliable water supplies; a skilled labour force (together with quality services and housing to accommodate the workforce); affordable agricultural and industrial land; and access to markets via road, rail, air and sea.

1.2.2 Irwin and the Asian Century

The Shire is already expecting a range of new public and private investments in agribusiness projects (see Section 2) and it is likely that, in the Asian Century, the Shire will increase what it 'makes for Asia'. In particular, the free trade agreements with China, Japan, Korea and Malaysia, as well as other local, national and regional markets are expected to create significant opportunities for the Shire over the next few decades.

External investors and multinational companies will seek out high quality greenfield industrial precincts with good access to road and rail networks, modern communication networks, places with an abundance of affordable residential and rural lifestyle lots, and service facilities.

Dongara has all of this, and more, including a new medical centre, new supermarket, beautiful beaches, healthy lifestyle, low crime rates and a community well-skilled in the resources sector.

Economic and land use planning, particularly industrial land use planning, will need to take into consideration these significant global opportunities. It may be that, as well as what is currently available, the Shire may also benefit from a high quality development-ready industrial precinct close to the Brand Highway and railway to ensure it is ready to benefit from the expected investment growth.

1.3 The Shire of Irwin's economic profile

Currently, the Shire's industrial land is mainly used for local population servicing activities (e.g. vehicle mechanics) and trade-related activity (e.g. agricultural machinery and boat repairs). The economy is dominated by a few key sectors. These have shaped, and are likely to continue to shape, demand for industrial land.

1.3.1 A steady-state economy focusing on fishing and agriculture

Irwin's economy is largely defined by fishing and agriculture (Table 2). With respect to the mix of tradeable and non-tradeable activity, it has the typical economic profile of a small rural or coastal town. The key difference is the Shire's slightly higher proportion of manufacturing and construction jobs in Irwin (Figure 5). Although it still within the expected range for a rural community of this scale, it does suggest a degree of specialisation and generally reflects the number of people working in boat repairs and maintenance.

Table 2 Enterprises by Industry – Shire of Irwin

Industry	No. Enterprises
Agriculture, Forestry and Fishing	117
Mining	3
Manufacturing	18
Electricity, Gas, Water and Waste Services	3
Construction	82
Wholesale Trade	7
Retail Trade	22
Accommodation and Food Services	20
Transport, Postal and Warehousing	21
Information Media and Telecommunications	0
Financial and Insurance Services	30
Rental, Hiring and Real Estate Services	45
Professional, Scientific and Technical Services	12
Administrative and Support Services	7
Public Administration and Safety	0
Education and Training	0
Health Care and Social Assistance	0
Arts and Recreation Services	0
Other Services	16
Unknown	10
Total	**413**

Source: Australian Business Register, 2016

The Shire's current industrial land use reflects this profile. The two primary estates specialise in construction, transport and population servicing activity (General Industrial Estate) and in marine industries (Marine Industries Estate). For example, marine industry activity accounts for around 43% of the total occupied industrial land area in the Shire (Table 3), and 70% of the total occupied lots.

Table 3 Industrial Land by Activity and Area

Estate	Activity	Area
General industrial estate	General industry	15.9ha
	Light industry	5.6ha
	Marine industry	0ha
	Vacant	24.4ha
	Under-used	*7.8ha*
	Total	45.9ha
Marine industries estate	General industry	0ha
	Light industry	0ha
	Marine industry	7.8ha
	Vacant	3.6ha
	Under-used	*1.8ha*
	Total	11.4ha
Grand Total		**57.3ha**
Occupied – fully used		*19.7ha (34.4%)*
Occupied – under used (i.e. low density development)		*9.6ha (16.8%)*
Vacant		*28ha (48.9%)*

Source: Shire of Irwin, Land use Audit, 2016

As noted earlier, the major growth prospects for the region also relate to fishing, agriculture (as well as some potential in tourism). Growth in these sectors has implications for industrial land demand.

Figure 5 Comparative Employment by Industry

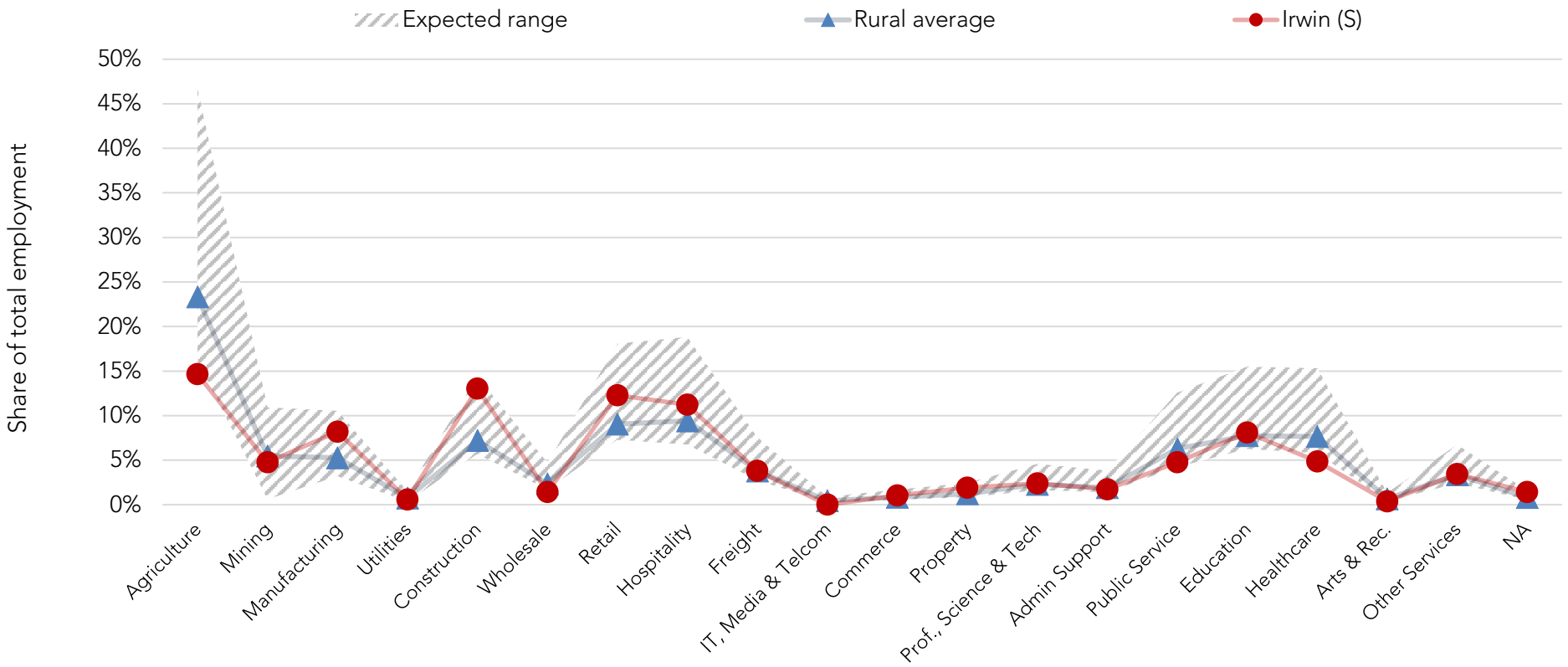


Figure 5 compares Irwin's employment profile with the average (blue line) and expected range (grey shading) for comparable rural councils (11 rural councils of a similar size and location from around Australia were selected for this comparison, including Robe and Kingston, SA, and Carnarvon, Exmouth and Ravensthorpe, WA). While within the expected range for all industries (although notably low in agricultural employment), Irwin's profile is unique for its higher proportion of workers in manufacturing and construction. Source: ABS, 2011

1.3.2 *A steadily growing residential community*

Population servicing activity dominates the General Industrial Estate, and, therefore, population growth is relevant to the analysis of industrial land demand.

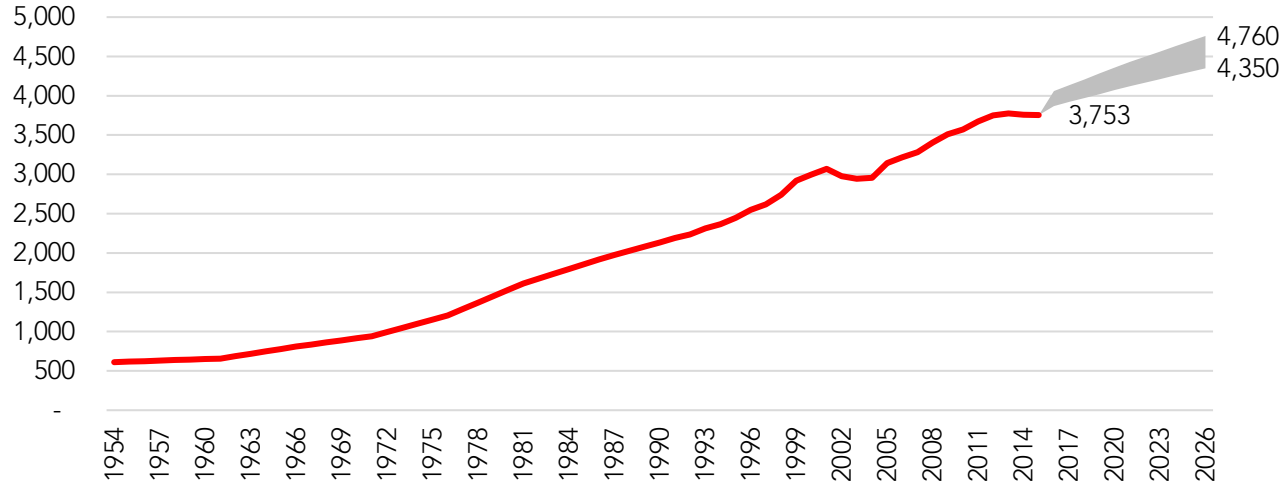
Over the last 60 years for which we have data, the Shire's population has growth at an average rate of 3% per annum, and at last official estimate, in 2015, was 3,753. The period of greatest growth was in the 20 years from the early 1960s until the early 1980s. Since then the growth rate has been a little more erratic, even including periods of decline (Figure 6).

The official State forecasts for Irwin indicate an average growth rate of 1.4% per annum, reaching a population of between 4,350 and 4,760 by 2026 (WA Tomorrow, 2015).

Although the WA Tomorrow forecasts do not consider the 'source' of population growth, it is generally understood that most of the current growth in Irwin is due to retirees moving to the area and new working-age residents who are commuting to Geraldton. These sources may stimulate some limited growth in demand for industrial land through increased population servicing activity.

Extending this growth trend for a further ten years, we see a population of 4,900-5,500 by 2036. This is likely to generate some demand for new industrial land in Irwin (see Section 2).

Figure 6 Population 1954-2026 (Shire of Irwin)



Source: ABS, 2016, WA Tomorrow

Over the last five years, an average of 26 new residential dwellings have been built in the Shire each year. This is a relatively high number compared with the growth in new residents, and is probably partly attributable to the construction of holiday houses and shrinking household size.

1.3.3 *A community perception that there is inadequate industrial land*

Recent consultation undertaken by the Department of Planning for the 2016 Central Regions Land Supply Analysis (CRLSA) reported a *perception* of an undersupply of industrial land in the Shire. By

contrast, the analysis for *this* study, which included a land use audit and a thorough demand modelling exercise, did not identify an undersupply of land.

Apart from both serviced and unserviced vacant land (which accounts for four of the 10 largest industrial lots in Dongara, Figure 7), relatively low value warehousing and storage activity takes up most of the larger lots in the Estates. These are mostly under- or undeveloped.

Figure 7 Large Vacant Lots, General Industrial Estate



The General Industrial Estate includes at least three large unserviced vacant lots (indicated by numbers) ranging in size from 0.42ha to 0.76ha. The three 'GIE East' lots are either occupied residential (the central lot) or vacant general industrial lots. In addition, along the western edge of the Estate are some 20, serviced vacant lots averaging around 0.2ha each and two, larger unserviced lots (~0.5ha). Source: Shire of Irwin, 2016; Geografia, 2016

Additionally, according to recent consultation, Geraldton offers a good supply of available industrial land and is the favoured location for industrial activity in the larger region. This means that the Shire of Irwin is not currently filling a role as an overflow demand location.

Overall, the *prime facie* evidence is that the Shire currently has a sufficient quantity of industrial land to cater to future demand, *at least, under a business-as-usual (BaU) scenario.*

However, the location, level of amenity; and the typical size of lots currently available (a median size of 2,200sqm, excluding undeveloped vacant sites) may not be suitable for future use and could be acting as a disincentive to new investment.

