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Draft

Guilderton to Kalbarri Sub-regional Planning Strategy

NOVEMBER 2017



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Gordon Stephenson House
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website: www.dplh.wa.gov.au

email: info@dplh.wa.gov.au

tel: 08 655 18002

fax: 08 655 19001

National Relay Service: 13 36 77

infoline: 1800 626 477

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Executive Summary

The coastal area between Guilderton and Kalbarri is the focus of the *Guilderton to Kalbarri Sub-regional Planning Strategy*.

Historically, the sub-region has been characterised by small fishing and tourist towns nestled along a coastline of sandy beaches and fringe reefs, with the regional city of Geraldton anchoring economic and social service provision.

The sub-regional strategy is an overarching planning document that outlines the Western Australian Planning Commission's approach to future planning and development within the sub-region

The Guilderton to Kalbarri sub-region is administered by eight local governments and covered by the Mid West and Wheatbelt Development Commissions.

The strategy responds to a range of potential planning issues that would impact the coast. These include:

- Perth's outer suburbs sprawling up the coast, threatening large tracts of pristine remnant vegetation and stretching infrastructure servicing demands
- urban growth threatening areas with high biodiversity significance, known strategic mineral and petroleum resource value and other recognised natural assets
- changing coastal processes prompting the need for guidance on existing and proposed development to inform coastal hazard risk management and adaptation plans (CHRMAP)
- continued population and tourist growth prompting the need for strategic and sustainable potential tourism opportunities

- Indian Ocean Drive being compromised as an important tourist route if it is used for major freight
- the need for new recreational marine facilities in the sub-region, in particular at Ledge-Lancelin.

The strategy sets 17 policy statements specific to the sub-region. These clarify the WAPC's position on matters such as: coastal hazard risk, the future of Wedge and Grey, settlement hierarchy definition, limitations on future rural residential development, and avoiding native vegetation loss.

Eleven future actions are set for the WAPC to undertake, some of which are specific to the sub-region and others that may have broader application. The future actions respond to data gaps and proactive initiatives identified in the preparation of the sub-regional strategy.

Future actions include: land assembly for non-residential public uses, preparation of a further sub-regional strategy for the Mid West's Batavia Coast, investigating the need for a study to identify future demand for a Perth-Geraldton passenger rail service, and assisting in the preparation of tourism strategies to guide local planning strategies.

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I Introduction

I.1 The study area

The study area for the *Guilderton to Kalbarri Sub-regional Planning Strategy* can be broadly described as the coastal strip between Guilderton (Moore River) to the south, and Kalbarri (Murchison River) to the north, and including the Abrolhos Islands.

I.2 Need for this strategy

The Western Australian Planning Commission (WAPC) has identified a range of issues that are consistently experienced throughout the coastal area from Guilderton to Kalbarri, particularly in the coastal settlements. These include urban growth pressure, coastal erosion and inundation, protection of biodiversity, tourism, agriculture and landscape values, and bushfire planning.

The primary aim of this strategy is to manage and plan for growth along the Indian Ocean coastal zone from the northern boundary of the metropolitan region to Kalbarri.

The strategy is intended to help local governments implement State strategic issues in a sub-regional context by guiding decision-making, and informing local planning documents such as local planning strategies and schemes.

The WAPC established a steering group to guide the preparation of the *Guilderton to Kalbarri Sub-regional Planning Strategy*. The steering group has overseen the preparation of the document and supports the purpose, vision and implementation actions presented.

I.3 Purpose and scope

The sub-regional strategy is an overarching planning document that outlines the WAPC's approach to future planning and development within the Guilderton to Kalbarri sub-region.

The purpose of the strategy is to integrate local and regional landuse planning to provide for population and economic growth in a sustainable manner. The strategy also must respond to environmental and coastal landform change and address complex governance matters.

The sub-regional strategy provides a local context and more detail for actions previously detailed in the WAPC's *State Planning Strategy* (2014) and various local planning instruments.

It promotes a whole-of-government approach for a wide range of social, economic and environmental considerations in the sub-region.

As a provision of the State Planning Framework, the sub-regional strategy forms the basis for cooperative action by the State and local governments on land use, development and infrastructure. Local planning strategies are expected to be consistent with this document.

I.4 Vision

The vision for the *Guilderton to Kalbarri Sub-regional Planning strategy* is:

Relaxed and healthy coastal communities connected to a diverse economy, valued natural environment and a celebrated culture

1.5 Key issues

- There is the potential for Perth's outer suburbs to sprawl up the coast, threatening large tracts of pristine remnant vegetation and stretching infrastructure servicing demands on the State.
- Urban growth may threaten areas with high biodiversity significance, known strategic mineral and petroleum resource value and other recognised natural assets.
- Coastal processes are changing. Guidance around the State values of existing and proposed development is required to inform the preparation of coastal hazard risk management and adaptation plans (CHRMAP) by local governments and others.
- Continued population and tourist growth is expected to put pressure on the sub-region's coastal areas. The strategic and sustainable development of potential tourism opportunities is required.
- Indian Ocean Drive is an important tourist route that could be compromised if it is used for major freight.
- There is economic and recreational pressure to develop new marine facilities in the sub-region, in particular at Ledge-Lancelin.

1.6 Process for developing this strategy

The preparation of the *Guilderton to Kalbarri Sub-regional Planning Strategy* was overseen by the Department of Planning, Lands and Heritage on behalf of the WAPC. A steering group was established to guide the preparation of the strategy.

The steering group included representatives from:

- Western Australian Planning Commission (WAPC)
- Department of Planning, Lands and Heritage
- Mid West Development Commission
- Wheatbelt Development Commission
- WA Local Government Association (WALGA)
- Shire of Chapman Valley
- Shire of Carnamah
- Shire of Coorow
- Shire of Dandaragan
- Shire of Gingin
- City of Greater Geraldton
- Shire of Irwin
- Shire of Northampton.

The steering group met in Jurien Bay, Geraldton and Lancelin, and received presentations from:

- Department of Planning, Lands and Heritage
- Department of Transport – Marine
- Main Roads WA
- Tourism WA
- the Office of the Environmental Protection Authority
- Mid West Development Commission
- Wheatbelt Development Commission.

The steering group has overseen the preparation of this document and supports the purpose, vision and implementation actions presented.

Infrastructure projects identified within the strategy are based on indicative information from State government agencies and are subject to change. Unless otherwise stated, they should not be taken as a funded Government commitment.



2 Governance and context

2.1 Planning

The planning context for the *Guilderton to Kalbarri Sub-regional Planning Strategy* is shown in **Figure 1**. This strategy is intended to be more detailed than a regional strategy, but it does not address all matters that would typically form part of a local planning strategy.

2.1.1 State planning policies

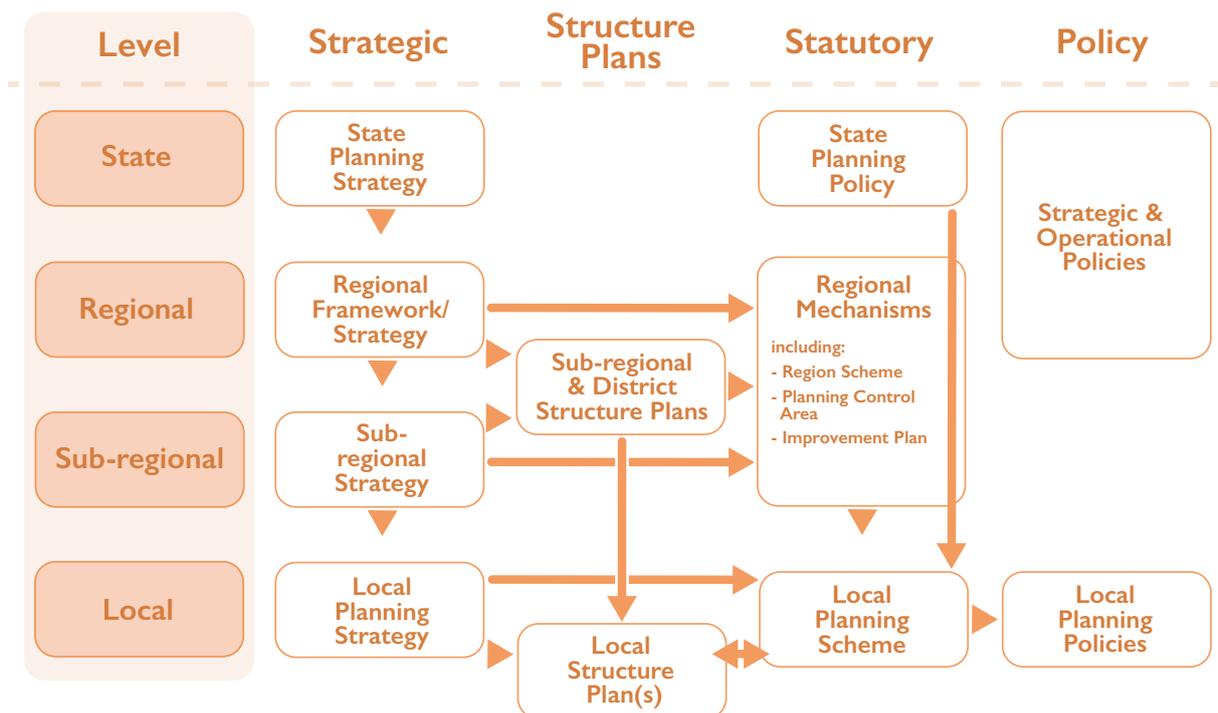
State planning policies provide the highest level of planning policy control and guidance in Western Australia. They are prepared under Part 3 of the *Planning and Development Act 2005* and are applied at all levels of planning decision-making including strategic planning, local planning strategies and schemes, structure

plans, subdivision, and development. This study seeks to build on the policy direction of State planning policies relevant to the Guilderton to Kalbarri sub-region (**Appendix 2**).

2.1.2 Regional planning and infrastructure frameworks

Planning and infrastructure frameworks have been prepared for each of Western Australia's 10 planning regions. The frameworks provide guidance to government agencies and local governments on land use, land supply, land development, environmental protection, infrastructure, investment and for the delivery of physical and social infrastructure for each region. They also provide the framework

Figure 1: Western Australian Planning Framework



for the preparation of sub-regional and local planning strategies and inform the decisions of the WAPC and its Infrastructure Coordinating Committee.

The Guilderton to Kalbarri study area is covered by the *Mid West Regional Planning and Infrastructure Framework* (2015) and the *Wheatbelt Planning and Infrastructure Framework* (2015). These frameworks establish a broad settlement hierarchy for each region, outline major transport routes and infrastructure, identify conservation estate, remnant vegetation, mineral prospectivity, and significant basic raw materials.

2.1.3 Indian Ocean Drive Planning Guideline

The *Indian Ocean Drive Guideline* (2014) sets out broad guidelines for the location, siting and design of various land uses and development in the locality of Indian Ocean Drive. It provides an integrated approach to land use decision-making across five shires with the purpose of retaining the rural and natural landscape and enhancing the provision of services and facilities available to all users of the scenic coastal road.

The Guideline is classified as an operational policy under *State Planning Policy 1: State Planning Framework* with the intention that it be used in the context of local planning strategies and schemes (and amendments to) and development applications.

2.1.4 Local planning strategies and schemes

There are eight local governments in the study area, and all have local planning strategies and schemes that govern land use and development.

This sub-regional strategy is intended to provide direction and support to local governments to deal with issues of State and regional significance.

The local planning strategies and schemes may need review to ensure consistency with this strategy.

2.2 Regional development

The *Regional Development Commissions Act 1993* defines the regions of the State in an almost identical manner to the Planning Act.

Regional investment blueprints have been prepared for each region in Western Australia defined under the *Regional Development Commissions Act 1993*. They identify priorities for economic, social and community development projects.

By considering local issues and conditions, the blueprints seek to develop the economic base of each region by highlighting advantages, workforce opportunities and community development. They are intended to guide investment and allocation of funding into infrastructure and services for regional communities

Mid West Regional Investment Blueprint

The *Mid West Regional Investment Blueprint* (2015) represents a 2050 growth and development strategy for an intergenerational, global, innovative and dynamic Mid West region that attracts and retains talent and investment.

The Blueprint has five priority pillars that are deemed as important to either drive or reduce barriers to growth and development. These are:

- physical infrastructure
- digital and communications
- economic development
- highly desirable communities
- knowledge and learning.

The five pillars are further divided into 22 associated elements (sub-pillars).

The Mid West Development Commission has been progressively implementing the Blueprint.

Wheatbelt Regional Investment Blueprint

The *Wheatbelt Regional Investment Blueprint* (2015) outlines a future for a region that is diverse in industry, liveability and capability. Five distinct sub-regions are home to 75,000 people, receive nearly 700,000 visitors annually and drive an annual economic value of \$7.4 billion. This economic activity occurs across the key industries of agriculture (including horticulture and aquaculture), mining, transport and logistics, manufacturing and construction and lifestyle services (retail, tourism, health, education, aged care).

To maximise growth across the region, the Wheatbelt blueprint outlines a roadmap with six key pillars for growth.

2.3 Aboriginal heritage and native title

The *Native Title Act 1993* provides for the recognition and protection of Aboriginal and Torres Strait Islander people's native title rights and interests. Certain government actions, such as grants of freehold, have been found to extinguish native title.

When planning for urban growth and development, native title is an important consideration as land in and around towns that may be identified as appropriate for certain development options may be subject to a native title claim or determination. Broadly, however, native title has been extinguished on the majority of land in the study area by the granting of freehold title.

The recognised traditional owners for the land north of Perth are the Yued people. See the *Noongar (Koorah, Nitja, Boordahwan) (Past, Present, Future) Recognition Act 2016*. The Yued region includes coastal areas between Two Rocks and Leeman, and also includes inland areas such as Moora and Dalwallinu. Geraldton and its surrounds are considered to be the traditional lands of the Yamatji people.

Since 2009, the State Government and South West Aboriginal Land and Sea Council have been negotiating on the South West Native Title Settlement, a negotiated settlement for six native title claims made by the Noongar people of the south west of Western Australia (of which the Yued claim forms approximately 29,000 square kilometres). Under the Settlement, native title is proposed to be exchanged for a negotiated package of benefits, including formal recognition of the Noongar people as traditional owners, land, investments and the establishment of Noongar Regional Corporations. A major component of the Settlement is the establishment of the Noongar Land Estate through the transfer of a maximum of 320,000 hectares of Crown land for cultural and economic development, comprising 300,000 hectares as reserve land and 20,000 hectares as freehold title. The Noongar Boodja Trust will be a major landholder in the Wheatbelt and South West regions.

In the Mid West, the Naaguja claim covers approximately 5,500 square kilometres including the City of Greater Geraldton and the shires of Chapman Valley, Irwin and Northampton.

The South West Native Title Settlement and the Naaguja claim are not yet finalised. When they are, traditional owners are expected to be more closely involved in land use planning in the district. This strategy acknowledges the traditional owners of the sub-region, past and present.

The Shire of Gingin and the Yued people have prepared a reconciliation action plan, which identifies two significant areas for Yued people. Until the South West Native Title Settlement commences the *Native Title Act 1993* (Cth) still applies to all land users planning activities in the Settlement Area. Within the native title settlement area and across the sub-region the *Aboriginal Heritage Act 1972* (WA) applies at all times, and will continue to do so after the commencement of the native title settlement. Land users must always consider Aboriginal Heritage in their planning processes. These are shown on **Map 1**.



3 Population and settlement

The Guilderton to Kalbarri coast has two distinct settlement areas:

- the regional city of Geraldton, including settlements along the Brand and North-West Coastal highways, principally Dongara-Port Denison and Kalbarri; and
- settlements along Indian Ocean Drive, from Guilderton in the south to Leeman in the north.

These are shown on **Map 1**.

3.1 Population statistics

3.1.1 Population statistics and projections

Population change comprises three elements: fertility (births), mortality (death) and migration. It is generally the case that birth and death rates are similar, resulting in no net change in population. Migration, be it within Australia, or from overseas is the most critical factor in effecting substantial change in population. In regional areas, the issue of population is sensitive, as there is no 'absolute' population figure that exists. This strategy seeks to explore the different types of population data that can be used for different purposes.

In considering potential population change, there is a range of data that can be used to provide an indication. This includes:

- **Census data** – the Census is conducted by the Australian Bureau of Statistics (ABS) every five years and provides detailed information on people counted in a location on census night, usual residence, movement since last Census and visitors. This data is available at the finest level of detail of all data, including local government, settlement

(if over a certain threshold), suburb, postcode and neighbourhood (known as a mesh-block).

- **Estimated resident population** – the Estimated Resident Population produced by the ABS is Australia's official population and is used as a basis for Commonwealth grants and seats in parliament. These figures are derived by adding natural increase (births minus deaths) and net overseas migration (immigration minus emigration) to the estimated population at the beginning of the period. Account is also taken of estimated interstate movements involving a change of usual residence (net interstate migration). This data is updated every quarter, but its finest detail is for local government area.
- **WAPC forecasts** – the WAPC is the State demographer and is responsible for preparing population forecasts for use by State agencies and other interested parties. Its WA Tomorrow suite of publications includes a forecast range known as 'bands'. Users can choose from five forecasts (bands) which best suit their purposes. Bands A and B contain less optimistic forecasts, Band C is the 'most probable' forecast and bands D and E represent the most optimistic forecasts. Where smaller populations are involved, there is greater variability between the bands.
- **Blueprint aspirations** – the Mid West and Wheatbelt Regional Investment blueprints both set aspirations for population growth, based on average annual growth rates.

Figure 2 shows anticipated population growth in the sub-region, which combines local government-wide population figures for Estimated Resident Population and the WA Tomorrow projections. An overall trend of growth is anticipated in the study area.

ABS and WAPC forecasts are based on the 'cohort component method', in which base population is projected by calculating the effect of births, deaths and migration within each age-sex group according to specified fertility, mortality and migration assumptions. The component cohort method of forecasting has been used globally since 1895. It is widely used by developed nations, as well as the United Nations and the World Bank. While the model is stable and reliable, it struggles to capture seasonal changes and to project for 'opportunity' or aspiration.

The WAPC will be guided by the full range of population figures in contemplating land use change.

