

Far North Region Plan

A volume of the South Australian Planning Strategy



July 2010



Government of South Australia
Department of Planning
and Local Government

Far North Region Plan

A volume of the South Australian Planning Strategy

This document is the *Far North Region Plan*.

The document has been prepared by the South Australian Government, through the Department of Planning and Local Government, as a volume of the South Australian Planning Strategy pursuant to section 22 of the *Development Act 1993* and is subject to change.

For further information

Please visit www.dplg.sa.gov.au or telephone the Department of Planning and Local Government on 08 8303 0600.



Government of South Australia

Department of Planning
and Local Government

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OVERVIEW

Chapter A



OVERVIEW

Chapter A

Background

The *Far North Region Plan* (the Plan) guides future land use and development in the region. It has been prepared by the South Australian Government, through the Department of Planning and Local Government, in collaboration with the Outback Areas Community Development Trust, the Northern Regional Development Board, the relevant natural resources management boards and the four councils of the region:

- Port Augusta City Council
- District Council of Coober Pedy
- Flinders Ranges Council
- Roxby Downs Council.

The priorities identified in the *State of the Outback Report 2005* prepared for the Outback Areas Community Development Trust and during consultation on the 2007 update of *South Australia's Strategic Plan* (as summarised in Appendix 3) also informed the development of the Plan.

As well, submissions received from industry, interest groups and the community during the public consultation period from October to December 2008 were valuable in improving and finalising the Plan.

The authors of the Plan have drawn on the most recent data and statistics available on the Far North; however, due to the region's remoteness, data collection has been sporadic and in many cases data from several areas has been combined, which tends to mask the region's diversity of issues and needs. In addition, the available statistical data does not include the region's significant number of temporary residents. The authors have sought to address these shortcomings by studying the region in sections, disaggregating data where possible and accounting for temporary residents.

For more information about how the *Far North Region Plan* was developed, please see Appendix 1.

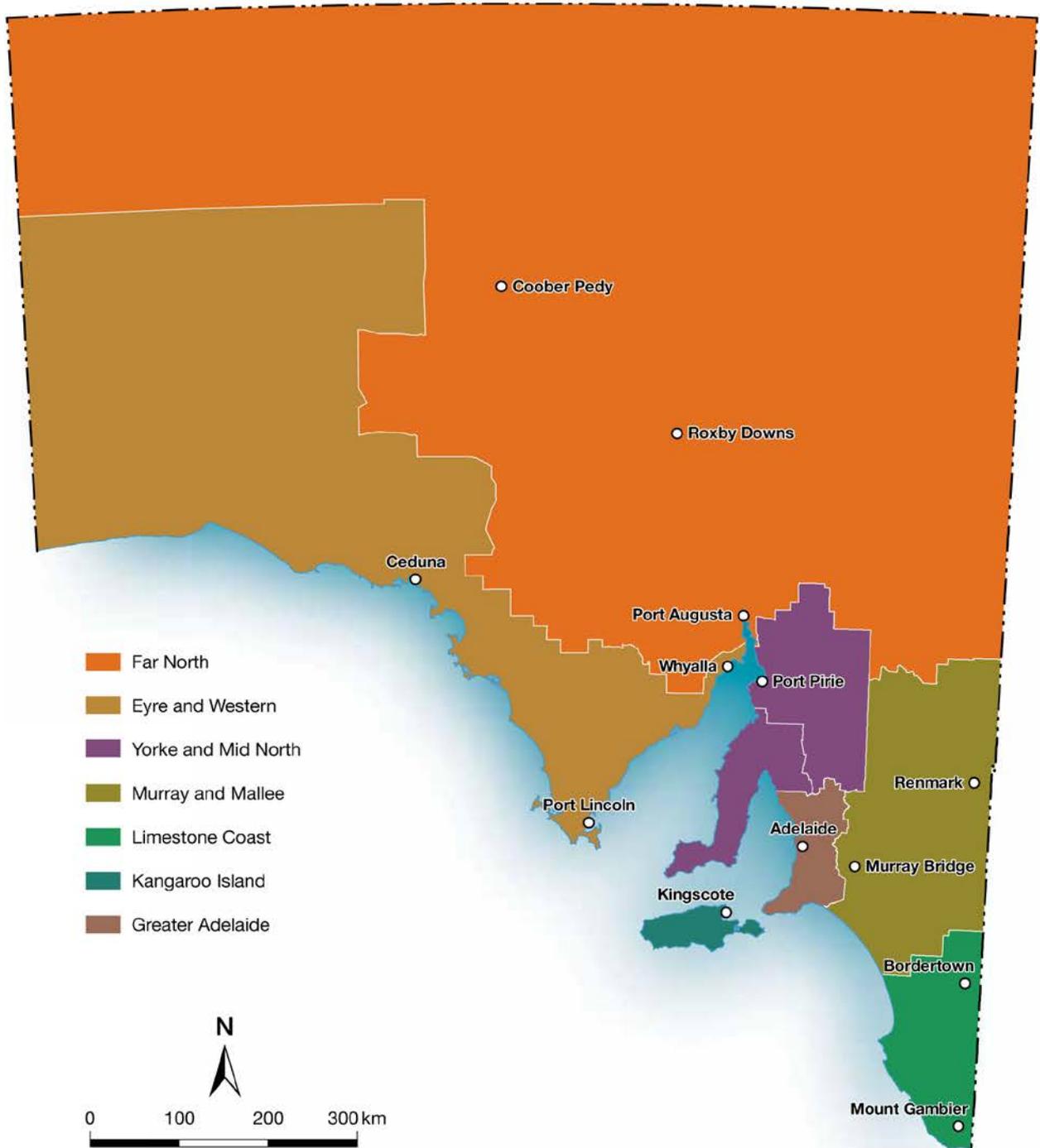
The role of the South Australian Planning Strategy

The *Far North Region Plan* is one of seven regional volumes that, together with *The 30-Year Plan for Greater Adelaide*, make up the South Australian Planning Strategy. The regions covered in the regional volumes of the Planning Strategy are: Eyre and Western, Far North, Kangaroo Island¹, Limestone Coast, Murray and Mallee, Yorke and Mid North² (refer to Map A1).