Taking this into consideration, along with the prospects for major new projects in the region (see Section 2), it may be that future demand will not be met by the current mix of available lots. To that end, this Strategy considers both the 'Business-as-Usual' demand trajectory and a more ambitious, investment attraction-based approach.

2. Demand Analysis

Industrial activity is changing. It is increasingly technology-driven, often cleaner and requires higher amenity facilities and a more controlled (or even attractive) environment, including high quality office space. Industrial incubators are the natural culmination of this trend and there may be scope for one in Irwin. Steady population growth, as currently projected, is likely to require additional industrial space over time, although this can be accommodated within the existing industrial estates. While a 'business as usual' industry growth trajectory is unlikely to grow beyond current land capacity, there is the prospect for major new investments that may require large lots and the scope for an investment attraction approach that kick-starts further demand growth.

2.1 Innovation, incubators and industrial land

Contemporary industrial estates offer much higher levels of service and amenities than has previously been the case. These include: fibre optic networks, food services, fuel, landscaping and maintenance. In a few instances, industrial estates now include business incubators. These are set up to assist start-ups and home-based businesses in (amongst other things) advanced manufacturing. In turn, this drives future demand for more traditional industrial land, creating a positive feedback loop of population and industry growth.

While most incubators are in advanced manufacturing (e.g. additive manufacturing, commonly known as 3D printing), in major cities, and often adjacent to centres of higher education, there are examples of agribusiness incubators in less urbanised settings, such as Irwin.

2.1.1 Industrial incubators in agriculture and fishing

Case Studies 1 to 4 describe some industrial incubators; their purpose; and how they were established and funded.

Case Study 1 The Iceland Ocean Cluster (IOC)

This was set up to: "create value by connecting together entrepreneurs, businesses and knowledge in the marine industries."



Source :: www.hussjavarklasans.is/um/

What does it do?

It is a privately-owned industry cluster, predominantly accommodated in a single large warehouse and the adjacent Ocean Cluster House on Reykjavik harbour. The latter is a high amenity, collaborative workspace providing rental offices and research facilities to SMEs and start-ups in marine industries.

The main activity is the development of new seafood processing technologies, along with marine-related biotech and other complementary industries.

The IOC hosts 64 companies with a total of 170 staff.

How was it established and funded?

The IOC started as a university project in 2010 and, in 2012, private seed funding was used to set it up as an incubator, starting with 10 companies.

Case Study 2 The New England Ocean Cluster (NEOC)

The founder of the IOC established the NEOC to: "foster collaborative relationships among marine-focused businesses and entrepreneurs with the aim of generating environmentally and economically sustainable ideas."

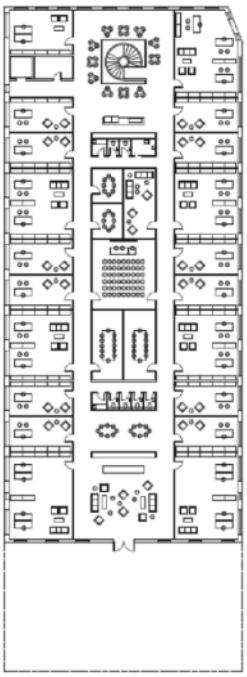
What does it do?

The NEOC has a membership of small and large marine industries enterprises which have committed to collaborate in product and technology development. It incorporates an incubation centre (under development), which will receive support services from NEOC staff.

The main activity is as a high amenity, shared workspace for early stage companies developing products from marine resources (e.g. reusing waste or by-products from seafood harvesting or related activities). As with the IOC it will accommodate seafood industries enterprises. The intention is that it will be a public-private partnership with tenants paying a lease and possibly an annual fee.

How was it established and funded?

The NEOC received federal government funding, as well as support from the IOC to establish in 2015. It took possession of a city-owned, 2,800sqm former transit shed on a pier in Portland, Maine.



Source: http://www.newenglandoceancluster.com

Case Study 3 Greentown Labs

Greentown Labs operates in the envirotech sector, with a mission to: "enable a vibrant community of entrepreneurs to work on their visions and to provide access to the space, resources, and funding that allows their early-stage companies to thrive."



Source: http://www.greentownlabscom

What does it do?

Greentown Labs is a more traditional incubator facility focusing on envirotech start-ups. Located in Somerville, Massachusetts (5km from Boston), its 3,000sqm include a prototyping lab and co-located office space, a shared machine shop, electronics shop, and an events space. It is well-located in an accessible, affordable and interesting space which attracts start-ups.

Greentown Labs delivers programs to enable start-ups to rapidly grow their networks and their companies. One particular advantage is that it provides start-ups with access to otherwise costly software. It also sponsors services in marketing/PR, graphics and design and insurance for business development purposes.

How was it established and funded?

The incubator was established when four of its original firms were looking for affordable space near the Massachusetts Institute of Technology. They established a not-for-profit firm and established their first space with 5 companies. Since then they have continued to grow through a mix of private and public funding. For example, in 2015, it received $1.5m from Massachusetts Clean Energy Centre to expand.

Case Study 4 The Great Lakes Ag-Tech Business Incubator (GLATBI)

GLATBI: "specialises in helping farmers and ag-related entrepreneurs commercialize, license, or sell their ag-technology inventions."



Source: http://www.agtechincubator.com

What does it do?

GLATBI leverages from the innovation of farmers, with the aim of turning on-farm inventions designed to solve specific problems into commercial ventures. It does not provide physical building space (which is considered a costly diversion of resources). Instead, funding goes to staff to help commercialise, licence or sell client technology.
When required, GLATBI brokers access to space for its members. Five ag-tech companies currently form GLATBI.

How was it established and funded?

Planning for GLATBI started in 2010 and it opened in 2014. Funding came from the US Department of Agriculture (for a feasibility study) and the State of Michigan (for operations). Since then private sector investment (through cash and discounted services fees) have supported its expansion.

These examples illustrate that successful industrial incubators are:

1. Generally **industry specific**.
2. Usually rely on a **mix of public and private funding**.
3. The result of significant **pre-planning** before any financial commitments are made (e.g. bringing together a range of partners, developing business cases and prospectuses).
4. Commonly in **high amenity settings**: from the building, to the location.
5. Characterised by strong **industry leadership** and a champion to kick-start them.
6. Not necessarily dependent on the provision of physical spaces and can be **'virtual incubators'** focusing on financial and similar service provision.
7. Best set within a **cluster** of complementary activity.
8. Equipped with **pathways for growth**, with participants/members having access to larger premises as they grow.

These factors need to be considered in the development of an incubator for the Shire.

2.1.2 Funding an incubator through a mix of public and private investment

The Federal Government has a specific scheme to encourage business incubators: *the Incubator Support Initiative*. This provides funding through two components, both of which require matched funding from applicants:

1. **Support for new and existing incubators -** to help develop incubators in regions/sectors with international trade potential, or to support existing high performing incubators; and
2. **Expert-in-residence** - to enable access to research, managerial and technical skills through secondments.

2.1.3 A business incubator for Irwin?

Given the precedence of successful agriculture and marine industries incubators, the current availability of Federal funding, and the potential industry opportunities in the region (see next section), there are reasonable grounds to consider the establishment of a business incubator.

A *well thought out and well-funded* incubator is likely to stimulate innovation, business start-ups and employment. It would act as a positive feedback driver on the growth accruing from other potential projects in Irwin (e.g. the Water for Food project). The incubator could take the form of a marine-industries focused incubator, at or near the harbour, an agribusiness-related incubator, most probably virtual in the first instance, or both.

Before any decision is made, further work is needed. This should take the form of a feasibility study and/or business case and include discussions with potential partners from both the public and private sectors.

2.2 New demand for industrial land in Irwin

In recent years, the Shire of Irwin has experienced limited demand for industrial land. This can be attributed, in part, to consolidation and restructuring of the rock lobster fishing industry, greater

mechanisation of the traditional farming operations in the region and relatively slow tourism and population growth.

Over the last six years new building activity on the industrial estates has been low, averaging a take-up of 1-2 lots per annum across the two estates. Additionally, many currently occupied lots are developed to a low density.

Despite this low level of BaU activity, there are some prospects for increased industrial land demand and the following five industries are potential drivers:

1. Marine industries
2. Agribusiness
3. Resources (oil and gas, heavy minerals sands, lime sand)
4. Tourism and urban development (i.e. population servicing activity)
5. Transport and logistics

2.2.1 Building on the traditional strength of the marine industries



Irwin has a significant boat harbour; a relevantly skilled local workforce; potential for developing recreational boat pens; expansion opportunities in aquaculture (including local processing of by-products); and boating-related tourism activities. As described in Section 2.1, there are notable, successful examples of industrial incubators supporting growth in marine related industries (specifically fishing).

The Shire is one of the few WA local government areas with a significant boat harbour. While industry consolidation now means that the rock lobster catch landed in Port Denison is transported outside of the Shire for processing, some servicing, maintenance and repair of commercial rock lobster vessels continues to be carried out in the harbour and in the Marine Industries Estate. A change in regulation is required for the local retail of landed lobsters. Should this eventuate, there is interest in establishing a lobster retail outlet, including a restaurant. This may increase the volume of fish landed at Port Denison, and, consequently, the boat servicing activity.

As noted in Section 1.2, global demand for seafood protein will increase, creating new opportunities for aquaculture. In 2014, the Shire gave in-principle approval for the development of an onshore abalone aquaculture project at Seven Mile Beach. It is also expected that aquaculture activity south of the Houtman Abrolhos Island will continue to expand. These developments could increase the need for marine services at Port Denison. The Dongara-Port Denison long-standing association with the sustainable fishing of rock lobster provides a solid foundation on which to develop new aquaculture activities.

The large Port Denison harbour also has significant potential for recreational boat pens. An increased residential population and tourist numbers will generate demand for marine services that could also help off-set the decline in traditional commercial fishing.

2.2.2 New agribusiness opportunities



There are opportunities in irrigated agriculture and, while most technical innovation in farming practices, produce and machinery occurs on-farm, there is some interest in the concept of an industrial incubator focusing on mentoring farmers in the adoption of new technology or production, or the commercialisation of their inventions. This could take the form of a 'virtual incubator', rather than a physical space.

In addition to maintaining services to the traditional broadacre grain and sheep farming in the region, a potentially significant opportunity exists for expanded irrigated horticultural development, pre-empted by investigation into groundwater sources.

The Shire is presently the largest vegetable and fruit growing area within the Geraldton Region, with over 47 hectares in total. Crops include olives, peppers and melons and, more recently, mangoes. A major mango orchard has been established with harvest at a time of year opposite to the northern Australian crops.