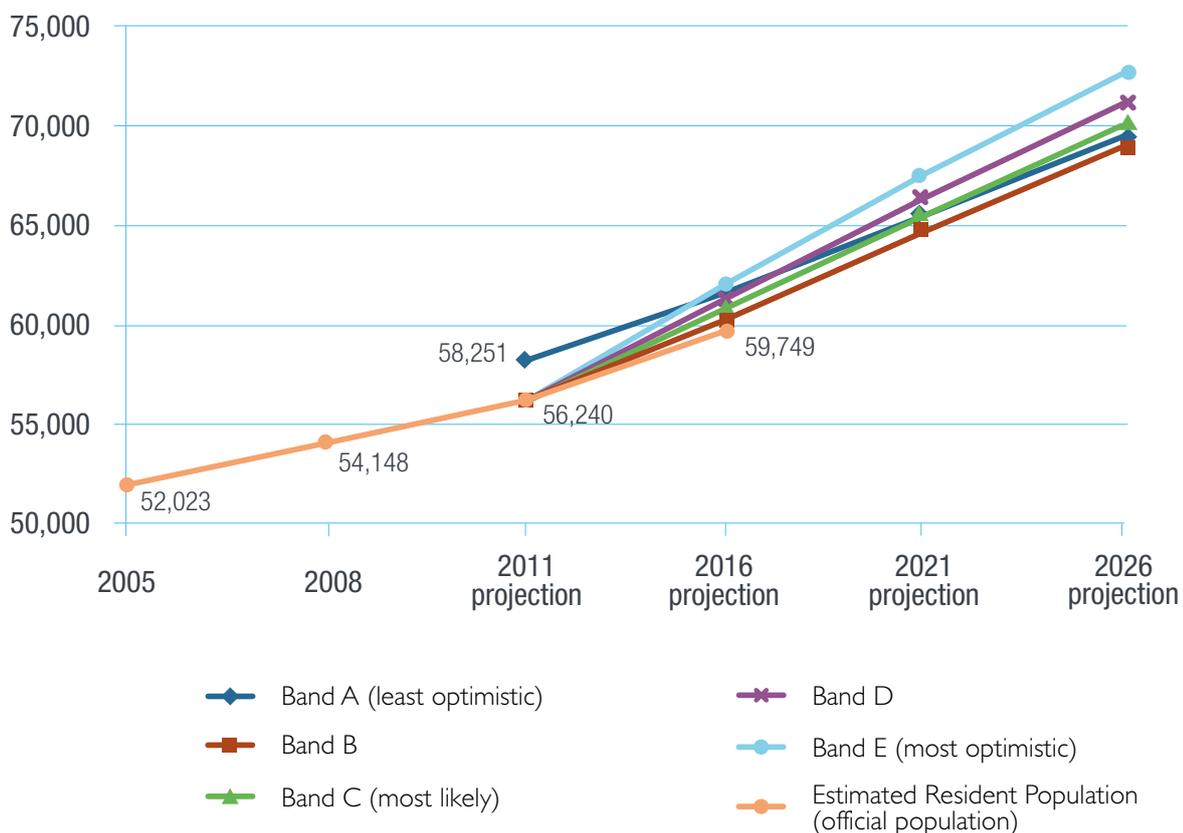
3.2 Settlement and growth

3.2.1 Settlement hierarchy

The settlement hierarchy shown in **Map 1** is broadly similar to that shown in the regional planning and infrastructure frameworks, with the exception that Wheatbelt settlements are now defined to a greater level of detail. The hierarchy and status of the settlements is outlined in **Table 1**.

Table 1 also illustrates the ability of the settlements to respond to urban growth demand by identifying the existing and potential population of each settlement. In the context of this sub-regional strategy, potential population is the estimated design population of the settlements if they were to be developed to the full extent of the current level of zoned

Figure 2: Anticipated population growth of local governments in the study area



serviceable land. The planned populations of the settlements that form part of this strategy are significantly above the existing population.

As shown in **figure 2** and **table 1**, there is sufficient land supply to cater for future population growth.

The WAPC's approach is for one of consolidation and growth around existing settlements so they are able to realise their potential.

Urban growth should be in an orderly manner, with a presumption against the development of land for urban purposes that is beyond reasonable estimates of demand.

This strategy does not provide for Perth's outer suburbs to sprawl up the coast, and local planning frameworks are in place to achieve a nodal form of development, generally with large tracts of pristine remnant vegetation in-between.

3.2.2 Settlement culture and tourism impacts

Aside from Geraldton, most of the settlements along the coast were established to provide a holiday destination for farming communities from inland areas. As such, these communities have strong connections to inland farming districts and a social capital that has developed over decades of shared endeavour and leisure.

Table 1: Settlement hierarchy

Settlement category *	Settlement	2011 population	2016 population and potential population**
2 (regional city)	Geraldton	35,749	38,111 (96,000)
3 (regional centre)	NIL		
4 (sub-regional centre) – existing and proposed	Kalbarri	1,467	1,557 (6,500)
	Dongara-Port Denison	2,766	2,790(14,500)
	Jurien Bay (proposed)	1,507	1,761 (35,000)
	Lancelin (proposed)	606	726 (12,000)
	Guilderton South (proposed)	Nil	Nil (6,000)
5 (major town)	NIL		
6 (town/major local centre)	Cervantes	461	527 (2,500)
	Leeman	356	352 (2,000)
7 (local centre/village/settlement)	Green Head	256	297 (1,500)
	Ledge Point	207	240 N/A
	Guilderton	141	172 (1,000)
	Seabird	80	78 (limited growth)
	Port Gregory (Yallabatharra SSC)	213	86 (limited growth)
	Horrocks	131	138 (1,500)

* **Appendix 1** describes the characteristics of the assigned settlement categories.

** **Existing and potential population capacity** – 2016 population is based on the 2016 Census. Potential population indicates the population that could be accommodated based on existing zoned land, noting that population is indicative only, and may be affected by topography, vegetation, bushfire, servicing and land assembly.

The planning implications associated with holiday towns are significant. Many houses are 'lock and leave', with up to 30 per cent vacancy during non-peak times. At peak times, towns struggle to cope with the influx of visitors, making demands on local facilities and services, and also impacting on the sustainability of facilities in off-peak times.

The impact of tourism on specific facilities is discussed in Section 5 – Economic Drivers.

3.2.3 Health and education services

Tables 2 and 3 outline the health and education facilities available to the study area.

Due to the historical settlement pattern of coastal communities in the study area, the Indian Ocean drive settlements have limited health and education facilities, reflective of permanent population figures. It should also be noted that some 'inland' towns such as Northampton and Moora provide health and education services that are accessed by the coastal settlements

The relationship between population and services is well-established, such that education and health facilities are typically provided when populations hit a certain threshold. From a community perspective, if the services were in place, then population may grow, which is

a conundrum. In a sense, communities must endure the limitations of modest servicing until such time as populations increase.

The study area also has a significant aging population, and one that is proportionally older than the State average. This presents a complex range of health (and housing) requirements for communities, with the pending retirement of the 'baby boomers' and continued trend of people wishing to 'age in place'.

As coastal communities grow, priorities will be for hospitals with accident and emergency services, and for schools that cater for years K-12. A particular challenge for this area is the issue of the demand on health services created by seasonal populations.

The need for additional facilities and upgrades is typically aligned with permanent population growth based on planning thresholds within agencies, meaning that seasonal populations do not form part of population considerations.

In situations where permanent facilities are not in place, there should be a focus on establishing and maintaining effective access to services, particularly for emergency health services. This requires resourcing of infrastructure to support the Royal Flying Doctor Service, identifying strategic highway locations for helicopter landing, supporting local volunteer brigades.

Table 2: Health facilities

Health campus	Type	Beds	Emergency services	RFDS airstrip
Dongara Eneabba Mingenew Health Service	Public	<50	Y	Cervantes Jurien Bay Geraldton Kalbarri Dongara Leeman
Geraldton Regional Hospital	Public	93	Y	
St John of God Hospital – Geraldton	Private	60	N	
Kalbarri Health Centre	Public	<50	Y	

Source: Department of Health, Healthy WA Service Finder (2017); Australian Institute of Health and Welfare, Hospital Profiles (2017); Wheatbelt Regional Infrastructure and Planning Framework (2015)

Table 3: Education facilities and enrolments

School	Location	Type/classification	Enrolments
Cervantes Primary School	Cervantes	Primary schools (K-6)	46
Dongara District High School	Dongara	District high schools (K-12)	424
Allendale Primary School	Geraldton	Primary schools (K-6)	354
Beachlands Primary School	Geraldton	Primary schools (K-6)	143
Bluff Point Primary School	Geraldton	Primary schools (K-6)	317
Geraldton Flexible Learning Centre	Geraldton	Non-government schools (7-12)	83
Geraldton Grammar School	Geraldton	Non-government schools (K-12)	591
Geraldton Primary School	Geraldton	Primary schools (K-6)	348
Geraldton Senior College	Geraldton	Senior colleges (10-12)	845
Holland Street School	Geraldton	Education support schools (K-12)	47
John Willcock College	Geraldton	High schools (7-9)	791
Leaning Tree Community School	Geraldton	Non-government schools (K-6)	82
Mount Tarcoola Primary School	Geraldton	Primary schools (K-6)	438
Nagle Catholic College	Geraldton	Non-government schools (7-12)	1227
Rangeway Primary School	Geraldton	Primary schools (K-6)	451
St Francis Xavier Primary School	Geraldton	Non-government schools (K-6)	469
St John's School	Geraldton	Non-government schools (K-6)	210
St Lawrence's School	Geraldton	Non-government schools (K-6)	606
Strathalbyn Christian College	Geraldton	Non-government schools (K-12)	456
Waggrakine Primary School	Geraldton	Primary schools (K-6)	521
Wandina Primary School	Geraldton	Primary schools (K-5)	330
Gingin Senior High School	Gingin	District high schools (K-12)	
Jurien Bay District High School	Jurien Bay	District high schools (K-12)	307
Kalbarri District High School	Kalbarri	District high schools (K-12)	220
Lancelin Primary School	Lancelin	Primary schools (K-6)	126
Leeman Primary School	Leeman	Primary schools (K-6)	36

Source: Department of Education student census Semester 2, 2016

In the study area, Geraldton Regional Hospital is expected to be substantially redeveloped, including upgrading the Emergency Department and the provision of 18 new mental health beds.

3.2.4 Land requirements for future public works

The State government is a major investor in non-residential public projects throughout the Western Australia. The provision of health, education, emergency, justice, cultural and general government services requires requisite facilities. As populations change and grow courts, hospitals, schools, correctional facilities, cemeteries and so on are required in support.

Currently, there is no land assembly process for the identification and reserving of land for non-residential public projects, and land is sought by State agencies after development has occurred. This frequently leads less than optimal outcomes in terms of cost, location and, ultimately, service delivery.

Identifying the location and land requirements for public infrastructure early in the planning process, as occurs with transport and energy infrastructure, is recommended as this would be an efficient and cost effective approach to securing land projected to be required by the State.

In the Guilderton to Kalbarri sub-region this does not currently occur, as there is only limited information available to inform local planning strategy preparation. Although beyond the limited scope of this document, it is recommended that the Planning portfolio develop and drive a land assembly process to identify assemble land for non-residential public projects in the sub-region.

3.2.5 Public health and adaptive technologies

The *Public Health Act 2016* has repealed much of the previous *Health Act of 1911*. As there is a significant amount of work required to transition to the new regulatory framework, the Act will be progressively introduced over the next three to five years. There is a timeline for implementation, which outlines five key stages to the implementation of the new Act, with many of the functions carried out by local government environmental health officers.

The transitional arrangements involved with the new Act are intended to provide a reasonable timeframe to adapt to changes for matters such as asbestos, terminology, authorised officers, reporting requirements, infectious diseases, public health, the built environment, water and enforcement.

With many settlements in the study area not having deep sewerage, and with limited access to affordable water and power supply, the use of fit-for-purpose infrastructure and innovative technologies is broadly supported, provided it can meet health and safety requirements.

4 Environmental significance

The study area is rich in biodiversity and natural assets, including flora, fauna and mineral resources (**Map 2**) however historical farming practices have resulted in extensive clearing.

Planning processes are required to consider the environmental values of the region and incorporate measures to ensure that potential impacts on the environment are avoided or minimised. There is an increased focus on enhancement of environmental assets where feasible. Significant proposals which are likely, if implemented, to have a significant effect on the environment, may require referral to the Environmental Protection Authority (EPA) and/or Commonwealth Minister for the Environment under the *Environmental Protection Act 1986 (WA)* and/or *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*, respectively.

With the region experiencing pressure for growth, the WAPC will seek to address natural resources early in planning processes, particularly as part of strategic regional and sub-regional planning. This is because delaying the consideration of natural resources to structure planning and subdivision stages reduces the ability to achieve desired outcomes.

The WAPC will be guided by the principles outlined in *State Planning Policy 2: Environment and Natural Resources (SPP2)* and *State Planning Policy 2.5: Rural Planning (SPP2.5)*, as they relate to natural resources.

4.1 Climate

The study area covers two temperature/humidity zones as defined by the Bureau of Meteorology (BOM) (2017). Moving north through the study area the climate experiences

more hot, dry summers with mild winters. While the southern section of the study area experiences warm summers with cold winters.

Average annual rainfall within the study area ranges from 600 millimetres in Lancelin to 346 millimetres in Kalbarri (BOM, 2017).

The Bureau of Meteorology (2017) notes that the observed mean annual temperature from 1970-2016 has been increasing. This is consistent with the observed trend in global annual temperature over the same time period.

The implication of future temperature increases, both locally and globally, needs to be considered within future planning work. This includes consideration of the long-term effects on the environmental systems and biodiversity. Further, there is an increased likelihood of extreme events such as bushfire, storm events and coastal impacts within the study area. Proactive planning within this context can address otherwise irreversible impacts on the environment and both public and private infrastructure. Guidance for addressing several of these issues is provided through State planning policies, such as SPP2, SPP2.5, SPP2.6 and SPP3.7.

4.2 Biodiversity

The study area is characterised by a diverse range of terrestrial and marine ecosystems supporting flora and fauna, exemplified by two of the 15 biodiversity hotspots in Australia being located within its boundary (**Map 2**).

The Geraldton to Shark Bay Sandplains biodiversity hotspot comprises extensive heaths and scrub-heaths, perfect habitats for native plants and animals. The sandplains are most

extensive in the north, where the area overlaps the edges of the Carnarvon Basin biodiversity hotspot. The sandplains are home to a diverse range of endemic plants and many reptiles, including a number of endemic small skinks and the Western Australian Carpet Python.

The Mount Lesueur-Eneabba hotspot is located in the southern extents of the study area. It supports a large number of distinct, species rich and endemic communities. There are more than 250 indigenous plant species, many living in the heaths and scrub heaths. The hotspot provides an ideal habitat for reptiles, especially small lizards, and home to the threatened Dibbler, a small carnivorous marsupial.

Other significant ecosystems found within the study area include rivers and their catchments such as the Moore, Hill, Murchison, Irwin, and Chapman rivers and associated estuaries as well as wetlands of national significance. Nationally important wetlands within the study area include the Hutt Lagoon System, Karakin Lakes, Indoon System, Lake Thetis, Lancelin Defence Training Area and Murchison River (lower reaches).

The study area also contains significant marine biodiversity, ecosystems and habitats, such as those found within the Jurien Marine Park and Abrolhos Marine Reserve. These areas support numerous marine communities and species, further there are at least 15 whale species and other cetaceans likely to occur in the area.

Within the study area there are several matters of national significance and other matters protected by the *Environment Protection and Biodiversity Conservation Act (1999)* (EPBC Act) in addition to the wetlands mentioned above. The EPBC Act currently lists one National Heritage Place (Lesueur National Park), three listed threatened ecological communities likely to occur in the area (including Banksia Woodlands of the Swan

Coastal Plain), 103 listed threatened species and 51 listed migratory species within the study area.

Land use planning can be an effective tool to improve biodiversity conservation outcomes through the identification and protection of areas with significant biodiversity values, including corridors, in reserves and via zoning, as well as through the appropriate location and control of adjacent land uses.

The study area's biodiversity is one of its major assets, providing economic and social benefits to the broader community. Opportunities to enhance this resource both for use by the community and for its tourism potential should be investigated. Development should aim to protect vegetation, flora and fauna species and communities which are identified as having significant environmental values.

4.2.1 Conservation assets and protection

The study area is largely cleared as a result of historical land uses, with a substantial amount of cleared land available for development. As such the remaining remnant vegetation is important for the conservation and environmental values it holds. Future development should be avoided in areas with vegetation and flora values to prevent additional impacts to remnant vegetation.

The Department of Biodiversity Conservation and Attractions (DBCA) plays an important role in conservation and environmental management, whilst also providing advice to planning decision-makers on environmental issues relating to nature conservation, as well as DBCA-managed areas.

National Parks and associated approved management plans within the study area are outlined in **Table 4**. There is also a number of nature reserves and conservation areas that are of high environmental value, which should also be considered in land use planning. Additionally, regional flora and vegetation surveys have been undertaken for some sections of the study area, including the Geraldton Regional Flora and Vegetation Survey (2010).

As well as the above national parks, the study area also contains the Jurien Bay Marine Park, the Abrolhos Commonwealth Marine Reserve and numerous nature reserves.

In order to help protect and maintain Australia's biodiversity the Commonwealth administers the *Environment, Protection and Biodiversity Conservation Act (1999)*. Within the study area there are several matters of national significance and other matters protected by the EPBC Act, including one National Heritage Place (Lesueur National Park), three listed threatened ecological communities likely to occur in the area (including Banksia Woodlands of the Swan Coastal Plain), 103 listed threatened species and 51 listed migratory

species. Furthermore, as noted in section 4.2, the study area contains a diversity of wetlands of which six are listed as nationally important under the EPBC Act. These include the Hutt Lagoon System, Lake Logue-Indoon System, Murchison River (lower reaches), Lake Guraga, Karakin Lakes, Lake Thetis and Lancelin Defence Training Area. This means that activities such as major new developments, works or infrastructure that are likely to have a significant impact on national matters of significance needs to be considered and approved at the national level before proceeding.

Although as noted above there are several reserves for varying conservation purposes within the study area, significant biodiversity assets remain in unprotected remnant vegetation on private land.

To the south of the strategy area, work is in progress on the Strategic Assessment of the Perth and Peel Regions. The aim of the Strategic Assessment is to secure approval under Part 10 of the EPBC Act and deliver a streamlined approvals process under the *Environmental Protection Act 1986 (WA)* for development within the Perth and Peel regions

Table 4: National parks in the study area

Local government	National park	Management plans
Northampton	Kalbarri National Park	Kalbarri National Park 2015
Carnamah	Tathra National Park	
Coorow	Alexander Morrison National Park Lesueur National Park (portion) Watheroo National Park (portion)	Lesueur National Park – Coomallo Nature Reserve 1995
Dandaragan	Lesueur National Park (portion) Watheroo National Park (portion) Badgingarra National Park Nambung National Park Drovers Cave National Park	Lesueur National Park - Coomallo Nature Reserve 1995 Nambung National Park 1998 (incl. Wangarren, Nilgen and Southern Beekeepers Nature Reserves, and the Wedge and Grey Masterplan 2003)
Gingin	Moore River National Park	<50

required to support a city of 3.5 million people. Outcomes of the Strategic Assessment may need to be considered within the strategy area.

