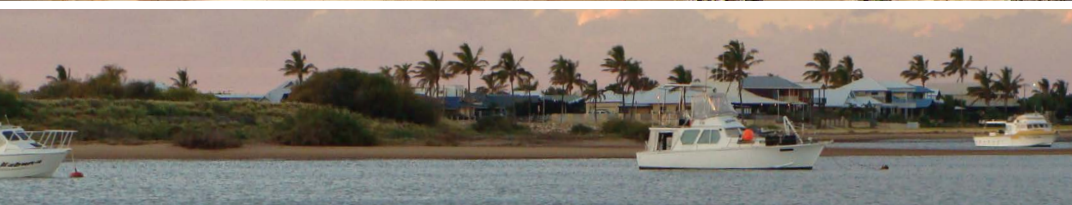
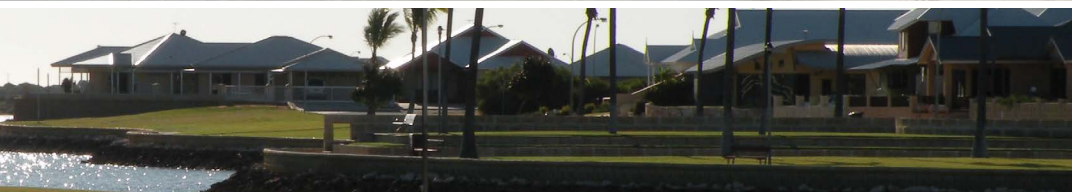


Gascoyne

Regional Planning and Infrastructure Framework

Part A: Regional Strategic Planning

February 2015



Department of Planning



Western Australian Planning Commission



Gascoyne Regional Planning and Infrastructure Framework - Update Schedule

Update no.	Date	Details
1	16/06/2015	Section 3.3 updated to reflect revised ABS current population estimates and WA Tomorrow forecasts.
2	June 2021	Updates to reflect: <ul style="list-style-type: none"> • The rescinding of the of the Shark Bay Regional Strategy (1997); • The contemporary local planning framework; • New population statistics; and • Updates to implement State Planning Policy 6.3 Ningaloo Coast; and • Inclusion of the 'Guiding Principles for the Future of the Ningaloo Coast'.

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website: www.planning.wa.gov.au
email: corporate@planning.wa.gov.au

tel: 08 655 19000
fax: 08 655 19001
National Relay Service: 13 36 77
infoline: 1800 626 477

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Regional Planning and Infrastructure Framework

Part A: Regional Strategic Planning

February 2015



Department of
Planning





Minister's Foreword

The Gascoyne is one of Western Australia's most diverse and physically attractive regions. Its enchanting landscapes, which include two world heritage areas – Shark Bay and Ningaloo; and its desirable climate also make it an attractive place to both live and work. Together with the region's location in central Western Australia, between the booming North West and the Perth metropolitan region, these elements give the Gascoyne a comparative advantage in developing its economic potential.

To capitalise on the Gascoyne's natural advantages and build upon its increasingly diverse economy, it is necessary that a coordinated approach is developed for this region. To achieve this, regional planning and infrastructure decisions need to be integrated. This will promote an agreed way forward on behalf of the region's key stakeholders, including local communities, which will maximise the opportunities to attract private and public investment.

Within this context, the Gascoyne Regional Planning and Infrastructure Framework, sets out a regional planning approach for the entire Gascoyne. Its aim is for the Gascoyne to be considered as a whole, while also recognising its unique attributes. These attributes include a world class coastline encapsulating two World Heritage areas; a significant fishing industry; an important food bowl source as a result of a thriving horticulture industry; an increasingly diversified pastoralism area; and outstanding inland natural landmarks such as Mt Augustus and Kennedy Range National Parks.

I congratulate the Western Australian Planning Commission and the Department of Planning on their collaborative work on this important policy framework that builds on the characteristics and opportunities of one of the State's most diverse and beautiful regions.

A handwritten signature in black ink that reads "John Day". The signature is fluid and cursive, with a period at the end.

John Day MLA
Minister for Planning



Chairperson's Foreword

As one of the State's most beautiful and diverse areas, the Gascoyne region has the potential to further capitalise on its key economic drivers such as tourism and agriculture. Sustained prosperity in the region however, will depend primarily on the development of key infrastructure and diversification of local industries.

The Gascoyne Regional Planning and Infrastructure Framework will be a critical driver in identifying the region's economic potential through a whole-of-government approach. To achieve this, the Framework sets a regional overview for the Gascoyne that encourages growth opportunities that respect its diversity of natural environments, cultural backgrounds and economic industries.

Prepared by the Department of Planning under the guidance of the Western Australian Planning Commission, the Gascoyne Regional Planning and Infrastructure Framework affords leadership through providing a shared vision and a common way forward to deal with the regional issues that are being faced by the Gascoyne.

The Commission will use the Framework to guide regional strategic planning in the Gascoyne to assist the delivery of coordinated policy and planning solutions. Fundamentally, it will be instrumental in guiding growth in the region according to its specific strengths and constraints and, importantly, the needs of the people that live there.

The Gascoyne Regional Planning and Infrastructure Framework introduces a new vision for a significant area of the State that is set to become an increasingly attractive place in which to visit, live and work.

A handwritten signature in black ink, appearing to read 'Eric Lumsden'.

Eric Lumsden PSM
Chairman
Western Australian Planning Commission



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1 Introduction

The Gascoyne region is characterised by its diverse and remote landscapes – from spectacular coastal reefs to rugged outback ranges. With an area of 135,277 square kilometres and a population of about 10,000 people, the region is sparsely populated. Despite this, the Gascoyne region is an important contributor to Western Australia’s economy. It is arguably most renowned for its unique tourism experiences, which attract more than 200,000 visitors annually; and quality horticultural and seafood produce.

The *Gascoyne Regional Planning and Infrastructure Framework* (the Framework) has been prepared for the region, which encompasses four local governments — the shires of Carnarvon, Exmouth, Shark Bay and Upper Gascoyne (Figure 1).

1.1 Vision

The Gascoyne is one of the most attractive and diverse regions in Western Australia where residents and visitors alike will enjoy the region’s significant environmental assets and desirable climate whilst ensuring access to a range of services. New economic opportunities will continue to evolve that further diversify the local economies and maximise the potential of the region’s World Heritage attributes.

In working towards realising the above vision for the Gascoyne, key themes supported by the Framework include:

- a diverse Gascoyne region offering the diversity of ecosystems, landscapes, enterprises, people and cultures;
- a liveable Gascoyne region that is the place of choice for the brightest and best;
- a connected Gascoyne region that is as connected to the rest of the world as any other place; and
- a collaborative Gascoyne region enabling alignments that progress the region’s sustained prosperity.

These key themes align with the *State Planning Strategy 2050* (Western Australian Planning Commission, 2014) vision for Western Australia¹.

¹ Refer to section 3.1.2 for an overview of the components that form the structure of the *State Planning Strategy 2050*.

1.2 Purpose

1.2.1 Objectives

In order to contribute to a whole-of-government approach to strong and healthy regional communities, the Framework objectives are to:

- provide the regional context for land-use planning in the Gascoyne;
- provide an overview of the major regional issues facing the Gascoyne including economic, social, cultural and environmental matters;
- identify the priority actions required to enable comprehensive regional planning and to guide local planning processes; and
- indicate regional infrastructure projects that are considered significant from the region’s perspective to facilitate further economic and population growth in the Gascoyne.

1.2.2 Principles

The *State Planning Strategy 2050* identifies the following principles as being interrelated and applicable across all regions, local governments and communities. In this context they are considered strategic in supporting the objectives of this Framework, as well as the broader vision for the Gascoyne.

Community	Enable diverse, affordable, accessible and safe communities
Economy	Facilitate trade, investment, innovation, employment and community betterment
Environment	Conserve the Gascoyne’s natural assets through sustainable development
Infrastructure	Ensure infrastructure supports development
Regional development	Build the competitive and collaborative advantages of the Gascoyne
Governance	Build community confidence in development processes and practices



1.3 Strategic goals

With a vision of sustained prosperity for Western Australia, the *State Planning Strategy 2050* identifies five strategic goals and a number of associated priorities for each.

Table 1 presents the Framework's strategic goals for the Gascoyne region, following a consistent approach to the *State Planning Strategy 2050*. Specifically, these relate to the vision for the Gascoyne established in the Framework; and are reinforced by the Framework objectives and their supporting principles. These strategic goals underpin the opportunities, strategies and initiatives identified in the Framework.

Table 1: Strategic goals

Strategic goal	Gascoyne vision themes			
	Diversity	Liveability	Connectedness	Collaboration
A globally competitive region	A diversified economic base	Attraction and retention human and monetary capital	Global trade and high speed movements	Generating innovative ideas and enterprises
A strong and resilient Gascoyne region	Embracing diverse economic and social opportunities	Creating places where people want to live and work	Building strong relationships and accessibility	Enabling collaborative advantages across the Gascoyne and with other regions
Sustainable communities	Community specific development, responsive to diverse needs, places and contexts	Communities with attractive, liveable environments	Providing natural and built connections within and between communities	Collaborative and inclusive planning
Infrastructure planning and coordination	Supporting economic diversity, innovation and resilience	Providing contemporary, effective, resource-efficient services	Linking regional economic opportunities to the movement of people, goods and services; including connectivity with other regions	Sharing new ideas and creating new business and lifestyle opportunities
Conservation	Maintaining and conserving biodiversity, landscapes and environments	Enhances and secures natural environments and resources	Connecting ecosystems, people and resources	Realising opportunities through collaboration for environmental conservation and sustainable communities

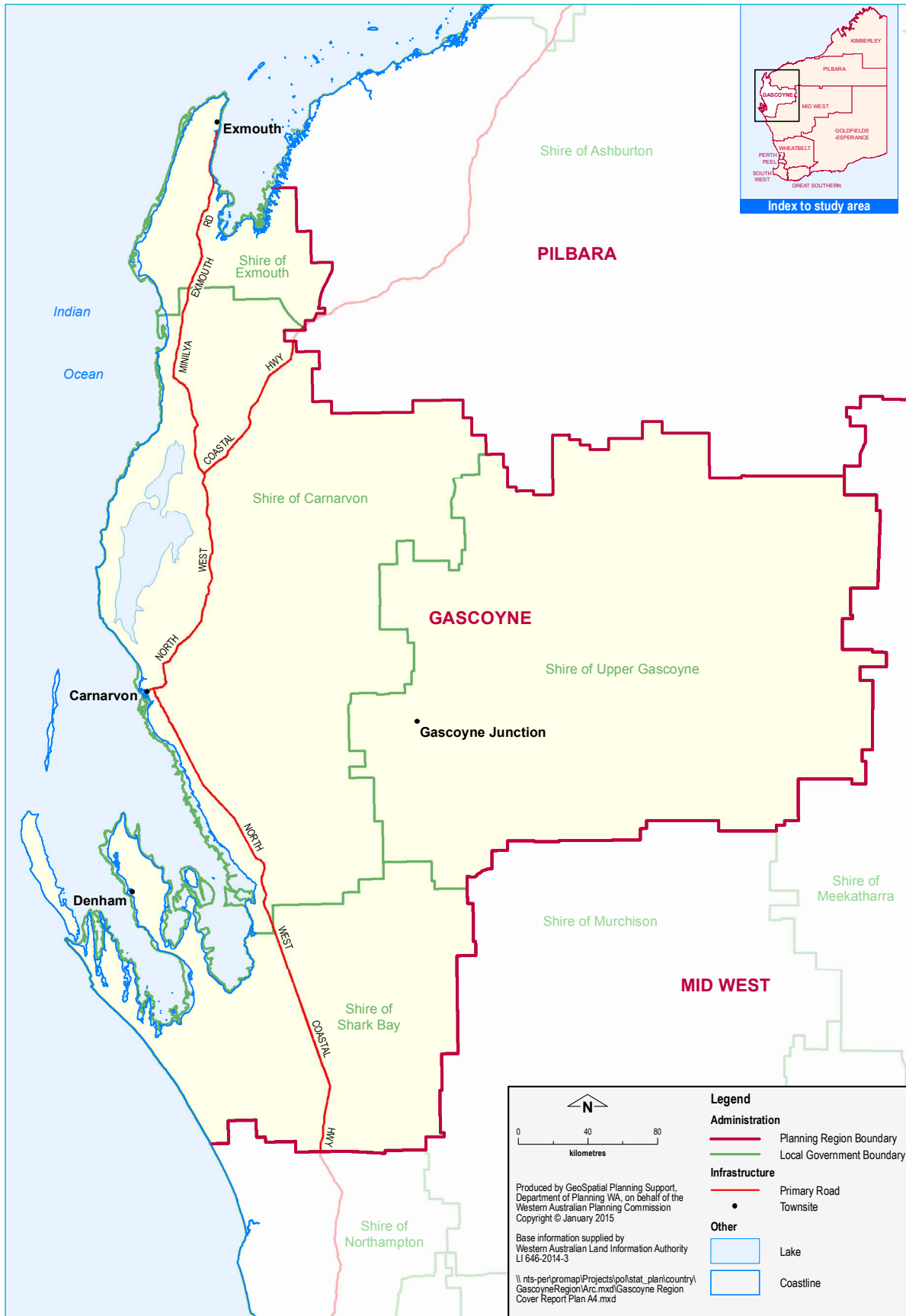


Figure 1: The Gascoyne Region

1.4 Gascoyne regional planning approach

The *Gascoyne Regional Planning and Infrastructure Framework* was prepared under the guidance of the Gascoyne Regional Planning Committee, which was established by the Western Australian Planning Commission (WAPC) to focus on identifying key regional issues and priorities and undertake strategic planning in consultation with regional stakeholders. It is recognised that fostering effective partnerships between stakeholders with clearly defined roles and responsibilities is key to the future implementation of the Framework.

The Framework is a second tier document (Figure 2) preceded by the WAPC's *State Planning Strategy 2050*, and has a similar level of importance as a regional strategy under the State Planning Framework (State Planning Policy 1).

The Framework does not replace other policies that guide the WAPC's decision-making across the State. It will be taken into account by the Commission when preparing and reviewing strategies and policies that apply to the Gascoyne region and will inform local governments with respect to local planning processes including local planning strategies and schemes.

The Gascoyne Planning Approach (Figure 2) provides strategic direction for regional planning in the Gascoyne, within the context of the State Planning Framework. The key elements of this approach are:

- regional planning in the Gascoyne will be guided by the *Gascoyne Regional Planning and Infrastructure Framework*;
- to pursue comprehensive regional planning in the Gascoyne, a number of actions are required. With respect to this, the Framework identifies several regional planning initiatives, a number of which are already underway;

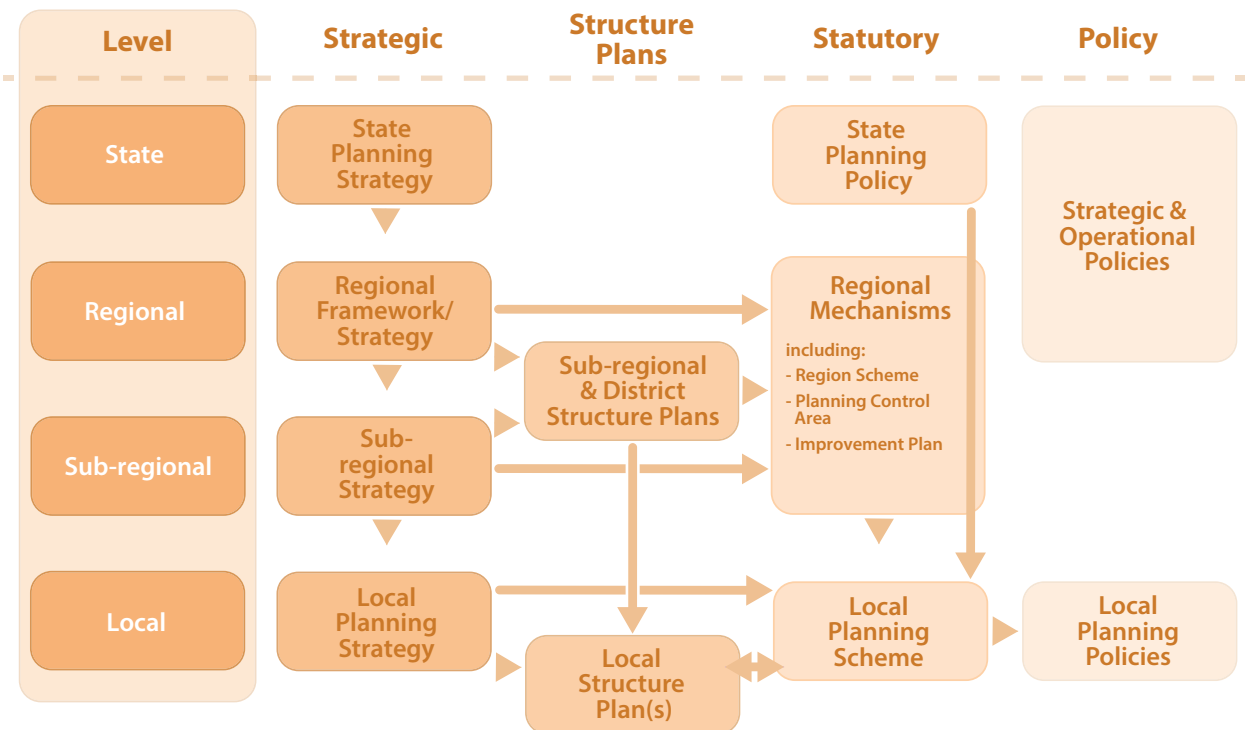


Figure 2: State Planning Framework

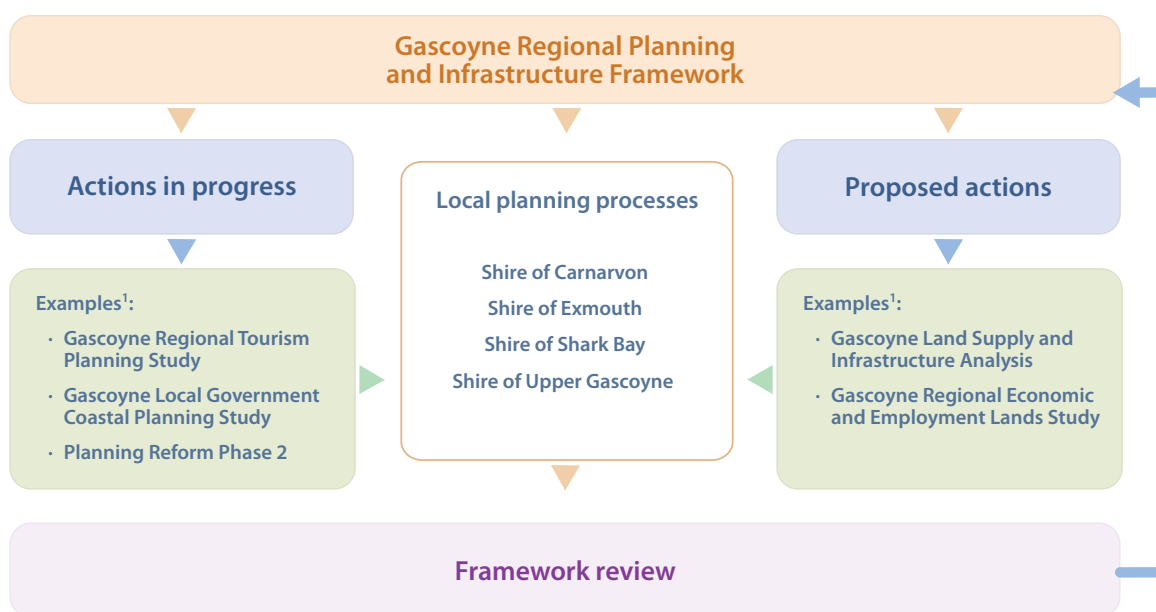
- it is intended that these will inform local planning processes, such as the preparation of and amendments to local planning strategies and schemes; and
- recognition that the *Gascoyne Regional Planning and Infrastructure Framework* is a living document that will need to be reviewed to maintain relevance.