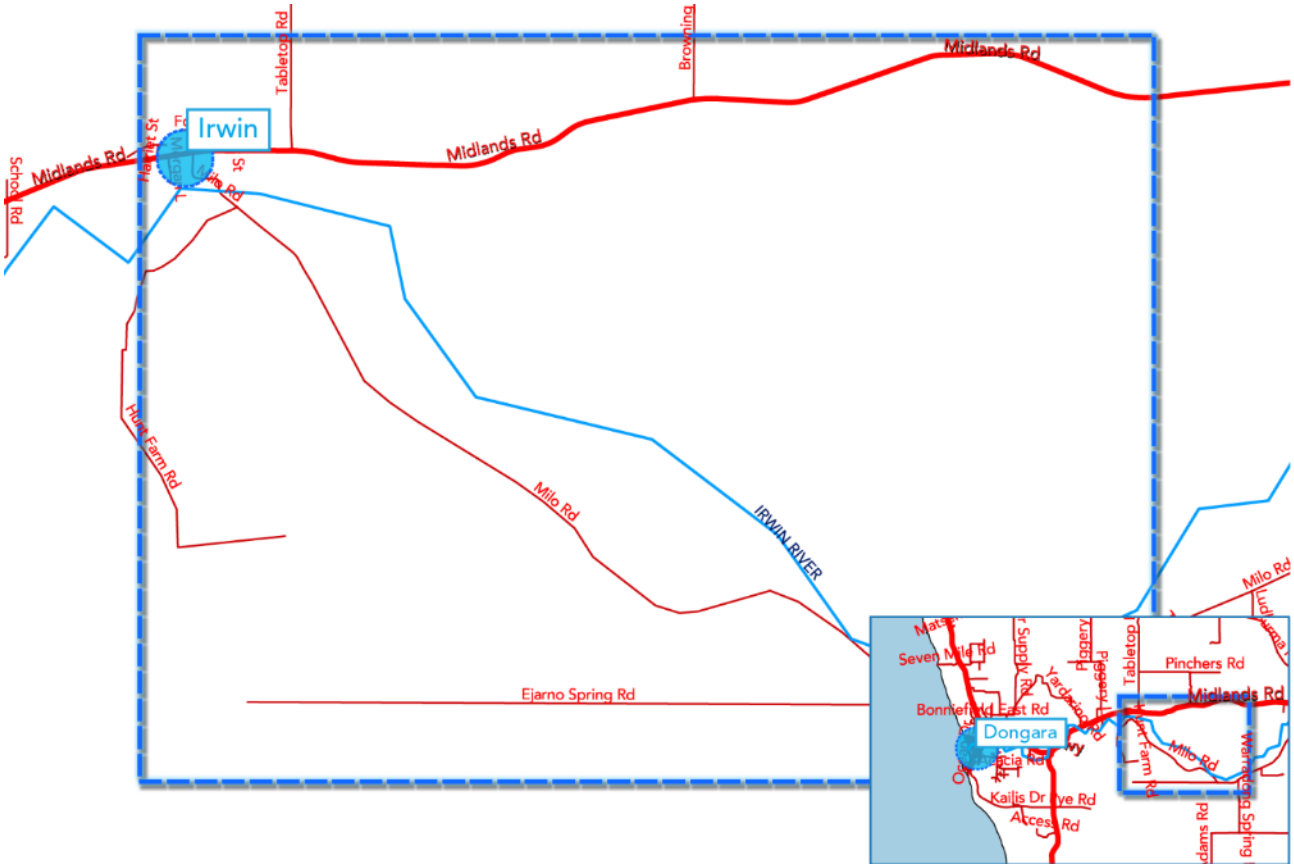
The Midlands groundwater and land assessment project is part of the *Water for Food* program delivering 11 projects across the State, with the aim of significantly increasing irrigated agriculture. The portion of the Midlands area between Gingin and Dongara is regarded by the Department of Water (DOW) and the Department of Agriculture and Food (DAFWA) as one of the most economically promising irrigation zones in WA.

Groundwater resources in the Gingin Area are almost fully allocated, resulting in the Midlands project focussing on identifying one or more 2,000 – 3,000 hectare area(s) suitable for intensive irrigated horticulture.

The *Arrowsmith groundwater allocation plan* (DOW, 2010) identified potential for un-allocated groundwater resources in several aquifers including the Dongara, Eneabba Plains, Twin Hills and Allannooka groundwater sub-areas. A preliminary groundwater assessment of the Midlands Region was completed in 2015. It identified 11 prospective groundwater resource/groundwater supply options, five of which were in the Arrowsmith Groundwater Area, including the Irwin River Valley.

Figure 8 shows the Irwin River Valley prospective groundwater resource area for horticultural development. This large area is situated east of Dongara and south-east of the Irwin town site near the junction of Milo Road and the Midlands Road. Subsequently, the Irwin River Valley became one of two sites prioritised for further investigation.

Figure 8 Irwin River Valley – Prospective Groundwater for Horticulture Development



Source: from Preliminary Groundwater Assessment of the Midlands Region, Hydroconcept, 2015

In the *Water for Food – Midlands – Infrastructure Assessment (AFS Agriculture, 2016)* three representative crops were assessed – horticultural tree crops, pasture and melons for small scale, local development. The review concluded that a maximum of 38 bores could be supported for agricultural use in the Irwin River Valley area. In the long term, current electricity infrastructure is unlikely to be able to run these bores and associated agricultural activities. Research by AFS concluded that investigations into alternative energy supplies are need, although, as noted in Section 2.2.3, there is currently no business case for developing new power sources in the region due to current excessive supply.

Preliminary results from the groundwater investigation of the Irwin River Valley suggest limited scope for irrigated horticulture expansion. Further infrastructure into other groundwater sources is warranted.

Should new investigations support irrigated horticulture, it will most probably be small scale. Nonetheless, the Shire will benefit. A wider range of agribusiness support services would be needed, with many businesses in the General Industrial Area to grow – including transport operators, irrigation and pump services and farm supplies. This will drive demand for a larger labour force – both permanent and seasonal. Being nearby to Dongara-Denison, some permanent employees are likely to live in town, which would boost population-driven demand for small (population servicing) industrial businesses. Seasonal workers (including backpackers) will be attracted to the area which will have a positive impact on tourism, hospitality and retail services.

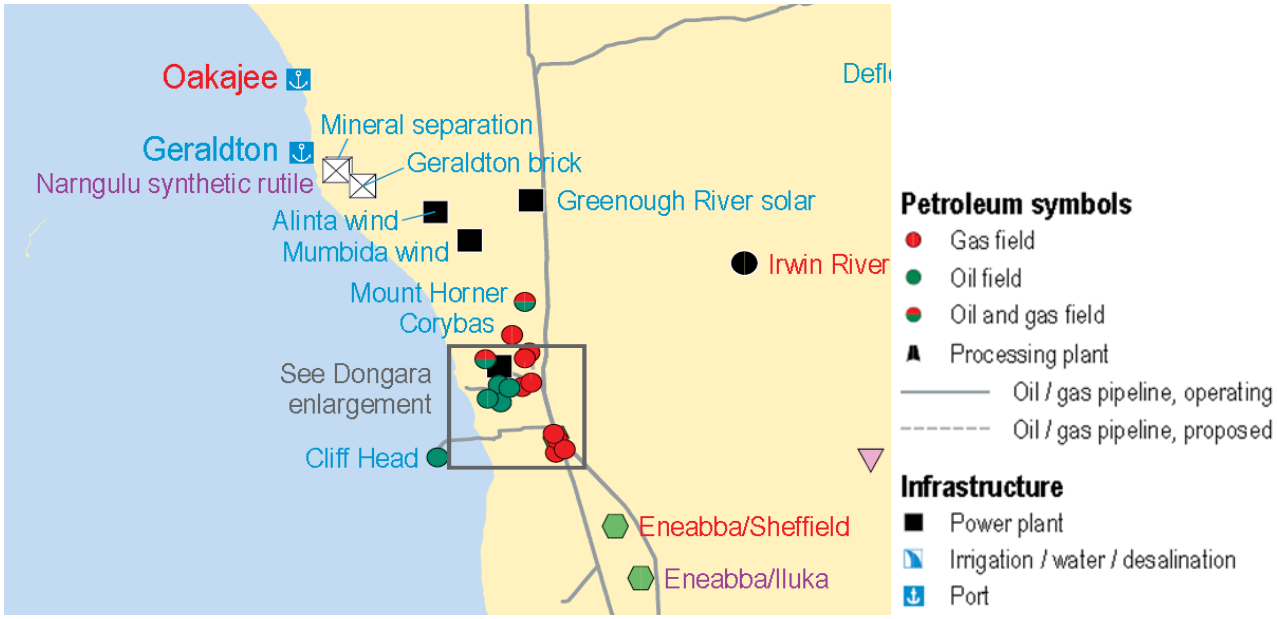
2.2.3 A diverse resources sector

As well as steady activity in oil and gas extraction, there are growth prospects in wind energy and mineral sands. The latter includes major TiO_2 manufacturer, Tronox, which has a permit to open a new mine and mineral sands miner, Ticor, which will be able to prolong its operations. As many businesses in the Irwin industrial areas provide services to the mining, oil and gas industry, it is recommended that the Council and its Economic Development Committee (EDAC) build a relationship with the industry to maximise business, employment and economic opportunities in the local area.

The Shire and the wider Mid-West region have a diverse range of petroleum and mineral resources, many of which are in current production while other tenements may be in earlier phases of exploration and management. These include oil and gas, heavy mineral sands and lime sands. Not surprisingly, mining is the largest contributor to the Shire's economy.

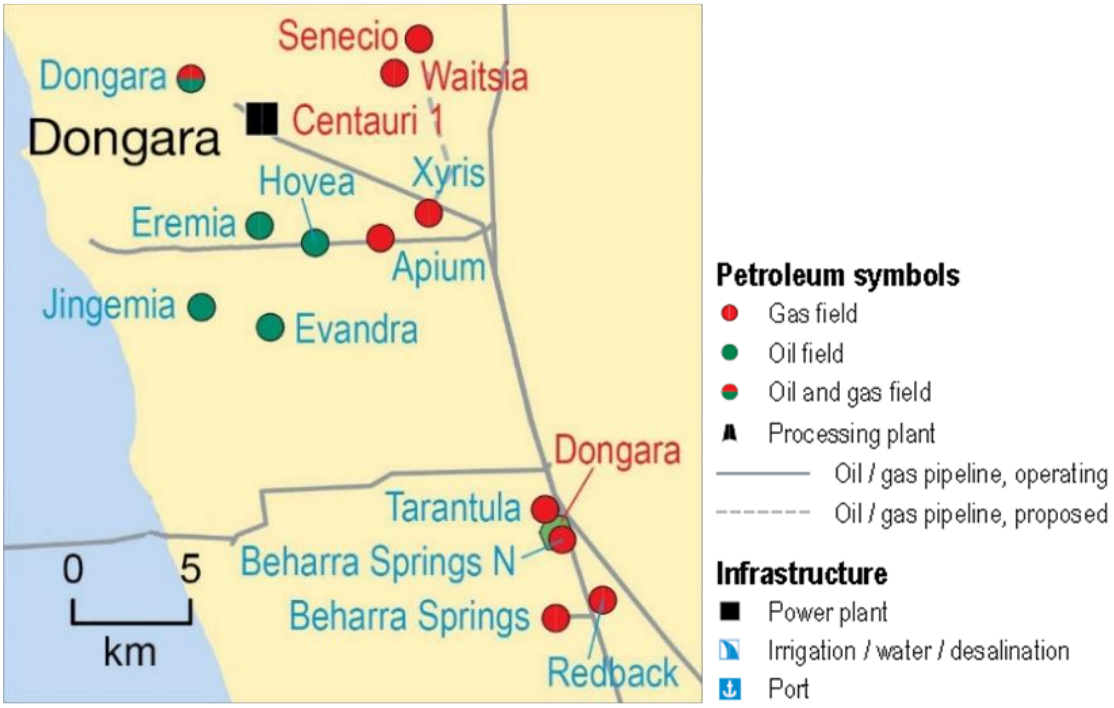
Figure 9 and Figure 10 are from the Department of Mines and Petroleum. They show the indicative location of resource projects over a portion of the Mid West region. Projects operating, or currently under development, with an actual or expected value of production greater than $10m are annotated in blue. Proposed or potential projects with a capital expenditure greater than $20m are in red.

Figure 9 Major Resource Projects (Mid West Region)



Source: Department of Mines and Petroleum Major Resource Projects

Figure 10 Major Resource Projects (Dongara)



Source: Department of Mines and Petroleum Major Resource Projects

Oil and gas operations in the Shire have a long history. Processed gas is exported south via a pipeline or, as condensate, by truck.

The 2014 discovery of the Waitsia gas field (16.5 km east-southeast of Dongara) led to Stage 1 commercial sales in 2016 and the joint venture partners are moving into Stage 2, a full field development phase. When fully developed, the Waitsia field is expected to produce approximately 10% of WA's daily domestic gas consumption.

Several businesses in the Dongara-Port Denison industrial areas provide services to the oil and gas industry. Building and maintaining a relationship with these businesses should be a part of the work of the Council's EDAC.

The region's gas fields may improve the prospects for agricultural or mineral commodity processing in Irwin. For example, gas is a relatively cost-effective energy source for agri-food processing such as abattoirs and fruit and vegetable processing.

There are two windfarms between Dongara and Geraldton:

1. The Alinta Wind Farm (owned by Infigen), near Walkaway, south east of Geraldton. This 54 turbine, 89MW facility became operational in 2006 and feeds into the south-west interconnected system via the Western Power grid.
2. Mumbida, completed in 2013, is a 55MW wind farm developed by joint venture partners Synergy and Infrastructure Capital group (ICG). The Water Corporation of WA purchases all output to offset part of the energy requirements of the Southern Seawater Desalination Plant at Binningup, near Bunbury.

There is also a 10MW **solar energy farm** at Greenough River, south of Geraldton.

According to Western Power, there is no immediate expectation (or economic case *at this stage*) for additional windfarms in the region. However, if the Irwin River Valley is developed for major irrigated horticulture (Section 2.2.2), then, in the longer term, there may be a shortage of electricity to run the full number of potential bores. In the same way that power generated by the Mumbida wind farm is used to part offset a desalination plant, the future electricity requirements of an Irwin groundwater bore field could be part or fully supplied by wind or solar energy.