A number of new conservation reserves over Crown Land are proposed in the strategy area as part of the Strategic Assessment. These are known as Phase 1 reserves and are shown in dark blue in **Figure 3**. The Strategic Assessment also identified a number of other areas of Crown Land shown in light blue in **Figure 3**. Subject to a selection process outlined in the Strategic Assessment, it is proposed some of these land parcels would be selected for Phase 2 conservation reserves over time. The proposed conservation reserves present opportunities for nature based tourism and recreation provided conservation values are protected. It should be noted that the Strategic Assessment is in a draft form and the areas of Crown Land identified for conservation reserves is subject to refinement.

The clearing of native vegetation in Western Australia is generally restricted and requires a clearing permit under Part V, Division 2 of the EP Act unless the clearing is for an exempt purpose.

Future land uses and development will need to carefully consider the environmental values of the study area and incorporate measures to ensure that impacts from development on the environment are avoided or minimised, and the environmental values of the land are enhanced where feasible. Significant proposals which are likely, if implemented, to have a significant effect on the environment, may require referral to the Environmental Protection Authority (EPA) and/or Commonwealth Minister for the Environment under the *Environmental Protection Act 1986 (WA)* and/or *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*, respectively.

Figure 3: Land affected by the draft Strategic Assessment of the Perth and Peel Regions



Generally the WAPC will not support proposals that may have a significant impact on matters of national or international significance and will require referral under the EPBC Act.

This strategy seeks to preserve biodiversity values by avoiding development in vegetated areas. Aside from the biodiversity status of the area, there is substantial zoned and/or cleared land available for development. Further, although there is relatively good information about biodiversity assets, there is a need to consider wildlife and biodiversity corridors that may be able to link the areas of land held in conservation reserve.

4.3 Water resources

The study area contains significant ground and surface water assets, with many of these water resources being adjacent to, or surrounded by existing town sites.

Future land use change and development must consider these resources and potential impacts on the total water cycle. The aim is to deliver an outcome that is consistent

with the principles of integrated water cycle management and water sensitive design as outlined within *State Planning Policy 2.9: Water Resources and Better Urban Water Management*.

The regulation of the take and use of water, protection of waterways, managing drainage and protection of public drinking water sources and supply is currently managed through six Acts. It is proposed that the six existing Acts be consolidated into one *Water Resources Management Act*. In 2015 drafting of a bill commenced, and it is intended that the new Act will substantially modernise the existing legislation, some of which dates back to the early twentieth century. The new legislation is intended to address the water management needs of the State in the context of climate change, water allocation and licensing and environmental management.

4.3.1 Groundwater

Five groundwater management areas, proclaimed under the *Rights in Water and Irrigation Act 1914* exist within the study area: the Gascoyne, Arrowsmith, Gnangara, Jurien and Gingin groundwater areas. Groundwater is the major, almost sole, source of water for domestic, agricultural, industrial and commercial developments within the study area.

Water reserves, catchment areas and underground water pollution control areas are collectively known as public drinking water source areas (PDWSAs). Within the study area these are proclaimed under the *Country Areas Water Supply Act 1947 (WA)*. The water quality protection note 75 (Department of Water, 2012) notes that there are 18 PDWSAs within the study area, most being located within close proximity to existing settlements. Within these areas land use and development is guided by the WAPC's *State Planning Policy 2.7: Public Drinking Water Source*, *State Planning Policy 2.2: Gnangara Groundwater Protection*, and *State Planning Policy 2.9: Water Resources*.

Water resource availability is informed by allocation plans under the *Rights in Water and Irrigation Act 1914*, and is subject to allocation limits. The Department of Water and Environmental Regulation's support for a land use change or development would be influenced by whether or not water is available. If abstraction of the required water would result in significant environmental effects (such as impacts on native vegetation, wetlands or waterways), the Department of Water and Environmental Regulation may need to refer the proposal to the Environmental Protection Authority under s38 of the EP Act.

The provision of water supply for residential, agricultural, mining and industrial uses, as well as water quality management of drinking water resources will be a key challenge for future planning. Key pressure areas will include Greater Geraldton, Dongara, Narngulu, and Northampton/Kalbarri.

4.3.2 Surface water

The study area contains numerous surface water features including rivers, wetlands and other water dependant ecosystems (**Map 2**). The surface water systems typically discharge into coastal lagoons or wetlands before reaching the coast. The mouths of those that do not reach the coast typically have little or no connection to the ocean, with river mouths blocked by sand dunes or bars, sometimes permanently.

The study area's river systems are considered to have regionally significant values in terms of biodiversity, habitat provision, aesthetics, recreation, and indigenous and European cultural heritage; however it is recognised that their condition varies along their length.

There are three main river basins within the study area; namely the Greenough, Moore-Hill and Murchison River Basins. The Murchison River is approximately 700 kilometres long and rains the Yilgarn Plateau. The Greenough

River and Moore-Hill river basins are made up of a number of small rivers, which are not linked. These include the Irwin, Hutt, Bowes, Greenough, and Arrowsmith rivers within the Greenough River basin, and the Eneabba Creek, Hill and Moore rivers within the Moore-Hill basin.

As noted in section 4.2.1, the study area contains a number of significant wetlands. Many of the study area's wetlands dry out completely during the summer, however there are some which are continuously fed by groundwater that are particularly important transitory habitats for migrating birds as well as supporting significant permanent ecosystems.

The impacts of land use and climate change on environmental water supply and biodiversity management will also be a key challenge for the sub-region. Pressure areas are likely to include Irwin, Greenough, Murchison, Chapman, Hill and Moore River systems, the agricultural areas within the sub-region, native vegetation and national parks/reserves. It is imperative that investigations into these impacts on natural assets in the study area are undertaken, and

utilised in the preparation of planning strategies, schemes and policy. Further, floodplain mapping of significant waterways and establishment of natural and heritage corridors should be undertaken.

4.4 Land capability and catchment management

Many areas of highly productive soils are found close to the coast in the study area. This includes soils in Northampton and Chapman Valley areas, the front and back flats at Greenough, the Irwin River Valley, and Spearwood type sands which run in a belt up the coast from south of Perth to the vicinity of Jurien Bay. These fertile and versatile soils are the foundation for high quality agricultural land and are important, finite assets for the agricultural industry.

The Department of Primary Industries and Regional Development is aware that intensive agriculture including horticulture and animal production, such as piggeries and poultry, has grown rapidly in the past decade in this area,



particularly in the Shire of Gingin. Research undertaken earlier this century identified that catchment management practices threaten the health of the lower Moore River. The growth in intensive agricultural activities in the past decade has increased nutrient runoff even further.

The levels of nutrients in the estuary are significantly above accepted standards and it is considered eutrophic. Because of the naturally dark colour of the water (tannins) and the dynamic of the sand bar, the estuary at Guilderton is not yet affected by algal blooms. However, it has been stated that altering the natural dynamics of the estuary and river mouth through development may create serious problems with algal blooms in the future.

State Planning Policy 2.5: Rural Planning notes that sub-regional and local planning strategies should provide soil and land capability information regarding the risk of nutrient export where land uses may generate increased nutrient loads in rivers estuaries or their tributaries. It is further stated within SPP2.5 that environmental and landscape attributes will be managed and improved by making planning decisions that support the protection of water resources and their dependent environments in order to maintain or improve water quality.

Proposals that may affect the nutrient level of a river, estuary or associated tributary need to consider the nutrient load of that system. WAPC consideration of such proposals, where the nutrient load is already above accepted standards, would require a net reduction in nutrient export to be demonstrated

The draft *Government Sewerage Policy 2016* promotes reticulated sewerage as the best disposal method for sewage. It requires all new subdivision and development to be connected to reticulated sewerage where available or considered necessary on health, environment or planning grounds.

Further, one of the key issues addressed by the review of the current sewerage policies is the potential for impacts on the environment from the on-site disposal of sewage. The draft policy dictates sewage sensitive areas and associated requirements in these areas. Sewage sensitive areas represent locations where there is a high environmental risk associated with on-site sewerage disposal. These areas are well-defined, known to have high environmental values and to be sensitive to the impacts of on-site sewerage disposal. The following sewage sensitive areas are recognised by the draft policy and are shown in **Map 3**:

- land that drains to and is within two kilometres of the estuarine areas of the Chapman, Greenough, Hill, Irwin and Murchison rivers
- land within two kilometres of the coastal embayment of Jurien Bay
- land within a boundary, which is one kilometre up-groundwater-gradient and 250 metres down-groundwater-gradient of a significant wetland or where the groundwater gradient is unknown within one kilometre of the significant wetland
- habitats of threatened and priority ecological communities and specially protected water depended fauna
- wild river catchments.

4.5 Bushfire

Bushfire protection is a land use and development issue in much of the Study area particularly where settlements and development activities occur. The recently released *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP3.7) and the accompanying Guidelines apply to every stage of the planning process and it is intended that bushfire planning and management measures be addressed as early as possible in the planning process, with the level of information provided being progressively more detailed.

Bushfire protection measures include construction of fire breaks and removal of vegetation from around dwellings. In instances where biodiversity management conflicts with bushfire risk management measures and significant clearing of native vegetation is the only means of managing bushfire risk, the policy position is that the proposal should generally not be supported (SPP3.7 Guidelines).

This strategy seeks to manage bushfire risk by avoiding development in vegetated areas.

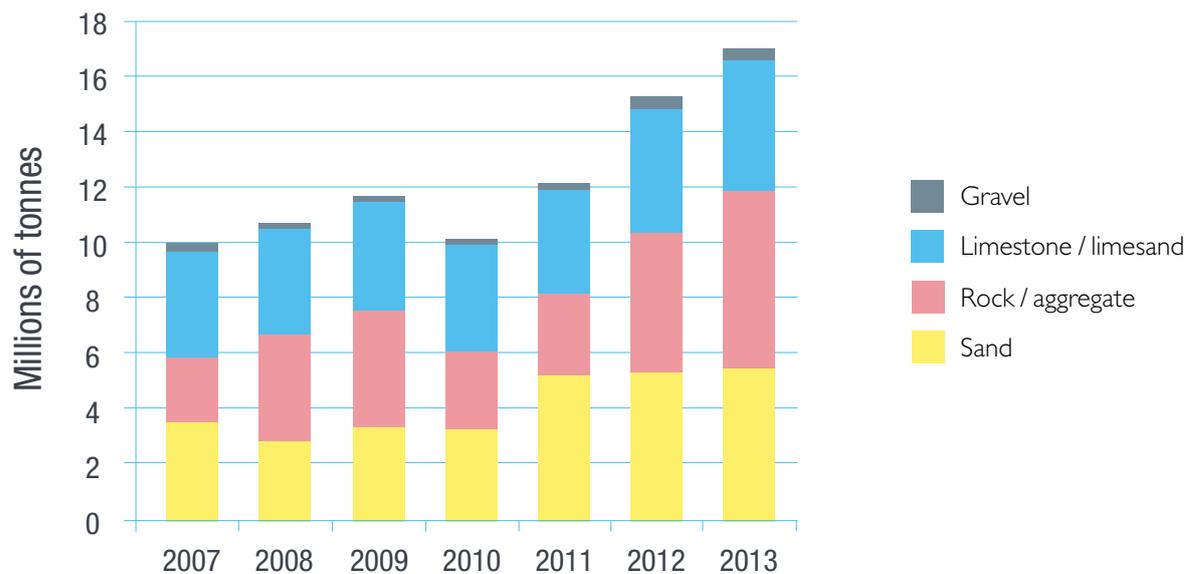
4.6 Basic raw materials

A ready supply of basic raw materials (BRM) is important for future urban and industrial development, essential for the construction of buildings, roads and other infrastructure, and also for the sustainability of agricultural production. Sources of BRM include sand, clay, limestone, limesand, gravel and rock aggregate.

Population growth in Western Australia has increased the demand for BRM (Figure 4), and protection of strategic resources is a relevant planning matter. So too, the extraction of resources needs to be carefully managed. The Geological Survey of Western Australia (GSWA) assists in land use planning to identify, map and protect areas of BRM for future extraction, and to minimise land use conflicts.

Limestone and limestone deposits within the dune system along parts of the Mid West Coast, within Gingin coastal areas around Lancelin and Ledge Point, and in the Shire of Dandaragan are a valuable resource predominantly for agriculture, as it is used to addressing soil acidification. Much of the limesand resources from the study area are freighted by road to agricultural areas to the east. As such, east-west limesand routes are a relevant planning consideration for this study. Further details on proposed routes are outlined in section 6.1.

Figure 4: Basic raw materials extraction on Crown land in Western Australia.



Source: Department of Mines, Industry Regulation and Safety – Basic Raw Materials

A number of mobile dunes occur within the study area which can result in impacts on infrastructure and surrounding land uses. To mitigate these impacts, implementation of management strategies such as limesand extraction may have beneficial outcomes in reducing dune areas and migration speeds. The impact on environmental values and native vegetation is variable however, with further investigation to occur before limesand extraction is utilised as a dune management strategy. This strategy supports a case-by-case approach to managing dune migration, depending on the speed of movement, likely impacts, quality of resource and available avoidance options.

Policy guidance in relation to BRM is currently provided in SPP2.5. The policy sets out matters which are to be taken into account and given effect to by the Commission and local governments in considering zoning, subdivision and development applications for the extraction of basic raw materials, or within

the vicinity of identified BRM resource areas. In addition, they seek to protect and preserve Western Australia's rural land assets due to the importance of their economic, natural resource, food production, environmental and landscape values. Ensuring broad compatibility between land uses is essential to delivering this outcome, and includes consideration of indicative separation distances or in subregional and/or local planning strategies, and in schemes as required.

The Department of Mines, Industry Regulation and Safety is progressively mapping BRM resources, including 'Significant Geological Supplies' (SGS). SGS areas are basic raw materials identified by the Department of Mines, Industry Regulation and Safety as having State significance due to the size of the resource, relative scarcity, demand and/or location near growth centres and transport routes.



In the study area, there are substantial BRM deposits, shown on **Map 4**. If developed, they would potentially exceed forecast demand for BRM. For example, within the Shire of Irwin, there are large areas of limestone, all of which do not need planning protection.

Once SGS are identified, they may be incorporated into strategic planning in accordance with SPP2.5. Consideration of the incorporation of SGC into strategic planning will require consideration of the potential strategically environmentally significant implications of doing so, based on advice from relevant government agencies and authorities. As shown on **Map 4**, strategic BRM resources are mostly located to the east of coastal areas, however it is evident that most extraction is currently occurring near settled coastal areas, particularly south of Dongara-Denison, north of Jurien Bay and North of Cervantes. Over time it is expected these resources will be depleted, and extraction will move to the SGS sites.

Identification of basic raw material resources and sites does not indicate that extraction would be environmentally acceptable nor that subsequent approval for extraction would be given. Proponents are required to address environmental matters which may determine the extent and/or manner in which BRM may be extracted.

Where BRM occur on Crown land (unallocated, reserve or pastoral leases), extraction for commercial sale requires a Mining Lease. Mining tenements are issued under the *Mining Act 1978* and are administered by the Department of Mines, Industry Regulation and Safety. Where BRM occur on private (freehold) land, extraction requires approval under the *Planning and Development Act 2005*, administered by local government.

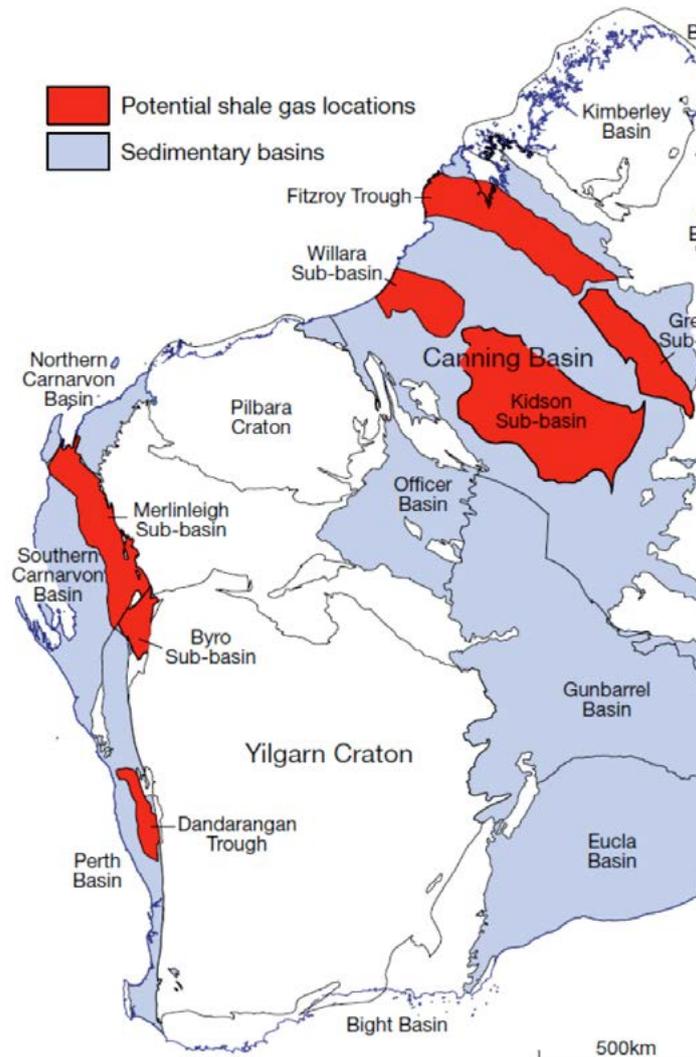
4.7 Mineral and petroleum resources

The coastal strip between Guilderton and Kalbarri contains garnet, coal, titanium zircon and petroleum resources (**Map 5**).

Northern extents of the Perth Basin situated in the study area as far north as Northampton, have accommodated oil and gas exploration since the 1950s. This has involved a range of activities including field exploration, seismic surveys, exploration and development drilling, as well as construction of infrastructure and gas pipelines. The portion of the study area within the Perth Basin area is thought to have a high prospectivity for conventional gas and unconventional gas production, with unconventional gas encompassing tight gas, shale gas, and coal seam gas, all generally requiring hydraulic fracturing to improve reservoir permeability.

Operational oil and gas fields in the study area are concentrated in the Shire of Irwin, where the Corybas tight gas field, Western Australia's first operating tight gas operation is located. In Western Australia, shale and tight gas rock formations are found between 2,000 and 4,000 metres below ground, significantly below groundwater resources and under layers of low permeability rock. As the gases are found at great depth with significant vertical separation from non-saline shallow aquifers, environmental and health impacts generally associated with their extraction are considered manageable.