The *Shark Bay Regional Strategy* (Western Australian Planning Commission, 1997) and *Ningaloo Coast Regional Strategy Carnarvon to Exmouth* (Western Australian Planning Commission, 2004) provide a land-use strategy for most of the coastal Gascoyne. Both of these previous strategies were considered in the preparation of the *Gascoyne Regional Planning and Infrastructure Framework*. The *Shark Bay Regional Strategy* was rescinded in 2019.

1.5 State strategic alignment

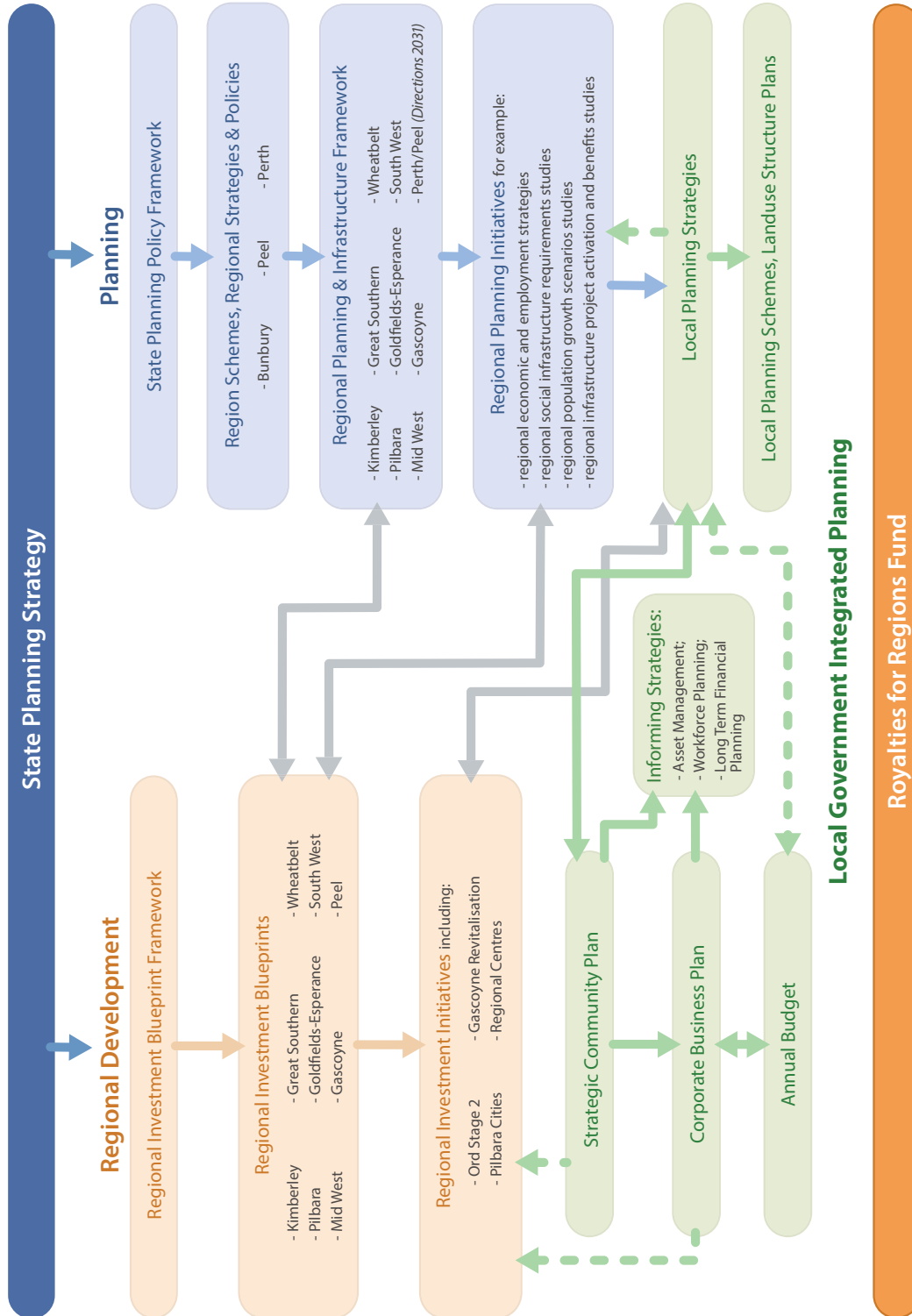
Figure 4 illustrates an integrated State-level strategic approach to planning and regional development, in the context of the State Planning Strategy. Significantly, this approach recognises the complementary nature of a number of strategic activities and initiatives occurring across various State Government portfolios, particularly planning, regional development and local government. As such, it encourages interaction between relevant State Government agencies and local government; and reinforces the importance of a whole-of-government approach to regional planning and development.

Within this context, implementation of this Framework and consideration of regional planning issues will require decision making at a State and regional level. The regional planning governance framework for this is outlined in Figure 5. This will be used to guide important decision making on the direction for regional planning issues and may also be used to seek funding to allow regional planning initiatives, such as those identified in this Framework, to be implemented.



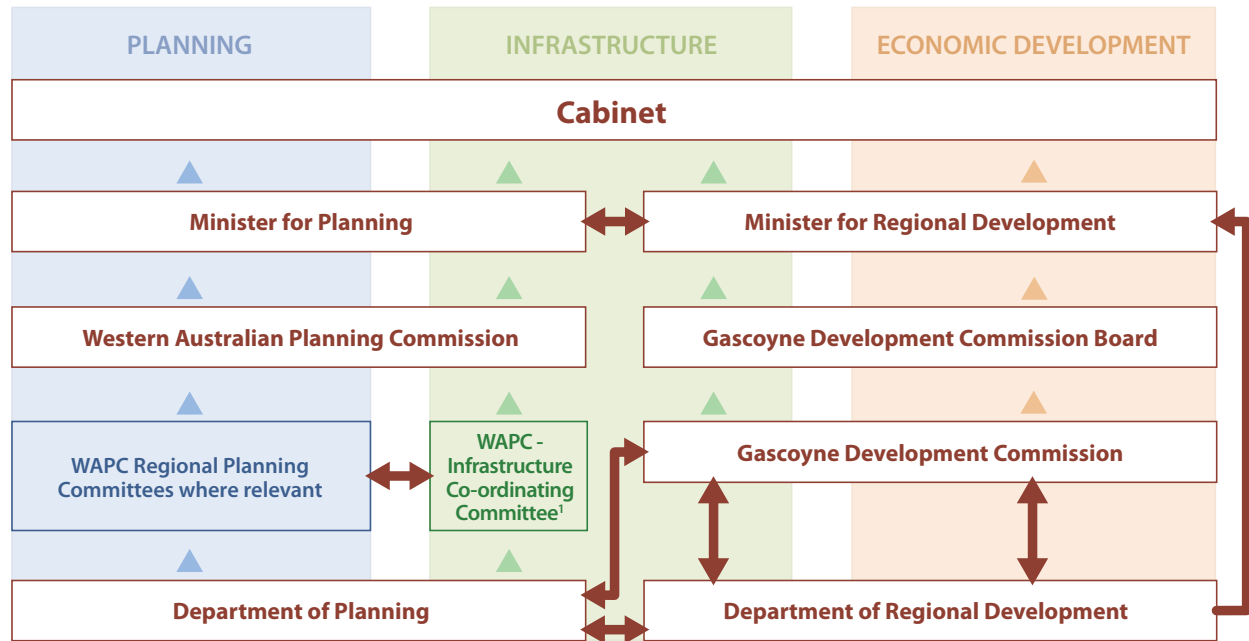
¹ for complete lists of actions, refer to Table 8 for Gascoyne regional planning initiatives.

Figure 3: Gascoyne Planning Approach



(source: Western Australian Planning Commission, 2014)

Figure 4: State planning and development context



¹ The WAPC Infrastructure Coordinating Committee membership is comprised of the Chair of the WAPC and representatives from the local government sector; State Government; and professional sector.

Figure 5: Governance framework

2 Key drivers

Unless otherwise noted, the majority of the statistical data in this chapter is by the Department of Primary Industries and Regional Development (DPIRD). For further information with respect to this and/or the latest available figures, please refer to the DRD's Regional Snapshot series at www.dpird.wa.gov.au.

2.1 Economy and employment

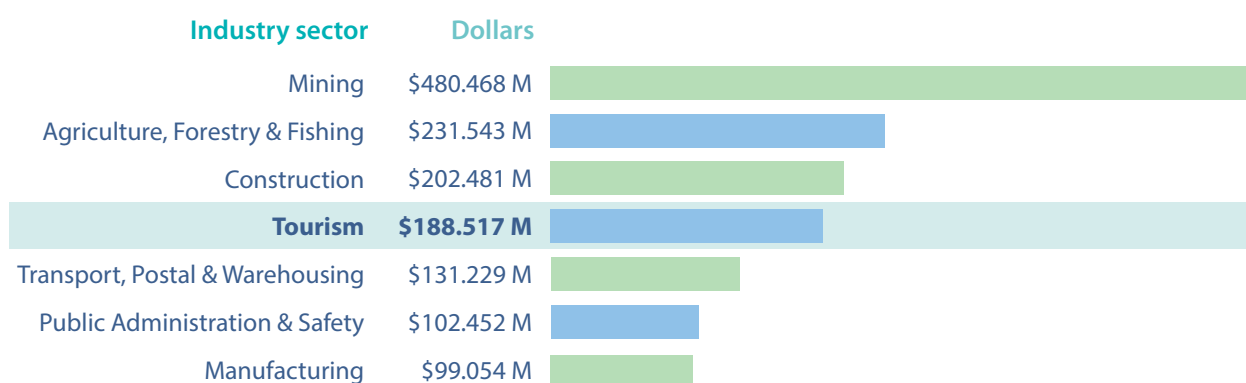
Tourism, mining, agriculture and fisheries are prominent and valuable sectors in the diverse economy of the Gascoyne (Figure 6). In the financial year 2017/18 the value of the gross regional product was estimated to be \$1.057 billion (Department of Primary Industries and Regional Development (2020)). Typically, about 95 per cent of this is generated in the coastal areas of the region.

For the 2019 December quarter, the labour force of the Gascoyne region was 4,482 persons, of which 4,462 (91.4 per cent) were employed and 420 (8.6 per cent) were unemployed (Department of Education, Skills and Employment 2019). Australian Bureau of Statistics ABS 2020 indicates that about 23 per cent

of Gascoyne workers are employed in social services including health, education and public administration. Agriculture, Forestry, Fishing, Construction and Transport Accommodation & Food Services, Mining and Agriculture, Forestry & Fishing are the Gascoyne's most labour intensive industry sectors, with each employing approximately 9-28 per cent of the region's workforce.

Future growth in the Gascoyne and the rate at which it occurs will invariably be influenced by the strength of the regional economy. It is therefore critical to plan for land assembly and infrastructure to meet the needs of the economic drivers; and it is important that this is done in such a way so that land is available and affordable.

Growth in the region's economy will invariably require additional workers and particular skills for certain industry sectors. Skilling WA (Department of Training and Workforce Development, 2010) provides a workforce development plan for Western Australia to build, attract and retain a skilled workforce; and to ensure that the State has the capacity and capability for continued economic success. It has a particular focus on growing the workforce through increased participation, targeted skilled migration and attracting



(source: Department of Primary Industries and Regional Development 2020)

Figure 6: Value of industry activities

and retaining a skilled labour force in the State's regions. In addition, further regional workforce development planning for the Gascoyne forms an initiative of this Framework and accordingly is identified in Table 8.

2.1.1 Tourism

Contributing an average of \$234.5 million annually from the years 2010-12 (Department of Regional Development, 2014), tourism represents the region's most valuable industry sector.

The Gascoyne offers a unique tourism product with people being attracted by its distinctive and unspoilt, tranquillity and warm winters. The region is renowned for its marine and terrestrial attractions including Ningaloo Coast World Heritage Area, Shark Bay World Heritage Area, Ningaloo and Shark Bay marine parks; and Cape Range, Francois Peron, Mt Augustus and Kennedy Range national parks.

According to Tourism WA, an average of 292,000 people visited the region annually in the years 2016-18, with 31 per cent being international visitors (Department of Primary Industries and Regional Development, 2019). The coastal areas are the most accessible and unsurprisingly have the greatest visitation. Visitors are predominantly self-drive tourists.

With tourism being such a valuable sector for the region and local communities alike, and growth over the longer term likely to be sustained, it is imperative that existing and potential tourism opportunities are maintained and developed in a strategic and sustainable manner. Notably, the predicted increase in cruise shipping activity in Western Australia over the coming decade may present opportunities to further diversify the tourism sector, particularly in Exmouth (Tourism WA, 2012).

Priorities for tourism product and infrastructure development in the Gascoyne region are identified in *Australia's Coral Coast Tourism Development Priorities 2010-2015* (Tourism WA, 2010) for the shires of Carnarvon, Exmouth and Shark Bay; and in *Australia's Golden Outback Development Priorities 2010-2015* (Tourism WA, 2010) for the Shire of Upper Gascoyne. Analysis has been conducted at a sub-regional level, which includes an examination of the strengths and selling points of each area. It also includes an analysis of the current status of, and potential gaps in access, accommodation, attractions, activities and amenities.

The Commonwealth Government's Australia's National Landscape Program identifies the coastal Gascoyne as the Ningaloo-Shark Bay National Landscape. The program is a long-term strategic approach to regional tourism development and conservation that aims to highlight the value of Australia's most remarkable natural and cultural environments as tourism assets, and in turn, increase support for their conservation. As Ningaloo-Shark Bay is one of only 16 National Landscapes, its identification is significant and will promote further tourism opportunities in the Gascoyne. As part of the program's implementation, a strategic framework for regional tourism development, planning and marketing is being developed for the Ningaloo-Shark Bay National Landscape; and this is identified as an initiative in this Framework. A copy of the Ningaloo-Shark Bay National Landscape Experience Development Strategy can be found on the Gascoyne Development Commissions website at www.gdc.wa.gov.au.

Regional tourism initiatives and priorities for the Gascoyne are recognised in this Framework. These are considered to be valuable in facilitating further tourism opportunities in the region.

2.1.2 Agriculture

Agriculture is a valuable industry for the Gascoyne and historically it has been significant in the development of the region. The agricultural sector contributed \$234 million to the region's gross domestic product in 2016/17 (Department of Regional Development, 2020) and with the inclusion of the commercial fisheries sector; agriculture employs approximately 11 per cent of the region's workforce (Australian Bureau of Statistics, 2016).

Horticulture

The Gascoyne region has a well-established, diverse and thriving horticulture industry. Produce is predominately grown in the Carnarvon Horticultural District located on the fertile soils of the Gascoyne River delta. Horticultural production at Carnarvon was estimated to be worth \$98 million in 2016; with bananas, tomatoes and vegetables being the most valuable crops. Other valuable crops include table grapes, mangoes and melons (Department of Agriculture and Food, 2017). The industry has proven to be resilient, despite being vulnerable to adverse climatic events, and is increasingly being recognised from a State perspective as an important area for food

production. Most of the production is consumed by the domestic market at present; however, given the Gascoyne's proximity to populous neighbouring Asian countries the region is well positioned to develop existing and emerging export markets.

The horticulture industry in Carnarvon utilises approximately 1,000 hectares of the 2,000 hectares of the zoned area. There are currently about 170 plantations, with plantation sizes ranging between two and 40 hectares.

The State Government's Gascoyne Food Bowl Initiative is investigating the development of new water resources and expanding the Carnarvon horticulture area by up to 400 hectares.

Horticulture is also being developed as an alternative industry for pastoral properties in the region, with a number of pastoral lessees having produced melon, table grapes, corn and cattle feed crops on their land. (Gascoyne Development Commission, 2010)

Pastoralism

In terms of area, pastoralism is the predominant land use in the Gascoyne. There are some 80 pastoral stations in the region with an average size of 125,617 hectares (Gascoyne Development Commission, 2010). The land tenure of all pastoral properties is leasehold.

Livestock production for export or slaughter is the main focus for Gascoyne pastoralists and was worth \$24.7 million in 2011/12. The value of Gascoyne wool production has been in decline over recent years, being worth \$5 million in 2011/12. (Department of Regional Development, 2014)

Livestock is generally raised on natural pasture and watered through a variety of local sources. Consequently, the carrying capacity of the region's pastoral areas varies from season to season as this practice is dependent on sporadic rain over vast areas. Hence, the value of the Gascoyne's pastoral production can vary considerably from year to year. Some enterprising stations are diversifying to take advantage of opportunities including tourism, horticulture and inland aquaculture.

Increased productivity in the Gascoyne's pastoral sector will be dependent on improved land management practices. This may include restoring native vegetation in degraded areas, particularly to improve the condition of land surfaces in river catchments. (Department of Agriculture, 2012)

2.1.3 Fishing and aquaculture

Fishing

In 2014/15 commercial fisheries in the Gascoyne was worth \$43 million, representing nearly 9 per cent of the State's total catch by weight (Gascoyne Development Commission, 2020). The Gascoyne is home to the State's largest prawn industry and other significant products include scallops, crabs and fish (mostly snapper and whiting). The sector is an important employer in the region, with an estimated 300 people employed as skippers and crew during 2008 in addition to those employed at seafood processing facilities in Shark Bay, Carnarvon and Exmouth. (Gascoyne Development Commission, 2010)

As the fishing industry depends on healthy functional ecosystems, sustainable development is imperative. Management of the Gascoyne's fisheries assets falls under the Department of Fisheries, which has introduced Ecosystem-Based Fisheries Management across all fish and aquatic resources. This is a holistic approach taking into account all ecological resources, from fish to dolphins and coral reefs, as well as economic and social factors in deciding how to manage fisheries (Department of Fisheries, 2002).

Aquaculture

The aquaculture industry in the Gascoyne region makes up 8.5% of Western Australia's Aquaculture value (Department of Fisheries, 2015). Existing aquaculture predominantly focuses on the production of pearl oysters; however, pilot projects involving giant clams, freshwater aquarium fish, edible oysters and beta carotene production have been trialled. (Department of Regional Development, 2020)

2.1.4 Mining

Mining is a valuable industry sector for the Gascoyne, accounting for \$480 million in sales in 2016/17 (Department of Primary Industries and Regional Development, 2020). Commodities currently mined in the Gascoyne region include salt, gypsum, limestone, gem and precious stone; and sand. In addition, deposits of many other different minerals exist throughout the region including gold, diamond, copper, lead, zinc, beryl, tantalum, uranium, tungsten, marble, mica, amethyst, tourmaline and gravel. Notably, the State's largest gypsum deposits are located in the Lake MacLeod area.