Mineral sands (ilmenite, rutile, zircon and leucoxene) have been mined south of Dongara and exported from Geraldton, or the metropolitan area, since the 1970s. Potential expansion includes:

- Discovery of a new, high quality ore deposit, which may enable major operator, Ticor, to prolong its operations;
- Four new deposits discovered by Sheffield Resources Limited, north of Eneabba. These are located closer to Dongara-Port Denison than previous operations; and
- Tronox, which currently mines at Cooljarloo and processes at their Chandala plant near Muchea, is actively exploring for new mineral sands resources at Cooljarloo West, Jurien and Dongara.

With new and prospective mineral sands mines being located closer to Dongara-Port Denison, this potentially improves the opportunities for transport, servicing and employment in the Shire. In addition, there is the potential for a large-scale mineral sands processing plant in the region. However, as with others (e.g. in Bunbury), these plants are often located either close to the mine or to a major port (e.g. the mooted Oakajee port) making the likelihood of a plant in Irwin a low probability (albeit high impact) eventuality.

Limestone and lime sand resources are also a significant resource, with five mining tenements located near Dongara and Port Denison. Of these, four are mining leases and one is a live exploration licence. Three of the granted mining leases relate to the two main lime sand mining operations associated with Cockburn Cement Ltd and Westdeen Holdings, Pty Ltd. There is a pending mining lease, also for lime sand, immediately south of the Cockburn Cement leasehold.

Limestone and lime sand are used at Cockburn Cement's quicklime plant, for agricultural liming purposes and urban development. Appropriately, the Shire's Local Planning Scheme No. 5, Local Planning strategy and District Structure Plan identify suitable buffers around the lime sand resource and the quicklime plant buffer to avoid encroachment of incompatible uses.

2.2.4 A steady increase in tourism and urban development



Already a growing industry in Irwin, tourism can also result in population growth. Although Geraldton-centric, the opening up of the Abrolhos Islands to tourism may increase the demand for boat servicing and repairs at the Marine Industries Estate. The consensus view is that this will take between 15 and 30 years to mature. It means the Estate will need to be preserved in expectation of future demand. Any future population growth will also generate demand for marine services.

Tourism accounts for 10% of jobs, and around 6% of the Shire's total economic output (the 6th largest). Local tourism offers some history, traditional seaside holidays, and river and ocean experiences, including fishing. Port Denison harbour has significant potential for recreational boat pens and launching facilities (Section 2.2.1). There is also an expectation that the opening up of the Abrolhos Islands to tourism will, in time, stimulate local demand for marine industries.

The link with residential development is through the improved amenity for tourism that attracts holiday visitors, some of whom may eventually make a sea change, attracted by readily available residential land and seaside amenity. As noted earlier, population growth for Irwin has slowed considerably over the last few years and the forecast is for a continuation of modest growth. Under a BaU scenario, there is unlikely to be significant demand for industrial land from population servicing activities. Since 2011, there has been usually one new commercial activity per year. As there are more residents working in Geraldton, it should be expected that expenditure leakage will increase. This could present a business opportunity for attracting more local servicing businesses. In turn, increasing demand for industrial land. Further research is needed to quantify this leakage volume by type before this can be considered a firm opportunity.

Residential and tourism growth generates demand for building and construction and a wide variety of services including transport, retail, food and beverage, accommodation, building maintenance, vehicle maintenance and repairs. An increased residential population and tourist numbers will generate demand for marine services, as well as other activity, such as fibre glass repairs (in response to higher numbers of grey nomads with fibre glass caravans). This will help off-set the reduction in services to commercial fishing.

The Shire of Irwin has recently been chosen as the location for the filming of a major movie, and the Shire is working with Screenwest (Western Australia's screen funding and development agency) to become a Film Friendly destination. This will likely add to industrial land being used for art and prop space, also using specialized services such as fabrication, builders and the fishing industry. Initiation of a movie industry in Irwin would complement the Dongara Denison drive-in movie theatre's status as Australia's longest consecutive running drive-in (50 years).

2.2.5 Some uncertainty in transport and logistics opportunities



The general industrial estate hosts some transport and logistics activity. Growth is contingent on expansion in agriculture and mining and much of the truck maintenance is occurring elsewhere. The proposed road bypass may improve access. However, the inland freight route project may have the opposite effect.

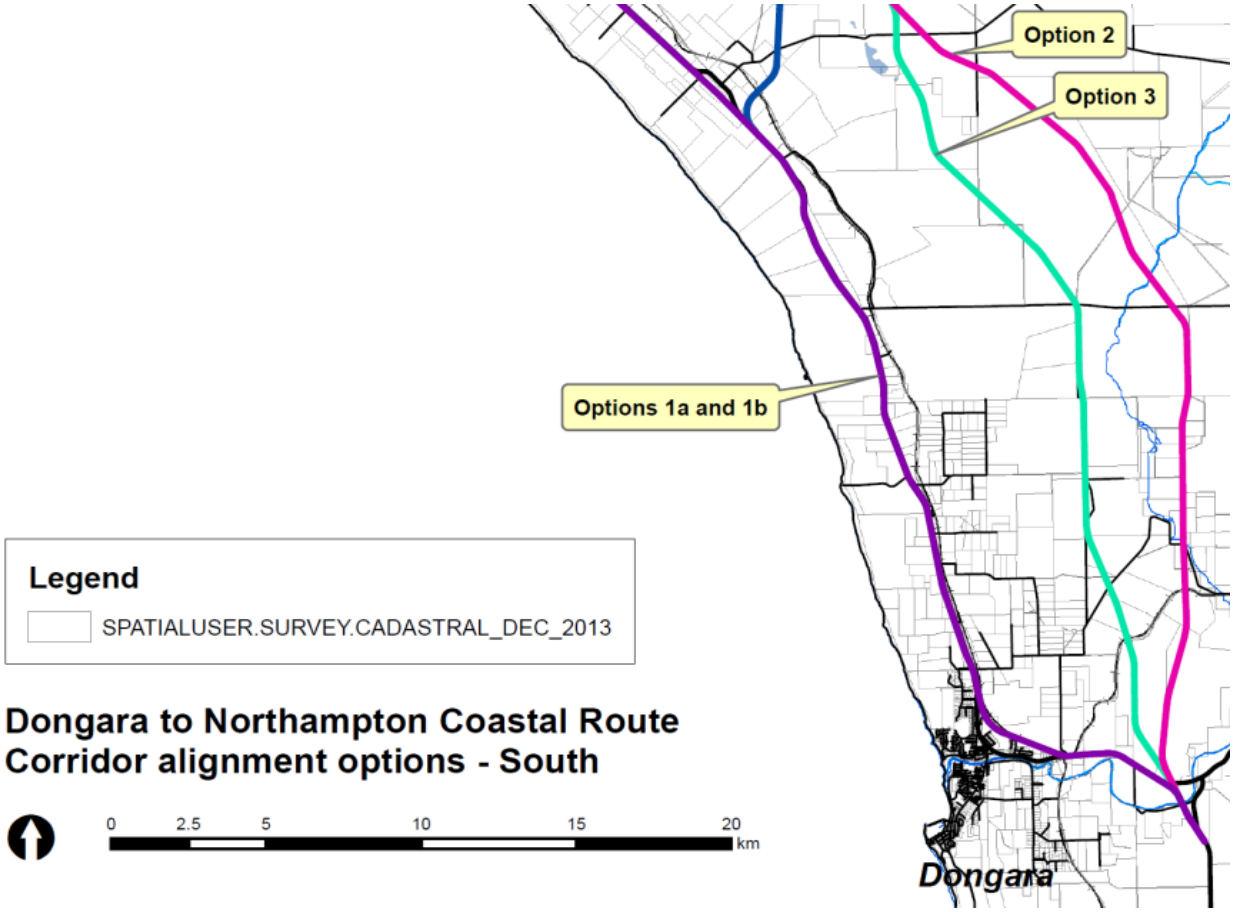
Brand Highway, south of Geraldton, and North West Coastal Highway, north of Geraldton, form the primary coastal regional freight route between Perth and the northwest. Planning has previously been undertaken to improve the capacity and efficiency of these and other roads near Geraldton, including the Oakagee-Narngulu Infrastructure Corridor linking the Narngulu industrial area east of Geraldton with the Oakagee planned port and major industrial area to the north of Geraldton.

There is a recognised need to coordinate the earlier planning and identify a highway route that provides a complete bypass of the Geraldton City area, avoiding southern and central urban areas and providing a high standard route for regional and freight traffic. Main Roads WA has prepared a *Dongara to Northampton Coastal Route Alignment Selection Study* (February, 2016) that investigates and selects the preferred road corridor alignment and network configuration for the future long-term State coastal route between Dongara and Northampton.

Figure 11 shows the principal route options affecting Dongara-Denison (Options 1, 2 & 3). All three involve a new intersection of the Brand Highway and Midland Road west of the existing intersection. Option 1 follows the existing Brand Highway toward Dongara, but on approaching the town near Pettit Road it then follows the railway line bypassing the town before heading north where various sub-options (Options 1a and 1b) are considered to link to the Geraldton bypass. Option 2 and Option 3 involve inland routes heading north from the Midland Road intersection. Both these routes would separate regional freight and regional through traffic from local traffic.

As a result of the desktop assessments, multi-criteria assessment and public and stakeholder consultation in 2015, the inland, Option 2 was recommended to be taken through to Alignment Definition investigation.

Figure 11 Dongara to Northampton Highway Alignment Options (South)



Source: Dongara to Northampton Coastal Route Alignment Selection Study, Main Roads WA 2016

Future construction of the Dongara to Northampton highway following the Option 2 route would separate regional and local traffic and enhance the residential and tourism amenity of Dongara by removing heavy freight traffic. Potential realignment of the Brand Highway adjacent the General Industrial Estate would be essential if Option 1 were selected, but less likely in the event Option 2 proceeds.

2.3 Potential scenarios for demand growth in Irwin

Indicative scenarios have been calculated. These are based on WA Tomorrow population growth forecasts for Irwin and hypothetical major project developments (and the subsequent job growth). These have been used to estimate future industrial land demand in the Shire. Taking into account global market opportunities, the upper bound of most growth trajectories are used.

The main input assumptions are based on the findings of the land use audit undertaken for this study. The audit documented every activity on industrial land in Irwin, including mean and median area, lot count and location for different industry activities. This information, as well as that gathered from the stakeholder consultation, was used to calibrate a model to estimate future demand for vacant industrial land. The key input assumptions are outlined below.

1. Agribusiness assumptions. The development of new agribusiness servicing activities in response to the establishment of a 2,500ha irrigated horticulture area (as part of the Water for Food project). Average lot size for these activities is 5,900sqm[2]. Job growth in horticulture is assumed to increase the local population growth rate to the upper bound of the forecast range. It has been assumed there is a 50% chance that, in any one year (post 2018), the horticulture area is established and, over time, 10 new servicing businesses are established in the General Industrial Estate, as well as a small business incubator.

2. Marine industries assumptions. Expansion of marine related industries, including boat servicing and boat pens (for tourism and residential activity) and the development of a marine industries incubator. The tourism activity expansion is not expected to occur until after 2026, and the incubator, after 2021. Stakeholder discussions suggest many of the existing marine industry enterprises are operating below capacity and the expansion of tourism/recreational boating can mostly be accommodated within the existing industrial footprint and serviced by existing enterprises. Nonetheless, the model assumes a 70% chance of three new enterprises being established; that job growth increases the population growth rate to the upper bound of the WA Tomorrow forecasts; and that a marine industries incubator is established (as an alternative, not as well as, an agribusiness incubator). Average lot size is 2,094sqm.

3. Resource sector assumptions. The model assumes that mineral sand mining (and potentially processing) and a new renewable energy generator (contingent on the establishment of an irrigated horticulture precinct) will drive new demand for industrial land in Dongara. Both servicing (highly likely) and processing (less likely) may occur[3]. Given the downturn in the State's economy, activity increase is presumed to be delayed so that it occurs after 2026. Excluding transport and logistics (Section XXX), the model assumes five new resource-servicing enterprises based in Dongara and, via job growth, population growth increase to the second highest growth trajectory (i.e. the WA Tomorrow D scenario). Average lot size for these activities is 4,880sqm.

4. Population servicing activity assumptions. WA Tomorrow population forecasts are used as the basis to estimate demand for new population servicing activity (located at the General Industrial Estate and including auto repairs and parts sales, residential building construction and similar). The median lot size estimate to accommodate population servicing activity is 3,432sqm with one new activity estimated for approximately every 300 new residents.