Figure 5: Sedimentary basins of Western Australia and potential shale gas resource locations



Source: Department of Mines, Industry Regulation and Safety (2016) – Basic Raw Materials

Figure 5 shows Western Australia's Sedimentary basins and potential shale gas resource locations.

There have also been numerous hydrocarbon fields discovered offshore and within the study area, south of Geraldton, as well as untested shale gas resources in the Dandaragan Trough.

The Department of Mines, Industry Regulation and Safety is the lead agency for the management of the titles system for mining, petroleum and geothermal industries, ensuring that safety, health and environmental standards are achieved in accordance with legislation.

The exploration and extraction of mineral and petroleum resources are primarily regulated under the Mining Act 1978 and the *Petroleum and Geothermal Energy Resources Act 1967*. Section 120 of the *Mining Act 1978* does not allow a planning scheme to prohibit the

issuing of a mining lease, meaning that land use planning cannot control mining operations. There is no similar clause in the *Petroleum and Geothermal Energy Resources Act 1967*.

The Department of Mines, Industry Regulation and Safety has commenced a legislation reform initiative to modernise the State's petroleum and geothermal legislation. The primary focus of this initiative will be to amalgamate the three main petroleum Acts and the two associated fees Acts into a single common 'Petroleum Act' to cover all petroleum and geothermal operations conducted in Western Australia. It is not yet known if the proposed legislative reform initiative will address land use planning control of some petroleum and geothermal operations.

The Department of Mines, Industry Regulation and Safety has released two sets of resource management and administration regulations for unconventional gas, adding to the regulatory framework that addresses potential adverse impacts from shale or tight gas projects such as land access, flora and fauna, local amenity, water quality and human health.

In 2017 the Government announced the banning of unconventional gas production in the South West, Perth and Peel planning regions. A moratorium on commercial fracking elsewhere in the State was also announced, subject to public enquiry.

4.8 Coastal planning

The landforms of the Guilderton to Kalbarri coast are diverse and dynamic, with coastal dune formations that are significant in contributing sand to the coast. While some of the coast falls within national parks and nature reserves, other parts are subject to increasing pressure from development for residential, tourist, recreational, industrial and commercial uses.

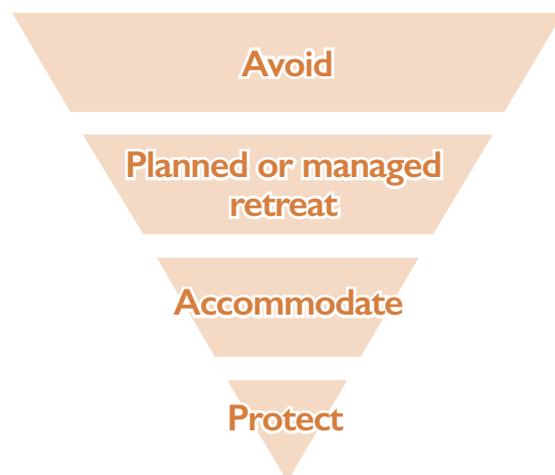
This section focuses on land use planning decision making in those coastal areas that are particularly susceptible to coastal processes (including climate change) and where the coastal processes may affect established public and private assets and/or will influence decisions about proposed new development.

4.8.1 Responses to coastal erosion

SPP 2.6 sets out four measures for managing risk and adapting to coastal hazards (**Figure 6**) that must be considered on a preferred and sequential basis.

The response to coastal erosion along the Guilderton to Kalbarri coast has generally been ad-hoc. This can be attributed to a lack of technical information, capacity and resourcing constraints, unclear responsibilities (private sector, local government, State government) and uncertainty about legal liabilities.

Figure 6: Risk management and adaptation hierarchy



Source: WAPC, 2014 CHRMAP Guidelines

As shown in **Map 6**, the Guilderton to Kalbarri coast contains a variety of landform types with differing vulnerabilities to landform change. Some areas within the study area may be considered to have a relatively high risk of coastal erosion; and will be the most significant planning challenge in the study area. SPP 2.6 establishes a framework to determine a response to coastal erosion, through the preparation of Coastal Hazard Risk Management and Adaptation Planning (CHRMAP). For many settlements from Guilderton to Kalbarri, CHRMAPs have either been or are being prepared.

Faced with critical coastal hazards, communities have tended to protect coastal assets, rather than adopting accommodate or retreat measures. However, in coming years, the preparation of CHRMAPs will determine communities' preferred adaptation measures. Planned and managed retreat may be necessary, particularly where development is at imminent or expected risk from coastal erosion. Where coastal hazard risks are evident, 'avoid' is always the preferred option for new development.

The WAPC is preparing 'planned and managed retreat guidelines', and it is anticipated these will provide an agreed process should communities choose 'retreat' to manage coastal hazards through the CHRMAP.

The key factors in identifying any preferred risk treatment measure are the societal (tangible and intangible) costs and benefits of the measures considered and the triggers for implementation. Affected communities and others who have an interest in the physical and natural assets of the locality are central to placing a value on these assets and participating in the selection of a preferred risk treatment measure. This includes consideration of the value communities' place on houses, beaches, parks, roads and other facilities relative to the costs of implementing an adaptation measure.

The settlement hierarchy outlined in this strategy provides for substantial growth and development in particular in Geraldton, Jurien Bay, Lancelin (south) and Guilderton (south). While a range of factors influence settlement hierarchy, being capable of future growth is a key factor and this may be influenced by the outcomes of CHRMAP and other requirements of SPP2.6.



5 Economic drivers

The sub-region's economy has benefited from a distinct locational advantage, being in close proximity to Perth, as well as the significant agricultural and mineral resource areas contained within the broader Mid West and Wheatbelt regions. The coastal settlements of the sub-region are developing from the traditional agricultural, servicing and commercial fishing base, into a diverse economy driven by growth in the tourism sector, expansion of social services, horticulture, aquaculture, investment in renewables and the ability to service the resources sector.

It is important to note that even though the agricultural and mining sectors provide the highest value in per cent of regional gross domestic product in the broader regions, they are not the biggest employers (**Figure 7**). Those industries that have historically fuelled economic growth and development in the sub-region are, in a number of coastal settlements, now taking a secondary role or are in a period of readjustment to new market conditions. Growth industries, such as tourism are now playing an important part of the economic diversification of the Guilderton to Kalbarri sub-region (Centre for Regional Development, 2011). Strategic planning is needed to not only promote growth and protect the highest value industries, but also to promote those industries that foster the highest levels of employment.

Although primary production is, and will continue to be a major economic driver in the study area, there are strong planning controls to protect and support this sector of the economy through SPP2.5. The focus of this document is to further explore potential for new economies and jobs.

As of September 2016, the labour force of the Guilderton to Kalbarri sub-region was 21,061 persons, with an estimated unemployment rate of 5.725 per cent (Department of Employment, 2016). The majority of the labour force is based in the regional city of Geraldton followed by the sub-regional centres of Jurien Bay, Dongara and Kalbarri.

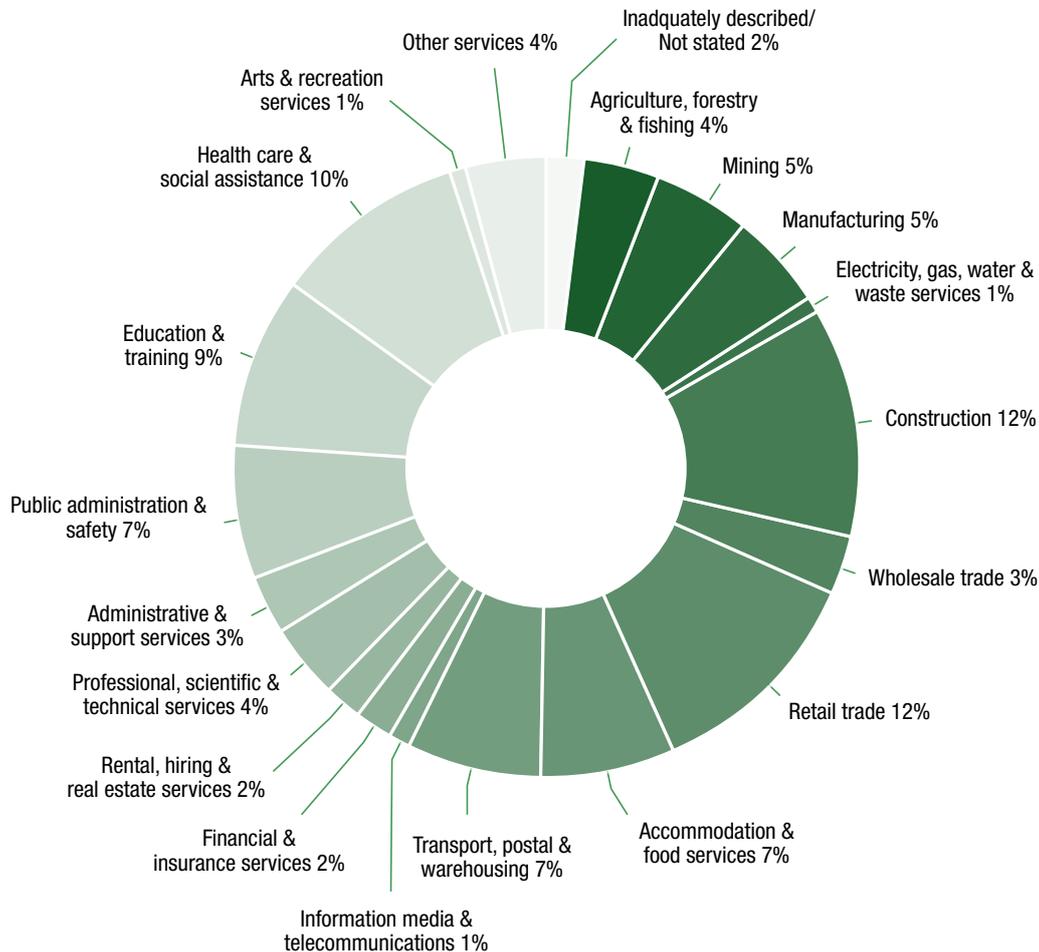


As seen in **Figure 7**, the industries that employ the most people within the sub-region include construction (12%), retail trade (12%), health care (10%), education and training (9%), accommodation and food services (7%), transport, postal and warehousing (7%) and public administration (7%). The percentages of employment for these industries are reasonably close together reflecting a relatively diverse economy.

The Wheatbelt and Mid West Regional Planning and Infrastructure frameworks, as well as the Wheatbelt and Mid West blueprints give an extensive overview of the economic drivers associated with the sub-region. The major points covered by these documents in relations to the sub-region's economic drivers include the following:

- The agricultural sector is a high value industry for the sub-region. Recent studies have identified areas of high quality agricultural land adjacent to the Irwin, Greenough and Chapman rivers that require protection from conflicting land uses. These areas could provide suitable areas for expanding the horticultural industry in the sub-region, provided a water supply can be identified. A \$4.7 million groundwater and land assessment is currently investigating groundwater availability, land capability and crop suitability in the area between Gingin and Dongara, and is expected to be finalised in 2018.

Figure 7: Employment by industry (Guilderton to Kalbarri sub-region)



- The majority of the sub-region's retail trade and manufacturing occurs in Geraldton and Jurien Bay (reflecting the large population bases). The retail sector is one of the sub-region's largest employers (12 per cent of the labour force).
 - The sub-region contains a variety of minerals and basic raw materials and is strategically placed to provide value to the broader regions' major resource projects, such as providing port and strategic industrial estate services. The biggest mines in the sub-region are generally for garnet, heavy mineral sands or construction materials.
 - Limesand deposits within the dune systems along parts of the sub-region are a valuable resource for the broader regions agricultural industry.
 - Operational gas fields within the sub-region are located within the northern extents of the Perth Basin and include Dongara, Woodada and Beharra Springs. There have been numerous commercial hydrocarbon fields discovered in the offshore and coastal area south of Geraldton; and there are many untested prospects in the sub-region, including those that contain shale gas resources. The logistics and economics of potential oil and gas discoveries are positive due to the Parmelia and Dampier to Bunbury natural gas pipelines, the proximity to Perth and the deregulated Western Australian gas markets. While there may be economic returns from such resources, environmental and land use impacts need to be carefully considered.
 - The principal commercial fishery in this sub-region is the western rock lobster fishery, which is Australia's most valuable single-species wild capture fishery. The Department of Primary Industries and Regional Development estimate that the 2014 commercial ex-vessel catch was valued at \$359 million. Other significant products include pearling, prawns, scallops, abalone and finfish.
 - Aquaculture will be a strategic growth industry, initiatives to expand the aquaculture sector in the West Coast Bioregion currently include trials for octopus, live rock/coral, finfish and the Department of Primary Industries and Regional Development is in the process of securing strategic environmental approvals for the Mid West Aquaculture Development Zone.
 - It is important that all communities have access to adequate social infrastructure and services, including essential services such as educational and medical facilities. The provision of such infrastructure and services can play an important role in attracting and retaining staff in the sub-region.
 - Alternative energy initiatives (for example, wind, solar, wave and microgrids) have been identified as a growth industry that could generate local employment and business development.
 - There are positive economic and social multipliers associated with growth in the tourism and recreation sectors with room to consolidate and market the sub-region's brand as a quality activities based destination. However, there is seasonality to this sector, with capacity and infrastructure constraints during peak periods, and more contemporary planning policy guidance is needed.
- Future growth in the sub-region and the rate at which it occurs will invariably be influenced by the strength of the economy. It is therefore critical to plan for land assembly, infrastructure, and provide appropriate policy guidance to meet the needs of the economic drivers.
- Recent policy guidance has been provided in regards to rural planning by the release of SPP2.5 and the associated guidelines. Further, the release of the regional planning

and infrastructure frameworks, as well as the Wheatbelt and Mid West blueprints has provided specific guidance and initiatives relating to the sub-regions economic drivers.

While there is a range of economic drivers in the study area, these are mostly addressed in other planning frameworks. For this study, tourism is identified as a priority area and one where the planning approach has not previously been articulated.

5.1 Tourism

Tourism is a key economic driver for the coastal communities of the study area, and there are approximately 600 tourism-related businesses within the local governments. More than \$360 million is spent per annum by tourists in the area (Department of Planning, Lands and Heritage, 2017), however the sub-region only captures a small percentage of the total visitors to Western Australia (**Figure 8**).

Recent and planned upgrades to the sub-region's built environment and infrastructure, such as increased accessibility through completion of Indian Ocean Drive and the proposed Kalbarri Skywalk are enhancing the tourism product and visitation.

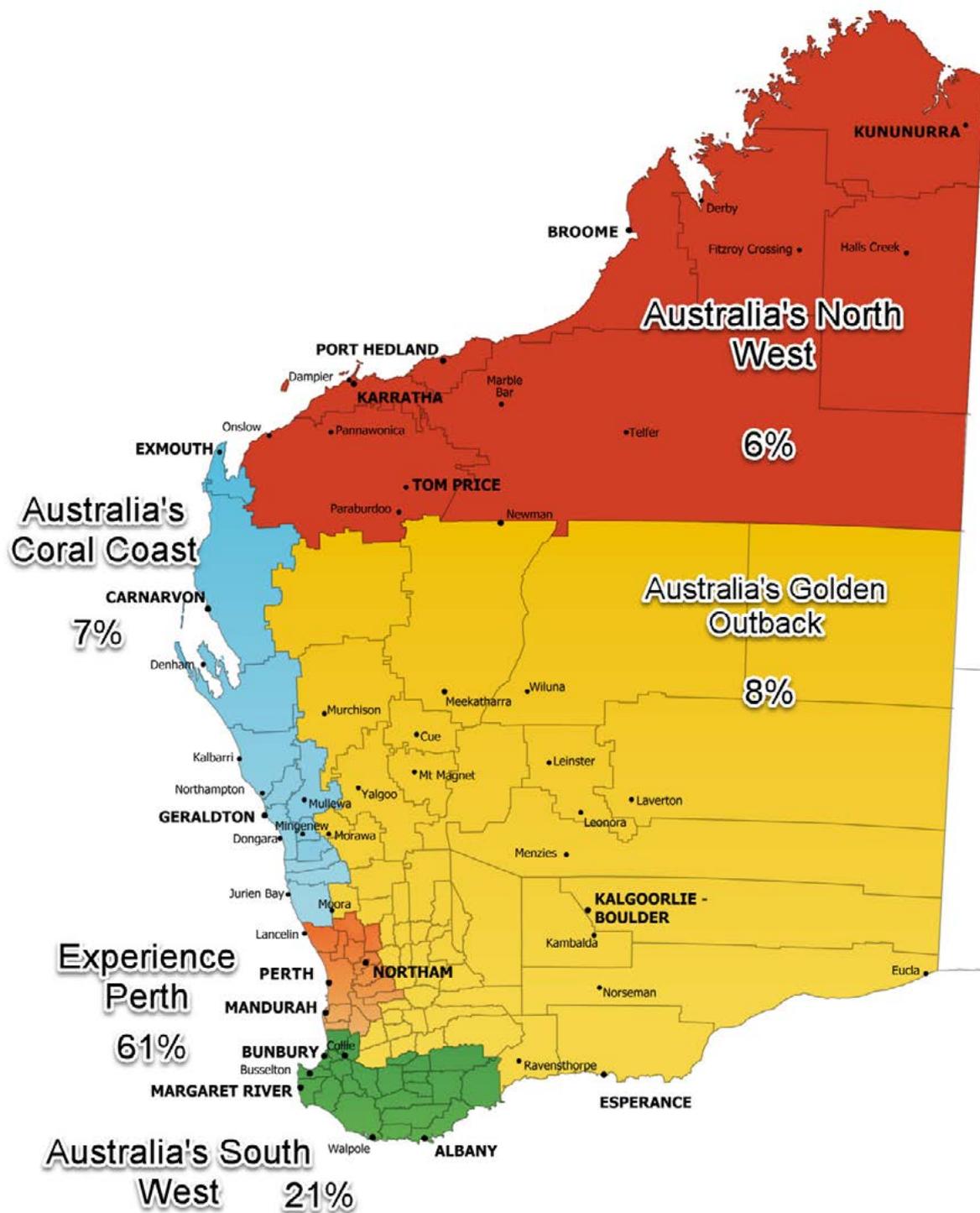
In addition, the general availability of zoned land for tourism purposes and existing attractions will be key opportunities that should be built upon. These opportunities may attract tourists from new tourism markets, as well as increasing domestic tourist numbers.