Currently, the main mining activity is salt production at Useless Loop in the Shire of Shark Bay and at Lake MacLeod near Cape Cuvier, north of Carnarvon. Both major salt operations maintain private port facilities for direct transport of product. Steady demand for salt on global markets has seen exports from the Gascoyne grow over recent years. When operating at their present combined capacity of 4.2 million tonnes per annum, these two operations account for about one third of the State's annual salt production.

The mining of a number of semi-precious stones, including mookaite and variscite, currently occurs in the Shire of Carnarvon. The future development of other mineral deposits in the region, particularly those previously mentioned, may provide further opportunities to expand and diversify mining in the Gascoyne.

Potential sources of basic raw materials include surface sand, gravel and limesand deposits on the coastal plain; and sand and gravel along the major rivers. A ready supply of basic raw materials is important for future urban and industrial development. In areas of rapid growth, land use conflicts can arise around basic raw material extraction sites; and in these circumstances planning protection may be required to ensure a cost-effective supply of these strategic materials.

Offshore from North West Cape there is substantial oil and gas production in the Exmouth sub-basin; however, as this is carried out in Commonwealth waters, the production value is not considered to be a part of the Gascoyne economy. Despite this, it still provides industry opportunities to investors interested in servicing the offshore petroleum industry.

In physical terms, the Carnarvon Basin is largely underexplored for onshore petroleum. The existing gas pipeline infrastructure in the area may enable petroleum resource development activities within the region. The Gascoyne also has prospective geothermal energy resources which could potentially provide energy requirements to nearby industrial, commercial and residential areas.

The Gascoyne region is strategically placed to provide value to the State's major resource projects, including offshore oil and gas developments in the Carnarvon Basin and major mining projects in the Pilbara. Exmouth and Carnarvon already play a role in the resource sector supply chain and there may be opportunities for the region to play an expanded role in this regard. Economic development opportunities associated with resource sector investment and expansion are explored in the Gascoyne Development Commission's *Gascoyne Pilbara Project*, particularly in regard to leveraging opportunities from the region's proximity to the Pilbara region (SGS Economics and Planning Pty Ltd, 2012).

2.1.5 Retail and manufacturing

For the financial year 2012/13 the Gascoyne's retail turnover was \$109 million, having grown over the previous decade at an average annual rate of 3.6 per cent. (Department of Primary Industries and Regional Development, 2020)

Manufacturing in the region reported a turnover of \$102 million in 2016/17, with the majority of business establishments being located in the Shire of Carnarvon. Prominent manufacturing establishments in the region include food processing (including fruit, vegetables and seafood) and metal product manufacturing. (Department of Primary Industries and Regional Development, 2020)

2.1.6 Opportunities

Economy and employment opportunities:

- EE1** Diversifying the regional economy through applying value adding processes to local products, including horticultural and fisheries produce.
- EE2** Developing existing and emerging export markets, particularly populous neighbouring Asian countries.
- EE3** Facilitating local industry and services through the provision of adequate industrial and commercial land within Gascoyne townsites.
- EE4** Improving training, employment and business opportunities throughout the region, including designing programs for specific demographics including Indigenous, special needs, youth and immigrants.
- EE5** Establishing research and development facilities in the Gascoyne specific to the region's economy.
- EE6** Expanding and diversifying the horticulture sector through the release of undeveloped land and additional water.
- EE7** Expanding and diversifying aquaculture pursuits in the region – including prawn and barramundi farming, expansion of farming tropical species, fin and aquarium fish farming.
- EE8** Diversifying economic activity on pastoral properties (e.g. tourist accommodation, horticulture).
- EE9** Expanding and diversifying the tourism sector – including resort, eco-style and affordable accommodation development, pastoral and plantation station stay accommodation, nature-based caravanning and camping, tours and marine charters, cruise shipping and development of small tourist node businesses.
- EE10** Developing strategic and sustainable tourism and recreation infrastructure and services to cater for an anticipated increase in demand.
- EE11** Developing the shoulder/low tourism season, possibly through event development.
- EE12** Developing Mt Augustus and Kennedy Range National Parks as significant tourist attractions, offering tourism accommodation and facilities in close proximity, Indigenous guided tours and support facilities.
- EE13** Fostering links between Gascoyne eco-tourism products and others within the State.
- EE14** Further exploration for petroleum, oil, gas and geothermal energy in the Carnarvon Basin.
- EE15** Production resulting from the future development of strategic resource deposits.
- EE16** Investigation of the Gascoyne's basic raw materials.
- EE17** Expanding the role of Gascoyne centres, particularly Exmouth and Carnarvon, in the resources sector supply chain.
- EE18** Promoting Gascoyne communities as sources of labour and bases for fly-in fly-out mining operations.
- EE19** Investigation of regional affordable housing requirements.
- EE20** Investigation of future Defence Force requirements in the Gascoyne, particularly with respect to the existing RAAF base at Learmonth.

2.2 Transport and infrastructure

Infrastructure is essential in supporting all economic sectors of the Gascoyne, in addition to its general population. From an economic perspective, inter-regional links are vital to ensure strong connectivity between the Gascoyne and other markets; and to allow for the efficient movement of goods and people into and out of the region. The Gascoyne's strategic regional and inter-regional connections have been considered in the *Western Australian Regional Freight Transport Network Plan* (Department of Transport, 2013).

Coordinated infrastructure corridors, which can potentially accommodate multiple types of transport and utility services infrastructure, are considered to be an efficient means of delivering the land requirements

for future regional and inter-regional infrastructure, particularly in areas where land is highly constrained. As such, infrastructure corridors should ideally be identified, planned for and secured well in advance of the additional regional infrastructure being required.

2.2.1 Road

The Gascoyne contains a network of primary roads that service the needs of the regional economy and population. The main sealed arteries carry a significant amount of inter-regional freight traffic and seasonally carry large volumes of tourist traffic. These are supported by a network of local government roads. In addition, the Department of Biodiversity, Conservation and Attractions manage in excess of 1,500 kilometres of roads in the region's conservation reserves, which play a vital role in supporting regional tourism.

The North West Coastal Highway provides the primary road linking the Gascoyne to adjoining Mid West and Pilbara regions and beyond. As such, it is a key freight and tourist route and is critical to the regional economy. Equally as vital to the region are the road linkages from the Highway to communities in the coastal areas of the Gascoyne, including Robinson Street (Carnarvon) and Minilya–Exmouth, Burkett, Coral Bay and Shark Bay roads.

The sparsely populated inland Gascoyne is serviced by a network of secondary and gravel roads generally maintained by local government. While the network typically experiences low traffic volumes it does provide vital linkages to inland settlements, pastoral stations and for freight and tourists. Some roads such as Carnarvon–Mullewa Road provide additional interregional routes, including important linkages to the Great Northern Highway. Improvements to the route linking Gascoyne Junction to Paraburdoo in the Pilbara were recommended in the *Mt Augustus and Gascoyne Outback Development Taskforce Final Report* (Gascoyne Development Commission, 2010). The implementation of improvements along this route would provide a more legible link between key tourism attractions across the two regions.

2.2.2 Aviation

Aviation performs a key role in the Gascoyne's transport network and is vital in supporting economic activity in the region, particularly tourism. This is pertinent in the context of the Gascoyne, as it is for much of Western Australia, where settlements are remote from large population centres and tourism markets, and where considerable distances exist between settlements within the region itself. The future development of the region's economy may require further development and diversification of aviation infrastructure and services, particularly to support tourism, fly-in fly-out workers and general aviation. The Framework identifies a number of initiatives and regional infrastructure priorities that support this, including the State Aviation Strategy being developed by the Department of Transport.

The Gascoyne's main regional airports are located at Learmonth and Carnarvon, which service most regular direct passenger flights to and from Perth. From Learmonth regular passenger flights to Broome and Paraburdoo are also available, with some flights servicing Carnarvon land at Shark Bay or Geraldton en route to/from Perth. Currently there are no regular passenger flights between Learmonth and Carnarvon.

Learmonth Airport, operated by the Shire of Exmouth, is the region's busiest airport and currently accommodates about 90,000 passengers per year. It is situated on a civil lease on the Learmonth RAAF base approximately 40 kilometres south of Exmouth. A Deed of Operation is in place with the Department of Defence and all aircraft movements must be approved with operations on the runway occurring under licenced arrangements. Generally, multiple regular passenger flights depart daily and the facility has the capacity to accommodate large jet aircraft used for international flights. Learmonth is also increasingly being used as a base and operational airport for helicopters servicing offshore oil and gas rigs and other hinterland air transport services. In addition, the Shire of Exmouth owns and operates the Exmouth Aerodrome, which provides a base for general aviation operations and maintenance. It plays an important role in regional aviation as it complements Learmonth Airport, which is subject to restricted operating arrangements. Further investigation is intended to be undertaken by the Shire of Exmouth regarding future requirements for this facility.

Carnarvon Airport caters for about 20,000-25,000 passengers annually and runs at least one regular passenger flight per day. The existing airport sits immediately adjacent to the urban area and currently has capacity constraints. The Shire of Carnarvon intends to investigate future requirements for regional airport facilities at Carnarvon.

Shark Bay Airport accommodates regular passenger flights that link Denham/Monkey Mia to Perth and Carnarvon. Total passenger transit numbers are around 5,000 annually.

Other light aircraft strips are situated near the Gascoyne's smaller settlements (including Coral Bay), communities and mines. Some of these have the capacity to take Royal Flying Doctor Service aircraft. There are no emergency road landing strips in the Gascoyne.

Additionally, there are many private air strips on pastoral leases that predominantly accommodate aircraft for aerial livestock mustering purposes.

2.2.3 Maritime facilities

Port installations in the Gascoyne currently exist at Cape Cuvier and Useless Loop. These facilities are privately operated by Dampier Salt Ltd (Rio Tinto Ltd) and Shark Bay Salt Pty Ltd (Mitsui Salt Pty Ltd) respectively to complement their nearby salt mining operations. The Cape Cuvier and Useless Loop installations currently comprise the port of Carnarvon, which does not have a port authority. At present there are no port authorities in the Gascoyne region. (Department of Transport, 2012)

The State Government has announced a proposed reform to the governance structure of ports in Western Australia. This is expected to result in a consolidation of existing regional port authorities and smaller ports controlled by the Department of Transport. The future Mid West Ports Authority, which currently comprises the port of Geraldton, is proposed to ultimately include the Cape Cuvier and Useless Loop port operations in the Gascoyne in addition to the proposed Oakajee port in the Mid West region.

Bejaling, about 30 kilometres north of Carnarvon, is understood to have bathometric characteristics that may make it a viable site for a deep water port. It could be a site of interest should a need for such a facility proximate to Carnarvon arise in the future.

The Gascoyne's major boat harbour facilities are located at Exmouth and Carnarvon. This infrastructure is critical for servicing the commercial fishing and tourism industries in addition to catering for recreational users. The Carnarvon boat harbour also serves as the home port for tugs required for the private port operations at Cape Cuvier; whereas the Exmouth facility supports the offshore oil and gas exploration and production service industry.

Despite recent substantial upgrades, demand may still warrant expanded maritime facilities at Exmouth, especially to support continued growth in oil and gas exploration and production and tourism. The expected growth in cruise shipping, combined with the identification of Exmouth as a key cruise destination in the *Western Australian Cruise Shipping Strategic Plan 2012-2020* (Tourism WA, 2012), is expected to contribute to future demand in particular.

A smaller boat harbour facility at Denham caters mainly for recreational and tourist users as well as harbouring the local fishing fleet. Opportunities for expanded maritime facilities at Denham, including possible marina-type infrastructure, are proposed to be investigated by the Shire of Shark Bay. Coral Bay has a maritime facility that is primarily for recreational boating purposes.

2.2.4 Energy

Due to vast distances between what are essentially limited markets, there is no regional electricity transmission network in the Gascoyne. Each settlement in the region generates its own electricity typically through diesel, gas, wind or a combination of multiple sources, which exclusively service that settlement and its immediate hinterland.

Horizon Power is the supply authority for the Gascoyne, providing electricity services to Carnarvon, Exmouth/Learmonth, Denham, Coral Bay and Gascoyne Junction. Other centres, including Burringurrah, do not have a regularised electricity service. The source and capacity of each electricity service provided by Horizon Power is listed in Table 2.

Table 2: Gascoyne electricity services provided by Horizon Power

Centre	Generation capacity (MW)	Fuel
Carnarvon	18	diesel/gas
Exmouth & Learmonth	8.6	gas/wind
Denham	2.8	diesel/wind
Coral Bay	3.1	diesel/wind
Gascoyne Junction	0.4	diesel

(source: data sourced from Gascoyne Development Commission, 2010 and Government of Western Australia, 2014)

To accommodate Carnarvon's long-term electricity needs Horizon Power is developing a new power generation site in Carnarvon, which includes the new 18MW Mungullah Power Station. Exmouth is also expected to experience ongoing growth in demand for electricity. (Gascoyne Development Commission, 2010)

Wind turbines currently supplement base-load generation at Exmouth, Denham and Coral Bay, and a private commercial solar power system feeds about 0.1 megawatts into the Carnarvon grid. Energy generation from sources such as solar and wind power are likely to have an increasingly important role in the Gascoyne's future energy provision, particularly in conjunction with base-load generation. There are other alternative future energy sources in the region that could be considered, including geothermal energy and gas from conventional and unconventional reservoirs. The growth of the energy sector in the Gascoyne will be limited by the size of the available market.

Horizon Power has constructed a 22,000 volt underground power reticulation network at Coral Bay. It has been proposed to replace the overhead powerlines at Carnarvon, Exmouth and Denham with an underground reticulated network.

The Dampier to Bunbury Natural Gas Pipeline traverses the region and has a lateral pipeline to Carnarvon. The pipeline has some spare capacity, which further upgrades could boost considerably. Carnarvon, however, currently has no reticulated gas network — the piped gas is exclusively used for the purpose of power generation.

A regional energy strategy investigating the Gascoyne's future regional energy generation and transmission requirements is currently being developed by the Gascoyne Development Commission.

2.2.5 Water infrastructure

Water

The water supply in the Gascoyne is drawn from groundwater sources with the Water Corporation operating and maintaining schemes at Carnarvon, Exmouth, Denham, Coral Bay and Gascoyne Junction. Other centres, including Burringurrah, do not have a regularised water service. Some sources, most notably Denham and Coral Bay, have salinity issues and require desalination. The Water Corporation also operates a separate scheme to customers at Denham providing a supply of non-potable artesian water for uses such as toilets and outdoor use.

The region's horticulture industry is reliant on the availability of groundwater. The Gascoyne Water Cooperative maintains an irrigation distribution system that delivers water to growers at Carnarvon. A number of growers located on the banks of the Gascoyne River also source water from private bores in the river. (Gascoyne Development Commission, 2010)

Given that the recharge of Gascoyne aquifers is generally limited and in some cases not fully understood, careful management is required to ensure that the quality of or accessibility to groundwater is not compromised for either industry or domestic purposes.

Furthermore, pastoral and other remote operations in the Gascoyne are generally reliant on artesian water.

The Department of Water released the *Carnarvon Artesian Basin Water Management Plan* in 2007, which provides information to organisations, industry and individuals about the way that groundwater in the basin will be managed. It focuses on managing the impacts of groundwater abstraction to maintain any associated environmental and economic values. Additionally, the Department of Water released a water allocation plan for the Lower Gascoyne in 2011 to guide the management of ground and surface water resources that support the Carnarvon horticultural area.

Wastewater

Carnarvon, Exmouth, Denham and Coral Bay each have a wastewater scheme operated by the Water Corporation. Anticipated growth in demand for these facilities should be monitored and incorporated into planning for facility upgrades.

Stormwater

The quantity and quality of stormwater entering the water resources of the Gascoyne is also a management issue and requires careful consideration. In this regard, it is important that urban water management issues are taken into account when considering planning for new residential, rural-residential, commercial and industrial areas. *Better Urban Water Management* (Western Australian Planning Commission, 2008) provides guidance on such matters.

2.2.6 Social infrastructure and services

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 makes a significant contribution to the liveability and attractiveness of a local community, which can play an important role in attracting and retaining staff in the region. The types of social infrastructure and services vary from regional to local; and it is important that future requirements are identified through appropriate mechanisms. The Gascoyne Development Commission, through the Gascoyne Revitalisation Plan, is working with Gascoyne local governments and other key stakeholders to identify local and regional infrastructure priorities with a focus on social infrastructure and services.

Education

Government school facilities are generally located in the larger towns and communities in the Gascoyne. Additionally, private schooling is available in Carnarvon from kindergarten to Year 10. Schools in all Gascoyne communities generally provide schooling up to Year 12, although in some schools, years 8 to 12 are delivered through the School of Isolated and Distance Education. Education services to more remote areas of the

Gascoyne are delivered by the Carnarvon School of the Air. (Department of Regional Development and Lands, 2011)

Tertiary education is offered through the Durack Institute of Technology campuses at Carnarvon and Exmouth, including a variety of academic and vocational courses.

Health

Carnarvon Hospital is the only true regional hospital facility in the Gascoyne region. It currently has a 43-bed capacity and maintains a range of higher order capabilities and services including community health, mental health and community-based aged care services. A district hospital services Exmouth. The Silver Chain Nursing Association operates a nursing post at Denham and the WA Country Health Service maintains remote area nursing posts at Coral Bay and Burringurrah.

The Royal Flying Doctor Service (RFDS) is of great importance to the Gascoyne due to the vast distances between facilities. However, the RFDS does not permanently base aircraft, medical infrastructure or flight crew in the region; with the nearest base being located at Meekatharra. The predicted increase in numbers of tourists travelling in isolated parts of the region is expected to further escalate the importance of this service.

In addition to the availability of mainstream health services, the Carnarvon Medical Service Aboriginal Corporation offers primary, secondary and tertiary health and medical services to the Aboriginal people of Carnarvon and surrounding areas.

Emergency and corrective services

There are police stations currently located at Carnarvon, Denham and Exmouth. A multi-functional police facility servicing the Upper Gascoyne area has recently been established at Burringurrah. The region is predominantly within the Mid West-Gascoyne police district with the exception of the Shire of Exmouth, which is in the Pilbara police district. It is noted that the district offices are based outside the Gascoyne, at Geraldton and Karratha respectively. Carnarvon has the only courthouse in the region.

The Department of Fire and Emergency Services (DFES) oversees a range of emergency service providers in the Gascoyne, including:

- Volunteer Fire and Rescue Services based at Carnarvon, Exmouth and Denham;
- Volunteer Bush Fire Service brigades at Gascoyne River (Carnarvon) and Shark Bay (Denham);
- State Emergency Service units based at Carnarvon, Exmouth, Shark Bay (Denham) and Useless Loop;
- a Volunteer Emergency Service unit at Coral Bay; and
- Volunteer Marine Rescue Services at Carnarvon, Exmouth, Shark Bay (Denham) and Coral Bay.

These are under the jurisdiction of the Midwest-Gascoyne DFES region.

Ambulance services are delivered by St John Ambulance WA, with sub-centres within the Gascoyne located at Carnarvon, Coral Bay, Exmouth and Shark Bay (Denham).

Culture and arts

The Department of Culture and the Arts has undertaken a regional cultural and arts action plan for the Gascoyne region, which is identified in Table 8 as an initiative. Planning for cultural infrastructure is further supported by their existing policy (Department of Culture and the Arts, 2012).