5. Transport and logistics. The land use audit found few specialist road transport enterprises in Dongara, with many enterprises incorporating transport and logistics into other activities. However, with an increase in agribusiness and resource industry activity, specialist transport providers are likely to be established. The model assumes that, after the expansion of irrigated horticulture and resource industry activity, two specialised transport/logistics enterprises are established. Average lot size is 2,700sqm.

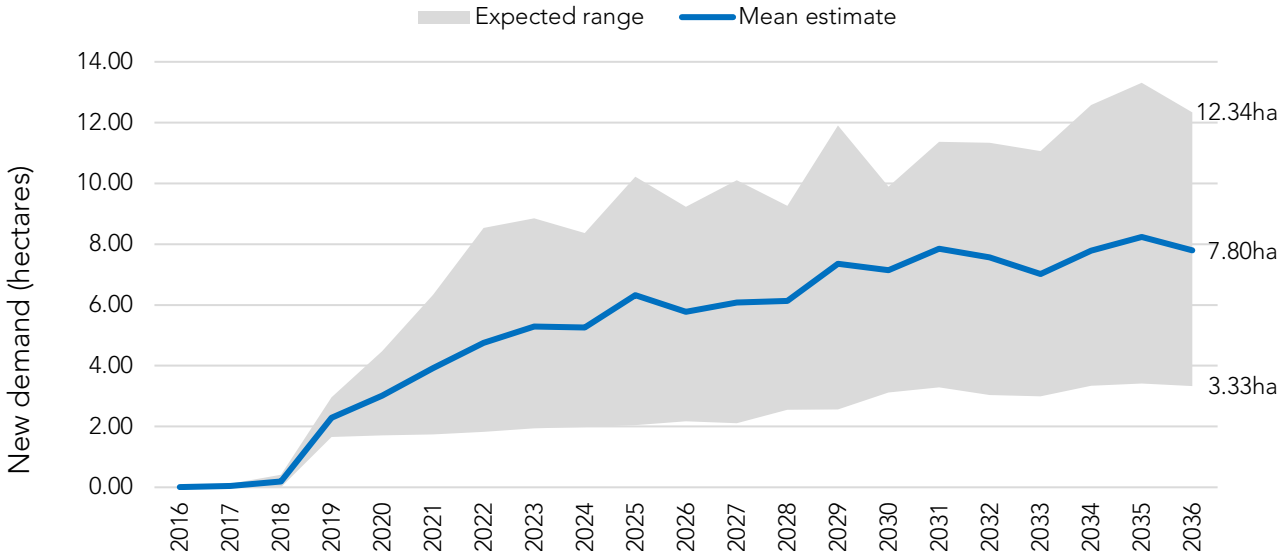
[2] Average lot sizes have been calculated using the existing distribution of lots by industry type in Irwin.
[3] Given the uncertainty, the potential impact of a mineral sands processing plant has not been modelled. Should it proceed it is likely the Industrial Investigation Area would be more suitable.

To estimate demand a Monte Carlo[4] model was composed using these input scenarios (together with the land use audit and WA Tomorrow data). The model was run to 2036 and produced ranged estimates of total demand for new industrial land.

2.3.1 A modest growth trajectory for current and unmet demand

Based on the population growth and major *known* project potential, expected demand for new industrial land over the next 20 years is in the order of 7.8ha (~20 lots). There is a wide-ranging uncertainty band around this, due to the difficultly of predicting future major project investment in the region (Figure 12).

Figure 12 Potential Land Demand Trajectory



As Figure 13 shows, there is a wide ranged estimate of future demand for industrial land. This is due to the uncertainty about future major project demand, which accounts for about 75% of new demand estimated in the model. Source: Geografia, 2016

The number of estimated new enterprises being established and lot availability (in the most appropriate Estate for each industry type and within the historical range of ideal size), suggests there is currently a sufficient quantum of suitably sized and located vacant lots for the expected demand (Table 4).

[4] This uses a set of probability ranges for the likelihood of a scenario occurring (e.g. the establishment of an irrigated horticulture precinct) and the expected impact. The model is run numerous times sampling from the probability ranges and an expected range of outcomes (in this case land demand) is calculated.

Table 4 Total Estimated Lot Demand and Potential Supply by Industry Type

Activity	Mean Lots Required	Preferred Estate	Median Lot Size (sqm)	Lot Supply (at suitable location/scale[5]
Agribusiness	5-6	General Industrial	4,900	~6
Marine industries	3-4	Marine Industries	1,975	~8
Resources	1-2	General Industrial	3,270	~5
Population servicing	4-5	General Industrial	2,700	~27
Transport and logistics	1-2	General Industrial	3,300	~24

This is an indicative estimate only, but suggests that there is adequate existing land area (and lot count) in the two industrial estates to accommodate any conceivable demand. The only caveat to this is that, some agribusiness and resource servicing activities currently occurs on relatively large lots, of which there is a limited supply. However, given most of these lots, and others, can be considered under-used, this is unlikely to be an issue. Source: Geografia, 2016

2.3.2 Investment attraction, rather than business as usual

To estimate demand trajectories, we measure historical trends and then drawn on insights from stakeholders about potential new projects. This approach underpins a model which can estimate future demand. While this can provide a reliable measure of the *expected* demand, it is only one part of the equation and misses *latent* demand. This is, demand that can be stimulated through the provision of suitable land to attract new, unforeseen investment. This is an 'investment attraction', rather than a 'BaU' approach to industrial development.

Given the significant growth in demand for resources (agricultural and mineral) in the Asian region, the notion of stimulating new investment in the Shire by offering industrial land that is attractive to new businesses should not be disregarded. While it requires market testing before any financial commitment is made, there may be scope to attract wholly new enterprises into the Shire through investment in the provision of greenfield industrial land (see Case Studies 5 and 6).

[5] This factors in the mean lot size for current activity.

3. Supply Analysis

There are 57.3ha of industrial land in Irwin, primarily in two estates. Factoring in the extent of vacant land (which includes a recent subdivision of some 20 serviced lots in the General Industrial Estate), the current supply is sufficient to meet *likely* future demand over the next 20 years. There are, though, very large new project proposals (e.g. in mining, agribusiness and tourism) that could seriously strain the current supply. There are various plans and concepts for rezoning and development (for example, the Industrial Investigation Area) that will influence the quantum and location of industrial land. These will need to be considered in the context of the current level of supply and demand. In addition, some minor changes to the Local Planning Scheme will assist in ensuring the Shire retains and improves its industrial land supply. There is also an opportunity to both stimulate new demand through the provision of development-ready land and to facilitate the development of a marine-related business incubator at the boat harbour. Further investigation and discussions are needed to advance these concepts.

3.1 Current supply of industrial land

According to the land use audit, there are currently 57.3ha of industrially zoned land in Irwin. This is made up of:

- 44.9ha in and contiguous to, the General Industrial Estate (this includes two lots, totalling 12ha, at the eastern end of the Estate); and
- 11.4ha in the Marine Industries Estate, which includes 2.1ha to the north of Russ Street, which is zoned industrial, but not yet developed.

Of this land, some 28ha (made up of 39 lots at a median size of 0.2ha) is vacant land (e.g. see Figure 13) and a further 9.6ha (19 lots at an average size of 0.28ha) can be considered under-used. (see Table 3).

There is also industrial activity (concrete production) occurring in the town centre zone (the 1.7ha 'in-town' site), which would be expected to relocate to the General Industrial Estate at some point.

Based on the scenarios outlined in Section 2.3, the current provision (including the additional capacity of under-used land and the slated industrial land) suggests there is adequate supply (both in terms of lot numbers and land area) for the foreseeable future, and certainly the next 20 years. This factors in the preferred lot size (as evidenced in the existing profile).

However, as suggested in Section 2, there may be some need for lot consolidation in the General Industrial Estate to cater to major resource industry service enterprises. In addition, there may be

potential to attract wholly new enterprises by offering premium, serviced industrial land. This will, however, need to be market tested.

Figure 13 Example Vacant Land in General Industrial Estate



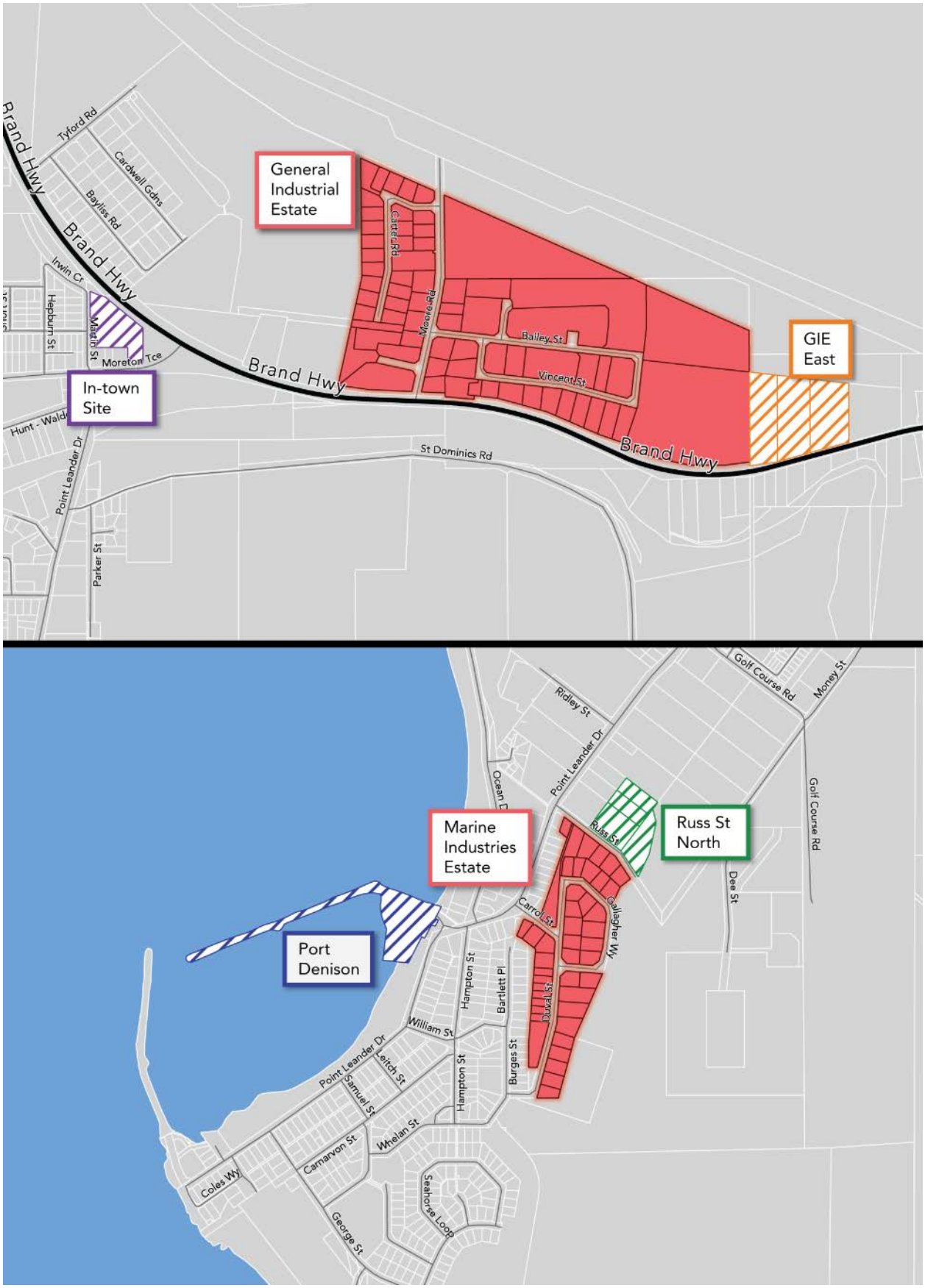
This is one of the serviced vacant lots available in the General Industrial Estate (as of November 2016). Source: Geografia, 2016

3.1.1 The policy setting

The recent Department of Planning study identified the following key points:

- Around 28ha (51%) of the zoned land is considered fully developed;
- The Department's development focus is on the General Industrial Estate, where:
  - A further 8ha of land is identified for future industrial use (currently zoned farming adjacent to 'GIE East');
  - 26ha of land was identified as capable of "substantial further development" and
- The Shire's draft Local Planning Strategy proposes that the part of the Marine Industries Estate to the north of Russ Street ('Russ St North in Figure 14) be rezoned from industrial to development zone for residential purposes.