As continued population and tourist growth is expected to place pressure on the sub-region's coastal areas, it is important that potential tourism opportunities are developed in a strategic and sustainable manner. To date, ad hoc planning has resulted in many settlements within the sub-region having fragmented areas of land zoned for tourism purposes, with little to no connection to the main activity centres, tourism assets and facilities. Further challenges include:

- infrastructure provision and capacity, especially during peak periods
- global, national and state economic conditions
- environmental constraints
- promotion of identity
- seasonal tourism product
- the perception the sub-region is a 'stop-over' between the major destinations of Perth and the State's northwest
- limited hotel, caravan park and camping capacity during peak periods (for example, Lancelin's need for an appropriate caravan park site, Dongara during Kitestock) impact of holiday homes, including community opposition to 'lock and leave' suburbs, reduced long-term rental stock, accommodation for staff involved in tourism-related roles
- provision of services away from the coastal areas (for example, Northampton acting as a service centre for the localities of Horrocks and Port Gregory).

A number of potential actions have been identified to address these challenges. In addition, priorities for tourism product and infrastructure development in the study area are further identified in *Australia's Coral Coast Destination Development Strategy 2007-2017* (TourismWA, 2007) for all local governments between Guilderton and Kalbarri. Analysis of each area's strengths and unique selling

Figure 8: Percentage of total visitors to Western Australia by Tourism WA region



Source: Tourism WA, 2016
 (The study area is part of the broader Coral Coast region)

points is addressed, including an analysis of the current status of, and potential gaps in access, accommodation, attractions, activities and amenities.

Tourism components of local planning strategies may be prepared by the local governments in consultation with TourismWA. These can address State, regional and sub-regional planning (refer Planning Bulletin 83 – Planning for Tourism). Currently, the shires of Dandaragan and Irwin (Shire of Irwin, 2013) have local tourism planning strategies that make specific land use planning recommendations.

In order for local planning strategies to appropriately address planning related tourism issues in the future the current policy guidance will need to be reviewed and updated to a contemporary standard. Current policy guidance is spread over several planning bulletins. To enhance the State's role in planning for tourism, it is recommended that tourism planning bulletins be reviewed, with the aim of forming one consolidated policy.

5.1.1 Tourism assets and events

The coastal communities between Guilderton and Kalbarri have several significant tourism assets and events (**Map 7**). These can create demand for tourism facilities as well as tourism associated land uses, both within and outside of existing urban areas. The natural environment is the main driver for tourism within the study area, with significant features such as:

- a pristine coastline, including the Abrolhos Islands
- wildflower country
- The Pinnacles (Nambung National Park)
- Island Rock and Natural Bridge (Kalbarri)
- Lake Thetis thrombolites
- Lancelin sand dunes
- Ellendale Pool (Greenough)
- Geraldton-based attractions, including the Moresby Range, HMAS Sydney memorial, St Francis Xavier cathedral and Museum of Geraldton
- Nambung, Stockyard Gully, Drovers Cave and Lesueur and Kalbarri national parks
- Beekeepers, Lake Logue, Yandanogo and Nilgen nature reserves
- vast marine assets including Jurien Bay Marine Park and numerous first- class surfing and kite-surfing spots such as Coronation Beach.

Events that create significant demand for tourism assets and facilities within the sub-region include:

- Lancelin Ocean Classic
- Opera in the Pinnacles
- Nambung Country Music Muster
- Indian Ocean Festival
- Sundays by the Sea
- Various sporting events (e.g. triathlons)

- Kalbarri Adventurethon
- Film fest
- Chapman Valley Agricultural Show
- Nukara Music Festival
- Redhill Concert
- Kalbarri Canoe and Cray Festival
- Yuna Regatta.

The *Wheatbelt Planning and Infrastructure Framework* designates the Pinnacles as a State Strategic Tourism site, attracting over 190,000 individual visitors per year (TourismWA, 2017).

Stop-over and lookout areas are interspersed along the coast including several stop-over bays along the main tourist routes of Indian Ocean Drive and the North-West Coastal Highway. Stop-overs and lookouts include but are not limited to Hangover Bay, Thirsty Point, Grigson Lookout, Wedge Island Lookout, Dynamite

Bay and South Bay (Green Head), Fisherman's Lookout (Dongara), Point Moore Lighthouse, Separation Point Lookout and the stopping bays and lookouts in the Red Bluff locality (Kalbarri) and the proposed Kalbarri Skywalk.

Tourist nodes and coastal campsites are also being investigated along the sub-region's coast. The Dandaragan Local Planning Tourism Strategy (2012) noted an action to investigate the provision of nature based camp sites with a focus on Sandy Cape and Hill River. Further, the Shire of Coorow is undertaking a 'coastal nodes eco-tourism project' in order to identify tourism nodes, such as Milligan Island, along the coast. Five of the nodes within the Strategy area have received investment and have been upgraded to support tourism activity. Those upgraded are Sandy Cape near Jurien Bay, Milligan Island near Green Head, Cliff Head near Dongara and Lucky Bay and Half Way Bay near Kalbarri.



There is potential for future tourism areas at Wedge and Grey. It has been proposed in the past to outline a framework for transitioning the existing developments at these sites to 'normalised' tourist and recreation areas for public benefit. This will eventually require approval from decision-makers in keeping with the State's planning and development system, reasonably applied to site conditions.

The potential for tourism uses on the Abrolhos Islands has also previously been investigated. The Abrolhos Islands are an A-Class Reserve managed by the Department of Primary Industries and Regional Development for the conservation of flora and fauna, tourism, and purposes associated with fishing and aquaculture industries. In this context the Minister for Fisheries is the relevant decision-maker for planning and development within the Reserve.

In addition to the natural environment, the sub-region's settlements provide amenity, servicing and accommodation functions within the urban setting, while historic farmstay/bed and breakfast and eco-resorts and unique experiences are also offered outside of the urban areas. It is recommended that the majority of tourism development be situated in or near to existing settlements and service centres. Development should not be located where it may cause a negative impact on the very environment that drives tourism activity in the sub-region.

5.1.2 Wedge and Grey

The control of squatters on Crown land in Western Australia is in accordance with the *Squatter Policy* (Department of Lands Administration, 1999). The objective of the policy is:

"to control the establishment of any new unlawful dwellings (squatter shacks) on coastal Crown land and facilitate the removal of existing dwellings (shacks) over a six year period".

Government recognised that professional fishers merit an exemption from the Squatter policy and developed a separate policy to address fisher shack tenure. The *Professional Fisher Shack Tenure Policy* (Department of Lands Administration, 1999) allows for a registered holder of a current rock lobster fishing license, boat license and a mooring in close proximity to the licensee's shack to continue to operate from the shack.

In May 2010, the Legislative Council Standing Committee on Environment and Public Affairs initiated an inquiry into shack sites in Western Australia. The Committee in its report (Report 21) made a recommendation specific to Wedge and Grey. In August 2011 the Government at that time responded to the Committee's report and accepted this recommendation with qualification:

Report 21 Recommendation 6: That Committee recommends that the responsible Minister and managing authority instruct leaseholders and shack owners to remove the shacks at Wedge and Grey and, as a priority, develop the area to provide the public with low impact, nature-based, affordable visitor facilities and accommodation, including camping and caravanning facilities.

August 2011 Government response to recommendation 6: Accept with qualification. The State Government will examine options for Wedge and Grey that meet the requirements for public recreation and tourism use in conjunction with a level of shack retention that contributes to the opportunities for public use. This consideration would be in consultation with the current shack leaseholders. Any future development of the sites will be subject to State planning requirements and will address equity of access and use, building safety, health and amenity, coastal processes and provide for environmentally sustainable public outcomes.

This policy position was reinforced through Cabinet's endorsement of SPP2.6, with clause 5.8(v) specifically supporting the removal of unlawful squatter shacks as per the *Squatter Policy* (July 1989 and January 1999).

In keeping with the August 2011 Government response to Recommendation 6, this strategy supports the development of Wedge and Grey for public recreation and tourism purposes. A level of shack retention that contributes toward public use may be contemplated, subject to such retention being for day use only and not inhibiting or adversely effecting cultural heritage values or environmentally sensitive areas. Any future use of the site must be subject to State and local planning, building and health requirements.

5.1.3 Trails and cultural tourism

Physical and mental health continues to be vitally important to the general well-being of Western Australian communities, with trails/tracks in all their forms becoming an increasingly valuable outlet for exercise, recreation and adventure. As such, Western Australia is seeing increased growth in trail-related activities.

The *Western Australian Strategic Trails Blueprint 2017-2021* seeks to achieve the vision "By 2021 more people will be using Western Australia's trail network resulting in greater community, social, cultural, economic, environmental, health and wellbeing outcomes for Western Australia". The Blueprint aims to achieve this by providing guiding principles, strategic directions and actions for consideration across the State for government, trail managers, landholders, trail support groups, tourism operators and the community.

Walking tracks, vehicle (4WD and 2WD) trails and diving trails (such as Jurien Bay underwater interpretive snorkel and dive trail) as well as a

significant cultural history provide a substantial opportunity for drawing tourist numbers into the sub-region.

There are currently several trails associated with stopping bays and town sites with some of the more well-known trails including the Lake Thetis Loop Trail (Cervantes), Turquoise Way Trail (Jurien Bay), Stockyard Gully Cave Trail (Leeman), Lesueur Walk Trail (Leeman), Thungara Trail (Irwin), Greenough River Trail, Chapman River Trail (City of Greater Geraldton), Bigurda Trail (Kalbarri National Park), Ross Graham River Walk (Kalbarri National Park), Northampton Botanic Line, Mushroom Rock Walk Trail, Z Bend River Walk (Kalbarri National Park), Loop Walk Kalbarri National Park, Dongara Heritage Trail and Chapman Valley Scenic Drive.

Tracks and trails provide opportunities to explore landscapes of the sub-regional significance via links between important features, however there are currently limited connections between trails along the coast. Significant opportunities exist for the establishment of sub-regional connections, including establishment of a 4WD trail north of Kalbarri connecting to Shark Bay, creation of a coastal hiking track linking settlements, and an inland hiking track establishing connections to national parks and farm stay accommodation.

Currently, Aboriginal tourism activities and experiences are under-represented in the study area. International tourists seek to have tourism experiences highlighting Aboriginal culture and heritage. Aboriginal occupation of the sub-region has established many important mythological sites which include natural features such as waterholes, rivers, hills and rock formations where people, animals and characters left traces of their journey across the landscape. Often these places are interconnected and form trails through the landscape, called 'songlines' in English. There

are five Aboriginal groups within the sub-region that have vast knowledge of the area and its cultural history.

By diversifying through niche opportunities such as Aboriginal tourism, geo-sites and geo-tourism, hiking and research tourism, there is potential to create authentic connections with visitors, unique cultural experiences and increase visitation to and across the sub-region.

5.1.4 Tourism land supply

Growth of the tourism industry relies on the availability of appropriately zoned and located land within town sites and in their hinterlands, as well as the supply of suitable infrastructure.

An initial assessment has been undertaken of the development status of land that is zoned to allow for tourism land uses. This involved an assessment of cadastral and scheme information as well as visual interpretation of aerial photography.

At the sub-regional level there is generally a sufficient supply of land zoned for tourism purposes within 10 kilometres of the coastline, with a total of approximately 737 hectares identified, 76 per cent (567 hectares) of which is considered to be undeveloped, as shown in **Table 5**.

Potential tourism land supply constraints were identified in the Shire Carnamah, Coorow (specifically Leeman, which only contains 2.6 hectares of undeveloped land zoned for a tourism purpose) and the Shire of Gingin.

Table 5: Land zoned for tourism purposes

Local government	Developed (ha)	Undeveloped (ha)	Applicable zones
Chapman Valley	14.54	142.23	Restricted use (1 and 2), Rural smallholdings (Additional use A1 and A3)
Coorow	5.1	10.32	Tourist accommodation
Carnamah	0	0	N/A
Dandaragan	19.39	77.51	Tourist, Harbour, Commercial, Rural residential (Additional use 3), Special use 2 and 4
Greater Geraldton	58.75	128	Special use 2 and 3, Regional centre, Tourism, Mixed use, Residential, Rural residential (Additional use 1), Rural (Additional use 15), Commercial (Additional use 17)
Gingin	28.3	15.47	Tourism, Town centre, Residential (Additional use 20), Special use
Irwin	12.98	144.77	Special use (1, 2, 6, 7, 9, 12, 13, 15, 17, 22, 23, 24, 25 and 28)
Northampton	37.61	49.21	Town centre, 'Caravan, camping and cabin', Tourist development, Tourist accommodation, Special use 14 (TPS 10), Special use 2, 5 and 10 (TPS 9), General rural (Additional Use 1 and 3)
Total	176.67	567.52	

Within the Shire of Gingin, the townsites of Guilderton and Seabird are constrained, having zero hectares and 1.13 hectares of undeveloped land respectively. Further, the *Wheatbelt Planning and Infrastructure Framework* noted that limited tourist accommodation is available within the Lancelin townsite.

Several factors challenge the provision of additional land for tourism, including limited capacity for townsite expansion, vegetation, lack of year round tourism demand, land assembly and varied community aspirations.

Relevantly, 89 per cent of Irwin's undeveloped area is found approximately 17 kilometres north of Dongara within one isolated estate (Special Use 1 – Wakeford Road, Bookara).

Depending on the level of future economic activity within the State, accommodation may become constrained within the inner parts of the City of Geraldton during peak periods. This is due to the majority of the undeveloped land within **Table 5** being located outside of the City's centre. Although the 'Regional centre' zoning allows for 'tourism' developments, there may be a significant lag period for new establishments being sited and developed should economic activity increase.

There is also evidence that the supply of tourism zoned land (developed and undeveloped) is fragmented across some settlements; often not located near attractions or activity centres (for example, Cervantes, Lancelin and Kalbarri). This creates difficulty in concentrating compatible land uses within defined precincts or nodes that can generate synergistic economic advantages. Although some settlements are working towards areas that support tourism growth (Jurien Bay, City of Greater Geraldton and Dongara) some areas currently lack a sense of place and a choice of activities including open activated spaces, coffee

shops, restaurants and bars, which are very important in creating the ambience necessary to support tourism growth.

A lack of infrastructure and infrastructure capacity may hamper growth of currently undeveloped tourism zoned land (for example, providing connections to power, sewerage and reticulated water). The availability of water and sewerage infrastructure is often a greater constraint than the availability of suitable land for tourism development. Developers frequently have to fund extension or augmentation of sewerage and water supply infrastructure which, depending on the scale of the project and the locational circumstances, can have a significant impact on project viability.

5.1.5 Caravan parks

Caravan parks are a fundamental component of Western Australia's tourism accommodation mix, particularly in the Guilderton to Kalbarri sub-region where self-drive travel is the most practical means of moving between locations. Caravan parks are primarily intended to provide short-stay accommodation for leisure tourists, and can vary considerably in size, scale, function, design, location, services and facilities. 'Short-stay' refers to occupancy by the same person for no longer than three consecutive months in any twelve month period. 'Long-stay' refers to occupancy by the same person for any period of time greater than three months. Long-stay accommodation is secondary to the primary use.

Other park types and associated licencing provisions exist; these may be exclusively long-stay parks such as residential parks, lifestyle villages, transient workforce accommodation parks, transit parks, nature-based parks or a mix of these park types.

The retention and development of caravan parks as affordable holiday accommodation within the State is a priority that is being addressed across government. Caravan parks

experience competing demands, which have contributed to numerous closures throughout the State.

These demands include:

- redevelopment (for residential use or higher end tourism accommodation)
- meeting minimum standards and the increasing complexity of regulatory requirements
- upgrade of aging infrastructure, and fund replacement and maintenance
- providing a greater range of facilities in response to changing market demands
- continuing to provide an affordable holiday experience while balancing increased operational expenses
- catering for the demand for other accommodation needs (for example, social housing, transient workforce accommodation, retirement living, emergency housing).

Caravan parks are particularly under pressure within the sub-region, as many are in locations that are attractive for redevelopment. In particular, the Shire of Gingin is an extreme priority for the development of caravan park accommodation. In some instances, redevelopment for higher value visitor accommodation, such as chalets and apartments, is able to occur under the existing scheme zoning. It is important to try to protect existing budget accommodation such as caravan parks. Where the need has been identified, local planning strategies can offer an opportunity to identify suitable sites for new budget accommodation and support appropriate developments. Local governments are also encouraged to consider the position set out by *Planning Bulletin 49 (Caravan Parks)* in planning and decision-making for caravan park related developments.

In a recent study of tourism trends, economic outlook and future needs of the Guilderton to Kalbarri sub-region (Department of Planning, Lands and Heritage, 2017), analysis suggested that six new caravan parks will be required by 2035 across the sub-region under a low growth scenario and 14 under a high growth scenario. This has been estimated on the basis that a caravan park will be provided when demand approaches the capacity of a new park.

5.1.6 Peak tourism

Anecdotal evidence has noted that demand for tourism facilities and associated infrastructure is affected by the seasonality of the sub-region's population influx. Estimates have shown that the population within the sub-region's settlements can more than double within these periods; for example the populations of Lancelin and Guilderton can swell from 600 to 1000 and 140 to 1,000 respectively.

The *Mid West Tourism Development Strategy* (2014) notes that accommodation, including holiday homes and caravan parks, within the sub-region, which is often of mixed standards has supply limitations during peak seasons. Further, essential infrastructure (power, water, sewerage) as well as community facilities/ infrastructure at these peak periods can often become constrained or placed under pressure due to increased usage, resulting in decreased levels of service.

Throughout the sub-region peak visitation often occurs during September-October (for example, school holidays, spring wildflowers (and near peak visitation in April (for example, Easter, Anzac, and school holidays) and July-August (school holidays and wildflowers).

The sub-region has limited tourism data to adequately manage and plan for peak tourism and inform decision making. It is important that the sub-region undertake tourism data collection and reporting that over time will provide a richer understanding of trends to

inform future plans and strategies. National or State tourism data should become secondary to the primary data gathered within the region.

5.1.7 Recreational boating

Recreational boating is an important part of Western Australia's culture, and also assists in increasing visitation to tourist nodes and assets. It creates demand for facilities and a mix of land uses, and attracts visitors to the area.

There is a high level of demand for recreational boating within the study area for fishing, leisure, sport and to take advantage of the sub-region's vast coastal and marine assets. Demand has grown steadily over the 25 years to 2015 (**Figure 9**) with Department of Transport figures noting the number of vessels increasing from approximately 2,000 in 1990, to more than 5,000 in 2015. The majority of these vessels are found within the City of Greater Geraldton (50 per cent), followed by the Shire of Gingin with 13 per cent (**Figure 10**) reflecting the larger population and subsequent diversity of facilities within these areas.