In the regional volumes the State Government, in partnership with local government, gives direction on land use and development for the period 2010–2036. They set out how the State Government proposes to balance population and economic growth with the need to preserve the environment and protect the heritage, history and character of regional communities. They outline where people are likely to live and the projected make-up of the population so that

1 Kangaroo Island is part of the Fleurieu and Kangaroo Island SA Government Administrative Region but for planning purposes it is covered in a separate regional volume of the South Australian Planning Strategy. The Fleurieu Peninsula is covered in *The 30-Year Plan for Greater Adelaide*.

2 The Yorke and Mid North regions are currently covered in the South Australian Planning Strategy as separate volumes. They will eventually be combined into one volume.





government agencies can plan for the provision of services and infrastructure, such as transport, health, schools, and aged care and community facilities.

At a local level, the regional volumes provide guidance and resources for councils as they undertake their Strategic Management Plans and review and amend their Development Plans. Development Plans contain the zones, maps and explicit rules that specify what can and cannot be done with land in the council area. Councils must ensure that their Development Plans and Development Plan Amendments are consistent with the land-use policies and directions of the relevant regional volume. The regional volumes also guide Development Plans and Development Plan Amendments in unincorporated (out of council) areas, as undertaken by the Minister for Urban Development and Planning.

The Structure Plans for the state's major regional cities, including Mount Gambier, Port Augusta, Port Lincoln, Port Pirie and Whyalla, flow from the regional volumes.

The South Australian Planning Strategy is a requirement of section 22 of the *Development Act 1993*. The Minister for Urban Development and Planning is responsible for its preparation on behalf of the State Government and for reporting to parliament annually on its implementation. Each volume of the strategy must be reviewed at least every five years.

The objectives of the regional volumes

To maximise the state's opportunities and respond to its challenges, the regional volumes of the South Australian Planning Strategy have three interlocking objectives. They are to:

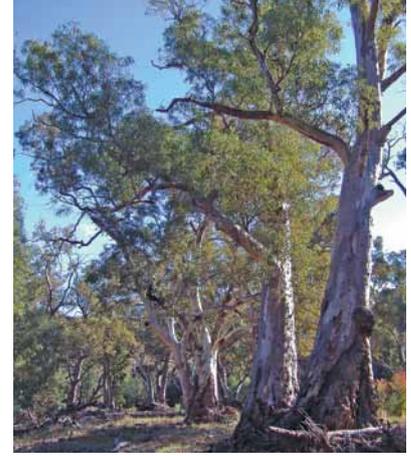
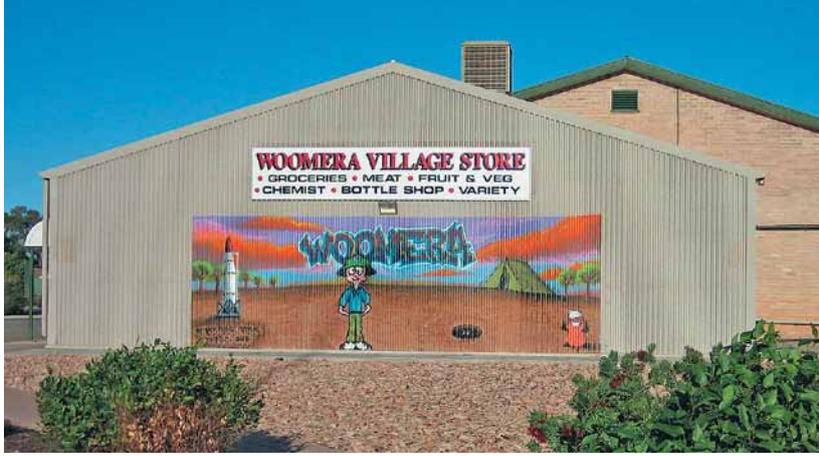
- maintain and improve liveability
- increase competitiveness
- drive sustainability and resilience to climate change.

Figure A1 shows how these three objectives interrelate.

Alignment with state government policies

The regional volumes of the South Australian Planning Strategy provide a bridge between broad, statewide planning aims and local, council-specific planning needs, and they work in tandem with key state policies, leading to a consistent approach to land use and development across the state.

Firstly, the volumes support the achievement of a range of social, economic and environmental targets in *South Australia's Strategic Plan*. Second, they feed into the *Strategic Infrastructure Plan for South Australia (2005–06)* by identifying the infrastructure priorities needed to support economic and population growth. Third, they tie in with the *Housing Plan for South Australia (2005)*, *Water for Good—A Plan to Ensure our Water Future to 2050 (2009)*, the *Economic Statement (2009)*, the *State Natural Resources Management Plan (2006)*, the regional natural resources management (NRM) plans (2009) and *South Australia's Waste Strategy (2005)*.



Relationship to South Australia’s Strategic Plan

Figure A2 shows the relationship of the regional volumes with *South Australia’s Strategic Plan* (SASP) and its targets, as well as the links to several state policy initiatives.

See Appendix 3 for further information about how the *Far North Region Plan* contributes to specific SASP targets.

How the regional volumes will work at regional and local government levels

While the regional volumes will primarily operate at a regional level, local government will play a pivotal role in their implementation, in collaboration with DPLG, other state government agencies and

stakeholders such as regional development and natural resources management boards. The collaborative process will feature regional forums, which will bring councils and relevant bodies together each year to agree on long-term land-use and infrastructure priorities, appropriate targets, and the need to focus their respective resources on implementing the priorities.