Figure 14 Irwin Industrial Land (with potential expansion sites marked out)



Source: Geografia, 2016

3.2 Supply characteristics

3.2.1 A high proportion of vacant or under-used lots

The General Industries Estate has a high proportion of vacant or under-used lots. In addition, there has been a contraction in the activity at the Marine Industries Estate due to the relocation of commercial rock lobster fishing vessels from Port Denison to Geraldton. This led to a reduction in commercial boat maintenance and repairs being undertaken in the Marine Industries Estate, although the Estate is still close to fully occupied. The consequence is an overall high number of under-used or vacant lots in Dongara. This relatively low level of current demand and the available supply (including several serviced lots in the General Industrial Estate) presents an opportunity for attracting new investment into the Shire, offering affordable, well-located industrial land in a steadily growing community.

3.2.2 The General Industrial Estate

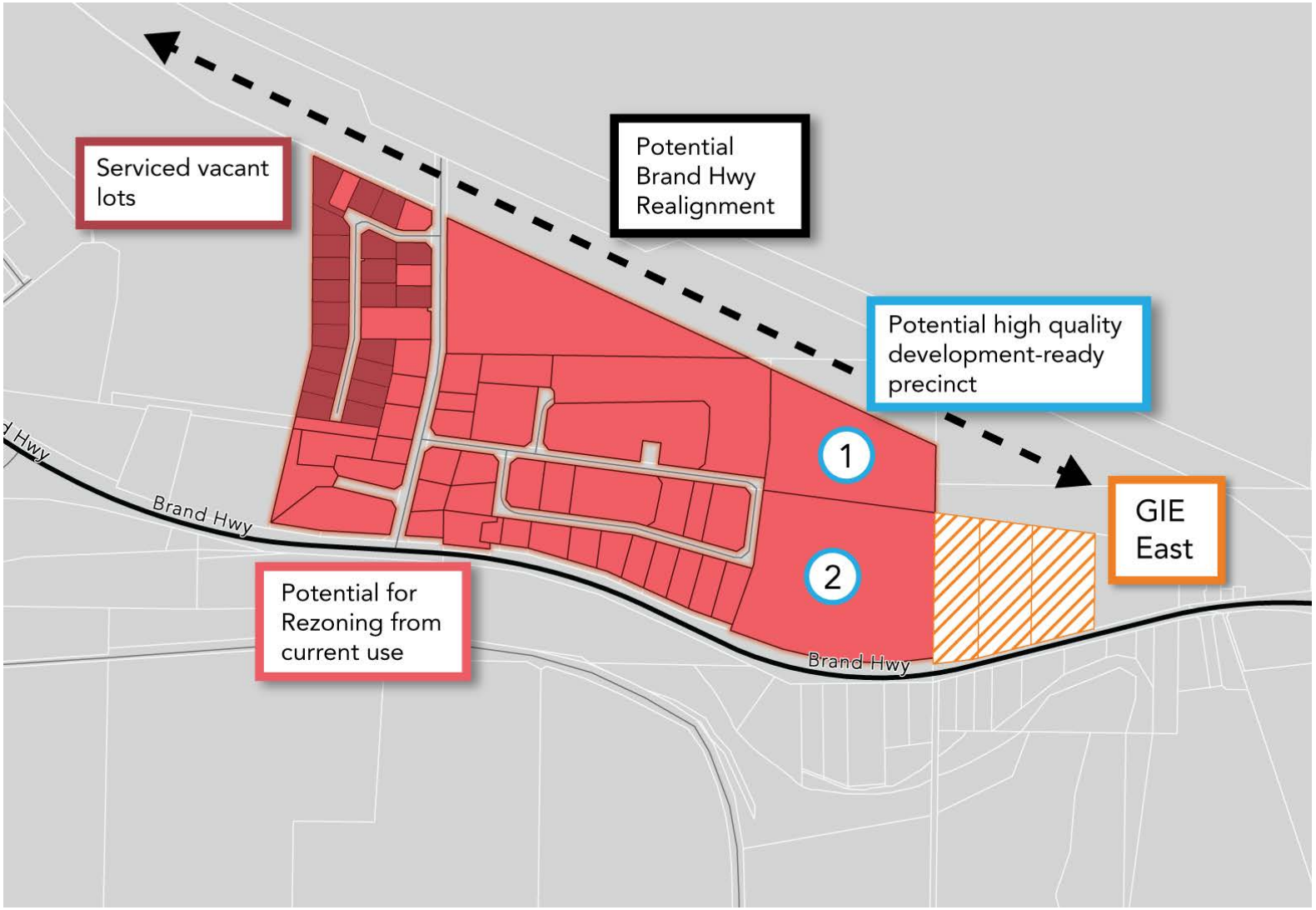
There are currently draft plans for rezoning land both to and from industrial, and other mooted plans for industrial intensification in the General Industrial Estate. Key points are:

- Land to the north of the General Industrial Estate (south of the railway line) and land to the east is zoned for General Industry, along with a 'Major road or highway' reservation alongside the railway for possible realignment of the Brand Highway. Such realignment would create good exposure for potential new industrial businesses. However, as noted above, with the recent contraction of economic activity in the region, under a 'BaU' approach, there is no expected current or unmet demand that justifies the creation of additional lots. There needs to be more market intelligence gathering to determine the prospects for either longer term, or unexpected demand growth before a commitment is made to add additional land;
- There are some 20 serviced lots at the western boundary of the Estate. These present a significant opportunity for marketing and development;
- There are two unserviced, large lots at the eastern end of the General Industrial Estate (see 'potential development lots' in Figure 15), which do offer excellent Highway frontage and could present an opportunity for development if market conditions warranted it. Investment in servicing these lots could be considered an 'investment attraction' approach to industrial development. Given it is a risky proposition, however, it would need to be tested before any financial commitment was made); and
- The current industrial activity occurring 'in-town' is compromising the amenity of the town centre and encouraging its relocation should be a priority consideration.

These proposals for the General Industrial Estate are shown in Figure 15. The new subdivision along Carter Road has a substantial supply of available serviced lots, while zoned land to the north and east of the existing developed area could be readily subdivided and developed for industry. Longer term, the 'Future industrial' shown further east could also be rezoned for 'General Industry'.

Should a real, rather than virtual, agribusiness incubator be considered, there are also vacant industrial units on two Moore Road properties in which it could be readily accommodated.

Figure 15 General Industrial Estate (Detailed)



Source: Geografia, 2016

3.2.3 The Marine Industries Estate

As discussed elsewhere in this report, there are several under-used and vacant lots and premises in the Estate. Nonetheless, the Estate is well positioned, in proximity to the harbour and able to service increased recreational boating needs and potential recovery in commercial boating. The fact that marine industries are clustered, rather than dispersed in a more general estate, is a particularly strong economic advantage that should be protected. Key points in relation to potential changes to the Estate are:

- The Shire's draft Local Planning Strategy recommends the 'Marine based industry' zone be rezoned to 'Light industry', in line with the *Planning and Development (Local Planning Schemes) Regulations 2015* which require a greater level of standardisation of zones across Western Australian planning schemes. As it is important to retain the marine-industries focus, it is recommended a local planning policy is introduced to that effect; and
- The pocket of land north of Russ Street sits amongst a mix of occupied residential and industrial uses and is partly cleared and partly containing remnant vegetation. The Shire's draft Local Planning Strategy proposes rezoning this to 'Development' zone for residential purposes. However, as identifying and protecting a suitable supply of industrial land for this Estate is more difficult than providing residential land (of which there is a relatively abundant supply), it is strongly recommended that this change is not made. Instead, it is recommended the subject portion of the land be zoned 'Light Industry' to enable future expansion of the Estate. When demand for industrial land improves, or there is a need for development of the adjoining residential land, then a local structure plan or plan of subdivision should be prepared by the proponent demonstrating a suitable interface between the zones and uses (Figure 16).

Figure 16 Marine Industries Estate (Detailed)



Red is the current Marine Industries Estate. The land currently proposed to be rezoned for residential use is highlighted in green. Source: Shire of Irwin, Local Planning Strategy

3.2.4 *Industrial Investigation Area*

The Shire's draft Local Planning Strategy shows a 2,058ha 'Future Industrial Investigation Area', south of Midland Highway and east of Brand Highway (Figure 17). The related Policy Actions are:

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.*

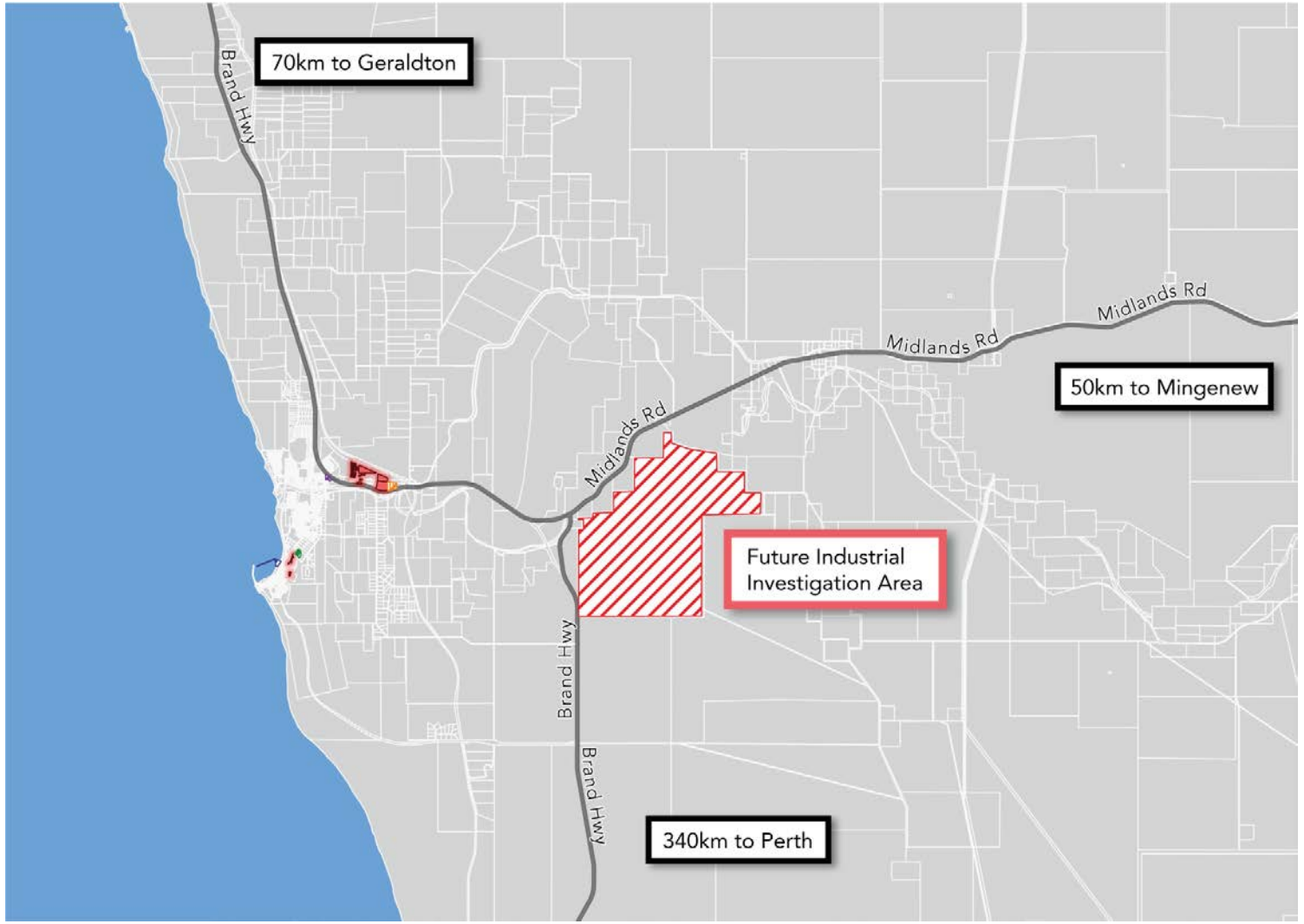
1.8.2 *If appropriate, consider rezoning the new industrial estate at Lot 353 Midland Road to an 'Industrial Development' Zone to allow for industrial structure planning in the future.*

Detailed analysis and investigation relating to the creation of this future industrial area is beyond the scope of this work, however, the following can be said:

- The identified area of 2,060 hectares is predominantly cleared, in large holdings and is rated as having a Moderate Versatility for agriculture (DAFWA, 2013);
- Topography is undulating and there is no identified flood risk;
- The area has good proximity to the Brand Highway and Midlands Road and will be near the proposed Dongara to Northampton Coastal (Highway) Route irrespective of whether Option 1, 2 or 3 is adopted. Similarly, existing railway lines are relatively close by; and
- A large industrial area of this type and size would normally only be needed for major industrial processing (such as minerals, animal or horticultural products) requiring large land areas and extensive buffers (usually 1-3km). This may be relevant should plans for mineral processing proceed or investigations for irrigated horticulture in the Irwin River Valley result in significant investment (see Section 2.2.3 and Section 2.2.2 respectively).