The demand for facilities is also affected by the seasonality of the sub-region's population flux. Anecdotal evidence has suggested that some boating facilities within the sub-region are seeing three to six times the demand during peak periods when compared to off-peak seasons. This has often resulted in anti-social behaviour and 'ramp rage' due to constrained facilities.

Previous studies have been undertaken by the Department of Primary Industries and Regional Development to determine estimates of annual catch levels by boat based recreational fishers. While these estimates can assist in determining the peak fishing season in the Guilderton to Kalbarri region (summer/autumn) they do not account for non-fishing recreational boat use and does not include enough detail to determine launch numbers for specific jetties within the area. In addition, the region is

categorised as 'West Coast' which also includes the Perth metropolitan area. A more refined, up-to-date study is required so that new and upgraded facilities are not omitted.

The Western Australian Marine Science Institution conducted a study at the Entrance Point boat ramp in Broome. Using video footage from a Department of Primary Industries and Regional Development camera, researchers were able to examine factors affecting the launching of recreational boats over a one year period. It was found that influential environmental factors included air and sea temperature, wind speed and direction, rainfall, barometric pressure and tides, in addition to the time of day and day type (weekday, weekend or holidays). This method could be applied to future studies of boat launch areas within the Guilderton to Kalbarri coastal region.



Figure 9: Number of recreational vessels in the sub-region

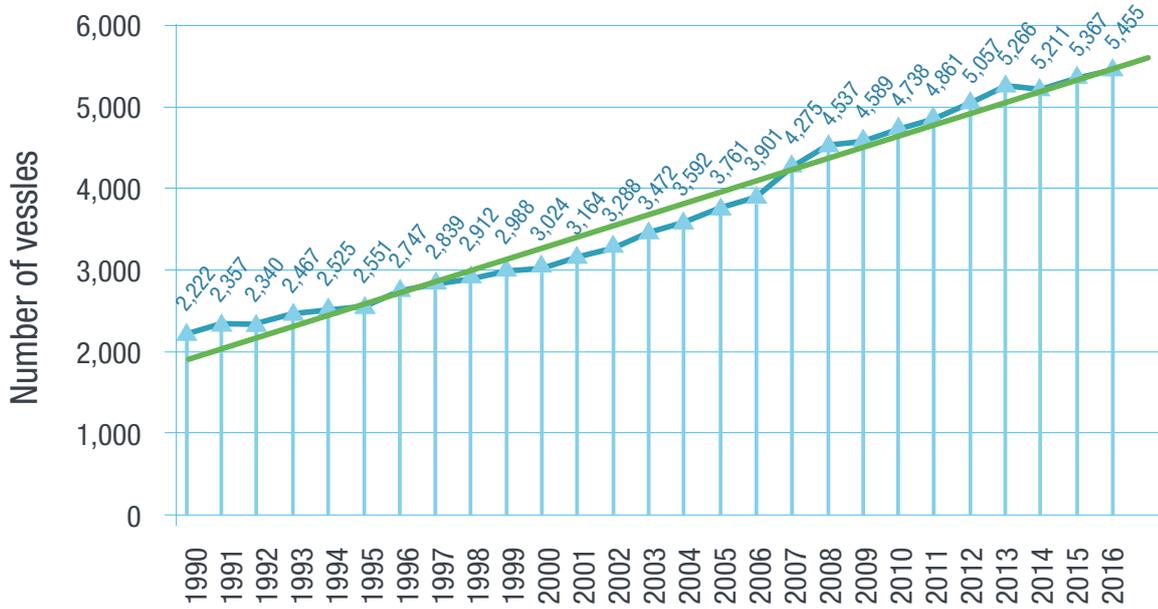
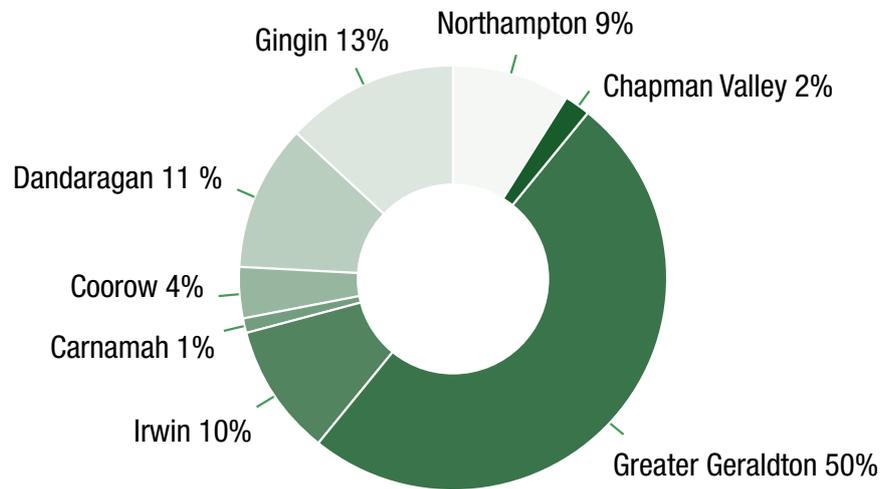


Figure 10: Percentages of recreational vessels per shire



Due to the sub-region's coastline offering a diverse range of environments to sail, cruise, fish, scuba dive and explore, as well as the Jurien Bay Marine Park encompassing an ecologically unique area, recreational sailing is emerging as a significant opportunity. There is potential to identify a sub-regional or regional recreational sailing route, which uses available facilities as safe mooring and anchorage points and stop-over locations along the route. In order to establish such a route recommended daily travel distances will need to be investigated, as well as establishing the suitability of current facilities and whether additional facilities will be needed. This could potentially create additional land use demands if facilities are established in currently undeveloped or underdeveloped locations.

A variety of recreational boat facilities are located in coastal towns to meet the needs of the sub-region's population (**Table 6**).

Currently, at most maritime facilities managed by the Department of Transport, the number of pens/moorings available for occupation by vessels is not always sufficient to completely satisfy demand, therefore members of the public are required to apply to a waitlist (Department of Transport, 2017). Marine vessel accommodation plans are available on the Department of Transport's website. The Batavia Coast Marina, Jurien Bay Boat Harbour and Port Denison Boat Harbour all have capacity for additional pens (**Table 6**). Some planning has been done to investigate a possible 150 pen Ledge Point Boat Harbour, however this is not a committed or funded project. Pens are not available at any other locations within the sub-region apart from Kalbarri.

The need for additional boating facilities will be subject to growth in the sub-region's boating fleet and visitor numbers, as well as assessing the supply, capacity and expansion potential of existing facilities. Future expansion of boating facilities within the sub-region will have land use planning implications that will need to be considered through the planning framework.



Table 6: Existing boating facilities

Boating facility	Class ¹	Mgmt	Main wharf/jetty infrastructure	Number of serviced pens/moorings
Guilderton	2	Shire of Gingin	Beach ramp, river ramp	Nil
Ledge Point	2	Shire of Gingin	Two beach launch locations (DeBurg Street and Jones Street)	Nil
Lancelin	2	DoT	T-shaped Jetty, fuelling facilities, beach launch	Nil
Cervantes	2	DoT	Jetty with fuelling facilities	Nil
Cervantes	2	Shire of Dandaragan	Beach launch	Nil
Jurien Bay Boat Harbour	6	DoT	Two service jetties, one fuel jetty, one government jetty, concrete four-lane boat ramp, boat maintenance facilities	69 – Potential for 150 extra pens
Green Head Maritime Facility	2	DoT	'L-shaped' service jetty, dual-lane concrete boat ramp with catwalk operated by local government, single lane boat ramp operated by local government	Nil
Leeman Maritime Facility	4	DoT	One 'L-shaped' service jetty, double lane gravel boat ramps operated by local government	Nil
Port Denison Boat Harbour	4	DoT	Two service jetties, one concrete wharf, dual-lane concrete boat ramp with catwalk	48 pens 23 commercial moorings nine recreational moorings, two swing moorings - potential for at least 200 extra pens
Batavia Coast Marina	6	DoT	Double boat launching ramp with two finger jetties, service jetty, fishing platform	84 floating pens - potential for 80 extra pens
Drummond Cove	2	City of Greater Geraldton	Boat ramp	Nil
Coronation Beach	2	City of Greater Geraldton	Beach launch	Nil
Horrocks Jetty	2	City of Greater Geraldton	Beach launch	Nil
Port Gregory Maritime Facility	2	DoT	Service jetty	Nil
Kalbarri Maritime Facility	3	DoT	One service jetty, one recreational jetty, one main boat launching ramp operated by local government	32 commercial boat pens, 23 commercial moorings, five charter moorings, two swing moorings

¹ The Department of Transport classifies boating facilities according to the below hierarchy: Level 1 - An effective sea rescue organisation; Level 2 - Beach launch for 4WD vehicles; Level 3 - Local area single lane ramp with onshore parking; Level 4 - District ramp, 2 lanes, sealed parking; Level 5 - Regional ramp, multiple lanes, holding jetties, sealed parking; Level 6 - Boat harbour, multiple lanes, boat pens, sealed access and parking

Source: Department of Transport, 2017

5.1.8 Tourism signage and promotion

Designated touring routes, signage, digital media and online promotion can direct tourists towards experiences, attractions and services offered by different destinations. The aim is to encourage visitors to explore tourism products and activity centres not located on major transport corridors, whilst establishing links between attractions.

Currently, signage within most of the sub-region is disparate between settlements, with a lack of informational signs that alert road users to the existing services and facilities. This is especially the case along the North West Coastal Highway and the southern section of the sub-region along Indian Ocean Drive as noted within the Indian Ocean Drive Planning Guideline (WAPC, 2014). The lack of signage directing the travelling public to, and providing information about services, facilities and tourist routes can potentially intensify the opinion that there are insufficient attractions and facilities within the sub-region. Further there is often distinct and separate branding of towns and therefore no coherent (sub-regional) identity in the minds of visitors.

Navigation for visitors and residents into and through the sub-region should be easy, with branding easily identifiable, badged and sited.

Tourism WA, in conjunction with Main Roads, has developed tourist signage guidelines to address the issues of safety, aesthetics, and compliance with national industry and road authority standards. These guidelines apply throughout the State. Tourist attraction signs are only permitted for establishments that are recognised as being of significant interest to tourists and meet some essential assessment criteria such as the core business being tourism-based and strongly committed to providing visitor services.

'Australia's Coral Coast' (the tourism promotional body representing the sub-region) also plays a role in signage for branding and marketing purposes.

Signage is considered as a development under the *Planning and Development Act 2005*, and as such is also regulated by the local government. It is standard protocol that Main Roads WA will only assess an application for a sign or advertising device where it has received an approval from local government.

Digital media and online promotional information is also limited within parts of the sub-region, including gaps in town information, day trip options, experiences available and recommended 'must-do' activities (Mid West Development Commission, 2014).

From a land use planning perspective, the agglomeration of tourism related land uses around tourist nodes, activity centres, attractions and facilities can significantly increase the effectiveness of signage and promotion towards these destinations. While the provision of locational diversity in tourism products is important, local planning strategy reviews should ensure that land use zones with a tourism use are consolidated around or near to facilities that will provide benefit to and gain advantages from tourism.

Further, it is vital that planning, development and promotion proceed with a similar vision to ensure that visitor experience matches the brand promise. Both need to be aware of what it is that people like most about Western Australia and what will drive additional visitors into the sub-region.

6 Transport

6.1 Roads

The study area is serviced by a number of key primary and regional distributor roads that provide critical linkages both within the area and more broadly to the surrounding regions (**Map 1**).

Roads classified as primary distributor roads include Brand Highway, Northampton-Kalbarri Road and North West Coastal are part of the Main Roads Western Australia network. These roads form part of the national highway network serving important inter-regional routes and connections including to the Perth metropolitan area, the North-West and other regions. Regional distributor roads and other public roads in the area are the responsibility of local governments and provide important tourist and heavy haulage connections between settlements, primary industries and other destinations.

Indian Ocean Drive

Indian Ocean Drive is the principal tourist route linking coastal settlements and tourist attractions with the Perth metropolitan area to the south and to the north Dongara and Geraldton. As a regional scenic coastal tourist route, Indian Ocean Drive provides an alternative route to Brand Highway for tourists travelling north of Perth. The WAPC has adopted the Indian Ocean Drive Planning Guideline to provide for the growth of the road while retaining the distinctive attributes through broad guidelines for the location, siting and design of various land uses and development in the locality of Indian Ocean Drive.

The *Indian Ocean Drive Planning Guideline* also contains a number of recommendations for future investigations, including those that would contribute to improved visitor and tourism amenities. These include road signage to identify the location and distance to stopping places, amenities and fuel, construction of new look-outs along the northern section of the road such as at Freshwater Point (Shire of Irwin) and the upgrading of existing look-outs, such as at Lions Lookout (Shire of Dandaragan).

While Indian Ocean Drive is primarily a tourist and commuter route, it also provides a localised heavy haulage traffic resulting from the transportation of agricultural lime. This is contained to small sections of Indian Ocean Drive between east-west roads used as part of the haulage of agricultural lime (aglime).

This strategy recommends retention of Indian Ocean Drive as a designated tourist route, limiting its capacity to accommodate major freight tasks. The Brand and Great Northern highways are capable of performing this role.

Greater Geraldton road network

At present, freight tasks that access the North-West Coastal Highway (Carnarvon, Exmouth, Onslow and Karratha areas) all pass through Geraldton. Over time, the competing needs of amenity and efficient freight movement may require planning to accommodate freight movements. The State Government is currently investigating a number of infrastructure projects to focus on the safe movement of freight and passenger traffic, ranging from a Geraldton cycle network to a Greater Geraldton heavy freight by-pass.

The Department of Transport's *Western Australian Regional Freight Transport Network Plan* forecasts an increase in growth pressures facing Western Australia's regional freight transport network, with a doubling of regional road freight by 2031. It is expected that most transport pressure in the study area will be concentrated around the Greater Geraldton area. Linked to the prospect of iron ore projects in the region, the Geraldton Port may reach capacity and generate significant heavy freight traffic at peak periods such as the grain harvest.

Brand Highway and North West Coastal Highway currently form the primary coastal freight route between Perth and the North West of Western Australia. It is recognised there needs to be a high standard route for regional and freight traffic that bypasses the City of Geraldton.

As shown on **Map I**, the Oakajee Narngulu Infrastructure Corridor (ONIC) project proposes a 32 kilometre long infrastructure corridor co-locating road, rail and utilities infrastructure. This would provide strategic linkages between Oakajee, Narngulu, Geraldton Port, and to iron ore mines.

AgLime routes

There is a number of dedicated and proposed aglime routes that carry aglime from coastal areas where it is sourced, to inland agricultural areas of Western Australia.

With a number of active mines located within close vicinity to settlements along the coastal strip, these aglime routes comprise a number of east-west local roads including K.W Road and Sappers Road (Shire of Gingin), Jurien Road in (Shire of Dandaragan), and Coorow-Green Head Road (Shire of Coorow) (**Map I**).

Table 7 lists the five designated aglime routes in the area. The table identifies the restrictive access vehicle (RAV) rating for each route. The RAV network is administered by Main Roads WA and identifies the suitability of certain roads for certain types of RAV vehicles. Further information on RAV networks can be found on the [Main Roads website](#).

While not identified as designated aglime routes, there are a number of local roads further north which carry significant aglime freight traffic. These roads include Coolimba-Eneabba Road (Shire of Carnamah) and Kailis Drive (Shire of Irwin) and also carry large volumes of commuter traffic.



Table 7: Designated agricultural lime routes

Aglime route no.	Roads (to Brand Highway intersection)	Local government	Restrictive access vehicle (RAV) network
Aglime Route 1 – Lancelin to Northam	Lancelin Road, Gingin Brook Road	Gingin	RAV 4
Aglime Route 2 – Lancelin to Goomalling	K.W Road, Sappers Road, Orange Springs Road	Gingin	RAV 4
Aglime Route 3 – Cervantes to Burakin	Cervantes Road, Cadda Road	Dandaragan	RAV 4 (Cervantes Road), RAV 6 (Cadda Road)
Aglime Route 4 – Jurien-Dalwallinu	Jurien Road	Dandaragan	RAV 7
Aglime Route 5 – Coorow-Latham	Coorow-Green Head Road	Coorow	RAV 4

Source: WALGA (2013); Main Roads WA 2017

Recognising the importance of the safe and efficient aglime haulage, the State Government has announced additional funding for the upgrading of the original five aglime routes. The Aglime Routes Upgrade project will upgrade key local roads and junctions with Indian Ocean Drive and Brand Highway.

6.2 Rail

The rail network in the study area is operated by Brookfield Rail and comprises of narrow gauge railway. Rail haulage is exclusively made up of bulk products, such as grain, mineral sands and iron ore and currently terminates at the Geraldton Port. The *Western Australian Regional Freight Transport Network Plan* recognises the growth of the resources industry in the southern Mid West region is expected to drive a significant increase in rail freight task into Geraldton to 2030. As such, consolidation of the rail network, linking the Geraldton Port, Narngulu industrial estate and the proposed

Oakajee port and industrial estate is an important consideration and is proposed as part of the ongoing investigations into the Oakajee Narngulu Infrastructure Corridor. The draft *Oakajee Narngulu Infrastructure Corridor Draft Alignment Definition Report* (WAPC, 2014) defines a preferred alignment for the ONIC.

While the study area currently has no passenger rail service, there may be opportunities in the future to consider a passenger rail service between Perth and Geraldton. This is of particular importance given the population growth potential of towns in the coastal strip between Perth and Geraldton and the availability of land within the study area.

6.3 Ports

The regional port of Geraldton is currently the areas only port facility; however, a significant deepwater facility is proposed at Oakajee, about 20 kilometres north of Geraldton in the Shire of Chapman Valley. Geraldton Port, and the proposed Oakajee Port are administered by the Mid West Port Authority under the *Port Authorities Act 1999*.

Geraldton Port has played a significant role in the growth of the area with the export based industries of surrounding regions reliant upon the port. Exports account for over 90 per cent of Geraldton Port's total throughput volume. Traditionally catering for the export of grain, Geraldton Port is increasingly adapting to the growth of the resources and tourism industries. In the 2014/15 cruise ship season Geraldton welcomed more than 34,000 passengers, however further infrastructure investment, including shore tension lines, may be required if major expansion is to occur.

The proposed integrated deepwater port at Oakajee with supporting infrastructure is expected to respond to the demands of the resources industry beyond the sub-region. Oakajee is part of the State Government's Oakajee Mid West Development Project managed by the Department of Jobs, Tourism, Science and Innovation through the lead agency framework.

In the short-term, the *Western Australian Regional Freight Transport Network Plan* forecasts an increased throughput of Geraldton Port of 20-30 million tonnes per annum, the majority of which will be transport by the rail network operated by Brookfield. A number of upgrades are proposed to increase berth capacity are planned for the port of Geraldton.