Figure A1 – Objectives of the regional volumes of the South Australian Planning Strategy

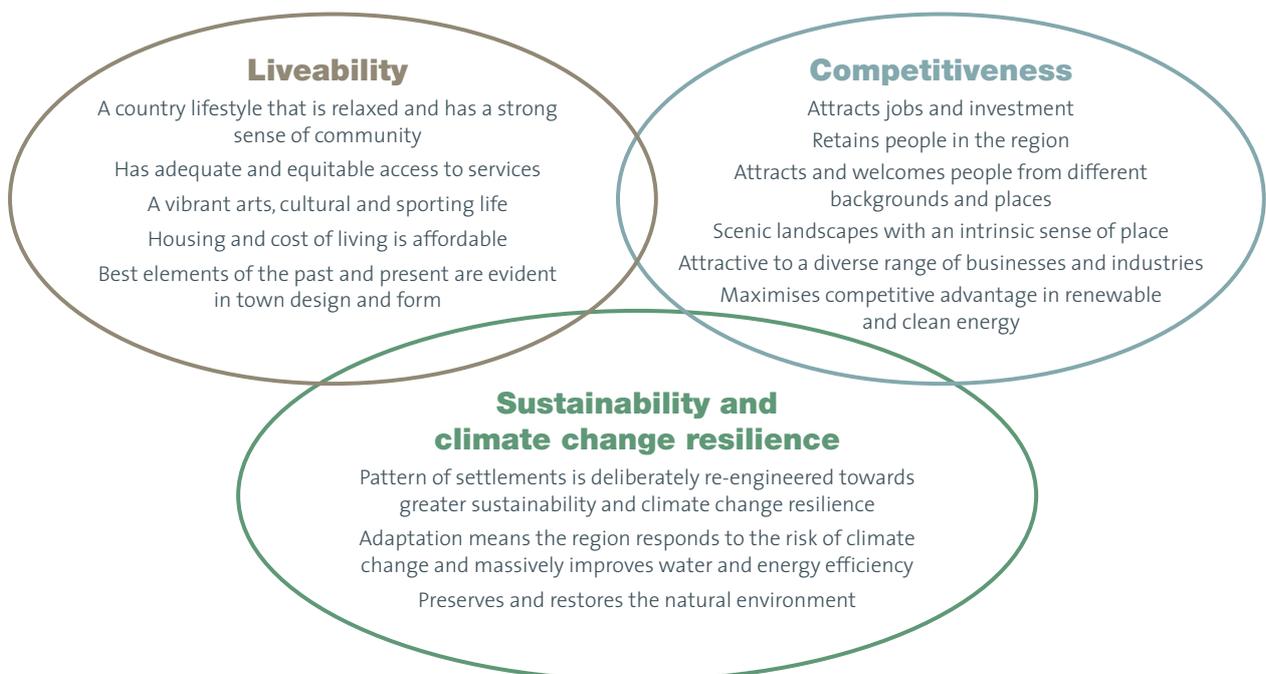


Figure A2 – The Far North Region Plan’s relationship with key state government policies



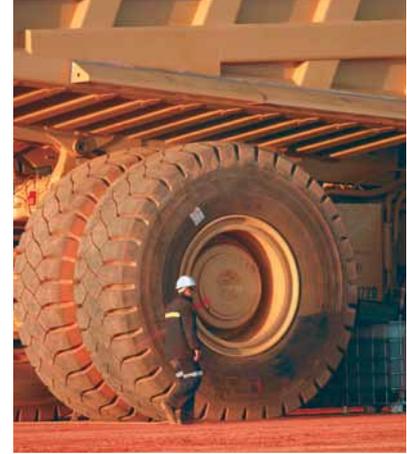
Planning for change in regional South Australia

The regional volumes of the South Australian Planning Strategy set out land-use policies to manage the changes that are forecast to occur across the regions. Of particular concern are changes in population and climate, which are

having, and will continue to have, significant impact on the demand for services and infrastructure, the natural environment, the character of communities and the economic prosperity of the regions.

Regional population change

The State Government believes that sustainable population growth is essential to maintain a healthy balance and a labour force that can support our economy. While much of the state's projected population growth is expected to occur in Greater Adelaide, regional areas will also grow significantly.



Courtesy of Oxiana

Table A1 – Population trends and targets by region 1996–2036

Region	Population trends		SASP T5.9 Target—Maintain regional SA's share (18%) of state population			
	ERP in 2008 ^a	Average annual growth rate 1996–2008 (%)	Share of 2008 regional population ^b (%)	Population target in 2036 ^c (based on 2008 share)	Population increase 2008–36 (persons)	Population growth 2008–36 (persons per year)
Eyre and Western	58,072	0.19	19.54	77,385	19,313	715
Murray and Mallee	70,125	0.23	23.60	93,446	23,321	864
Far North	28,460	-0.46	9.58	37,925	9,465	351
Limestone Coast	65,402	0.35	22.01	87,152	21,750	806
Yorke and Mid North	75,112	0.15	25.28	100,092	24,980	925
Total	297,171	0.17	100.00	396,000	98,829	3660

The make-up of the state's population is also changing dramatically—it is ageing at a faster rate than the other Australian states and this will bring significant challenges for planning, particularly in terms of the type and location of housing and its proximity to services.

South Australia's Strategic Plan (SASP) calls for regional South Australia to maintain an 18 per cent share of the state's total population; this would entail about 99,000 additional people taking

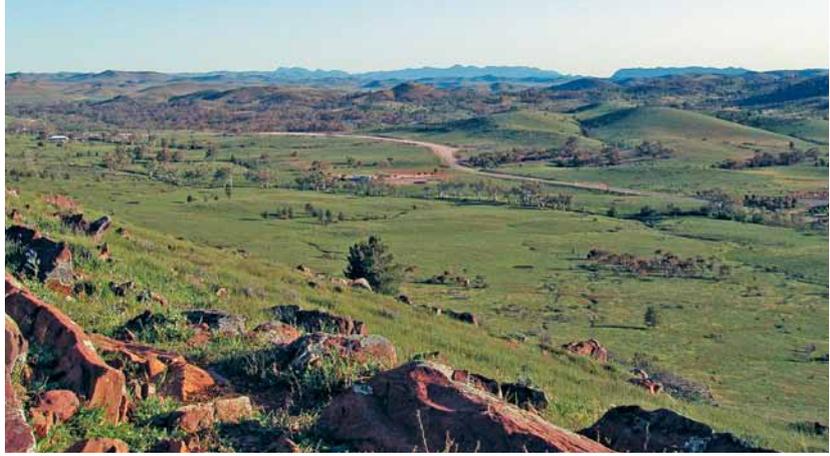
up residence in regional areas, resulting in a regional South Australian population of 396,000 people by 2036.