Regional sport and recreation

Sport and recreation is often considered to be the lifeblood for many communities, promoting social and community cohesion, healthier lifestyles and providing economic advantages. There are a number of quality sporting and recreational facilities available within the Gascoyne region.

Maintenance and upgrading of sporting facilities are often considered to be essential for many regional communities, helping to ensure that adequate opportunities are provided for both individuals and sporting organisations.

There is a range of resourcing and training initiatives provided by the Department of Sport and Recreation, State sporting associations and other organisations to support the upgrading or maintenance of regional sporting facilities. The Royalties for Regions Grants Scheme can also provide funding for upgrading or new facilities.

2.2.7 Telecommunications

Being a vast and isolated region, telecommunications infrastructure performs a vital role in keeping the Gascoyne region well-connected. A broad range of telecommunications services exists in the Gascoyne; with the region's settlements generally having the greatest level of accessibility to networks and services. As large parts of the region are remote, telecommunications services in these areas can be limited or otherwise reliant on delivery through satellite networks.

New and emerging telecommunications technologies may create opportunities for regional economic investment as well as innovation in service delivery, resulting in various economic and social benefits. For example, new and emerging technologies may create opportunities to increase or improve service delivery to remote locations for some services such as health and education. Projects that have delivered significant improvements to the standard of telecommunications infrastructure in the region include the:

- Regional Mobile Communications Project to increase coverage of the mobile network; and
- National Broadband Network, which delivered significant improvements in bandwidth speeds and connection reliability throughout the region through a combination of optic fibre, fixed wireless and satellite technology.

2.2.8 Waste management infrastructure

A strategic waste management plan for the Gascoyne has been prepared for the Gascoyne Development Commission on behalf of the region's four local governments (A Prince Consulting, 2009). The management plan primarily facilitates waste infrastructure planning; and seeks to ensure provision for solid waste management infrastructure at strategic

regional locations. Such infrastructure could include transfer stations, resource recovery facilities, recycling process facilities, landfills and requirements for waste related to industrial expansion. For further information, refer to the Gascoyne Development Commission's website at www.gdc.wa.gov.au.

From a statewide perspective, the Western Australian Waste Avoidance and Resource Recovery Strategy 2030 (Western Australian Waste Authority, 2019) provides strategic guidance on waste management issues.

It is recognised that a significant amount of the waste generated in the Gascoyne is due to visitors to the region. This is a pertinent consideration when planning for future waste management requirements, given the importance of tourism to the Gascoyne's economy and in particular the high number of visitors to the region relative to its permanent population base.

2.2.9 Designing communities

Well-designed communities, transport and infrastructure underpin the attractiveness and liveability of a place; which contributes substantially to the general well-being of its population. The provision of attractive and liveable communities with good social infrastructure may positively influence the attraction and retention of new residents to the Gascoyne.

It is important that a community's diverse needs are accounted for through its design. In particular, consideration should be given to ensure that communities are designed to be adaptable to future change, encourage a high quality built environment and promote physical activity.

Numerous strategic State Government documents; including *Liveable Neighbourhoods* (Western Australian Planning Commission, 2007), *Better Urban Water Management* (Western Australian Planning Commission, 2008) and *Active Living for All: A Framework for Physical Activity in Western Australia 2017-2019* (Department of Sport and Recreation, 2017); have been prepared to guide the development of well-designed, active communities. Other resources also reinforce design principles to this effect, such as the Heart Foundation's Healthy Active By Design on-line design resource available at www.healthyactivebydesign.com.au. This tool in particular has been developed in partnership with other stakeholders including State Government agencies.

2.2.10 Opportunities

Transport and infrastructure opportunities:

- T11** Developing and maintaining appropriate regional infrastructure to stimulate economic investment and service the needs of Gascoyne communities.
- T12** Improving interregional connectivity through reinforcing infrastructure network linkages beyond the region boundary.
- T13** Attracting residents and workforce through the provision of quality social infrastructure, services, affordable housing and well-designed communities, taking into account the region's remoteness and distance between settlements.
- T14** Providing a level of community service commensurate with seasonal tourist and itinerant worker population levels.
- T15** Improving air services both within and to the region.
- T16** Improving the Gascoyne's airport facilities.
- T17** Developing new energy generation to harness the benefits from the Gascoyne's naturally abundant energy resources.
- T18** Installing underground reticulated power networks in urban centres.
- T19** Enhancing the provision of wastewater infrastructure to meet the current and future requirements of Gascoyne settlements.
- T110** Ensuring the long-term viability of Gascoyne population and industry through the sustainable development and management of regional water resources.
- T111** Improving the Gascoyne's marine facilities to attract and meet the needs of recreational and industry users.
- T112** Enhancing the provision of waste management infrastructure to meet the current and future requirements of Gascoyne settlements.
- T113** Identifying opportunities for the co-location of joint infrastructure services sites and corridors.

2.3 Natural resources and cultural heritage

The Gascoyne region has a diverse and highly valued range of natural resource assets. These contribute to the regional economy through tourism, research, fisheries and agriculture. A unique wilderness experience is provided on both land and sea; and as a point of significance, the region contains numerous and sizable National and World Heritage listed areas. Surface and groundwater resources are highly valued throughout the region and careful management is required to ensure quality and quantity is provided sustainably. Sound management is imperative as, if realised, forecast long-term weather trends may have adverse effects on the region. The Gascoyne also has significant cultural heritage with many sites of both Aboriginal and European significance having been identified.

2.3.1 World Heritage areas

The Commonwealth of Australia is a signatory to the international treaty *Convention concerning the Protection of the World Cultural and Natural Heritage*, which was adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1972. UNESCO seeks to encourage the identification, protection and preservation of cultural and natural heritage places. For properties to be inscribed on the World Heritage List they must be of outstanding universal value and meet at least one of 10 selection criteria set by UNESCO. The protection of World Heritage values in declared World Heritage properties is regulated through the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999*.

The Shark Bay World Heritage Area extends over 2,320,000 hectares and overlaps Dirk Hartog Island and Francois Peron National Parks, Shark Bay Marine Park and other conservation areas. The *Shark Bay World Heritage Property Strategic Plan 2008-2020* has been prepared. Shark Bay was inscribed on the World Heritage List in 1991 and is currently one of only 20 places on the list that satisfy all four natural criteria for listing. These criteria relate to:

- being an outstanding example representing major stages of the earth's evolutionary history;
- being an outstanding example representing significant ongoing ecological and biological processes;

- containing superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance; and
- containing the most important and significant natural habitats for in-situ conservation of biological diversity.

The Ningaloo Coast World Heritage Area covers approximately 700,000 hectares and overlaps Cape Range National Park and Ningaloo Marine Park. The Ningaloo Coast was inscribed on the World Heritage List in 2011, satisfying criteria that relate to:

- containing superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance; and
- containing the most important and significant natural habitats for in-situ conservation of biological diversity.

It should be noted that the Ningaloo Coast National Heritage listing includes additional areas of significant environmental value that are beyond the extent of the World Heritage Area.

For specific information on the criteria for the World Heritage listing of Shark Bay and the Ningaloo Coast, including the World Heritage values of each area, refer to the Australian Government's Department of the Environment website at www.environment.gov.au/heritage/places.

A considerable amount of research has occurred over recent years through the Ningaloo Research Program, which has involved several institutions including the Commonwealth Scientific and Industrial Research Organisation, the Western Australian Marine Science Institution, the Australian Institute of Marine Science, several universities and State Government agencies (Ningaloo Research Program website). A number of projects developed through the program will assist in the future management and protection of the Ningaloo Coast's significant environmental assets.

The Australian Government's Department of the Environment has primary responsibility for the development and implementation of national policy on World Heritage matters. In 1997 the Australian Government and Western Australian Government, in accordance with Australia's obligations, signed an administration agreement to ensure that the day-to-

day management of the Shark Bay World Heritage Area would be undertaken by the Western Australian Government. The Department of Biodiversity, Conservation and Attractions is the lead State Government agency for World Heritage.

Shark Bay and the Ningaloo Coast are also identified on the National Heritage List, along with the Cape Inscription Area on Dirk Hartog Island.

2.3.2 Biodiversity

Terrestrial

Interim Biogeographic Regionalisation for Australia (IBRA) classifies major divisions of land defined by distinct assemblages of climate, geology, landform, fauna and vegetation. According to IBRA, the Gascoyne region contains parts of five bioregions: Carnarvon, Gascoyne, Murchison, Yalgoo and Geraldton Sandplains. IBRA bioregions and sub-bioregions are the reporting unit for assessing the status of natural ecosystems and their protection in the National Reserve System. The Murchison bioregion is currently under-represented in the National Reserve System and as such priority should be given to protecting ecosystems in this particular area, for example through the establishment of formal conservation reserves.

At the broad level the Australian Native Vegetation Assessment 2001 has mapped and described vegetation using major vegetation groups and identified that the Gascoyne planning region is covered by the Gascoyne, Carnarvon, Yalgoo and Murchison bioregions. Vegetation assemblages and bioregions, although not ideal, are often used as proxies to terrestrial biodiversity. Generally there is a greater diversity of vegetation communities along the coast when compared to the inland areas.

The Gascoyne region contains two national biodiversity hotspots listed under Australia's 15 national biodiversity hotspots — the Carnarvon Basin and the Geraldton to Shark Bay sand plains.

As minimal wholesale clearing has occurred in the region, the Gascoyne region is relatively well covered in native vegetation. Pastoral activities, however, have impacted on native vegetation and ecosystem processes in some areas.

The Gascoyne contains significant threatened fauna, as well as several species of flora that are declared rare or priority. Specifically, there are two Threatened Ecological Communities and 18 Priority Communities identified within the region.

A number of programs aim to restore biodiversity in parts of the region through environmental and ecological rehabilitation. One notable example is a ecological restoration project on Dirk Hartog Island, which aims to eliminate introduced species and pests; and reintroduce locally extinct mammal species to the island.

Marine

The Gascoyne region contains marine areas of international significance and great scientific interest, in particular as it occurs in the transition zone between tropical and temperate biogeographical areas.

A variety of coastal landforms occur, including high cliffs, islands and shallow bays, as well as an area where the edge of the continental shelf is closer to the shoreline than any other place in the State. The associated habitats support diverse marine ecosystems, containing temperate south-western Australian species mixed with tropical and temperate Indo-Pacific species. Many of the marine habitats have yet to be described in detail, but more is known about the coastal habitats because they are relatively accessible to human observers. (Department of Fisheries, 2000)

There are numerous unique marine environments that fringe the Gascoyne coast. For example, Shark Bay has several isolated basins that support unique populations of marine life. Between Carnarvon and Exmouth is the Ningaloo Reef, which at over 300 kilometres in length, is the largest fringing coral reef in Australia.

Substantial areas of the Shark Bay and Ningaloo Coast areas are protected and managed through marine reserves and marine parks. The significance of the Gascoyne's marine environment is further reinforced through identification on National and World Heritage Lists. Much of the Gascoyne's coastal areas are protected and managed under multiple pieces of legislation, including the *Conservation and Land Management Act 1984*, *Fish Resources Management Act 1994* and the *Commonwealth's Environment Protection and Biodiversity Conservation Act 1999*. Significant marine

biodiversity may exist beyond areas that are currently protected; for example, the area of coast between Red Bluff to Point Quobba and in Exmouth Gulf.

2.3.3 Water

Groundwater

The three groundwater management areas within the Gascoyne are the Pilbara, East Murchison and Gascoyne. These areas are proclaimed under the *Rights in Water and Irrigation Act 1914*. All towns in the Gascoyne are reliant on groundwater for domestic, commercial and horticultural purposes as no source of surface water is available. It is noted, however, that groundwater does vary in quality and quantity across the region. While groundwater resources of the region are significant, recharge is limited. This means careful management is required to ensure that the quality of, and accessibility to, groundwater is not compromised.

The Carnarvon Artesian Basin is a major subsurface storage comprising Exmouth Gulf, Lyndon–Minilya Catchments, Gascoyne and Wooramel systems and Shark Bay. The basin contains the Birdrong Aquifer, which is Western Australia's most geographically extensive artesian aquifer, covering approximately 50,000 square kilometres. Artesian groundwater from the Birdrong has historically been used by the pastoral industry, but is under increasing demand from new development proposals. The shallow alluvial aquifer along the Gascoyne River at Carnarvon and the upstream part of the alluvial aquifer within the Gascoyne Groundwater Area are not considered to be part of the Carnarvon Artesian Basin. Neither are other shallow aquifers, such as the Wooramel River alluvium and the limestone aquifer at Cape Range.

Surface Water

The main hydrographic catchments in the Gascoyne region are the Gascoyne–Murchison, Wooramel and Lyndon–Minilya catchments. These support the Gascoyne, Wooramel, and Lyndon–Minilya Rivers which are largely ephemeral waterways that dry up for part of the year. The Lyndon and Minilya Rivers are two relatively small rivers which originate from rangelands approximately 200 kilometres inland and both discharge in Lake MacLeod. The Gascoyne River and tributaries are surface water proclamation areas.

The Gascoyne River basin has an area of 77,600 square kilometres, originating more than 780 kilometres inland. The river passes through pastoral land for most of its length before discharging into the ocean at Carnarvon. The Wooramel River is ephemeral and the main tributary of the Wooramel catchment, originating in the Mid West region some 250 kilometres inland from the Shark Bay coast. The river has a small delta and discharges into Shark Bay.

The *Directory of Important Wetlands in Australia* identifies nationally important wetlands including several in the Gascoyne, such as Cape Range waterways, wetlands in the Exmouth Gulf, Hamelin Pool, Lake MacLeod, McNeill Claypan System and wetlands in the Shark Bay East vicinity. Inland water ways, such as Kookhabinna Gorge, Lake Carnegie system, Windich Springs and Yadjiyugga claypan are also identified in the directory.

Other regionally significant wetlands in the Gascoyne include: Edithana Pool (Lyons River) Rocky Pool and Fishy Pool (Gascoyne River) and cave wetlands in Exmouth.

Estuaries are located at the mouth of the Gascoyne River and Yardie Creek. The estuaries are greatly impacted upon by tidal influences and nutrient levels are likely to increase with increasing development along the coast. The estuaries and the large coastal lake, Lake MacLeod, are home to mangroves, salt marshes and numerous species of bird life. These systems are largely unmodified; particularly the near-pristine Lake MacLeod and Yardie Creek estuary.

Periodic high volume discharge of river water and associated sediment to the sea is an important influence on coastal and marine ecosystems.

2.3.4 Landscape and geology

The western part of the Gascoyne region is characterised by low relief, open drainage and large gently undulating sand plains. Varied landforms occur within the basin, including Tamala limestone formations such as the Zuytdorp Cliffs; and the Peron, Nanga and Edel Land Peninsulas in the Gascoyne Platform around Shark Bay. (Department of Mines, 1987)

Cape Range on the North West Cape is another significant landform from a regional perspective. It comprises a heavily dissected plateau, gorges and extensive cave systems; and has marine deposit characteristics inherently linking it to the marine environment (Western Australian Planning Commission, 2004). Further inland to the east of the Carnarvon Basin, the landscape is typified by north-westerly tending ridges and valleys including Mt Augustus.

The soils in the Gascoyne region comprise semi-arid soils that are distinctively red in colour due to oxidation of the iron content in the soil. The coastal soils are sandy, calcareous, made up of littoral shell fragments that are prone to oxide leaching and contain areas of mangroves, coastal cliffs and floodplains. Tourism and recreation are the major use on these soils.

Alluvial soils of the river systems comprise loamy fine sands that support horticulture at Carnarvon and pastoral pursuits including grazing. Further inland, browner duplex soils have higher concentrations of carbonates and less iron. The presence of organic matter is relatively low due to the sparse vegetation and the soils are generally infertile, except around major river systems. These soils support pastoral pursuits such as grazing.

Most of the Gascoyne region lies within the Southern Carnarvon Basin, a Phanerozoic sedimentary basin which has a long history spanning from 542 million years to present. Sedimentary rocks within the Southern Carnarvon Basin include shale, mudstone, sandstone, limestone, marl and radiolarite.

Underlying this basin and exposed in the eastern part of the region are metamorphosed sedimentary rocks, granite and gabbro of the much older (2,500–1,600 million years) Gascoyne Province. These include younger (1,070–775 million years) mafic intrusive rocks, which were emplaced during the Capricorn Orogen.

Sedimentary rocks of the Edmund Basin (1,620–1,460 million years) occur to the east of the Gascoyne Province. Many dolerite and gabbro sills (1,465–1,070 million years) have intruded Edmund Basin sediments.

In the southern part of the Gascoyne region, a portion of the Perth Basin overlies the Southern Carnarvon Basin. This portion comprises the Coolcalalaya Terrace which contains up to 8,500 metres of sedimentary rocks aged between 488 and 251 million years.

Currently there are 11 sites recorded in the Gascoyne on the State's register of Geoheritage sites. Geoheritage sites should be protected from incompatible activities by relevant government agencies including local government planning and approval processes. For further information, refer to www.dmp.wa.gov.au/791.aspx.

Mineral resources in the Gascoyne region are covered in section 2.1.4 Mining; and their distribution is indicated on the Framework map (Figure 10).

2.3.5 Cultural heritage

The continuing cultural legacy of the region's Aboriginal people, early European exploration and more recent pastoral and fishing activities largely define the Gascoyne's cultural heritage. It is important that both the region's Aboriginal and historic heritage is identified, protected and managed as their significance will increase over time.

The *Aboriginal Heritage Act 1972* lists numerous sites of Aboriginal significance in the region and protects all sites, including those that remain undisclosed by the traditional owners. Numerous places in the Gascoyne are listed on the State Heritage Database under the *Heritage Act 2018*.

Aboriginal groups with a strong traditional connection to their own country have inhabited the Gascoyne region for thousands of years. The landscape provides the basis for their spirituality, customs, beliefs and social systems. Aboriginal cultural heritage in the region encompasses archaeological, historical, ceremonial and mythological sites as well as living cultural practices.

There are a range of Aboriginal groups whose traditional country is the Gascoyne. These include the Baiyungu, Budina, Inggarda, Malgana, Nanda, Thalanyji, Thudgari, and Wajarri peoples. The native title rights and interests of the Thalanyji and Thudgari people have been recognised by the Federal Court of Australia, and the living culture of Aboriginal people in the region is on display at the Gwoonwardu Mia Gascoyne Aboriginal Heritage and Cultural Centre in Carnarvon. Visit www.dplh.wa.gov.au for more information on Aboriginal heritage.

Prior to European settlement, the Gascoyne region was visited many times by Dutch, French and English explorers, the first of which was Dirk Hartog, who in 1616 was landed on the island that now bears his

name. Australia's first pearling industry began at Shark Bay in the 1850s, however the townsite of Denham was not officially settled until 1898. In the 1860s pastoralists were induced to take up leases for grazing sheep in the region, which marked the beginning of active European settlement in the Gascoyne. Although cattle and sheep stations no longer dominate the economic, social and political landscape of the Gascoyne, pastoral activities maintain significant cultural value. The effects are marked by historical homesteads, as well as stopping places and hotels adjacent to stock routes along which drovers took cattle from the Ashburton to railheads at Mullewa and Meekatharra.