6.4 Aviation

The study area is serviced by a number of airports and airstrips used for a variety of tasks including general and recreational aviation and Royal Flying Doctor services.

Geraldton Airport is the principal airport and is serviced by multiple daily Regular Public Transport (RPT) services provided by Virgin Australia Regional Airlines and QantasLink on the Perth-Geraldton Route.

Sealed airstrips are located at Kalbarri, Dongara and Jurien Bay and unsealed airstrips are located at Cervantes, Leeman and Eneabba. The Shire of Dandaragan has completed a study into possible options for the long-term development of a Regional Airport in the Jurien Bay area.

The Department of Transport has released the *State Aviation Strategy* which supports the economic and social development of Western Australia through aviation services and infrastructure.

7 The Guilderton to Kalbarri sub-regional strategy

The Guilderton to Kalbarri Sub-regional Planning Strategy comprises two parts:

- the WAPC's policy position for the sub-region, that will form part of WAPC's decision-making
- an action list, which establishes a set of planning priorities for the WAPC to address in future years.

7.1 WAPC policy position for the Guilderton to Kalbarri sub-region

In addition to the established suite of policies outlined in **Appendix 2**, the WAPC will undertake the following actions in its decision-making for the Guilderton to Kalbarri coastal area:

1. Consider a full range of population statistics in determining likely demand for land use planning proposals.
2. Promote and encourage settlement in and adjacent to established settlements.
3. Discourage and prevent settlement that is distant from established urban areas and limit future rural residential development where bush fire risk, environmental and BRM impacts are known constraints.
4. Adopt the settlement hierarchy outlined in **Table I** and **Appendix I**.
5. Support and encourage adaptive technology to deliver innovative waste management, infrastructure and other local services.
6. Avoid development in areas that would result in the loss of native vegetation.
7. Support identification in planning instruments of macro corridors for biodiversity and wildlife, to connect environmental assets.
8. Generally not support proposals that may impact on matters of national or international significance and will require referral under the EPBC Act.
9. Avoid coastal hazard risks for new developments.
10. Adopt a 'planned or managed retreat' from coastal hazards where infill or redevelopment of existing settlements is contemplated.
11. Undertake protection works only as a last resort when justified in the public interest to protect high value property and infrastructure – and ensure funding arrangements are based on cost-benefit and user pays principles.
12. Support the development of Wedge and Grey for public recreation and tourism purposes, in keeping with the State's planning, building and health requirements.
13. Ensure that short-term accommodation is the only form of habitation at Wedge and Grey.
14. Seek to incorporate tourism routes in local planning strategies to ensure land use change can take advantage of tourist pathways.
15. Designate and retain Indian Ocean Drive's road classification as a coastal tourist route, and restrict its use for freight tasks.

16. Generally support the retention and development of caravan parks as affordable holiday accommodation.
 17. Support a case-by-case approach to managing dune migration, depending on the speed of movement, likely impacts, quality of resource and available avoidance options.
 18. Recognise the importance of the ONIC as an important strategic infrastructure corridor linking Geraldton and the Oakajee site.
- tourism assets, including amount and locations of zoned land, potential locations of future tourism land
 - tourism zoned land and tourist accommodation capacity, including an assessment of the private holiday rental market
 - infrastructure capacity, constraints, gaps (power, water and sewerage limits) and opportunities
 - protection of caravan parks.

7.2 WAPC future actions

1. Investigate the potential to extend the Geraldton Regional Flora and Vegetation Survey project to include other areas experiencing pressure for development within the study area.
2. Prepare an assessment of the projected non-residential public use needs in the Guilderton to Kalbarri sub-region, including developing and driving a land assembly process to identify and assemble land for non-residential public uses.
3. Research the impact of seasonal tourism on local services and infrastructure.
4. Assist local governments to implement options for planned and managed coastal retreat, where this option is identified as appropriate under a relevant CHRMAP.
5. Review and consolidate tourism planning bulletins to form a single policy.
6. Assist local governments to achieve greater consistency and integration between tourism zones, planning requirements, assets and activity centres.
7. Assist in the preparation of tourism strategies that can provide guidance to local planning strategies on issues including:
 8. Assist with planning investigations for land uses associated with existing and planned boating facilities with an aim to inform local planning strategies.
 9. Continue to implement the recommendations for future investigation as per the WAPC's *Indian Ocean Drive Planning Guideline* document.
 10. Investigate the need for a study to identify future demand for a passenger rail service between Perth and Geraldton that services or passes nearby coastal towns.
 11. Prepare a sub-regional strategy for the Mid West's Batavia Coast sub-region.
 12. Develop planning guidance that can be used in local planning schemes to provide a flexible approach for the planning and development of aged-care sites.
 13. Prepare an assessment of the conservation values of the Guilderton to Kalbarri sub-region, with a specific focus on informing future land use planning decisions and policy and in consultation with relevant government agencies and authorities.

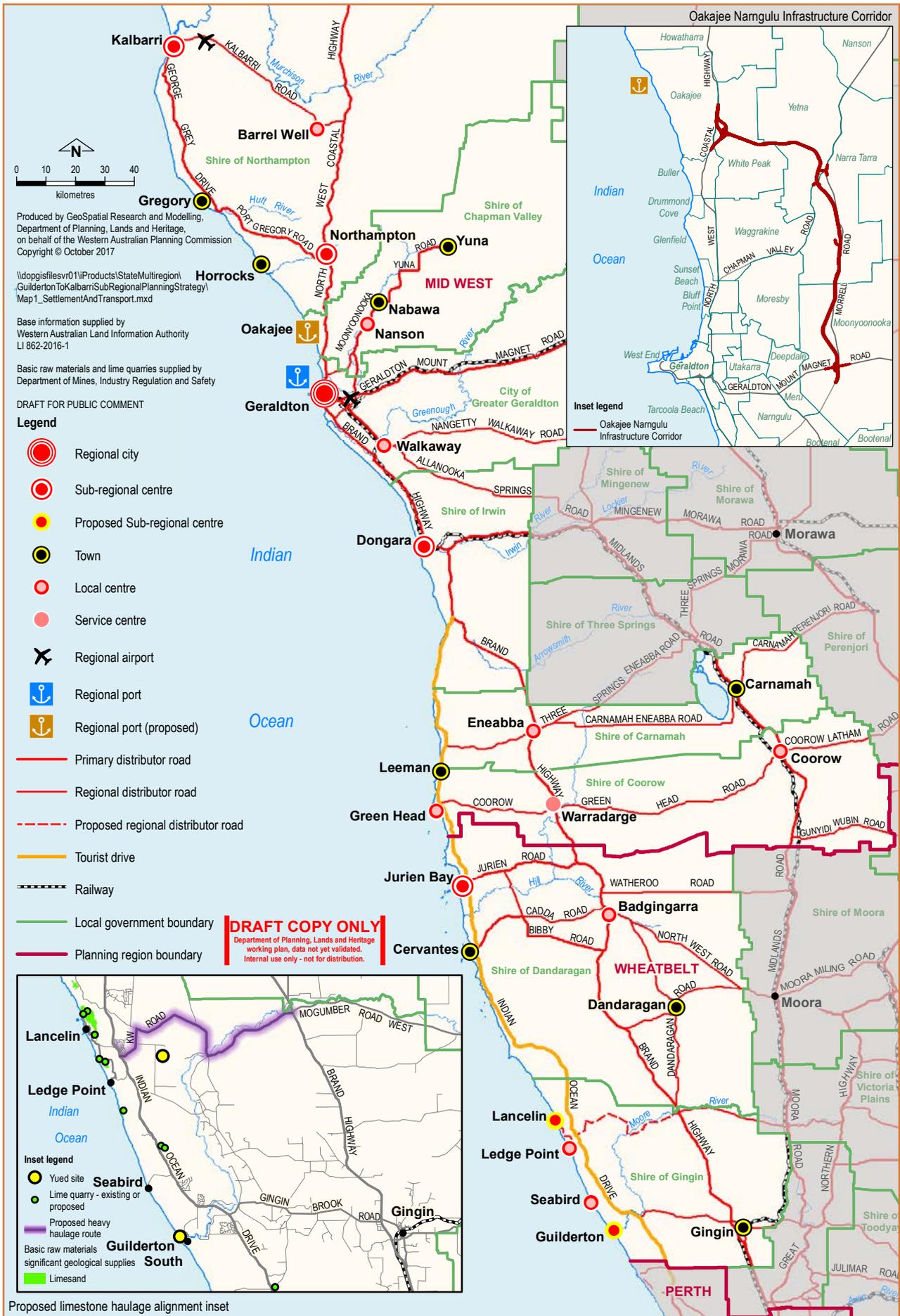
7.3 Monitoring and review

The WAPC will be responsible for monitoring the implementation of this sub-regional strategy and determining the scope and nature of any reviews.

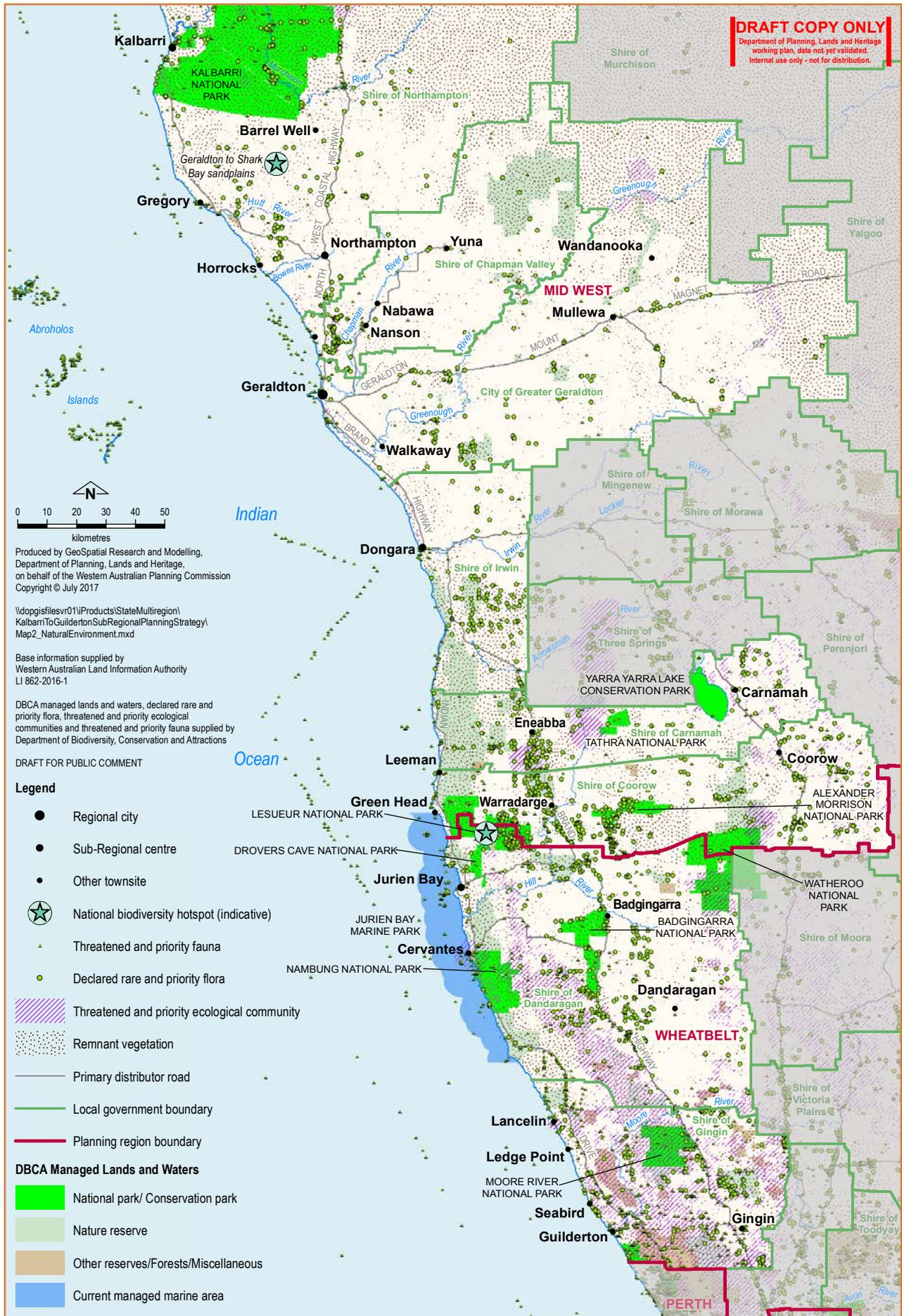
The strategy will be updated accordingly whenever the WAPC reviews or develops policy and position on emerging issues.

7.4 Maps

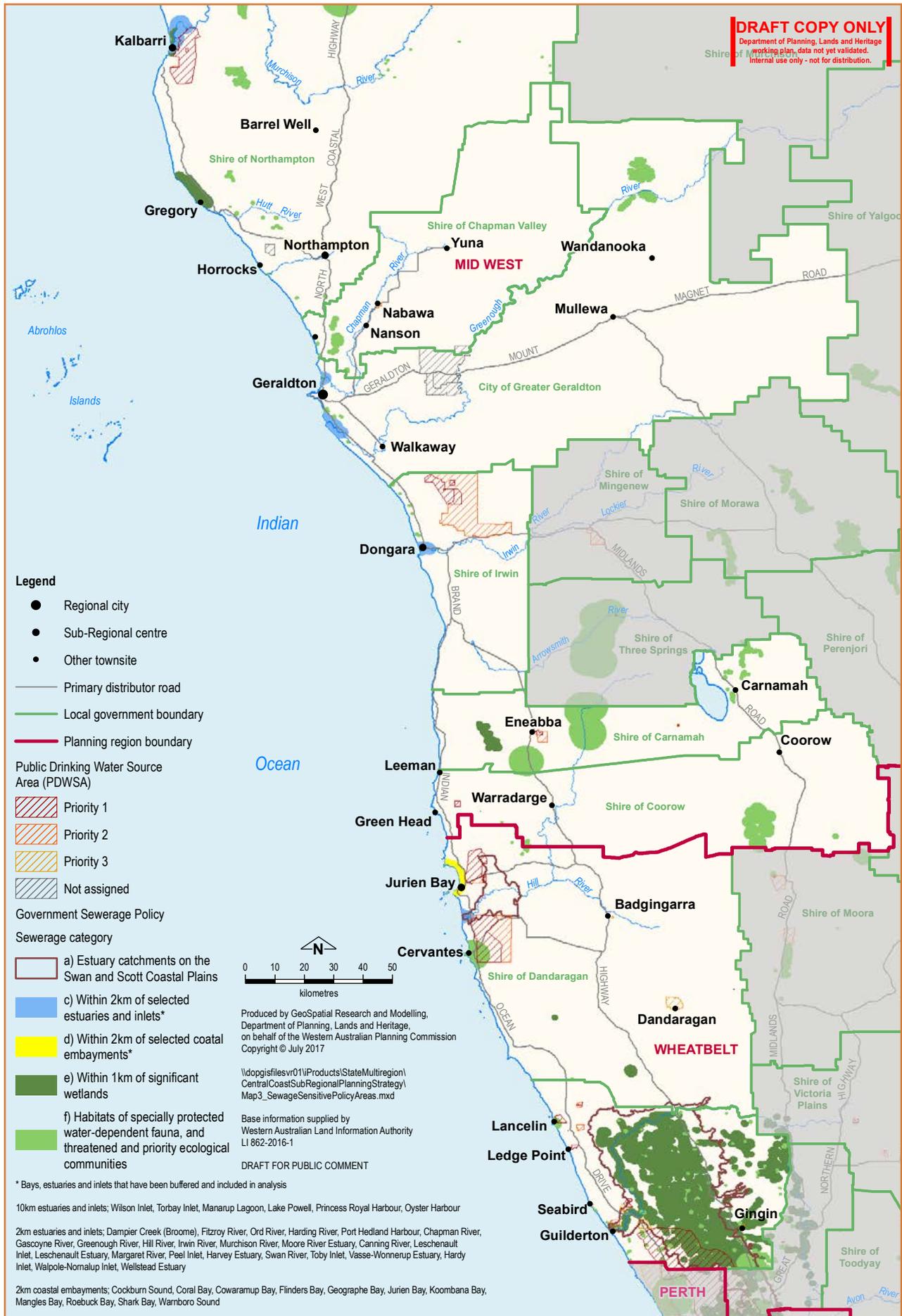
The following maps identify and illustrate the primary information, actions and outcomes of the sub-regional strategy.