Table A1 breaks down this population target by region and indicates the past population growth rates (1996–2008).

Each region requires an average annual growth rate of 1.03 per cent to achieve its population target increase and maintain its 2008 share of the estimated resident population (ERP).

Notes to Table A1:

- a ERP (estimated resident population). Australian Bureau of Statistics, *Regional population growth, Australia*, cat. no. 3218.0, ABS, Canberra, Apr. 2009.
- b Department of the Premier and Cabinet, *South Australia's Strategic Plan, DPC*, Government of South Australia, Adelaide, 2007, <www.saplans.org.au>.
- c South Australia's population is expected to reach 2.2 million by 2036. Department of Planning and Local Government, *The 30-Year Plan for Greater Adelaide: Background Technical Report, DPLG*, Government of South Australia, Adelaide, 2009, p. 16, <www.plan4adelaide.sa.gov.au>.



While overall population numbers in regional areas have remained relatively static during the past decade, there have been significant changes in where people are choosing to live.

Numbers have declined in the more sparsely populated areas, particularly those in the Far North, and in settlements with less than 1000 people (with the exception of coastal communities). Changes to population distribution are being driven by the restructuring of farming enterprises, resulting in larger and fewer agricultural properties; the interstate and intrastate migration of people seeking a regional lifestyle; and changing industry demands.

Generally, towns with more than 1000 people have grown; several of these towns have had the fastest rates of population growth in the state. Larger centres such as Port Lincoln, Murray Bridge and Mount Gambier have continued to expand, while in Port Pirie, Port Augusta and Whyalla the population has stabilised and shown some improvement after a sustained period of decline.

The demographic profile of the regions also has been changing, with an ageing population and generally declining numbers of young people.

However, increasing economic investment in the regions and the expansion and diversification of primary industries, aquaculture, mining and the services that support tourism and older populations are expected to attract and maintain more young people and people from overseas. This will contribute to the achievement of the SASP population growth target.

To achieve the SASP workforce targets, the South Australian Government, through the Department of Further Education, Employment, Science and Technology, is working with industry to develop workforce action plans in the mining, defence, construction, health, and advanced manufacturing sectors. As well, industry skills boards are developing workforce development plans to address the demand for labour and skills in industries that have lost workers to mining.

Any potential impacts on natural resources, the environment, biodiversity, and the character of communities as a result of these changing population patterns and related development will need to be carefully managed.

Climate change

The potential effects of climate change on the regions range from threats to water supply, increased risk of bushfire and greater fragmentation of native habitats to increased pressure on health care services from more vulnerable people, such as the elderly.

The State Government believes it is critical to intervene now to help the regions prepare for and adapt to long-term climate change. Securing water and energy supplies is fundamental to economic, social and environmental wellbeing in the face of such change.



In recent years, state and local government and regional communities have improved water security through augmentation of supply, the introduction of permanent water conservation, and measures such as wastewater re-use and stormwater harvesting. Increased housing density, improved water efficiency of buildings and the incorporation of water-sensitive urban design (WSUD) principles in the development process will lead to more efficient water consumption in regional towns. State and local governments also are developing, by 2014, regional demand and supply plans, as outlined in *Water for Good—A Plan to Ensure our Water Future to 2050*, for the eight natural resources management regions across the state, as well as investigating how regional communities can diversify their water supply sources.

In addition, state and local governments continue to investigate ways to organise land use such that it supports renewable and clean energy technologies. These opportunities will give South Australia a competitive advantage in a carbon-constrained economy. Investment in infrastructure will be critical to realise such opportunities.

These initiatives will extend the life and reliability of our water and energy supplies and allow the population and the economy to grow without placing unsustainable demands on our natural resources.

Our understanding of climate change and its ramifications is evolving rapidly. It is critical that policies and decisions are based on the best current information, and are able to be adjusted in the future if required.

Managing change

South Australia's regions face the challenge of managing the impacts of climate change and population growth to protect viable primary production industries and the natural resources upon which they depend. This challenge has been compounded by reduced rainfall during several drought years. In this time rural communities have again shown their resilience and capacity to manage in both good and bad years.

Local councils, regional and economic development boards, natural resources management boards and the state government have been working with the community, local groups and industry to develop effective strategies for specific sectors (for example, primary industries and tourism) and specific parts of the region (for example, individual towns and council areas) that will lead to a sustainable future for the regions.

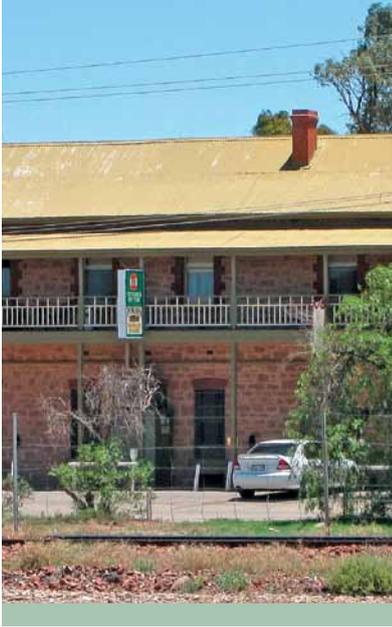
They recognise that population and economic growth must be balanced with protection of the environment, including biodiversity, and retention of the regions' unique qualities for the benefit of future generations and to attract and retain skilled workers.