The settlement of the Gascoyne River delta began in the late 1870s, with the town of Carnarvon being developed as a port for shipping livestock and wool. In the early 1920s banana plantations along the Gascoyne River were established. The importance of coastal shipping in the early development of the region for passengers, supplies and exports is evident by the Mile Long Jetty and Lighthouse Keepers Cottage on Babbage Island, the lighthouse and keepers quarters at Cape Inscription on Dirk Hartog Island and the Vlamingh Head lighthouse at Exmouth.

North West Cape has a significant military and aviation history, with an airbase and naval refuelling point for allied forces in World War II, and the town of Exmouth which was opened in the 1960s to service the Naval Communication Centre. The Overseas Telecommunications Centre station near Carnarvon was Australia's first earth station for satellite communication. It operated from 1966-1975 and adds another dimension of diversity to the region's cultural history. (Gascoyne Development Commission, 2009)

The State Register of Heritage Places lists 15 places in the Gascoyne (Table 3). Listings include a range of places located across townsites, rural and remote locations; and include buildings, jetties, lighthouses and ruins. Each place is unique and has its own combination of values, which together shows its cultural heritage significance.

Local planning schemes are one planning mechanism that allows local governments to provide statutory protection to heritage places. Scheme provisions can stipulate special planning approval requirements for identified heritage places.

Table 3: Gascoyne historic heritage places

Local government	Suburb/locality	No. registered places	Total
Shire of Carnarvon	Babbage Island	2	10
	Brown Range	1	
	Carnarvon	4	
	South Carnarvon	1	
	North & South Plantations	2	
Shire of Exmouth	Ningaloo	2	3
	North West Cape	1	
Shire of Shark Bay	Dirk Hartog Island	1	1
Shire of Upper Gascoyne	Gascoyne Junction	1	1
Total			15

(source: State Heritage Office, 2014)



2.3.7 Opportunities

Natural resources and cultural heritage opportunities:

- NC1** Maximising the economic return from the region's significant environmental assets without damaging the assets.
- NC2** Capitalising on interests, skills and knowledge of residents to enhance the management of land and the protection of cultural heritage.
- NC3** Incorporating natural resources and all significant environmental considerations into the preparation and assessment of strategic and statutory planning proposals to achieve environmental protection and management outcomes.
- NC4** Utilising appropriate natural resource management information to assist strategic regional planning.
- NC5** Utilising places of heritage value to support further growth and development of the region.
- NC6** Protecting and managing the region's cultural heritage and arts, including maintenance of indigenous cultural practices and languages; and indigenous places of significance, historic places and landscapes of significance.
- NC7** Mitigating and adapting to the potential impacts of forecast climate change in the Gascoyne.
- NC8** Incorporating principles in new development that embrace the Gascoyne's climatic conditions.
- NC9** Protecting and managing the coastal strip south of Carnarvon.



3 Strategic directions

3.1 Governance

In recognition of a number of broad regional issues and challenges associated with the governance structure currently operating, the Framework identifies the following governance strategies:

- G1** Provide regional planning support for implementing the broader strategic context of the Framework and guiding the development of local planning strategies.
- G2** Communicate the relationship and roles of government, legislation and policy.
- G3** Promote a whole-of-government approach to regional planning and coordination.

Regional government offices and local government authorities in the Gascoyne represent Commonwealth, State and local governments. These are supplemented by cross-government and cross-agency committees and commissions, which promote whole-of-government responses to the planning challenges presented by the region. In some instances, these committees may also include private and non-government stakeholders to promote cooperative and deliberative governance outcomes.

The Framework establishes a high level strategy to guide planning within the Gascoyne region. To facilitate high-quality planning outcomes for the region, planning support is required to develop and finalise local planning strategies in particular, and to assist in the implementation of the broader strategic context of the Framework. Consideration should be given to the future structure of local governments in the region and its implications for regional planning.

With the complex policy framework that exists, where several different agencies within three tiers of government administer a multitude of legislation, it is inevitable that some of the actions recommended in this Framework will fall outside of the direct jurisdiction of planning. This also demonstrates the complexity and difficulty of implementing a whole-of-government approach.

This document will therefore serve as a means to give advance notice to relevant agencies/authorities of future actions that may be required.

3.1.1 National framework

There are a range of Commonwealth statutes and policies that have influence or control over land use and infrastructure development. One such example that has implications for land use in the Gascoyne region is the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999*, which provides a legal framework to protect and manage nationally and internationally significant flora, fauna, ecological communities and heritage places. In the context of the Gascoyne, this is of particular importance as places listed on the World Heritage List, as outlined in section 2.3.1, and on the National Heritage List are subject to this legislation.

The Council of Australian Governments (COAG) may also provide guidance with regard to the implementation of State-level policies and legislation; and this can include where such instruments relate to economic development and associated land-use planning matters. For example, a Multiple Land Use Framework has recently been developed by the COAG's Standing Council on Energy and Resources as an approach to address challenges arising from competing land use, land access and land-use change; and this is designed to operate within established regulatory and policy frameworks relating to land ownership, usage and access.

Beyond the spheres of legislation and policy, the Commonwealth Government supports a number of nationwide initiatives to facilitate regional development which are relevant in the context of the Gascoyne region.

For example, Regional Development Australia is one such initiative that, through collaboration with State and local governments, provides a framework for reporting to the Commonwealth Government on a range of issues facing the regions, including regional planning and regional development. A regional plan has been developed by Regional Development

Australia Midwest Gascoyne that recognises pertinent regional issues and identifies goals and priorities for the betterment of the Mid West and Gascoyne regions.

Desert Knowledge Australia is another such initiative supported by the Commonwealth, in addition to the Northern Territory Government. A number of programs run by this organisation are focused on innovation and capacity building in regional and remote Australia in order to facilitate beneficial business and social outcomes for these areas.

3.1.2 State and regional framework

Planning

The State Planning Framework is set out in State Planning Policy 1 (Variation No 2) (2006). It informs the Western Australian Planning Commission (WAPC), local government and others involved in the planning process to ensure integrated decision-making across all spheres of planning.



(source: Western Australian Planning Commission, 2014)

Figure 7: State Planning Strategy 2050 structure

The State Planning Framework unites the State Planning Strategy, State Planning Policies, regional strategies (including regional planning and infrastructure frameworks), regional and sub-regional structure plans, strategic policies and operational policies within a central framework to provide a context for land-use planning decision making in Western Australia. Broad relationships between these various planning instruments are indicated in Figure 2. For further information on the State Planning Framework, refer to the Department of Planning, Lands & Heritage website, www.dplh.wa.gov.au.

The *State Planning Strategy 2050* provides the basis for long-term State and regional land-use planning. The Strategy's structure, presented in Figure 7 outlines its core elements including its vision, principles, strategic goals and strategic directions.

The Strategy aims to facilitate a whole-of-government approach in order to deliver sustained prosperity for land-use planning and development. Within this context, regional planning and infrastructure frameworks (such as this document) are strategic land-use plans focused at a regional level that outline a structure for sustainable land use; provide guidance for future planning; and address broad planning considerations across local government areas. Significantly, regional planning provides a relevant context for other local level planning processes.

An important consideration for planning at a State level is that of collaboration across regions. As such, interregional issues are an important focus for the *State Planning Strategy 2050*; and where these relate to the Gascoyne region, they are acknowledged as being relevant in the context of this Framework.

In the case of the Gascoyne, *State Planning Policy 6.3 Ningaloo Coast* is of direct relevance. This policy seeks to guide decision making along this part of the coast and its implementation is supported by the *Ningaloo Coast Regional Strategy Carnarvon to Exmouth* (Western Australian Planning Commission, 2004). In response to the development of this Framework and the proclamation of the Ningaloo Coast as a World Heritage Area, it is proposed to review *State Planning Policy 6.3 Ningaloo Coast*.

Notwithstanding the above, the Gascoyne region now has two World Heritage areas, which is an important regional planning consideration for future policy direction.

Planning reform

Since 2009 the State Government has undertaken a series of comprehensive reform strategies to improve the land-use planning and development approvals system in Western Australia.

Information on the status of planning reform initiatives is available online at www.dplh.wa.gov.au/planning-reform.

State development

The Department of Job, Tourism, Science and Innovation as the lead agency for major resource and industry infrastructure projects, has developed an Infrastructure and Services Assessment Framework to provide a consolidated approach to the identification of potential impacts on communities, and local regional infrastructure and services directly associated with major resource and infrastructure projects at a local, regional and State level. The Infrastructure and Services Assessment Framework outlines the State's requirements for proponents to manage their infrastructure and service impacts.

This standardised approach to impact assessment is intended to simplify the planning process for new or significantly expanded projects and to help the Government improve the coordination of infrastructure planning and service delivery.

Regional development

Regionally-based regional development commissions, each of which have their own board, and the Department of Primary Industries and Regional Development are currently the key State agencies for regional development.

The Gascoyne Development Commission is a statutory State Government authority that encourages the sustainable development of the Gascoyne region. The Commission has regionally based staff and reports to a board of regional community representatives.

A review into the functions and responsibilities of regional development commissions was conducted. One of the resulting recommendations from this review was that regional investment blueprints be developed for each region to set future directions from a regional development perspective. The blueprints have been developed with input from all levels of government and the community in the region (Department of Regional

Development and Lands, 2015). Importantly, they are expected to inform State Government investment in each region, including the allocation of future Royalties for Regions funding. The Gascoyne Development Commission published its *Gascoyne Regional Investment Blueprint* in 2015.

Royalties for Regions

The Royalties for Regions initiative has several streams of funding designed to deliver infrastructure, services and projects of State significance to regional Western Australia:

- the Regional Community Services Fund;
- the Regional Infrastructure and Headworks Fund; and
- the Country Local Government Fund.

The funds support strong and vibrant regional communities by improving infrastructure and head works, establishing across-government strategic and community service projects, providing a range of contestable grant opportunities and building capacity in local communities.

The current allocation of Royalties for Regions funding is determined through various initiatives and processes, including those administered by the Department of Primary Industries and Regional Development and Regional Development Commissions.

Commencing in 2010/11, the Gascoyne Revitalisation Plan is an ongoing \$150 million Royalties for Regions funded initiative contributing to the delivery of major infrastructure and headworks projects to build a more sustainable social and economic base for the Gascoyne; and to assist the region achieve its potential for growth. Projects being funded through the Gascoyne Revitalisation Plan include:

- Gascoyne Junction Town Centre and Tourism Facilities
- Shark Bay Community Sport and Recreation Centre
- Monkey Mia Jetty replacement (Shark Bay)
- Carnarvon Fascine and Town Centre Revitalisation
- Carnarvon Library and Art Centre
- Carnarvon Police and Justice Complex
- Carnarvon Health Campus redevelopment

- Carnarvon Boat Ramp
- Exmouth Multipurpose Service Redevelopment
- Tantabiddi Boat Ramp upgrade (Exmouth)
- Exmouth CBD and Foreshore Revitalisation

The projects being funded through the Gascoyne Revitalisation Plan draw from the Gascoyne Regional Development Plan 2010-2020, which was developed by the Gascoyne Development Commission in partnership with the four Gascoyne local governments to outline major regional project priorities. In addition, the process to identify potential projects for funding is further guided through local governance and decision-making bodies, including the Gascoyne Advisory Group (and previously from the former Gascoyne Revitalisation Steering Committee). This group prioritises and develops (as necessary) new project initiatives and presents new proposals to be funded through the Plan for reference to the Royalties for Regions Directors General Reference Group; and subsequently to the Minister for Regional Development for consideration and presentation to Cabinet for approval.

Beyond the Gascoyne Revitalisation Plan, additional Royalties for Regions funding has been provided to other major infrastructure, headworks and community priority projects in the Gascoyne include:

- Coral Bay Seasonal Staff Accommodation
- Gascoyne Irrigation Pipeline
- Gascoyne Foodbowl initiative
- Carnarvon Stage 2 Flood Mitigation Works.

Transport

The Department of Transport is developing transport network plans under the 'Moving Freight' and 'Moving People' themes. These documents define the transport response to the growth and development profiles outlined in the State Planning Strategy.

Under these plans, the Department of Transport and relevant stakeholders have developed the *Western Australian Regional Freight Transport Network Plan* to guide the future development of the regional freight transport network to successfully respond to the needs of the growing Western Australian economy and population, while protecting the environment and quality of life aspirations valued by the community. (Department of Transport, 2013)

This plan defines the Principal Freight Network as part of the larger Western Australian transport network over which the movement of heavy freight will be supported and gradually concentrated. It seeks to optimise the productivity of intensively utilised mixed-traffic networks, allowing the efficient operation of more, and increasingly productive, regional freight movements. The plan identifies the network development and investment priorities over the next two decades, and planning and policy review priorities.

The Department of Transport has developed a *State Aviation Strategy* (2015) in consultation with relevant stakeholders to support the State's economic and social development through aviation infrastructure and services. The Strategy provides a framework for policy setting, and future planning and investment in Western Australian international and domestic air services and airport infrastructure.

Conservation

The management of the conservation estate is administered under the *Conservation and Land Management Act 1994*, through management plans prepared by the Department of Parks and Wildlife for the Conservation Commission of Western Australia and the Marine Parks and Reserves Authority. It is important that management plans are contemporary; and this is recognised in the Framework through the identification of several initiatives in Table 8 proposing to prepare and update a number of management plans for marine and terrestrial reserves. Current management plans as they relate to the conservation estate in the Gascoyne are presented in Table 4 below.

The Department of Biodiversity, Conservation and Attractions is also the lead agency for the day-to-day management of the region's World Heritage areas and reports to the Australian Government on the protection, conservation, presentation, rehabilitation and transmission to future generations of the World Heritage values.

Table 4: Current status of Gascoyne conservation estate management plans

Park or reserve	Management plan
Cape Range National Park	Cape Range National Park Management Plan No. 65 (2010)
Edel Land National Park (proposed)	Shark Bay Terrestrial Reserves and Proposed Reserve Additions Management Plan No. 75 (2012)
Francois Peron National Park	Shark Bay Terrestrial Reserves and Proposed Reserve Additions Management Plan No. 75 (2012)
Dirk Hartog Island National Park	Shark Bay Terrestrial Reserves and Proposed Reserve Additions Management Plan No. 75 (2012)
Kennedy Range National Park	Kennedy Range National Park and Proposed Reserve Additions Management Plan No.59 (2008)
Mt Augustus National Park	-
Ningaloo Marine Park	Management Plan for the Ningaloo Marine Park and Muiron Islands Marine Management Area 2005-2015 No. 52
Shark Bay Marine Park	Shark Bay Marine Reserves Management Plan 1996-2006 No. 34
Ningaloo Coastal Reserves	Nyinggulu coastal reserves draft joint management plan (2019)
other State managed conservation parks and reserves	miscellaneous

State lands

The Department of Planning, Lands & Heritage plays an important role in managing Crown land and native title across the State. These are very important issues in the Gascoyne where extensive Crown land exists. Crown land, including pastoral leases, is generally managed through the *Land Administration Act 1997*.

For example, managing Crown land deals with pastoral leases including Ningaloo; and the ongoing management of vacant Crown land to deal with issues such as coastal shacks. In recognition of the importance of such issues to the Gascoyne, the Framework identifies applicable initiatives in Table 8. In particular, opportunities to diversify activities on pastoral leases are being investigated through the Pastoral Lands Reform Program.

Native title

The Commonwealth *Native Title Act 1993* provides for the recognition and protection of Aboriginal and Torres Strait Islander peoples' native title rights and interests. Certain government actions, such as grants of freehold or other exclusive tenures to other parties, have been found to extinguish native title. Claims for native title generally do not affect areas where native title has been extinguished, for example, land held in freehold or exclusive tenure in developed areas.

The resolution of native title claims can provide Aboriginal communities with greatly improved opportunities for cultural, social and economic development; and greater certainty over land management. Prior to settlement being reached, negotiation generally occurs between the State Government and relevant claim groups.

Tourism

Tourism Western Australia is the State Government agency responsible for promoting tourism in Western Australia. Its focus is on marketing the State; developing, attracting and promoting major sporting, cultural and business events; and developing significant tourism infrastructure and projects.

In this regard, Tourism WA undertakes strategic planning – which can have implications for regional areas, including the Gascoyne – such as the:

- *Government Strategy for Tourism in Western Australia 2020*, which highlights partnerships and a whole-of-government approach to increasing the value of tourism to the State to \$12 billion by 2020;
- *Western Australian Cruise Shipping Plan 2012-2020*; and
- *Western Australian Caravan and Camping Action Plan 2013-2018*, which has subsequently been successful in securing Royalties for Regions funding for a number of regional projects.

Further information is available from www.tourism.wa.gov.au.

Mining

The Department of Mines, Industry Regulation and Safety (DMIRS) is the lead agency for the management of an equitable and secure titles system for the mining, petroleum and geothermal industries. DMIRS, in partnership with the Department of the Premier and Cabinet, has also been leading the State's implementation of the Multiple Land Use Framework approach which was endorsed by the Standing Council on Energy and Resources in December 2013.

Exploration and extraction of mineral and petroleum resources are regulated under the *Mining Act 1978* and the *Petroleum and Geothermal Energy Resources Act 1967*. All proposed resource projects are assessed under these acts and where appropriate they can also be assessed under the *Environmental Protection Act 1986* and the Commonwealth *Environment Protection and Biodiversity Act 1999*. For these activities, there is generally no requirement for planning approval under the *Planning and Development Act 2005*.

Basic raw material extraction on Crown land is regulated by the *Mining Act 1978*, while local government regulates quarrying basic raw materials on private land.

For more information on the legislation and policy framework applicable to the Department of Mines, Industry Regulation and Safety, in addition to the latest statistics on mining in Western Australia, refer to their website at www.dmirs.wa.gov.au.

Housing

Affordable Housing Strategy 2010–2020: Opening Doors to Affordable Housing (Department of Housing, 2010) is the State Government's affordable housing strategy. From a State-wide perspective, the strategy contains a number of broad strategic actions and initiatives in response to general challenges pertaining to the provision of affordable housing.

To understand housing issues in the Gascoyne,

other region-specific investigations are proposed or underway, to provide an evidence base to ultimately assist decision-makers to plan and provide optimal housing allocation for the region. The Department of Community's Social Housing Demand Model and Gascoyne Housing Affordability Study, which are identified in Table 8 as Framework initiatives, are examples of such investigations.

From a planning perspective, housing availability can be influenced by residential land supply. To better understand the current situation with regard to the availability of relevant zoned land in the Gascoyne region, the Department of Planning, Lands & Heritage is proposing to undertake a land supply and infrastructure analysis. This is identified in Table 8 as a Framework initiative.

Emergency services

The emergency management environment is diverse and involves a coordinated effort from volunteers, the community, local and State authorities and, on occasions, also mutual support from other states and at the national level.

An annual report on Western Australia's preparedness for emergencies is prepared by the State Emergency Management Committee for the Minister for Emergency Services. In particular, it provides a broad view on the State's capacity to deal with large-scale emergencies; reports progress in the emergency management sector; and highlights work underway to enhance capacity. Significantly, this process serves

as an objective assessment of the State's preparedness for emergencies and examines how much has been done as well as the need for continuing work. (State Emergency Management Committee, 2012)

Utilities

Various utilities services are delivered via a range of providers, which can include Government Trading Enterprises such as Western Power and Water Corporation; local governments; and private companies.