Considering these points, pending identification of proven demand for a candidate industry(s), it would be premature to initiate rezoning of Lot 353 Midland Road to an 'Industrial Development' zone. Nonetheless, given the potential future demand for the area, there is merit in its identification as an 'Industrial Investigation Area' in the Shire's Local Planning Strategy.

Figure 17 Future Industrial Investigation Area



Source: Shire of Irwin Draft Local Planning Strategy, Part A

3.3 Development requirements and priorities

3.3.1 The planning scheme context

LPS5 is the principal statutory planning document for setting out the development requirements for industrial uses and development. The aims of LPS5 that are relevant to industrial land and, therefore, will shape the Industrial Land Strategy, are to:

- Ensure there is a sufficient supply of serviced and suitable land for housing, employment, commercial activities, community facilities, recreation and open space; and
- Assist employment and economic growth by facilitating the timely provision of suitable land for retail, commercial, industrial, entertainment and tourist developments as well as providing opportunities for home based employment.

The objectives of the respective industrial zones under LPS5 are listed below.

General Industry Zone

a) To encourage the consolidation and improvement of industrial development into an area which has been appropriately located and serviced for that purpose.
b) To protect the amenity of zones abutting the industrial zone via the establishment of landscaped buffers and the imposition of landscape and setback land use conditions on any planning approval issued for general industrial development.
c) To ensure that no person erects a building in this zone, unless the façade of the building is constructed of and/or clad in a building material, to a design and specification approved by the local government.
d) To discourage the establishment of non-industry related land uses in the zone.

Light Industry Zone

a) To protect the amenity of zones abutting the Light Industrial Zone via the establishment of landscaped buffers and the imposition of landscape and setback land use conditions on any planning approval issued for light industrial development.

Marine-Based Industry Zone

a) To consolidate industrial development associated with the fishing industry in an appropriately located area with close access to the Port Denison Harbour.

These aims and objectives are similar to other local planning schemes in Western Australia and considered appropriate to Dongara-Port Denison.

3.3.2 Use and development table

Part 5.24 of LPS5 comprises a Zone/Use Development Table for each Zone (Table 5).

Table 5 Zone/Use Development Table

Zone		General Industry	Light Industry and Marine Based Industry
Use		Any permitted use	Any permitted use
Min. lot area (m^2)		2000	1000
Min. effective frontage (m)		25	25
Min. boundary setbacks	Front	11	11
	Rear	7.5	7.5
	Side	As per Building Code of Australia	As per Building Code of Australia
Min. car parking spaces		As determined by the LGA	As determined by the LGA
Min. landscaping % of site		Clause 5.13 applies	Clause 5.13 applies
Other requirements		Nil	Nil

Source: LPS5

These use and development standards are like other local planning schemes in WA and do not represent a significant constraint to industrial development.

Under part 5.29 of LPS5, prior to the development and/or subdivision of land in the General Industry Zone, the local government may require a Structure Plan to be prepared in accordance with the provisions of Clause 5.35. These Structure Plan provisions are also common to most local planning schemes in WA.

In the General Industry, Light Industry and Marine-Based Industry Zones, development must comply with the standards specified in Table 5, and are at the discretion of the local government where not specified. Landscaping must include the first 5m of the front setback area and the first 3m of the rear setback area.

Where appropriate the local government may impose additional or more stringent setbacks for landscaping requirements to protect the residential amenity of adjacent Residential or Special Residential zoned lots.

3.3.3 Local planning policy

The current planning context (described above) strikes a reasonable balance between ensuring appropriate use and development (including encouraging marine related industries only in the Marine Industries Estate) and that there are no planning constraints on good industrial development.

For reasons outlined in Section 3.2.3, however, it is recommended that there a local planning policy should be prepared to ensure the Marine Industries Estate is reserved for marine-based industries. This is important as clustering is a critical element in contemporary economic development planning.

3.3.4 Subdivision

The Western Australian Planning Commission's (WAPC) Development Control Policy 4.1 Industrial Subdivision (DC 4.1) was adopted in 1998 and (along with other relevant policies) continues to provide guidance on the matters considered by the WAPC when determining applications for industrial subdivision throughout the State. These include such matters as the design and shape of industrial lots, road layout, servicing and open space requirements.

DC 4.1 will have been considered by the WAPC when granting approval to previous subdivisions in Dongara and Port Denison, including the creation of the new lots west of Moore Road. These policy requirements will similarly apply to future subdivision applications such as within the existing developed industrial areas or the identified expansion areas. There is no need to replicate these provisions in LPS5.

3.4 Summary: a supply-side stimulus

3.4.1 The conservative scenario

As noted earlier, matching the current supply (including vacant land and mooted plans) with a conservative estimate for demand (under a BaU scenario) does not suggest that additional land is needed. Although it would be prudent to ensure land that is contiguous to the primary estates can be used for industrial purposes should the need arise in the future.

The Shire of Irwin has pro-actively sought to stimulate industrial growth by providing additional 2,000m^2 – 3,000m^2 lots to the west of Moore Road in the General Industrial Estate (see Figure 15). These contemporary lots are cleared, level and fully serviced. Thus far, two lots have been developed with new industrial premises, with the others remaining vacant. These lots represent an excellent opportunity for presenting, to as wide a market as possible, the availability of well-serviced, affordable industrial land close to the highway and town centre.

There has been a suggestion that the Shire, LandCorp or a private developer should seek to further increase the supply of lots to address a perception of poor price competition. However, when the relatively high costs of servicing are added to the raw land price, plus holding costs in a slow market, there is likely to be little change in the resulting lot price.

Overall, and notwithstanding the anecdotal evidence, the availability and price of industrial land in the Shire is not regarded as a significant impediment to attracting new or expanded businesses into the industrial estates. Rather, the perception of a lack of affordability is more likely a result of business turnover and profitability.

In summary, there is no evidence that a lack of affordable industrial land has been an impediment to development and growth.

3.4.2 A supply-side stimulus to drive economic development

While the BaU scenario does not warrant the provision of additional industrial land, there is a case for stimulating new 'above trend' demand for industrial services by focusing on economic development and population growth strategies.

In particular, the provision of a high amenity, larger lots in the Shire may assist with this. Given the prospects for major industry investment in the region (particularly in mining and energy, but also in agribusiness), having available serviced, well-located large lots may put the Shire in an ideal position to ensure some of this activity, and its supply chains, locate in Irwin.

There are examples of shires (and other government bodies) attracting new investment through Greenfield industrial land provision. Case Studies 5 and 6 (below) show that, if the right land is provided under the right economic conditions, this can be successfully achieved. In both cases, substantial pre-planning was undertaken in a context of a positive growth outlook which is expected to result in significant private and public investment.

Case Study 5 Enterprise Park, Wangara, WA

Enterprise Park was established by Landcorp in the northern growth corridor of the Perth metro region. With access from all directions via nearby major arterial roads.



Source: http://www.landcorp.com.au

Features

The estate is home to approximately 250 businesses ranging from commercial entities to light industrial firms. Originally envisioned by developer LandCorp to grow over multiple decades, the businesses within the park now contribute $37 billion to the Australian economy. The park was also the first in WA to implement design guidelines towards achieving unified and resource efficient developments.

How was it established?

Having broken ground in 1989, LandCorp used a model to extract approximately 5 million cubic metres of sand to prepare for development, the sand was then used for building materials that supplied the construction industry. In 2016 the park won the Property Council of Australia's award for Best Business or Industrial Park at the National Innovation and Excellence awards.

Case Study 6 Caledonian Court, Ararat, VIC

Two hundred metres from the Western Highway 200km west of Melbourne, the lots on Caledonian Court offer a good example of under-used land in a rural area purposed (by Council) and ready for industrial usage.



Source: http://business-investment-lifestyle.ararat.vic.gov.au/industrial/industrial-estate-ararat

Features

Caledonian Court contains 12 lots within an Industrial 1 Zone, with water harvesting built onsite for owners to use, and all other utilities connected. The lots range from 1,153 – 5,000 sqm. Council maintains that while standard conditions will apply to all lots, developments will also be subject to conditions regarding the planning permit issued for individual lots.

How was it established?

With $500 million of combined public and private investment expected in the region over the next four years, and an additional $400m of flow-on effects, Ararat Rural City Council opened the Court to accommodate some of this future growth. To date, five of the 12 lots have been sold.

3.5 Potential location of a business incubator

As part of any plan to stimulate new demand, the concept of an industrial incubator needs serious consideration. As noted earlier, there are two prospects for industry-specific incubators in Irwin:

1. An agribusiness-focused incubator in the General Industrial Estate.
2. A marine industries incubator in proximity to the Port Denison Harbour.

Based on the case study research and an analysis of Irwin's economy, there are some clear foundations for developing an industrial incubator in Irwin.

3.5.1 Incubators should be well located, high profile and high amenity

As noted in Section 2.1.1, business incubators are ideally located in repurposed buildings with architectural merit. This contributes to the high amenity setting necessary to attract and retain investors, entrepreneurs and skilled workers. There are two potential opportunities for incubators, described below.

Denison House

The notion of using historic Denison House as business incubator premises has been raised in stakeholder consultation for this study, as well as in earlier work. However, according to the *Irwin River Estuary Management Plan* (Land Insights, 2014), this is not an ideal outcome for the building.

The objective for the area under the Plan is to retain the focus of reserve management on recreation and conservation of natural values. The Plan identifies potential uses for Denison House including tea rooms/café; small shop displaying local produce, art and craft; activity rooms for community groups; interpretive centre for visitors; canoe and kayak hire; and museum or other use by the Irwin District Historical Society. A footbridge to improve public access from the northern side of the Irwin River is also proposed.



While start-up commercial-style businesses or 'cottage industries' may suit Denison House, light, marine-related or general industry would not be compatible with the building or its context.

The Boat Harbour

By harnessing Dongara-Port Denison's maritime history and making use of existing infrastructure and facilities, the Boat Harbour represents a prospective location for a business incubator. The Harbour boat pens, moorings, a boat ramp, fuelling and maintenance facilities and various other public facilities. While the eastern side of the harbour is mainly for commercial use, the southern side is used by the recreational boating and fishing public.



The Department of Transport has management responsibility of the Harbour and, according to the Shire's EDAC, has a plan to double the number of boat pens – to cater mostly to tourism and recreational boating, some of which is likely to be stimulated by the tourism development of the Abrolhos Islands.

With rock lobster processing now centralised in Geraldton, part of the Geraldton Fishermen's Cooperative 'Live Lobster Centre' located alongside the service wharf could be converted for use as a business incubator focussed on marine-related industries and associated tourism and recreation. If larger work spaces are required (e.g. for proto-type engineering) the nearby Marine Industries Estate has capacity to accommodate this. As identified in the *Port Denison Foreshore Masterplan Concept* (RPS, 2013) commercial activation of the 'co-op' building would help invigorate the harbour and foreshore precinct.

In addition, the generous amount of hard stand and vehicle parking adjacent 'the Pier', service wharf and the 'co-op' precinct could be used for additional marine-related industrial activities, especially if businesses emerging from the incubator begin to outgrow incubator space and need to graduate to larger permanent premises.

The 'co-op' building forms part of Reserve 41089, which is subject to Minister for Transport management orders for harbour purposes, with the Department of Transport being the responsible agency. However, under Shire's District Zoning Scheme (Local Planning Scheme No. 5 - LPS5), most of the 'co-op' building falls within the 'Ocean' zone, with a smaller portion falling within a 'Local reserve'.

Figure 18 shows the existing situation with the LPS5 zoning overlayed on the cadastre, plus annotated recommendations.

Figure 18 Preparing for a Marine-Related Business Incubator, Port Denison



Source: Shire of Irwin, Local Planning Scheme 5

While the current situation has not prevented development and operation of the 'co-op' building, it is anomalous and confusing. Importantly, if the 'co-op' building is to be considered for use as an industrial and business incubator, the status of the land and building under LPS5 should be made clearer.