THE CONTEXT FOR THE PLAN

Chapter B



THE CONTEXT FOR THE PLAN

Chapter B

The Far North region at a glance

The Far North region:

- covers more than half the geographical area of South Australia, including four councils, the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands³, and the unincorporated (out of council) areas north of the Riverland, Mid North and Eyre Peninsula and west of the Maralinga Tjarutja (MT) Lands and Ceduna
- has a population of 26,727⁴
- contains extensive mineral resources and accounts for 70 per cent of South Australia's mining outputs
- generates more than \$3 billion a year for the South Australian economy—the highest contribution of any non-metropolitan region of the state⁵

- produces 13 per cent of the state's total farm-gate value of livestock
- contains defence and aerospace facilities of strategic importance to the state
- has a strong tourism base that includes the Flinders Ranges, salt lakes, outback landscapes and other natural features
- has a major city, Port Augusta (population 13,874), which has extensive infrastructure, including an airport, and a large number of educational, retail and commercial facilities and services
- has three other important commercial and service centres—Coober Pedy, Leigh Creek and Roxby Downs.

See Appendix 2 for detailed information about the Far North region, including its population distribution, economy and infrastructure.

Key issues for the Far North region

The following issues were identified as critical to the region's future by local government, industry groups and communities during consultations during 2005–08. These issues, which are grouped under four themes, are the key drivers for the *Far North Region Plan*.

Environment and culture

- Value the region's environmental and cultural assets, including its heritage assets, significant geological structures, sites of significance to Aboriginal communities, the unique coastal habitat of the Upper Spencer Gulf, and conservation areas of state and national significance
- Recognise the fragile nature of the arid environment and gather more information on the state of the region's environmental assets to inform management practices and land-use and development planning

3 The Pitjantjatjara Land Rights Act, 1981 provided for the vesting of title of the Anangu Pitjantjatjara Yankunytjatjara Lands (APY Lands) to the people known as Anangu Pitjantjatjara. The Executive Board of Anangu Pitjantjatjaraku Yankunytjatjara (APY Executive Board) was constituted under this Act. The APY Executive Board oversees the activities of the various constituent groups serving the needs of the people on the APY Lands. It also helps shape policies regarding economic and social development. The Executive Board comprises elected members from across the APY Lands with the Chairperson chosen by the Board.

4 Australian Bureau of Statistics, *2006 Census of Population and Housing*, ABS, Canberra, 2007.

5 EconSearch (2005) *Quantifying the Economic Contribution of South Australia*



- Manage tourism and mining developments to ensure they do not adversely affect fragile environments
- Value the strong Aboriginal culture and the unique multicultural communities of towns such as Coober Pedy
- Better manage the limited quantity and quality of water resources
- Plan for the impacts of climate change, particularly the effects of extreme weather events on ecosystems, pastoral activities, infrastructure and housing design
- Manage potential biosecurity threats arising from increased population and transport activity, as well as the increased disturbance of soils.

Economic development

- Better manage the impact of expanded mining and support industries, which bring employment opportunities to the region but also lead to a loss of people from towns and properties to work in those industries
- Ensure a sufficient and appropriate supply of industrial and residential land in Port Augusta and Coober Pedy so they are well positioned for opportunities arising from new mining activities
- Ensure economic diversity to foster resilience to boom-and-bust cycles of the mining industry
- Support the retention of the individual character of towns and environments as these are critical to the tourism industry
- Attract and retain a skilled workforce, including health professionals, police and tradespeople, through measures such as providing affordable housing and rental accommodation to ensure ongoing services in towns and offset the loss of people to the mining industry.

Population and settlements

- Support Aboriginal people moving to towns for greater employment opportunities or to access health and other services
- Collect better data on changing demographics to inform planning
- Support the retention of volunteers and progress associations, which are critical to the wellbeing, self-reliance and effective functioning of towns, especially in light of a declining volunteer base
- Address the increasing demand for facilities and housing for older people in Coober Pedy, Port Augusta, Leigh Creek and Quorn
- Retain the distinctive character and built heritage of the outback and Flinders Ranges towns to support the tourism industry and sustain a sense of local identity



- Strategically plan Port Augusta to ensure land is available to maximise the opportunities associated with expanding mining and defence activities
- Address the shortage of affordable housing for purchase and rent, particularly in Coober Pedy, Roxby Downs, Port Augusta and Quorn
- Manage the demand for water and power by designing houses for the climate and by increasing the capture and recycling of waste and stormwater.

Infrastructure and service provision

- Consider the implications of temporary residents and seasonal population fluctuations on services and infrastructure
- Upgrade and maintain the water, electricity, roads, and information, communication and technology (ICT) infrastructure, which is critical to meet the needs of the existing population, and make further investment in growing areas
- Improve public transport and continue to maintain roads and airstrips, which are critical to providing access to health services
- Retain, protect and improve strategic infrastructure (roads, railways, ports, airports and transmission corridors) to support the expansion of mining operations
- Upgrade the waste management infrastructure in small communities to meet Environment Protection Authority (EPA) requirements
- Retain and expand health, education and police services in key centres
- Retain services in Leigh Creek to support the communities of the northern Flinders Ranges
- Provide infrastructure with minimal environmental impact
- Ensure that infrastructure will not adversely affect the aesthetics or character of the outback.