Service providers generally undertake strategic planning, for example Water Corporation's *Water Forever Whatever the Weather: A 10-year plan for Western Australia* (Water Corporation, 2012). This planning may occur as part of their general business planning; and may also have implications for land-use planning in regional areas.

Local government and communities

Encouraging better collaboration between government agencies, not-for-profit organisations and local governments in the delivery of all services is one of the general roles of the Department of Local Government, Sport and Cultural Activities. The Department is focused on the delivery of a more collaborative and coordinated range of community services at a local level.

3.1.3 Local framework

The Gascoyne has four local governments, including the shires of Carnarvon, Exmouth, Shark Bay and Upper Gascoyne.

As Table 5 indicates, the Shire of Shark Bay is the only local government in the Gascoyne that currently has a local planning strategy; however, the three other local governments are currently preparing local planning strategies.

Table 5 also lists the local planning schemes that Gascoyne local governments currently operate from. All Gascoyne local governments are currently preparing new local planning schemes, which will ensure alignment with contemporary local planning practices.

Layout plans provide another important local planning instrument. These are generally used to guide land use planning in Aboriginal settlements (see section 3.2.6), many of which fall outside of, or are not recognised or zoned within local planning schemes. The Department of Planning, Lands & Heritage's Planning for Aboriginal Communities Program, which is identified as a regional planning initiative in Table 8, has been instrumental in developing many layout plans throughout the State in consultation with the affected communities and other stakeholders.

Through the Northern Planning Program, the Department of Planning, Lands & Heritage is currently undertaking a program to build planning capacity in Gascoyne local governments. The program aims to facilitate local planning processes; and is also acknowledged as a regional planning initiative in Table 8. Since its inception, assistance has been given to Gascoyne local governments to progress projects including:

- new local planning strategies and schemes/ scheme reviews including for the shires of Carnarvon, Exmouth, Shark Bay and Upper Gascoyne;
- a settlement structure plan for Coral Bay for the Shire of Carnarvon;
- a townsite structure plan for Denham for the Shire of Shark Bay;

- a structure plan for Exmouth South for the Shire of Exmouth; and
- structure plans for Babbage and Whitlock Islands, East Carnarvon and Kingsford for the Shire of Carnarvon.

An important consideration in reviewing local planning instruments and practices is the opportunity to better align and integrate local planning strategies and schemes with broader local government operational plans, such as corporate business plans that are required under the *Local Government Act 1995*. Any future local government reform should seek to capitalise on this opportunity as well as increase the capacity of local governments in the Gascoyne to undertake regular local planning reviews. This will ensure that when development opportunities arise, local governments can respond quickly to proactively influence investment decisions and direct development to the most appropriate areas.

3.2 Activity centres

The Framework identifies the role and function of activity centres based on current community focal points for people, services, employment and leisure.

The Activities Centres Framework and Settlement Hierarchy described in this section of the Framework and illustrated in Figure 8 are expected to provide the core focus of growth for the region over the next 20 years. It is intended that the Gascoyne's permanent resident population will be consolidated within existing townsites. It is important to note that the role a centre plays in the future may vary dramatically from the

Table 5: Local planning framework for the Gascoyne region

Local government	Local planning strategy	Local planning scheme	Layout plans
Shire of Carnarvon	2017	LPS No. 13 (2020)	
Shire of Exmouth	2019	LPS No. 4 (2019)	
Shire of Shark Bay	2013	LPS No. 4 (2018)	
Shire of Upper Gascoyne	2018	LPS No. 1 (2018)	Burringurrah LP No. 2 (2003)

LPS - Local Planning Scheme; LP - Layout Plan; OP - Outline Plan

Table 6: Population of Gascoyne settlements

	Centre	2011 population ¹
Regional Centre	Carnarvon	5,160
	Exmouth	2,486
Sub-regional Centre	Denham	699
Tourism Centre	Coral Bay	256
	Monkey Mia	n/a
Local Centre	Gascoyne Junction	n/a
	Burringurrah*	118
Service Centre	Minyila	n/a
	Overlander	n/a
	Wooramel	n/a
	Billabong	n/a

* denotes Aboriginal settlements

¹ Each settlement's population has been derived from 2011 ABS Census where applicable. Due to very low population densities in parts of the Gascoyne, the smallest geographic areas in which Census data is released (Statistical Areas Level 1) often extend over a very large geographical area much broader than a single settlement. In these instances, where accurate 2011 Census data relating specifically to individual Gascoyne activity centres is unavailable, the table is denoted with n/a.

function it serves now, however it is anticipated that this will not significantly change without planning intervention and/or considerable investment. Current population levels of Gascoyne settlements and Tourism Centres are presented in Table 6.

The growth of centres should be managed in accordance with the identified hierarchy. A centre is considered to have or should have the potential to develop into the level that they is identified within the hierarchy. The following strategies have been developed in response to the Gascoyne's key drivers and opportunities.

Activity centres strategies:

- AC1** Accommodate future Gascoyne population growth in general accordance with the proposed Activity Centres Framework and Settlement Hierarchy.
- AC2** Plan for infrastructure and services commensurate with seasonal tourist and itinerant worker population levels.
- AC3** Develop the region's settlements to be sustainable and liveable communities.
- AC4** Encourage fly-in fly-out workers to reside in the region.

3.2.1 Regional City

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. These often service a catchment that includes the majority of the regional population; as well as industrial, retail, commerce, administration, government and social services. Importantly, regional cities contain substantial regional health, education and recreation infrastructure.

Based on existing population levels and services offered, currently no activity centre in the Gascoyne is considered to function as a Regional City. Examples of comparable centres in neighbouring regions include Geraldton in the Mid West and Karratha in the Pilbara.

3.2.2 Regional Centre

Carnarvon and Exmouth are considered to be the Gascoyne's regional centres. 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. At a regional level, 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. In addition, regional centres typically provide comparative retail as well as higher-order education, recreation and health services.

Carnarvon and Exmouth both contain a diverse set of high-order functions, including civic administration, government offices and services, comparative retail, education, recreation, health and light industry. They also provide cultural and entertainment facilities.

The centres are the predominant hubs for employment within the region and are essential for regional economic prosperity. Both centres are serviced by regional airport facilities; and are important for accommodating growth in the region's tourism industry. In particular, Exmouth is the region's primary tourism base with its hinterland accommodating substantial numbers of visitors, peaking at seasonal periods.

Most of the existing hard and social infrastructure within the Gascoyne is located in either Carnarvon or Exmouth. Both centres have a stable permanent population base and have opportunities for growth.

3.2.3 Sub-regional Centre and Tourism Centre

Denham is the only Sub-regional Centre in the Gascoyne region. Through the provision of goods and services, sub-regional centres support the population and economic activities within their surrounding hinterland. 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. 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; in addition to a range of social infrastructure and services, including local recreation, health services and secondary education.

Coral Bay and Monkey Mia are considered to be the major tourism centres in the region. These centres have a small population base and their local economies are focused on tourism. These centres experience significant fluctuations in population due to the seasonal influxes of tourists. Tourism centres predominantly cater for tourists; and as such are generally service and experience oriented with some associated retail functions. Despite sitting on the same level of the activity centres hierarchy as sub-regional centres, tourism centres generally contain minimal

civic and social infrastructure as they predominantly service an itinerant population base. With respect to Coral Bay, due to its isolation and the number of visitors it attracts, there is a requirement for the ongoing provision of service workers accommodation. Currently, the *Ningaloo Coast Regional Strategy* does not support permanent residential accommodation or the creation of freehold lots for workers accommodation at Coral Bay.

3.2.4 Local Centre and Tourism Node

Local centres offer a level of service that generally deals with the daily needs of their service population, but with a lower level of choice than regional or sub-regional centres. Gascoyne Junction and Burringurrah Aboriginal settlement (see section 3.2.6) are considered to be the Gascoyne's local centres. Gascoyne Junction also serves as the seat of its local government.

Tourism nodes contain a negligible population base and as such the functions they provide cater exclusively for the needs of tourists; and like tourism centres they experience significant seasonal population fluctuations. Tourism nodes primarily accommodate overnight visitors and generally contain the necessary infrastructure to facilitate this function. They can also offer some basic retail facilities that are secondary to the core function of accommodation. Tourism nodes in the Gascoyne currently include caravan parks remote from other activity centres.

3.2.5 Service Centre and Minor Tourism Node

Service centres are generally located on a major State arterial roads and offer basic 'roadhouse' facilities, including minor vehicle repair and servicing.

Minor tourism nodes accommodate overnight visitors, but have a lesser capacity in comparison to tourism nodes. They generally have limited infrastructure related to this function, meaning that they are generally more constrained than tourism nodes. This category typically includes popular camping sites.

Lower capacity camping sites and other potential nodes for tourism are individually identified in previous regional strategies; however, they currently contain minimal or no facilities. It is recommended that future accommodation requirements are provided for in larger

tourism nodes and existing sites; and at this point in time, if other potential nodes for tourism were to be developed, it is preferred that they become day use sites. If additional nodes to cater for tourism, particularly accommodation, are considered necessary, further investigation will be required to determine suitable locations.

Notwithstanding the above, it is acknowledged that informal camping does occur in the Gascoyne. With respect to this, visitors should be encouraged to camp in areas designated for that purpose. This issue is proposed to be considered in future regional tourism planning initiatives.

3.2.6 Aboriginal settlements

Aboriginal settlements are often remote from service and economic centres; however, they can provide a number of urban functions and amenities such as housing, health, education, retail and recreation. *State Planning Policy 3.2 Aboriginal Settlements* defines an Aboriginal settlement as a discrete place that is not contiguous with a gazetted town; is inhabited or intended to be inhabited wholly or principally by persons of Aboriginal descent, as defined under the *Aboriginal Affairs Planning Authority Act 1972*; and which has no less than five domestic dwellings and/or is supported by essential services that are provided by one or more State agency(s).

In this context, Aboriginal settlements are considered to fit within the Settlement Hierarchy of the Gascoyne's Activity Centres Framework. Burringurrah, the Gascoyne's only Aboriginal settlement, is currently considered to function as a Local Centre.

3.2.7 Specialised Centre

Specialised centres are essentially centres of employment that concentrate on a specific type of activity. They generally do not provide functions similar to those provided in other Gascoyne activity centres and are therefore considered to sit outside the Settlement Hierarchy. They can be, but are not necessarily, located within relatively close proximity to other activity centres that contain a permanent population and typical urban functions.

The individual roles of the Gascoyne's specialised centres are diverse and include:

- a naval communications base at North West Cape;
- a Royal Australian Air Force base and a regional airport providing passenger aviation services at Learmonth;
- the private port facilities associated with salt mining at Useless Loop (Shark Bay Salt) and Cape Cuvier (which services the Rio Tinto operations at Lake MacLeod); and
- operating mine sites in the region.

Future specialised centres are also identified at:

- Bejaling Port – the possible site for a deepwater port;
- Overseas Telecommunications Centre site, Brown Range; and
- mine sites in the region that are either proposed or under development.

The Murchison Radio-astronomy Observatory in the adjoining Mid West region, which includes the primary Australian host site for the Square Kilometre Array, is identified as a Specialised Centre within that region. In particular, there are a number of radio quiet zones associated with the Square Kilometre Array site, some of which impact parts of the Gascoyne region. Accordingly, the boundary for the outer most zone that is within the Gascoyne region is indicated on the Framework map (Figure 10). For the full range of radio quiet zones within this area please refer to www.acma.gov.au. As radio quiet zones may have implications for certain types of land uses and activities occurring within prescribed areas, they may be a relevant consideration for affected local governments when reviewing their local planning frameworks including local planning strategies.

3.2.8 Conservation areas

World Heritage areas and State managed conservation parks and reserves (which include national parks, marine parks and other State managed conservation reserves) are distinguished from other activity centres as they purposely provide a conservation function and as such are considered to sit outside the proposed settlement hierarchy. They are considered to be influential to activity within the Gascoyne and are therefore recognised as being important to the Gascoyne's Activity Centres Framework.

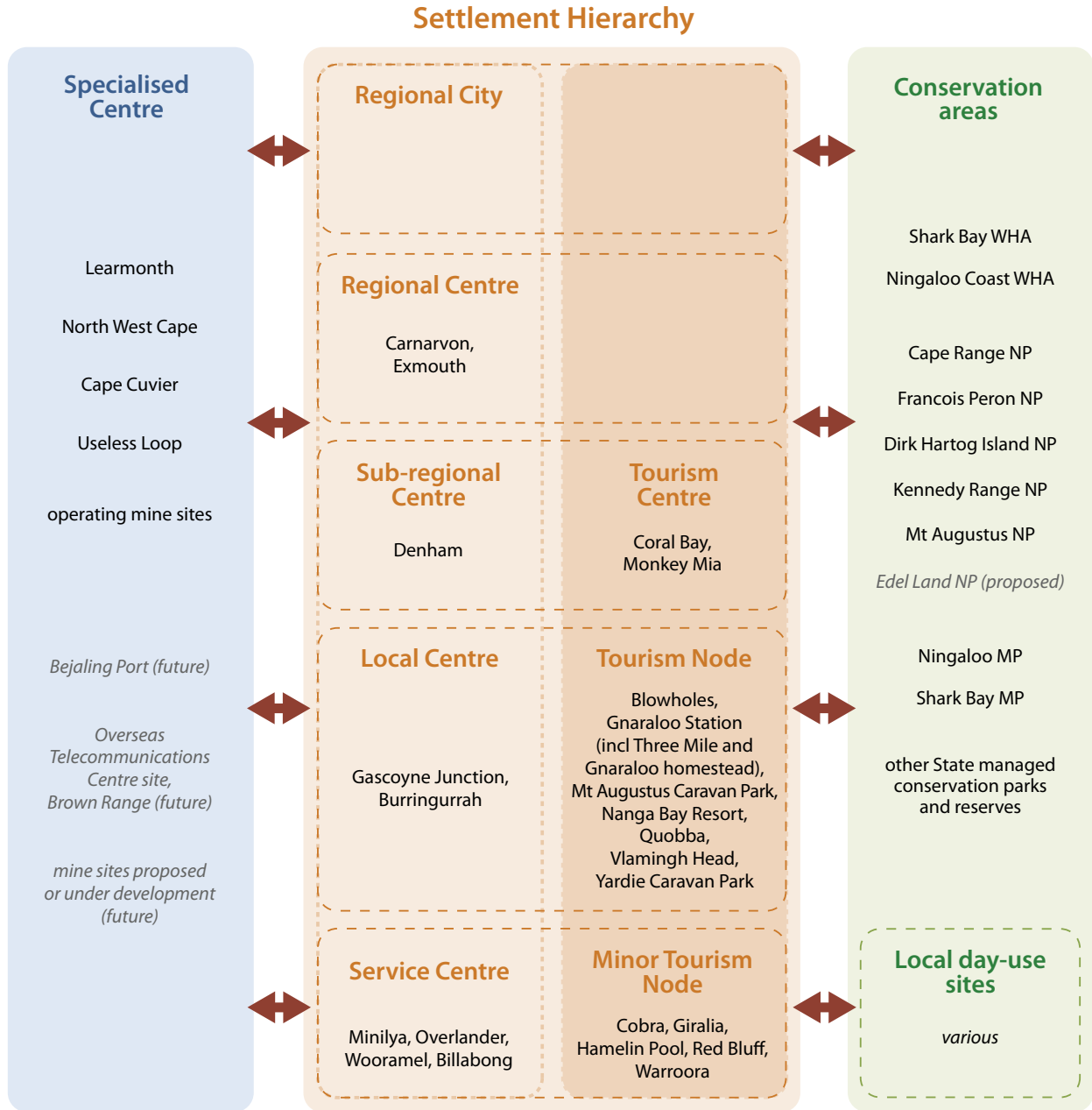


Figure 8: Gascoyne Activity Centres Framework

The Gascoyne region's five national parks, two marine parks and other conservation reserves are acknowledged as places where important activity occurs. They are important from an economic perspective as, through the promotion and conservation of some of the region's standout natural and landscape assets, they attract visitors from outside the region to the Gascoyne. State managed conservation parks and reserves are administered through management plans prepared by the Department of Biodiversity, Conservation and Attractions.

State managed conservation parks and reserves in the Gascoyne generally contain numerous attractions and provide basic visitor facilities, which can include visitor information centres, campsites, picnic areas, walk trails, interpretation of natural and cultural values and boat launching facilities. A single park or reserve can often contain several individual sites that are considered to provide amenity akin to other activity centre categories in this hierarchy, particularly tourism nodes and day-use sites. The process for planning recreation and tourism use in these sites is considered through management plans (Table 4) and this is outside the scope of this Framework. Refer to individual management plans for specific locations and details on the concentration of particular activities, including camping and day-use sites, within State managed conservation parks and reserves.

The region's World Heritage areas are described in section 2.3.1. It should be noted that the Shark Bay and Ningaloo Coast World Heritage Areas encompass a range of other regionally significant activity centres, including national parks, marine parks and other tourism nodes.

3.2.9 Local day-use sites

There are numerous day-use sites within and outside other Gascoyne activity centres. These sites offer various visitor amenities and facilities, but generally contain extremely limited or no formal provision for overnight accommodation. It is considered that the planning and management of individual sites constitute a local level issue and as such individual sites are not recognised as part of this Framework. Notwithstanding this, collectively day-use sites are acknowledged broadly as being important nodes for tourism activity at a regional level.

The management of day-use sites varies throughout the region and can often depend on the tenure of the subject land. Where relevant, the responsibility for the management of sites can include the:

- Department of Biodiversity, Conservation and Attractions, particularly for those sites within World Heritage Areas and State-managed conservation parks and reserves, including national parks. The management of these sites is usually administered by management plans, which are outside the scope of this Framework;
- local government; or
- pastoral leaseholder.

3.3 Population planning

The current Gascoyne population (2019 Preliminary Estimated Residential Population) is approximately 9,277 people (Australian Bureau of Statistics, 2020), with the majority (5,182 or 56%) living within the Shire of Carnarvon. The distribution of the remainder of the population is 2,871 (31%) in the Shire of Exmouth, 939 (10%) in the Shire of Shark Bay and 285 (3%) in the Shire of Upper Gascoyne.

Historically, population growth in the Gascoyne has generally been associated with the prosperity and development in the agriculture and tourism sectors. As a result, population growth rate is likely to vary depending on the level of economic investment and when this investment occurs.

At certain times of the year the Gascoyne experiences an influx of tourists and/or seasonal workers. Given the relatively low permanent population base, at peak times this can cause a significant increase in the regional population. In turn, this puts additional pressure on local and regional infrastructure.

Population forecasts and growth scenarios are important to guide future regional planning. They, along with economic projections, can be applied to inform analysis of possible future demand in planning for infrastructure, land supply, townsite capacity and other considerations that require a medium to long term timeframe for planning and/or construction.

3.3.1 Western Australia Tomorrow

Western Australia Tomorrow (Western Australian Planning Commission, 2019) contains population forecasts produced by the State Demographer. These are considered to be the State's official population forecasts. Forecasts have been produced for each local government area and planning region in Western Australia to the year 2031; and provide comprehensive demographic information about the age and sex structure of future population.

Table 7 summarises the forecasts that are applicable to this Framework, being those that are indicative of the median (Band C) and high growth (Band E) forecasts. For further information on these forecasts, including the full range of forecast bands and an explanation as to how they were derived, please refer to the Department of Planning, Lands & Heritage website at www.dplh.wa.gov.au.