There are at least two options for regularising the LPS5 zoning with the tenure and vesting of the land:

1. Insert a new 'Public Purposes – special use reserve' in the Scheme and to rezone the 'co-op' building and adjoining land (to the south) accordingly. This would be similar to the City of Fremantle Town Planning Scheme No 4, in which several precincts, such as the on-shore uses adjacent the main harbour and fishing boat harbour, are subject to a 'Public Purposes – special use' reserve.
2. Rezone the 'co-op' building and the remaining balance of Reserve 41089 to 'Port installation' reserve, consistent with the rest of Reserve 41089 to its immediate north.

It is recommended, therefore, that the Shire consult with the Departments of Transport and Planning, and the Geraldton Fishermen's Co-operative to determine the preferred option for regularising the zoning of the 'co-op' site. These discussions should also cover the possible use of the site as an industrial and business incubator for marine related activities.

4. The Strategic Plan

Current demand and supply trends mean that economic development planning to stimulate new investment is a critical first step in industrial land use development. The recommendations reflect this, with a range of actions falling under four strategic objectives.

4.1 Strategic objectives

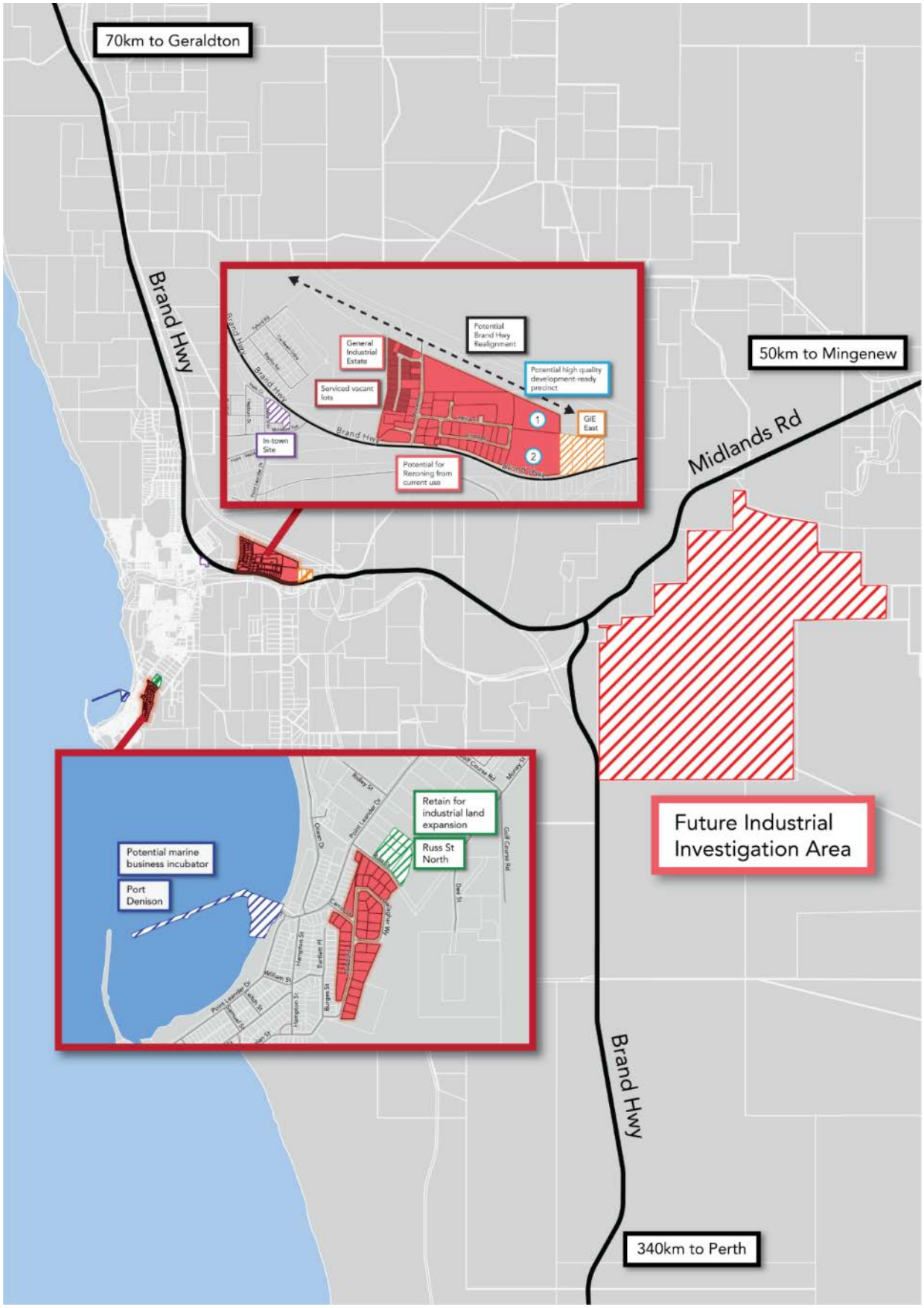
There are four strategic objectives relevant to ensuring that Irwin has a sufficient quantity of appropriate quality and development-ready land to support the Shire's economy:

1. Attract investment - Focusing on economic development and investment attraction by working with partners to secure new private and public investment and preparing and marketing development-ready infrastructure and sites.
2. Plan for growth - Ensuring that contiguous land can be developed in the future should it be necessary so that new enterprises can locate adjacent to complementary activities. This will put the Shire on a good footing to respond to currently proposed and, as yet unknown, economic opportunities.
3. Create clusters - Retaining the activity-based character of the land (i.e. marine industries estate for marine industries) so that businesses can cluster into economically efficient precincts.
4. Provide amenities - Encouraging gradual enhancement of amenities over time so that the industrial estates continuously improve and match the changing expectations of industry, particularly technology companies.

4.2 Priority actions

Figure 19 provides a simplified overview of the key elements of the Strategy, highlighting priority actions, sites and assets. Table 6 (overleaf) details the recommendations for industrial land planning and development in Irwin.

Figure 19 Overview of the Strategy



Source: Geografia, 2017

Table 6 Priority Actions

Objective/s	Action	Rationale	Relevant to…
• Economic development and investment attraction	1. Shire and its EDAC to liaise with the Departments of Water, and Agriculture and Food to progress investigation into an adequate groundwater source for a major irrigated horticulture area.	Irrigated horticulture area may be an economic opportunity for the region. If activity expands, it will have a significant impact on industrial land demand.	
• Economic development and investment attraction	2. Shire and its EDAC to build the relationship with the oil and gas and mineral sands industries to maximise business, employment and economic opportunities in the local area.	These industry sectors provide a realistic opportunity for economic development in the region and drive significant industrial land demand.	
• Economic development and investment attraction	3. Shire and its EDAC to investigate and promote tourism, lifestyle and urban development opportunities in the Shire, which will help generate demand for building and construction and a wide variety of industrial and commercial services to be in the General Industrial Estate.	Population growth will increase the size of the population servicing labour pool, thereby making the pool more competitive. This has a positive feedback on further investment. The increased size of the population servicing sector will increase demand for industrial land, and is likely to absorb some of the surplus lots in the General Industrial Estate.	
• Economic development and investment attraction	4. Shire and its EDAC engage with Main Roads WA and other relevant parties over the possible Dongara to Northampton Highway and related proposed Brand Highway realignment at Dongara to minimise negative impacts on the Shire's industrial businesses and to explore positive opportunities.	Bypass projects can have a negative economic impact on effected towns. Stakeholders need to be proactive to minimise this effect. There may also be opportunities for capturing some of the construction work on behalf of local businesses.	

Objective/s	Action	Rationale	Relevant to…
• Economic development and investment attraction	5. Investigate the potential for an agribusiness-focused incubator in the region. A virtual incubator is a possibility for this industry.	With the possible development of an irrigated agriculture and horticulture area, there is scope to develop value-added products and services. Case study evidence suggests a 'virtual' incubator is a cost-effective way to assist local innovators to commercial their products. While a virtual incubator creates no industrial land demand, the flow-on activities may do so.	
• Economic development and investment attraction	6. Ensure that the economic development work of Council includes a conduit for local industrial estate tenants to be informed of opportunities and plans.	Stakeholders report that there are information gaps in relation to Council, and other, plans for industrial land and economic development in the Shire. Better working relations between public and private sector agencies is more conducive to long-term planning and investment.	
• Economic development and investment attraction • Amenity	7. Undertake a detailed investigation of the potential for a marine industry incubator at the Geraldton Fisherman's Cooperative building. This incubator would cover: using by-products of the aquaculture industry; improving aquaculture management (sustainable farming practices), harvesting technology and packaging; and developing new products.	There are case studies of successful marine industry incubators in other parts of the world. However, their success has been contingent on being driven by local operators/stakeholders and based on extensive research, analysis and discussions. These incubators are in high amenity buildings adjacent to boat harbours.	

Objective/s	Action	Rationale	Relevant to…
• Economic development and investment attraction • Amenity	8. Council, and government agencies collaborate to investigate the market demand for, promote and incentivise a high quality, development-ready greenfield industrial precinct at 30262 Brand Highway. 9. Ensure the development presents with high amenity by introducing site specific requirements that encourage high technology, advanced manufacturing - or similar - related to one of Irwin's competitive sectors (e.g. agribusiness or mining).	A lack of serviced, large lots with good visibility and Highway access may be an impediment to capturing investment opportunities from relatively footloose enterprises (i.e. those that have a choice about where to locate and so will gravitate towards development-ready land. Additionally, as it would be at the entry to the town, this site will need to be developed in a way that is visually attractive.	
• Economic Development and investment attraction • Creating Clusters	10. The Council and its EDAC to discuss with the Departments of Transport and Planning and the Geraldton Fishermen's Co-operative to determine the preferred option to regularise the zoning of the 'co-op' site and to facilitate its possible use as an incubator for marine related activities. 11. Consider amending Local Planning Scheme No. 5 to rezone the 'co-op' site from 'Ocean' and 'Local Reserve' to 'Port Installation' or 'Public Purposes – special uses' reserve.	If a decision is made to develop an incubator at the co-op site, the zoning irregularity needs to be addressed.	

Objective/s	Action	Rationale	Relevant to…
• Planning for growth	12. Support identification of the 'Industrial Investigation Area' in the Shire's Local Planning Strategy pending the outcome of the analysis of the Irwin River Valley prospective groundwater source for large-scale irrigated horticulture and of possible mineral processing, using locally sourced energy resources.	There are several major projects that could significantly increase demand for very large lot industrial land, which would ideally be accommodated at the Industrial Investigation Area. However, until these major projects are underway and the demand implications are clearer, it is premature to rezone the land from its current use.	
• Planning for Growth	13. Provide for future expansion of the General Industrial Estate to the north (south of the possible realignment of Brand Highway adjacent the railway) and to the east as identified in the Shire's Local Planning Strategy.	This is well located land and contiguous with the existing industrial estate and, therefore, should be retained in the event of future demand growth.	
• Planning for Growth • Creating Clusters	14. Rezone the existing 'Marine based industry' area to 'Light industry' in keeping with the Planning and Development (Local Planning Schemes) Regulations 2015 - including the portion of land north of Russ Street to provide for future expansion of the industrial area near the Port Denison Harbour.	Consistency in planning schemes provides more certainty to the business community. It is important that the Estate is reserved for marine industries to help maintain and strengthen the cluster effects.	
• Creating Clusters	15. Council to ensure a marine-based industry focus of activity is retained in the Marine Industries Estate.	It is essential that all future uses in the Marine Industries Estate are marine-based industries to maintain and strengthen the cluster effects.	
• Creating Clusters	16. Encourage and facilitate relocation of the existing concrete services business from near the Dongara town centre entry to the General Industrial Estate.	Consolidation of industrial uses improves economic efficiency and once removed from the in-town site, it will provide opportunity to enhance urban amenity, which will become increasingly important to the town's prospects as tourism activity increase.	

Appendix

How this document was prepared

This Strategy was prepared through a mix of quantitative and qualitative research. It built upon the Department of Planning's recent work. The key steps were:

1. A site analysis of all industrial land in the Shire which was documented using a geospatial database that plotted the location, size, use and condition of each industrial lot.
2. Consultation with key stakeholders with a focus on discussing the medium and long-term economic prospects for the region, as well as the real economic opportunities that may emerge over the next few years and drive demand for new industrial land.
3. Case studies of successful industrial incubators in industry sectors relevant to Irwin and in industrial land development projects carried out by local government.
4. Composition and calibration of a population-economic model to estimate future demand for industrial land based on projected population growth rates (for population servicing activity), and potential major projects.
5. An analysis of existing constraints and consideration of the relevant planning documents and their implications for industrial land in the Shire.