THE VISION FOR THE FAR NORTH REGION

Chapter C



THE VISION FOR THE FAR NORTH REGION

Chapter C

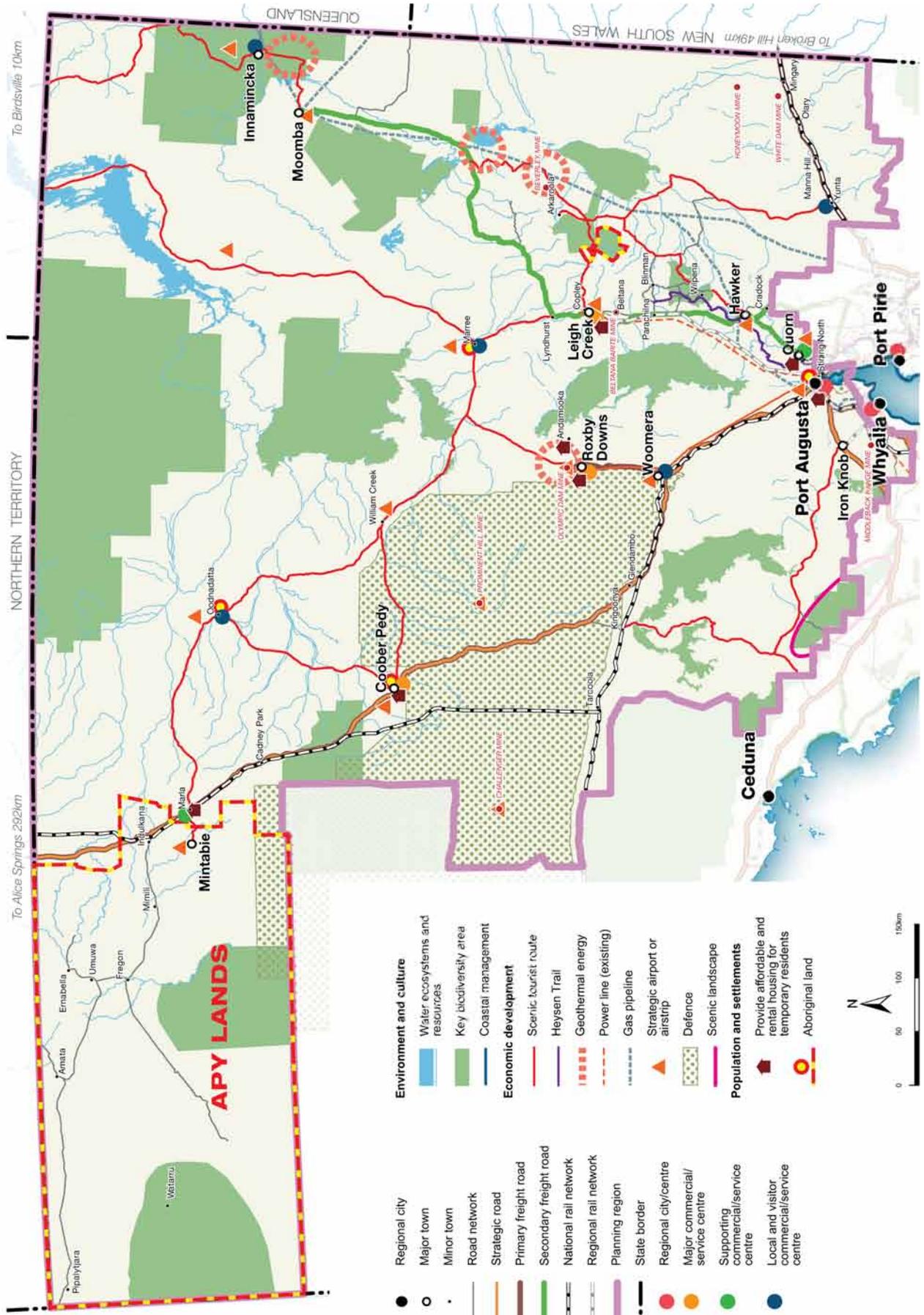
An integrated approach

The *Far North Region Plan* is a coordinated and integrated vision for land use and development across the region. It responds to the opportunities and challenges facing the region and identifies the planning priorities, principles and policies necessary to achieve the vision (refer to Map C1).

The Plan allows for communities to develop and grow, and encourages initiatives that help retain the special qualities of the Far North while fostering vibrant and distinctive towns that support a range of lifestyles. It supports activities that benefit the local and regional economy, provide local employment and attract people to the region. It recognises the region's variations in geographical features, economic strengths and community aspirations, and seeks to make the most of the different opportunities each presents. It seeks to balance the needs of people today with those of future generations.

The aims of the vision are to:

- manage the region's population and industry growth, with a focus on Port Augusta, Roxby Downs and Coober Pedy
- build sustainable local service towns and communities supported by strategic infrastructure and services planning
- strengthen the tourism industry in the outback and Flinders Ranges, building on the region's rich natural and cultural assets
- expand the mining and defence industries and associated infrastructure
- introduce sustainable and innovative approaches to securing water and energy supplies
- manage natural resources sustainably with the aim of losing no more species and protecting areas of high natural value.







PRINCIPLES AND POLICIES

Chapter D



PRINCIPLES AND POLICIES

Chapter D

This chapter outlines the principles and the policies that are required to realise the vision for the Far North region. These are set out under three themes:

- environment and culture
- economic development
- population and settlements.

Under each theme the Plan identifies:

- planning-related priorities for councils (and the Minister in out-of-council areas) to consider when developing Strategic Management Plans and updating Development Plans⁶
- principles to guide land-use planning and development
- planning-related policies that provide ongoing direction to councils (and which must be reflected in their Development Plans).

While the policies and priorities of the *Far North Region Plan* may change over time, the principles will be a constant driving force for future generations to ensure that the region is competitive, liveable, sustainable and resilient to climate change.

The contribution of these principles to *South Australia's Strategic Plan* targets is described in Appendix 3.

⁶ These priorities were identified during public consultations in 2006, 2007 and 2008.



The principles are:

- 1** Recognise, protect and restore the region's environmental assets
- 2** Ensure the efficient use of water and energy
- 3** Protect people, property and the environment from exposure to hazards
- 4** Effectively manage waste, wastewater and stormwater
- 5** Identify and protect places of heritage and cultural significance, and desired town character
- 6** Create the conditions for the region to become resilient to the impacts of climate change
- 7** Protect and build on the region's strategic infrastructure
- 8** Provide and protect serviced and well-sited industrial land to meet projected demand
- 9** Safeguard mineral, oil and gas resources and support further exploration, extraction and processing
- 10** Reinforce the Flinders Ranges and the outback as iconic tourist destinations
- 11** Retain and support ongoing aerospace and defence industry operations
- 12** Retain and strengthen the economic potential of pastoral lands
- 13** Focus commercial development in key towns and ensure it is well sited and designed
- 14** Foster sustainable alternative energy and water supply industries
- 15** Support aquaculture and fishing industries at Port Augusta
- 16** Reinforce the role, functionality and vibrancy of towns and settlements
- 17** Strategically plan and manage township growth
- 18** Design towns to provide safe, healthy, accessible and appealing environments
- 19** Provide residential land for a supply of diverse, affordable and sustainable housing to meet the needs of current and future residents and visitors

ENVIRONMENT AND CULTURE

Overview

The region's natural environmental and cultural assets play essential roles in guiding its future development, underpinned by a range of existing plans, strategies and agreements. Settlements and industry are inextricably dependent on climate and water resources, as well as land- and water-dependent ecosystems. As well, heritage sites and structures of significance provide an essential sense of identity and connection with place.