The WA Tomorrow forecasts are regularly reviewed so please refer to the above website for the latest status of the forecasts.

3.3.2 Future scenarios

To provide an alternative to the population forecasts, population scenarios would have to be developed. Scenarios are not an official population forecast, but allow the investigation of opportunities over and above the historical trends, which may lead to alternative population futures. In addition, scenario population planning allows for greater timeframes to be considered as they are not expected to be as accurate as a forecast model. The development of scenarios may consider the possible population impacts of seasonal population influxes and additional economic activity and investment that may occur in the region.

The development of population growth scenarios is anticipated to commence through the regional investment blueprints that are under development by the regional development commissions.

Table 7: Gascoyne population projections

Local government area/region	Band	Current population ¹	Population forecast (median value) ²		
		2016	2021	2026	2031
Carnarvon	C	5,713	5,615	5,620	5,545
	E	5,713	6,430	6,590	6,560
Exmouth	C	2,788	2,960	3,195	3,500
	E	2,788	3,535	3,965	4,320
Shark Bay	C	963	970	1,025	1,050
	E	963	1,320	1,450	1,510
Upper Gascoyne	C	282	305	350	390
	E	282	480	585	645
Gascoyne Planning Region	C	9,746	9,850	10,190	10,485
	E	9,746	11,765	12,590	13,035

¹ 2019 Preliminary Estimated Residential Population (Australian Bureau of Statistics, 2019)

² WA Tomorrow (Western Australian Planning Commission, 2019)

3.4 Economic and regional infrastructure development

The following economic and regional infrastructure development strategies have been developed in response to the Gascoyne's key drivers and opportunities:

- E11** To encourage a whole-of-government approach to providing advice on regional infrastructure requirements to support the activation and development of the Gascoyne regional economy.
- E12** Encourage the diversification of the Gascoyne regional economy.

For the purpose of the Framework, regional level infrastructure is broadly considered to enable or support the development of the regional economy; and/or perform a function that caters for a regional catchment. Hence, regional infrastructure provision generally results in economic and/or social benefits for the region. This distinguishes it from local infrastructure, where the benefits predominantly extend to a more localised area.

The expansion of economic activity in the Gascoyne will underpin prosperity and population growth in the region. Opportunities for economic expansion have been recognised across various sectors of the regional economy including tourism, mining, horticulture and aquaculture. However, the expansion of these sectors and further economic diversification is reliant on key infrastructure including water, power, sewerage, roads, marine and airport facilities. The provision of supporting infrastructure and essential services, particularly at a regional level, must be coordinated in order to support economic development and capitalise on opportunities for growth.

The provision of regional infrastructure can lead to the activation or stimulation of multiple sectors of the regional economy. It can also provide opportunities for economic diversification within the region and greater amenity to the region's population. The expansion and diversification of industries in the Gascoyne would make the regional economy more robust, which is essential to attracting investment and growth to the region. The benefits of a strong, prosperous and

more diversified regional economy extend to the communities and residents within the region; and more generally to the State.

Planning regional infrastructure is important to support future regional development and growth. The undertaking of investigations and planning projects that specifically examine regional infrastructure requirements is often an essential first step in infrastructure delivery. Infrastructure planning at this targeted level allows potential solutions to be considered well in advance of when actual built infrastructure is required. It allows the consideration of numerous options, potentially including an evaluation of benefits, future demand, limitations and obstacles that may impact on the efficient delivery of further infrastructure. This process helps justify any measures required to secure or protect necessary land and resources to facilitate the delivery of future regional infrastructure efficiently and effectively.

The provision of additional regional infrastructure and the replacement or upgrading of existing infrastructure that has either aged or has inadequate capacity is likely to contribute to the development of the Gascoyne's economy. The State Government has already invested in a number of regional infrastructure projects that may contribute to the region's development. For example, a range of Gascoyne regional infrastructure projects have been recently undertaken or committed to, including:

- Exmouth Boat Harbour Stage 1 – new boat pens;
- new Mungullah Power Station, Carnarvon;
- new Coral Bay workers' accommodation village;
- Carnarvon Flood Mitigation Strategy Stage 2 works;
- Regional Mobile Communications Project;
- new regional police and justice complex – Carnarvon;
- Carnarvon Community College (Stage 1) – construction of a new K-12 campus;
- Ningaloo Centre – regional scientific research, community and visitor centre;
- Carnarvon Hospital redevelopment; and
- new community and primary health centre at Exmouth Health Campus.

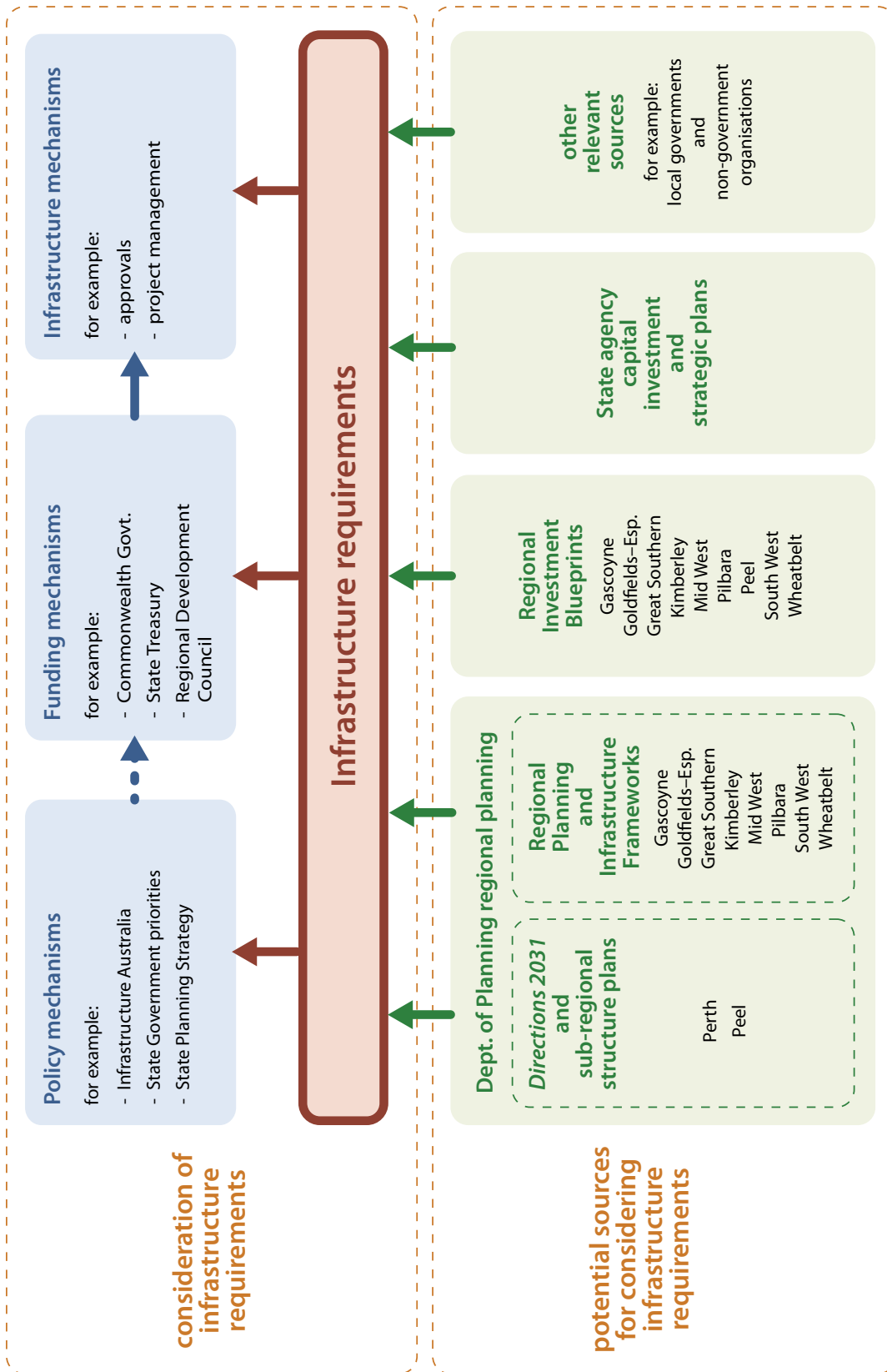


Figure 9: Considerations for identifying infrastructure requirements throughout the State

In addition, potential regional infrastructure projects may encompass a breadth of different infrastructure types including hard infrastructure (e.g. transport and energy projects), social infrastructure (e.g. health and education projects) and infrastructure planning. It needs to be recognised that any potential Gascoyne regional infrastructure projects will need to compete with infrastructure projects in other regions for funding and resources; and funding for individual infrastructure projects will be subject to normal budgetary and Treasury processes. In this regard, Figure 9 illustrates the considerations for identifying infrastructure requirements throughout the State.

3.5 Environmental and heritage planning

The Gascoyne's unique environmental setting and heritage define the region's character. The region's natural resources are invariably linked to economic activity and prosperity, essentially underpinning regional tourism, horticulture, pastoralism, fisheries and mining. The Gascoyne is within the Rangelands natural resource management (NRM) region.

The following environmental and heritage planning strategies have been developed in response to the Gascoyne's key drivers and opportunities:

- EH1** Protect and manage the region's significant natural resource assets.
- EH2** Investigate means to enable all sectors of the regional economy to meet the possible challenges presented by forecast long-term weather trends.
- EH3** Manage the changes to fishing regulations to mitigate the impact on recreation and small coastal communities containing commercial fisheries.
- EH4** Assess the requirement for a water allocation framework to assist in delivering sustainable water use outcomes.
- EH5** Protect and manage the region's cultural heritage and arts, including significant indigenous places, historic places and landscapes of significance.
- EH6** Investigate the future requirements for tourism and recreation sites in the Gascoyne.

Land-use planning has an important role in helping protect and manage natural resources and cultural assets, as it provides a means through which the impacts of land uses in areas containing significant resources and assets can be controlled. In particular, strategic planning at a regional scale allows upfront consideration of these assets in the land-use planning process. It also allows greater effectiveness in dealing with possible cumulative impacts of individual planning proposals. Regional strategic planning also provides a context for planning by local governments, which are encouraged to integrate natural resource management considerations into local planning strategies and schemes.

Numerous government and non-government agencies undertake natural resource management planning and projects in the Gascoyne, which is reflective of the variety of stakeholders with an interest in the effective management of the region's natural resources. For example, non-government organisations such as Rangelands NRM Western Australia have a number of strategic priorities to support and encourage the sustainable use of natural resources. They are also responsible for many natural resource management activities and projects within the Gascoyne.

Responding to an evolving environment, including through adapting management practices, is an important economic and environmental consideration for the Gascoyne. For example, recent trends in the temperature, wind and rainfall experienced in the region have progressively been departing from historical weather patterns; and forecasts indicate that these tendencies are set to continue. Climate change potentially has implications for land-use activities in the Gascoyne such as:

- fishery production;
- water availability;
- suitability of areas for land uses such as land uses such as pastoralism, horticulture and tourism;
- settlement patterns affected by changes in land use and environmental constraints; and
- coastal development setbacks and acceptable shoreline stabilisation techniques in response to sea level rise, storm events and changes in wave and wind patterns.

A number of initiatives to investigate such matters are occurring at a Federal, State and local level. It is important that these are given due consideration as they may have implications for future land-use planning in the Gascoyne. For example, various agencies have undertaken considerable research into the possible effects of forecast climatic changes on World Heritage properties in particular. The Gascoyne's World Heritage Areas contain extensive coastlines, leaving them especially vulnerable to potential impacts such as sea level rise.

The desire to expand the region's economy in order to attract growth poses a challenge, as to a large degree the Gascoyne economy is dependent on the region's significant environmental and heritage assets. Maximising the economic return from the region's significant environmental and heritage assets without damaging the assets themselves will be fundamental in ensuring ongoing sustainability and prosperity for the region on both economic and environmental fronts. Based on this premise, the following initiatives are supported by the Framework:

- the preparation of a natural resource management plan report for the Gascoyne to assist strategic regional land use planning for the region;
- investigation of basic raw materials needs and resources for the Gascoyne region;
- identification of priority agricultural land;
- development of a fisheries management plan for the Gascoyne Coast Bioregion;
- adaptation planning for economic activities and land uses that may be affected in the event that forecast climatic changes are realised; and
- review of sites identified in Gascoyne local government municipal inventories.

The Framework also supports the ongoing implementation of current practices, programs and recently completed initiatives that aim to manage natural resource assets, including the:

- coastal management vulnerability and risk assessment study, including coastal geomorphology mapping;
- incorporation of *Better Urban Water Management* framework principles in new development such as residential, rural residential and industrial areas;

- implementation of regional water planning to guide sustainable water allocation for future potable and non-potable water uses;
- protection of public drinking water source areas through appropriate strategies, reservations and special control areas in local planning strategies and schemes; and
- preparation and/or implementation of management plans for national parks and marine parks.

3.6 Carnarvon

Carnarvon is the largest centre in the Gascoyne and a regional residential, commercial and industrial centre. It is situated between the Shark Bay and Ningaloo World Heritage Areas, which provides an opportunity for Carnarvon to be promoted as an access point to these iconic areas. With a 2016 population of 5,367 (ABS 2016 Census, Carnarvon Statistical Area Level 2), the townsite contains just over half of the region's population. Carnarvon is generally recognised as being the administrative centre for the region and under this Framework it is considered that Carnarvon will remain as a key Regional Centre.

The following strategies for Carnarvon have been developed in response to the Gascoyne's key drivers and opportunities:

- C1** Prepare local planning strategy and review local planning scheme.
- C2** Provide the requisite hard and social infrastructure to facilitate and support future growth of Carnarvon's population and local economy.
- C3** Undertake flood management and mitigation works.
- C4** Identify sufficient and appropriately located land to accommodate growth.

The region's horticulture industry is predominantly located at Carnarvon. The Carnarvon Irrigation District extends along the Gascoyne River to the east of the town and is considered as part of the Carnarvon Regional Centre. The town's growth has historically been largely associated with prosperity

and development in the agriculture sector. Fisheries and tourism are other industries important to the local economy.

The main drivers for growth are expected to be Carnarvon's status as a regional centre, which will continue to attract State infrastructure, and the possible expansion of the horticulture area. Expansion of the horticulture area will likely require an expansion of industrial and commercial land for the associated service providers. Further research on this issue will be required in conjunction with that proposal.

The Gascoyne Development Commission's *Gascoyne Pilbara Project* (SGS Economics and Planning Pty Ltd, 2012) identifies that there is potential for Carnarvon to expand its role as a strategic road transport hub. Given its strategic location approximately halfway between Perth and Port Headland, in particular, there may be further opportunities to provide laydown and storage options to the resource sector supply chain at Carnarvon.

The ongoing redevelopment of the Carnarvon waterfront will improve the urban amenities of the place, having notable benefits for local residents. This is also considered to be important to the development of tourism in Carnarvon. With structure planning underway, future development on Whitlock and Babbage Islands may also increase Carnarvon's potential for tourism.

Town planning currently operates under the Shire of Carnarvon's Town Planning Scheme No. 10 (1988). The Shire is updating their local planning framework, including completing:

- a new local planning scheme;
- a local planning strategy; and
- structure plans, including for the Carnarvon horticulture area and the existing Carnarvon Airport.

The lack of provision of services, including reticulated sewerage, constrains some land for development in Carnarvon.

Inundation of areas during flood events poses a notable constraint to land development, especially in eastern areas of Carnarvon. It is also detrimental to the local economy as flooding damages horticultural produce and associated infrastructure. Implementation of flood mitigation plans will minimise the disruption to the

local economy caused by flooding and may improve prospects for development of land in affected areas. The completion of the Carnarvon Flood Mitigation Strategy Stage 2 works should make a significant impact in this regard.

An analysis of residential and industrial land supply in Carnarvon is proposed under an initiative of the Framework (Table 8, No. 5). This analysis would consider the required infrastructure to service anticipated demand.

3.7 Exmouth

Exmouth services a vibrant and growing economy broadly based on fishing, aquaculture, tourism and the offshore oil and gas industry. The Naval Communications Base at nearby North West Cape further diversifies the local economy. Its population of 4,325 in 2016 (ABS 2016 Census, Exmouth State Suburb) is expected to grow primarily due to continued expansion in the tourism sector. Exmouth also has potential to serve as a personnel base for resource projects in the north of the State.

Due to an increase in its share of the regional population and its important contribution to the regional economy over recent decades, Exmouth's significance as a centre in the Gascoyne is growing. It is in this context that Exmouth is identified in the Framework as a Regional Centre.

The following strategies for Exmouth have been developed in response to the Gascoyne's key drivers and opportunities:

- EX1** Prepare local planning strategy and review local planning scheme.
- EX2** Provide the requisite hard and social infrastructure to facilitate and support future growth of Exmouth's population and local economy.
- EX3** Undertake flood management and mitigation works.
- EX4** Identify sufficient and appropriately located land to accommodate growth.

The area's diverse economy provides numerous opportunities for further growth in Exmouth. The drivers for growth are economic activities associated with the marina boat harbour – primarily tourism, fishing and the oil and gas sector. The provision of upgrades to infrastructure may accommodate an expansion of these economic activities and may generate demand for additional industrial land.

Town planning currently operates under the Shire of Exmouth's Local Planning Scheme No. 4 (2019). The Shire is updating their local planning framework, including the preparation of a local planning strategy and a new local planning scheme. Additionally, a townsite structure plan has been developed to guide future land-use planning within the town.

An analysis of residential and industrial land supply in Exmouth is proposed under an initiative of the Framework (Table 8, No. 5). This analysis would consider the required infrastructure to service anticipated demand.

Flood management and mitigation is an important consideration in planning for Exmouth.

As Exmouth is a significant centre for regional tourism, it experiences considerable seasonal population influxes. This needs to be a consideration when planning for future infrastructure provision.

3.8 Denham

Denham is the administrative centre and primary settlement in the Shire of Shark Bay. Its local economy is principally focused on tourism and fishing. Surrounded by the Shark Bay World Heritage Area, it is located in close proximity to various conservation reserves that support tourism activity, including the regionally significant Tourist Centre of Monkey Mia. The region's natural and cultural attractions generate significant tourist activity and this has considerable economic benefits for Denham.

The provision of services to its local population and to the tourism and fisheries sectors highlights Denham's importance. It is in this context that Denham is identified as a Sub-regional Centre in the Framework.

The following strategies for Denham have been developed in response to the Gascoyne's key drivers and opportunities:

- D1** Prepare local planning strategy and review local planning scheme.
- D2** Provide the requisite hard and social infrastructure to facilitate and support future growth of Denham's population and local economy.
- D3** Identify sufficient and appropriately located land to accommodate growth.

Over the past decade the Shire of Shark Bay's population has shown a slight increase. Growth of the local and regional tourism sectors is likely to be the main driver for future growth in Denham. In particular, it is thought that the provision of upgraded maritime facilities would assist in facilitating expansion of these local economic sectors.

Monkey Mia predominantly caters for tourists, offering accommodation and other associated functions. As such, its population varies significantly seasonally due to influxes of visitors. The settlement is located approximately 24 kilometres from Denham and their local economies invariably complement one another. Monkey Mia is recognised in this Framework as a separate activity centre, although a consequence of its limited albeit specialised economic base and close proximity to Denham is that it is dependent on Denham for higher-order services.