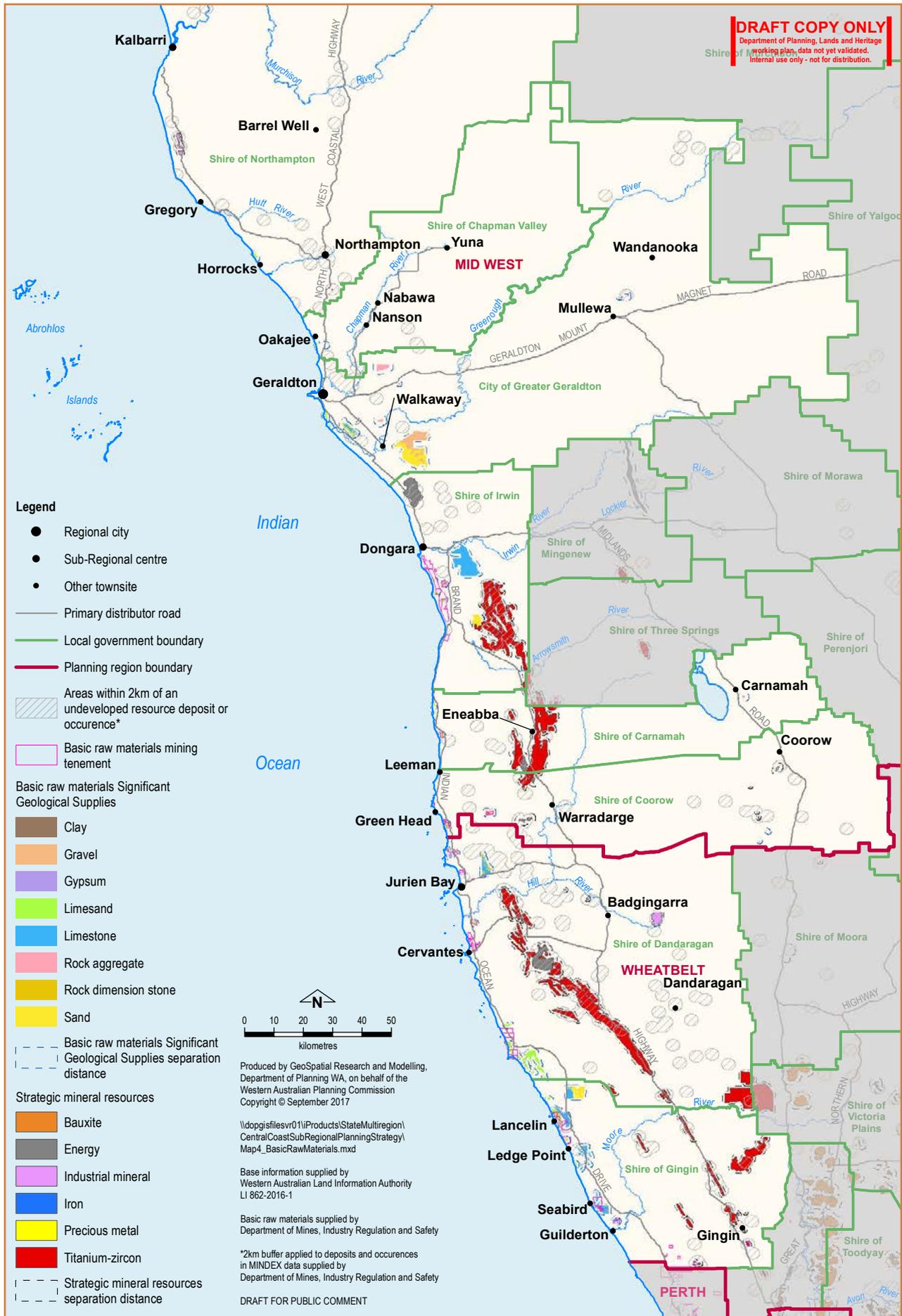
Map I: Settlement and transport



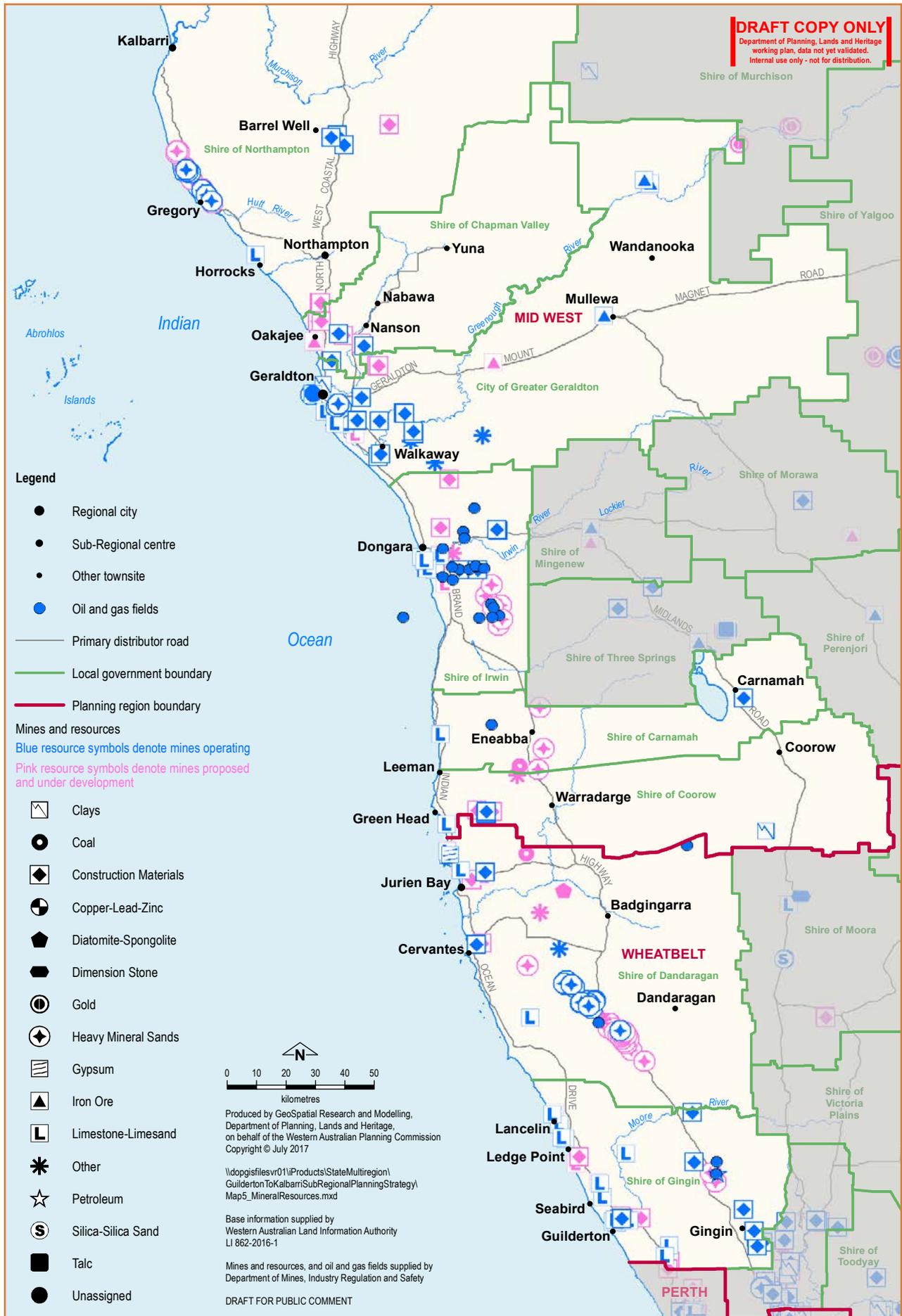
Map 2: Natural environment



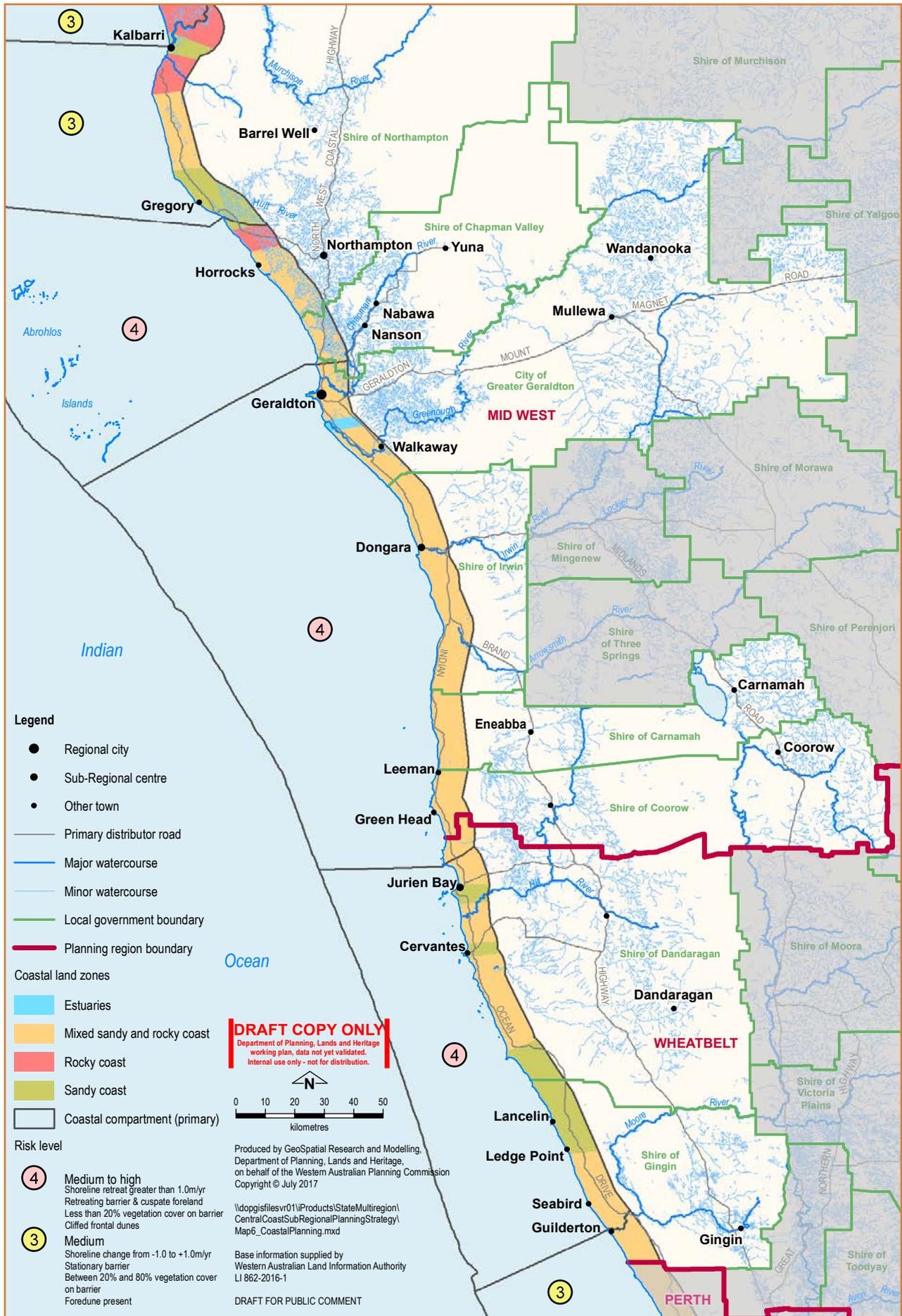
Map 3: Sewage-sensitive policy areas



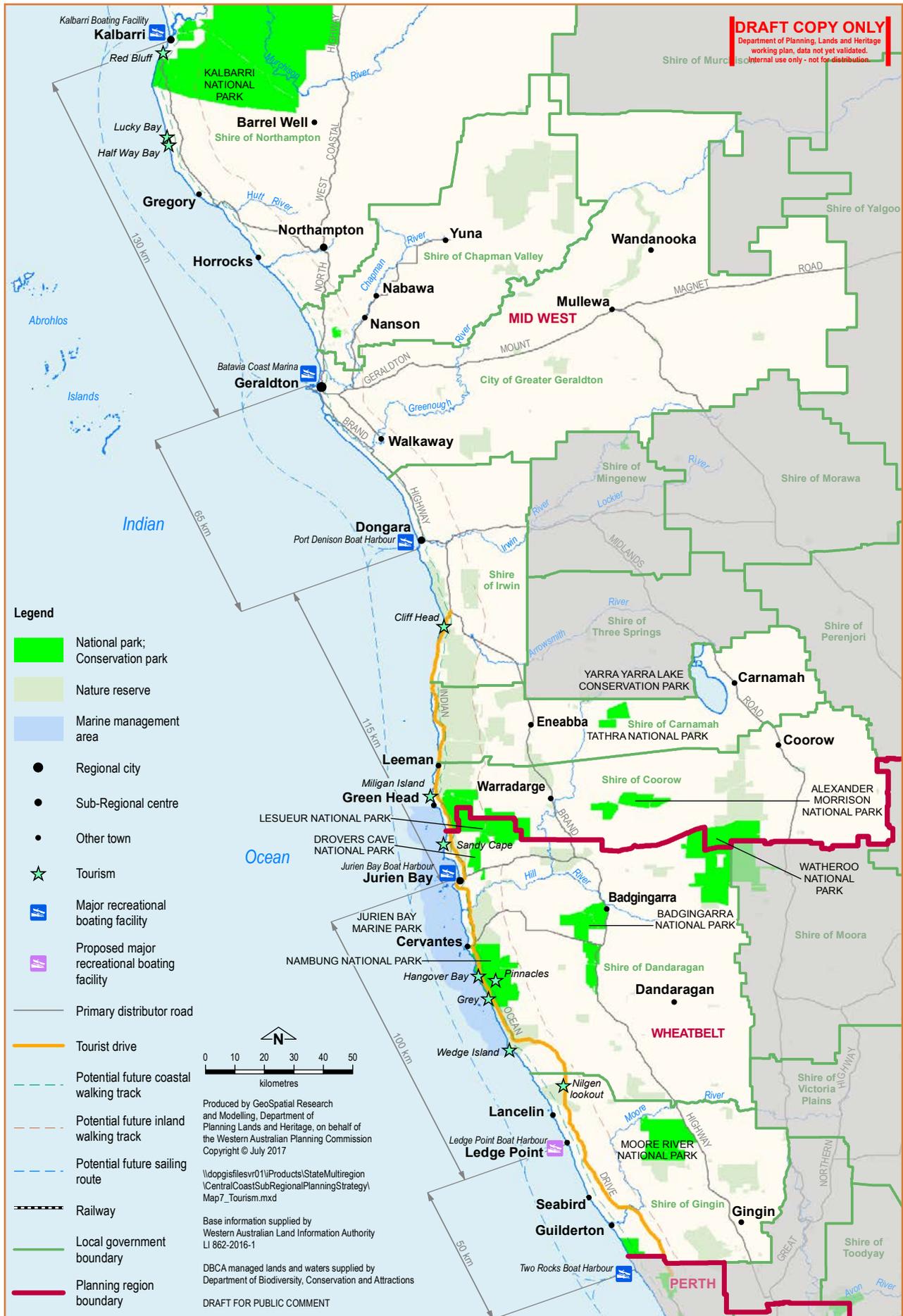
Map 4: Basic raw materials and mineral resources



Map 5: Mineral resources activity



Map 6: Coastal planning



Map 7: Tourism

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Appendix I – Regional settlement hierarchy

Description of settlement categories

Tier 1 to 4 settlements are generally considered significant from a strategic whole-of-state and/or regional perspective	
1. Capital city	<p>The Capital city is the highest level of settlement in the State. As a city of national and international standing, it is the State's main focus for civic, cultural, administrative, business, retail and tourism activity, with its catchment encompassing the entire State. The Capital city has by far the greatest range of high-order services, infrastructure and jobs, and the largest commercial component of any settlement.</p>
2. Regional city	<p>From a regional perspective, regional cities are typically dominant centres for population, economic activity and employment and are considered to offer the most extensive and diverse range of high-order services and functions. They play a significant role in developing much of a region's industry and employment and in this regard contain substantial hard infrastructure of regional significance.</p> <p>Regional cities often service a catchment that includes the majority of the regional population as well as industrial, retail, commerce, administration, government and social services. Importantly, they contain substantial regional health, education and recreation infrastructure. Typically, they contain a wide range of comparative retail, regional and branch offices of several government departments, and often provide a regional cultural and entertainment hub.</p>
3. Regional centre	<p>Regional centres typically offer a diverse range of high-order services and functions, but to a lesser degree than a Regional city. They are also distinguished from regional cities as they generally service a smaller population.</p> <p>Regional centres are significant centres of economic activity, employment and population and form important hubs for regional industry, commerce and civic administration functions, including government offices and services. They generally provide comparative retail as well as higher-order education, recreation and health services.</p>
4. Sub-regional centre	<p>Sub-regional centres support the population and economic activities within their surrounding hinterlands through the provision of goods and services. The catchment areas of sub-regional centres usually extend beyond the immediate centre to include surrounding centres and districts and as such their services are utilised by a broader population.</p> <p>Retail services offered in sub-regional centres largely focus on the day-to-day needs of their service population, however some comparative retail may also occur, particularly in larger centres. Other commercial and light industrial activities, which generally exist to service the local economies, are important functions of sub-regional centres. Sub-regional centres often provide local government administrative functions and a range of social infrastructure and services, including local recreation, health services and secondary education.</p>

Tier 5 to 8 settlements are generally considered significant from a sub-regional and/or local perspective	
5. Major town	Settlements within these three tiers offer a level of service that generally deals with the daily needs of their service population. Three separate tiers allows for distinction to be made where particular settlements service a larger population catchment and/or offer a greater number of services relative to others. How settlements are assigned to the respective tiers is considered within the context of that particular region.
6. Town / Major local centre*	
7. Local centre / Village / Settlement*	
8. Service centre	Service centres are generally located on major State arterial roads and offer basic 'roadhouse' facilities, including minor vehicle repair and servicing. Service centres may play an important role in inter and intra-regional travel, particularly in more remote areas of the State.

* Note: Tiers 6 and 7 may represent particular settlement types that are relevant to specific regions, and as such alternative names may be used to describe settlements as applicable on a region-by-region basis. This is pertinent due to the regional variation that occurs in existing policies; for example State Planning Policy 6.1: Leeuwin-Naturaliste Ridge, which can be attributable to differences in regional characteristics such as their respective communities, culture and sense of place. It is important to note that the naming of a tier does not have any effective bearing on the hierarchy itself.

Application of the regional settlement hierarchy

In its application, within the context of the relevant region it is intended that settlements are assigned to tiers in the hierarchy in **Table I** based on the general consideration of a number of factors that may underpin a settlement's relative strategic importance. For example:

- level and types of services that it provides
- hard and soft infrastructure provision
- population of the settlement
- population of its catchment area
- geographic size of its catchment area
- its proximity to other settlements, particularly those that are of a higher order.

Some of these considerations are relevant given the vastness of regional Western Australia and its marked diversity in settlement patterns, something that is largely attributable to the varying characteristics and intensities of different land uses and economic activities that exist across the State.

Notably, this approach avoids quantitative assessment of settlements. This is preferred as direct comparisons between settlements in different regions can be inherently misleading when evaluating their strategic importance, due to the marked differences that exist in settlement patterns across different regions.

In situations where proposed development is anticipated to change a settlement's level of strategic importance in the future, it may be applicable to identify such settlements as being 'proposed' to sit within the tier of the hierarchy that reflects its future regional function.

Appendix 2 – Relevant State planning policies

State planning policies with particular relevance to the Guilderton to Kalbarri sub-region:

- *State Planning Policy 1: State Planning Framework* intends for sub-regional strategies to guide change and to establish a basis for cooperative action to be taken by State and local governments on land use change.
- *State Planning Policy 2: Environment and Natural Resources* seeks to integrate environment and natural resource management with land use planning, protect, conserve and enhance the natural environment and promote and assist in the wise and sustainable use and management of natural resources.
- *State Planning Policy 2.5: Rural Planning* provides the basis for planning and decision-making for rural and rural living land in Western Australia.
- *State Planning Policy 2.6: State Coastal Policy* provides guidance for land use and development decision-making within the coastal zone, including requiring that coastal hazard risk management and adaptation is appropriately planned for.
- *State Planning Policy 2.7: Public Drinking Water Source* seeks to protect and manage public drinking water sources from incompatible land uses and pollution in order to maintain the quality of the drinking water.
- *State Planning Policy 2.9: Water Resources* seeks to protect, conserve and enhance water resources, ensure that suitable water resources are maintained to meet requirements for human and all other biological life; and achieve sustainable use and management of water resources.
- *State Planning Policy 3: Urban Growth and Settlement* sets out the principles and considerations which apply to planning for urban growth and settlements in Western Australia.