The design, siting and management of development must prevent adverse impacts on these critical assets and minimise the exposure of people and property to danger from natural hazards, such as floods, bushfires and landslides.

Achieving sustainable levels of demand for water and energy is also essential, particularly considering the effects of climate change.

Several organisations have policies to guide the management of the environment, particularly state and regional natural resources management (NRM) plans⁷; Environment Protection Authority policies, codes of practice and guidelines; Coast Protection Board policies; the *Biodiversity Plan for the Northern Agricultural Districts of South Australia* (2001); and the *Marine Planning Framework for South Australia* (2006).

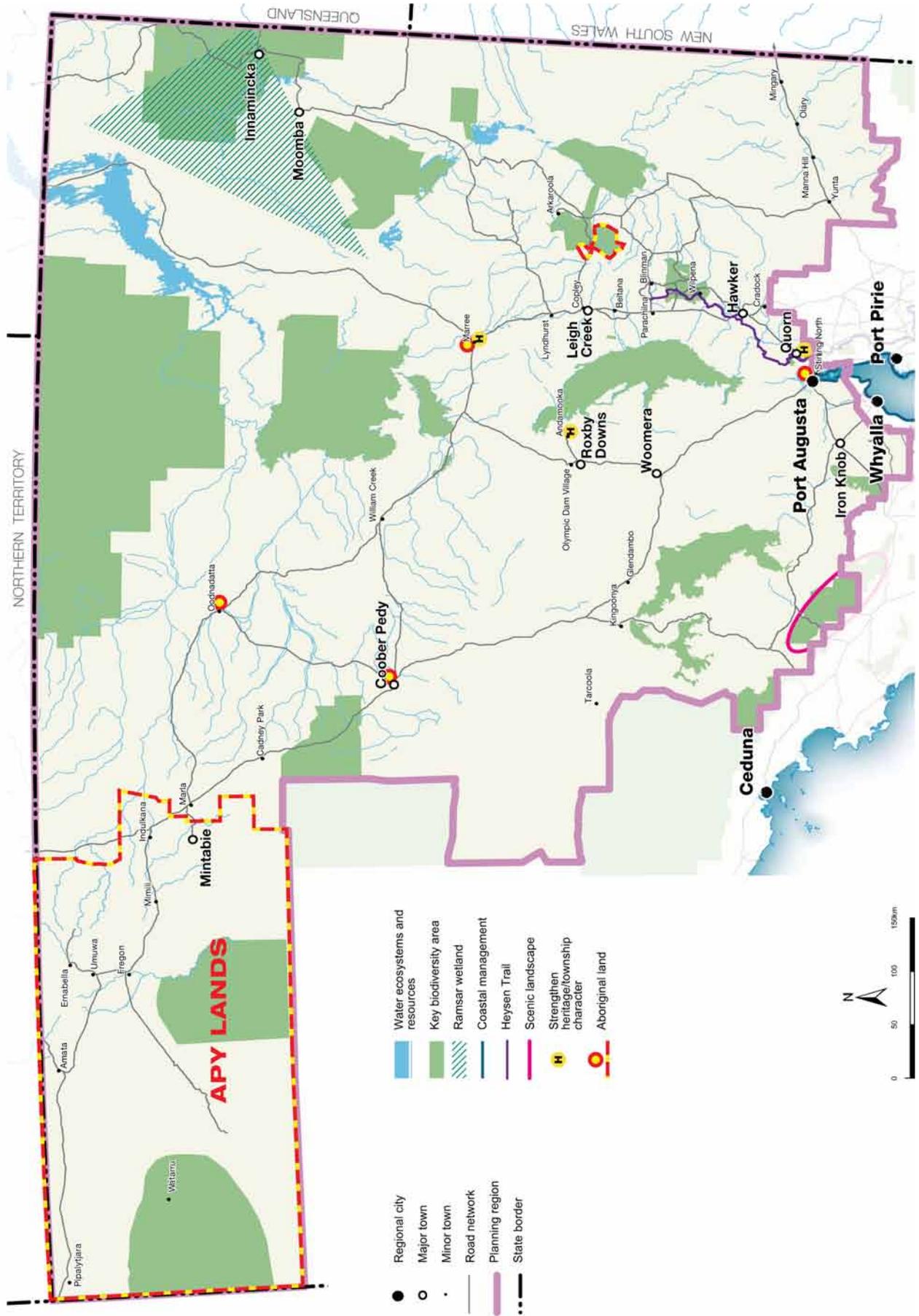
Several more specific studies further guide management of environmental resources in the region, including heritage surveys, the *Conservation Assessment of the Northern and Yorke Coast* (2007) and the *South Australian Arid Lands Biodiversity Strategy* (2007). In addition, the Australian, South Australian and Northern Territory governments, in conjunction with universities and other partners, are undertaking an on-going study to improve the understanding and long-term management of the Great Artesian Basin.

Councils should take these plans and studies into account when they review and update their Development Plans.