Town planning for Denham and Monkey Mia currently operates under the Shire of Shark Bay's Local Planning Scheme No. 4 (2018). The Shire of Shark Bay Local Planning Strategy (2013) provides strategic direction to guide future land-use planning within the two settlements. A new local planning scheme is currently under preparation by the Shire, which will complement their recently finalised local planning strategy.

An analysis of residential and industrial land supply in Denham is proposed under an initiative of the Framework (Table 8, No. 5). This analysis would consider the required infrastructure to service anticipated demand.

3.9 Other key settlements

3.9.1 Coral Bay

Coral Bay is a major Tourism Centre located within the Shire of Carnarvon. It is an established settlement that caters predominantly for tourists and as such, its population varies significantly on a seasonal basis due to influxes of visitors. In addition to some general retail, Coral Bay offers limited civic and social functions at a scale commensurate with the temporary and itinerant nature of the population that it primarily services.

A Framework Agreement exists between the Baiyungu Aboriginal Corporation (BAC) and the State allowing the BAC to plan and develop a number of significant landholdings in and around Coral Bay for a range of land uses and activities such as a new workers accommodation village recently completed by LandCorp. The BAC represent the Baiyungu people, who are members of Gnulli Native Title-registered claim group.

The Coral Bay airstrip has been upgraded in recent years to provide an acceptable level of service for local and regional aviation needs; however, the location of the existing airstrip is considered to be constrained. As such, the Department of Transport has undertaken some planning to relocate the facility in the long term.

Town planning for Coral Bay currently operates under the Shire of Carnarvon's Local Planning Scheme No. 13 (2020). The *Coral Bay Settlement Structure Plan* (2014) and the Shire of Carnarvon Local Planning Strategy (2017) guide future land-use planning within the tourism centre.

3.9.2 Gascoyne Junction

Gascoyne Junction is the administrative centre of the Shire of Upper Gascoyne and the gateway to the Kennedy Range and Mount Augustus National Parks, and the inland Gascoyne. The December 2010 Gascoyne River floods, the highest in recorded history, destroyed or severely damaged a substantial number of buildings and facilities in the remote town, impacting significantly on service provision to residents and visitors and the local economy more broadly.

In response to this emergency and as part of the Gascoyne Revitalisation Plan, \$3 million from Royalties for Regions funding was allocated to the rebuild and enhance the town centre and tourism facilities at Gascoyne Junction. The Shire has contributed the remaining \$500,000 for the project. This project has restored essential retail amenities and tourist facilities for residents and visitors to Gascoyne Junction, Kennedy Range, Mt Augustus and the inland Gascoyne.

Specifically, this project has delivered a new fuel station, general store, tavern and restaurant, caravan park and a new main street. Importantly, the new facilities have been built above the one-in-one hundred year flood level.

Town planning for Gascoyne Junction currently operates under the Shire of Upper Gascoyne's Local Planning Scheme No. 1 (2018), with the Shire's Local Planning Strategy (2018) guiding future land use planning.

3.9.3 Burringurrah

The Burringurrah Aboriginal community is located on a Crown Reserve in the Shire of Upper Gascoyne. The settlement is located approximately 35 kilometres south of Mount Augustus.

According to the Gascoyne Development Commission, Burringurrah is well placed to capitalise on the growing interest in tourism; however, considerable expertise and support from outside the community would be required to truly realise this.

Planning for the community is guided by the Burringurrah Community Layout Plan No. 2, which was endorsed by the Western Australian Planning Commission and the Burringurrah Community Aboriginal Corporation in 2003. An addendum to the Burringurrah Community Layout Plan No. 2 was finalised in 2010.

Table 8: Implementation Actions

No	Initiative	Details	Lead agency	Status	Local govt	SPS ¹
<i>Planning and Governance</i>						
1	Planning Reform	Ongoing implementation of strategic priorities and actions for the reform of the planning system as a result of Phase 1: <i>Planning Makes It Happen – a blueprint for planning reform</i> ; and the development of Phase 2.	DPLH	Underway	All	Ec, PI, SI, Env
2	Review of SPP 6.3	Investigate the need to review <i>State Planning Policy 6.3 Ningaloo Coast</i> , which may include considering the future direction of the <i>Ningaloo Coast Regional Strategy Carnarvon to Exmouth</i> .	DPLH	Proposed	SoE, SoC	Ec, PI, SI, Env
3	Planning for Aboriginal Communities Program	Implementation of the DPLH Planning for Aboriginal Communities Program within the Gascoyne region.	DPLH	Underway	All	Ec, PI, SI
4	Regional Population Scenarios for the Gascoyne	To advise on population growth scenarios and/or aspirations for the Gascoyne.	GDC	Proposed	All	Ec, PI, SI
5	Gascoyne Land Supply and Infrastructure Analysis	Undertake a residential and industrial land supply analysis for Carnarvon, Exmouth and Denham including an investigation of the required infrastructure to service demand.	DPLH	Proposed	SoC, SoE, SoSB	Ec, PI, SI
6	Gascoyne Local Government Coastal Planning Study	Undertake a Gascoyne Coastal Planning Study to inform regional and local government planning.	DPLH	Underway	All	Ec, Env
7	Local Government Assistance Program	Implementation of program, which is currently funded to 2014, to provide assistance to local governments within the Gascoyne to facilitate local planning processes including reviews and amendments to local planning strategies and schemes, structure plans and environmental assessment.	DPLH	Underway	All	Ec, PI, SI, Env
8	Draft Country Sewerage Policy	Review the draft Country Sewerage Policy 2002.	WA Health	Underway	All	PI
9	WA Port Reform	Refine the governance structure of WA ports, including the consolidation of existing regional port authorities, in response to the recent WA ports review.	DoT	Underway	SoC, SoSB	Ec, PI
10	Social Housing Demand Model	To assist with policy, planning implementation and demand for the public, social and affordable housing sectors in the Gascoyne.	DoH	Proposed	All	SI
11	Gascoyne Housing Affordability Study	Undertake an analysis of housing affordability in the Gascoyne region.	DoH	Underway	All	SI, La

No	Initiative	Details	Lead agency	Status	Local govt	SPS ¹
12	Gascoyne Crown Lease Reviews	Review crown leases in the Gascoyne, including: the Ninglao Coast Pastoral Exclusion Zone; exclusions being considered as part of the 2015 pastoral lease renewal process; and coastal shack sites, including a review of site leases at the Blowholes.	DPLH (Lands)	Underway	All	Ec
13	Coral Bay Structure Plan	Preparation of a structure plan for Coral Bay, including reviewing the existing settlement plan.	SoC	Underway	SoC	Ec
14	Regional Waste Management planning	To investigate the need for comprehensive strategic regional waste management planning in alignment with the WA Waste Authority's <i>Western Australian Waste Strategy</i> , including strategic waste management plans and associated landfill environmental management plans.	DWER, GDC, LGAs	Proposed	All	PI, Env
15	Australian Defence Force Posture Review	Finalise and implement findings of the strategic Australian Defence Force Posture Review, with regard to the Department of Defence's assets in the Gascoyne.	DoD	Underway	SoE	Ec, PI, Sec
Economy and employment						
16	Gascoyne Regional Economic and Employment Lands Study	Undertake a regional economic and employment lands study for the Gascoyne to inform regional and local planning.	DPLH	Proposed	All	Ec
17	Gascoyne Regional Tourism Planning Study	To understand current and potential tourism demand and investigate the need for additional tourism initiatives and requirements in the Gascoyne.	GDC	Underway	All	Ec, Env
18	Mid West-Gascoyne Resources Development Strategy	Produce a high-level resources development strategy that identifies future work to support a situational analysis and facilitate economic transition in the Mid West and Gascoyne.	RDA-MWG	Underway	All	Ec
19	Gascoyne Regional Digital Economy Strategy	Establish a strategy to guide the development of the Gascoyne's telecommunications infrastructure to adequately service the region's economic and social requirements; including consideration of the impacts of new and emerging communications technologies.	DoC	Proposed	All	Ec
20	Rangelands Reform Program	Review land tenure arrangements in the Rangelands including diversification of uses in pastoral lands.	DPLH (Lands)	Underway	All	Ec
21	Gascoyne Regional Workforce Development planning	Further develop workforce strategies for the Gascoyne with respect to the direction contained in the State Government's framework <i>Skilling WA – a workforce development plan for Western Australia</i> .	DTWD	Underway	All	Ec

No	Initiative	Details	Lead agency	Status	Local govt	SPS ¹
<i>Economy and employment (cont.)</i>						
22	Gascoyne Foodbowl Initiative	Maximise opportunities for the horticulture industry and investigate opportunities for expansion of the industry through infill development, amalgamation of blocks and the release of new land for agriculture. Any expansion depends on the availability of water and the expansion of the Carnarvon borefield.	DAFWA, DWER	Underway	SoC	Ec, PI
23	Gascoyne Catchment Project	Strengthen and diversify the pastoral industry in the Gascoyne through developing individual property action plans to target investment into remedial works and a monitoring tool to document the historic and presently occurring change in the rangeland condition throughout the Gascoyne region. The project forms part of the Ecologically Sustainable Rangeland Management program funded by Rangelands NRM WA.	DAFWA	Underway	All	Ec, Env
24	Aquaculture Expansion Feasibility Study	Economic and environmental feasibility into expansion of aquaculture industry.	GDC, DoF	Proposed	All	Ec
25	Gascoyne Mining Potential Study	To understand the potential for mining in the Gascoyne.	GDC	Proposed	All	Ec
26	Gascoyne Service Hubs	Investigate opportunities in the Gascoyne for potential hubs to service the State's mining industry, on the premise that its geographic and economic potential may attract service industry companies if appropriate land and infrastructure were available.	GDC	Proposed	SoC, SoE	Ec
27	Gascoyne Marine-based Common Use Facilities Investigation	Further investigation into the implications for the Gascoyne region with regard to possible future marine based common use facilities.	DRD	Proposed	SoE	Ec, PI
28	Ningaloo-Shark Bay National Landscape Experience Development Strategy	Develop a strategic framework that identifies specific initiatives for regional tourism development, planning and marketing. Part of the implementation of Australia's National Landscapes Program to promote and develop regional tourism and support conservation of environmental assets.	Tourism WA	Underway	SoE, SoC, SoSB	Ec
29	AgriFood 2025+	Scenarios based initiative to examine future opportunities for a globally competitive agriculture and food industry in WA.	DAFWA	Underway	All	Ec
30	More Sheep	More Sheep is a partnership initiative of the Department of Agriculture and Food Western Australia (DAFWA) and the Sheep Industry Leadership Council (SILC) to address the critical issue of the decline in the Western Australian flock. Its primary focus is Western Australian producers, to assist them become more profitable by producing more sheep for the investment in their current flocks.	DAFWA	Underway	All	Ec

No	Initiative	Details	Lead agency	Status	Local govt	SPS ¹
Transport and infrastructure						
31	Gascoyne Regional Investment Blueprint	Development of a Regional Investment Blueprint to inform State Government investment, that from a regional development perspective outlines the future direction of the Gascoyne region, including the identification of priority infrastructure.	GDC	Underway	All	Ec, PI, SI
32	State Aviation Strategy	Development of a State Aviation Strategy to support the economic and social development of Western Australia through aviation services and infrastructure; and to provide a sound framework for policy setting; and future planning and investment in Western Australian international and domestic air services and airport infrastructure.	DoT	Underway	All	Ec, PI
33	Gascoyne Social Infrastructure Requirements Study	Undertake the Gascoyne Social Infrastructure Requirements Study to investigate social infrastructure requirements within the Gascoyne to inform regional and local government planning.	DPLH	Underway	All	SI
34	Gascoyne Regional Energy Planning Study	Undertake a study of the Gascoyne's regional energy infrastructure requirements; including transmission and generation, to meet demand and support regional development.	GDC	Underway	All	PI
Natural resources and cultural heritage						
35	Basic Raw Materials Study	To investigate basic raw material needs and resources for the Gascoyne region.	DMP	Proposed	All	Ec, Env
36	Gascoyne regional water planning	Coordination of regional water planning issues including groundwater allocation planning, drinking water source protection planning and rural water planning.	DWER	Underway	All	Env
37	Mt Augustus Management Plan	Establish a management plan for the Mt Augustus National Park, including the vesting of the area proposed to become a Conservation Park.	DBCA	Proposed	SoUG	Ec, Env
38	Shark Bay Marine Reserves Management Plan	Review and update <i>Shark Bay Marine Reserves Management Plan 1996-2006</i> (Shark Bay Marine Park).	DBCA	Proposed	SoSB, SoC	Env
39	Ningaloo Marine Park (Commonwealth Waters) Management Plan	Review and update management plan for Ningaloo Marine Park (Commonwealth Waters).	DoTE	Proposed	SoE, SoC	Env
40	Fisheries Management Plan for the Gascoyne Coast Bioregion	Develop an ecosystem based fisheries management plan for the Gascoyne Coast Bioregion.	DoF	Underway	All	Ec, Env

No	Initiative	Details	Lead agency	Status	Local govt	SPS ¹
<i>Natural resources and cultural heritage (cont.)</i>						
41	Natural Resource Management Land Use Plan Report	Prepare a natural resource management land use plan report to investigate the integration of natural resource management into strategic regional land use planning for the region.	DPLH	Underway	All	All
42	Identification of High Quality Agriculture Land	Determine state and regional areas of High Quality Agriculture Land following identification and mapping of agricultural land quality for dryland and irrigated agriculture.	DAFWA	Underway	SoC	Ec
43	Risk Management Strategy	Minimise vulnerability to agricultural industries seasonal variability through mitigation and adaptation strategies.	DAFWA	Underway	All	Ec
44	Review of Gascoyne Local Government Municipal Heritage Inventories	Conduct a review of municipal heritage inventories in the Gascoyne to identify conservation priorities and inform subsequent updates to inventories.	LGAs	Proposed	All	SI
45	Gascoyne Regional Cultural and Arts Action Plan	Development of an action plan to focus on cultural and arts activity outcomes for the Gascoyne region.	DCA	Underway	All	SI
46	Gascoyne Aboriginal Cultural Needs Study	A study to consider the long-term cultural needs of the Gascoyne region's Aboriginal population.	GDC	Proposed	All	Ec, SI

¹ This column indicates an initiative's alignment with the strategic directions as presented in the *State Planning Strategy 2050* (Western Australian Planning Commission, 2014). The abbreviations for relevant strategic directions are explained in the list following this table.



List of acronyms

Lead agencies and local governments

DoC	Department of Commerce
DoD	Department of Defence
DLGSCI	Department of Local Government, Sport and Cultural Industries
DPIRD	Department of Primary Industries and Regional Development
DWER	Department of Water and Environmental Regulation
DoF	Department of Fisheries
WA Health	Department of Health
DoC	Department of Communities
DMIRS	Department of Mines, Industry Regulation and Safety
DBCA	Department of Biodiversity, Conservation and Attractions
DPLH	Department of Planning, Lands & Heritage
DTWD	Department of Training and Workforce Development
DoT	Department of Transport
DotE	Department of the Environment
LGAs	Local Government Authorities
RDA-MWG	Regional Development Australia Midwest Gascoyne
SoC	Shire of Carnarvon
SoE	Shire of Exmouth
SoSB	Shire of Shark Bay
SoUG	Shire of Upper Gascoyne
Tourism WA	Tourism Western Australia

Strategic directions from the *State Planning Strategy 2050*

Ec	Economic development
PI	Physical infrastructure
SI	Social infrastructure
Env	Environment
Sec	Security





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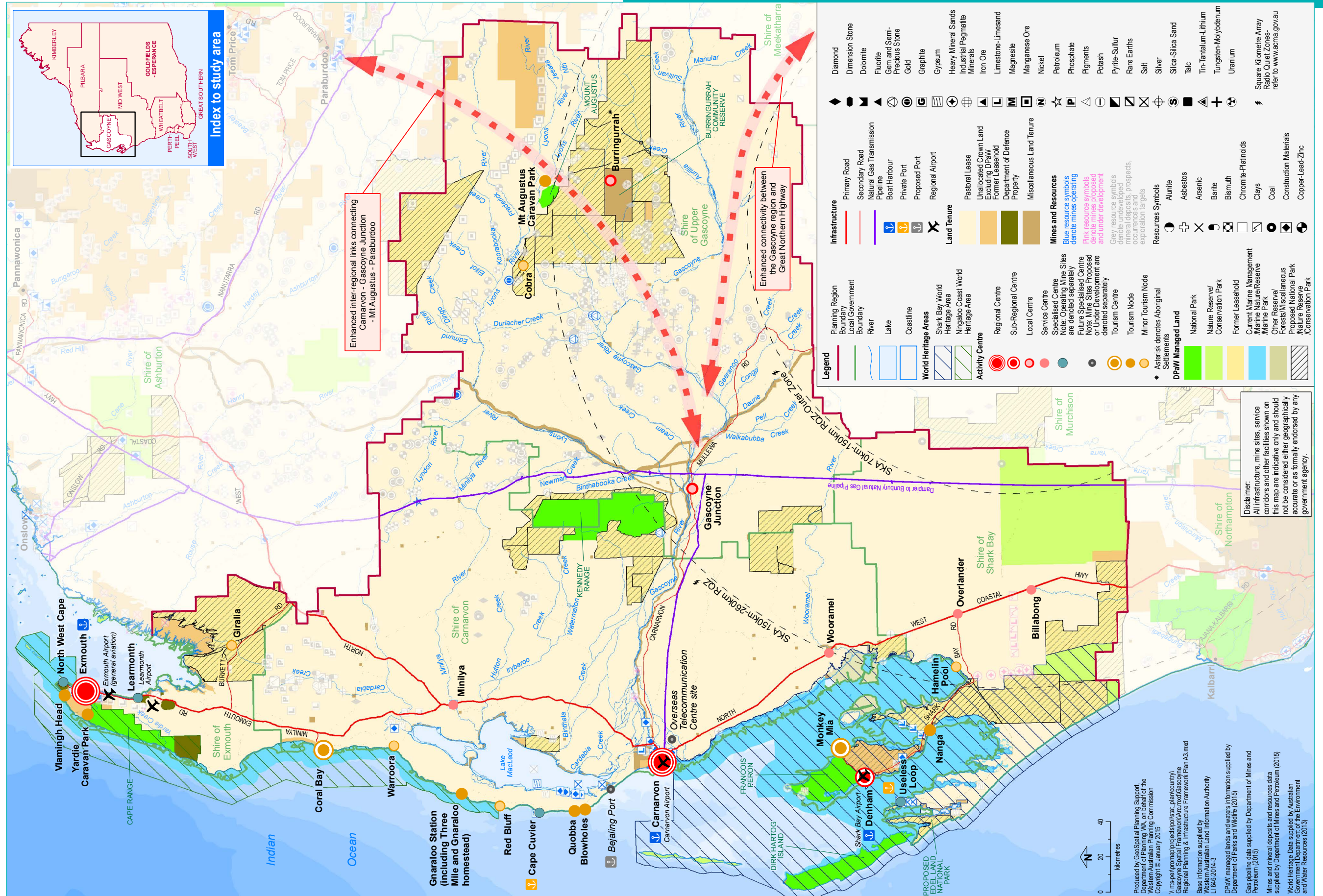


Figure 10: Gascoyne Regional Planning and Infrastructure Framework map