Priorities for councils

- Incorporate information from studies of the state of water resources and directions for the management of these resources (including the Great Artesian Basin) into Development Plans
- Incorporate information from environmental studies (for example, sea level variation effects, landscape mapping, conservation assessments) to inform the review/development of coastal zones in the Port Augusta Development Plan. In particular, ensure the Development Plan anomalies identified in the Conservation Assessment of the Northern and Yorke Coast are rezoned as a priority, and undertake a landscape assessment of the Flinders Ranges, review heritage surveys/assessments and incorporate identified sites, including local heritage sites, into Development Plans
- Incorporate information from environmental studies to inform the review and updating of Development Plans, including identifying areas of high biodiversity value
- Expand new wastewater treatment infrastructure in Port Augusta and Whyalla to exclude saline groundwater intrusion and maximise opportunities for water re-use.

⁷ Regional Natural Resource Management Plans are being developed, bringing together the work of former water catchment management boards, pest and plant boards, and soil conservation boards.





Principle 1

Recognise, protect and restore the region's environmental assets

Water

The Far North region has significant water ecosystems, including Lake Eyre Basin, one of the world's largest internally draining systems. The basin contains numerous creeks and river systems of high conservation value, including the Cooper and Warburton creeks and the Diamantina, Macumba, Peak, Neales and Alberga rivers. The Coongie Lakes are a wetland of international importance under the Ramsar Convention.

Other groundwater resources in the region are vital to the northern Flinders Ranges.

Further studies are required to better understand the capacity of all the region's groundwater resources and their associated ecosystems, to ensure land-use and development decisions support the ongoing health of the ecosystems, and to ensure that settlements and industrial activities can be sustained.

Other parts of the region depend on surface water catchments that are reliant on unpredictable episodic weather events for recharge and are subjected to high rates of evaporation.

Policies

- 1.1 Protect the quality and function of water ecosystems by preventing the adverse impacts of land use and development (such as impeded surface and subsurface water flows, increases in acid sulfate soils, overuse of resources, erosion, land degradation and clearing, and pollution).
- 1.2 Ensure development retains natural watercourses and drainage patterns through appropriate buffers and water-sensitive urban design (see Box 1).

- 1.3 Encourage water harvesting initiatives where ecologically appropriate.
- 1.4 Pursue best practice water use efficiency through the built form at both house and town level, drawing upon water-sensitive urban design techniques.

Coastal, estuarine and marine environments

Port Augusta is located at the headwaters of the Spencer Gulf. The area is valued by local residents and has particular significance for Aboriginal people who have strong historical and current associations with the Gulf's land and waters.

Good management of coastal areas and the marine environment is essential for the survival of a range of species. The Upper Spencer Gulf wetland system, which is included in A Directory of Important Wetlands in Australia⁸, acts as a fish nursery, and provides physical protection from coastal waters. The grey mangroves in the Winnowie Conservation Park form part of the largest undisturbed stands of grey mangroves remaining in South Australia.

⁸ Environment Australia, *A Directory of Important Wetlands in Australia, Third Edition*, Environment Australia, Canberra, 2001.

Of all the coastal areas of the Northern and Yorke Coast, the extensive saltmarsh areas at the head of the Gulf have been identified as having the highest priority for conservation.⁹ As saltmarsh complexes are particularly vulnerable to sea level rise, adequate land is required to support important fish nursery habitats, which will be endangered as the tide levels rise.

Aboriginal sites and objects located near the coast, in dunes and in the waters, are protected by state law.

Marine Plans are being progressively developed to provide more direction on the marine environment and ensure that its future development and use is sustainable. These plans and marine parks will complement the South Australian Planning Strategy and must be taken into account by councils in the review and updating of Development Plans.

Box 1—Water-sensitive urban design (WSUD)

WSUD techniques help to improve water quality and quantity, and reduce flood risk in urban areas, while enhancing biodiversity. They can be incorporated into development projects across a range of types and scales, including homes, streets, parking areas, subdivisions and multi-units, commercial and industrial developments, and public land. The techniques include:

- permeable paving of footpaths, common areas and parking spaces above underground water storage facilities
- water efficient fittings and appliances
- maintaining fixtures (for example, stopping leaks and drips from plumbing and taps)
- green roofs and living walls (that is, plantings on roofs and down walls)
- appropriate landscaping (for example, efficient irrigation, mulching, wind and sun protection, minimal lawn area, selection of suitable plants)
- wetlands to capture and treat runoff water
- capture and storage of rainwater and stormwater for residential re-use, or to irrigate parks, sporting fields and other open spaces
- capture, treatment, and re-use of wastewater.

More information about WSUD principles and techniques can be found in the *WSUD Technical Manual for Greater Adelaide*, available at <www.planning.sa.gov.au/go/wsud>. While the manual focuses on Greater Adelaide, many WSUD techniques can be applied in the Far North region.

⁹ Department for Environment and Heritage, *Conservation Assessment of the Northern and Yorke Coast*, DEH, Adelaide, 2007.



Policies

- 1.5** Protect coastal, marine and estuarine areas of conservation, landscape and environmental significance by avoiding development within these areas. In limited circumstances the development may require such a location, such as a tourist development of state significance, in which case the social and economic benefits must be demonstrated to outweigh the environmental and amenity impacts.
- 1.6** Protect coastal features and biodiversity by establishing coastal zones (refer to Box 2) that incorporate:
- ▶ habitats that are highly sensitive to the direct impacts of development
 - ▶ important geological and/or natural features of scientific, educational or cultural importance
 - ▶ landscapes of very high scenic quality.

Box 2—What is a coastal zone?

Coastal zones in Development Plans incorporate:

- coastal features and habitats that are highly sensitive to the direct impacts of development, including coastal dunes, coastal wetlands, samphire (tidal marsh), mangrove areas and estuaries
- important coastal geological features and other natural features of scientific, education, heritage or cultural importance (such as coastal cliffs)
- buffers separating development from sensitive coastal habitats or important marine fauna sites
- areas where exposure to coastal hazards (such as seawater flooding or erosion) has not been addressed (for example, by a seawall or a strategy to protect development)
- coast protection measures such as erosion buffer areas, seawalls and levee banks
- high-quality coastal landscapes and land of rural character that provides a backdrop to the coast.

Areas not required to be in a coastal zone include: landscapes that provide a backdrop to the coast but do not include coastal features; areas where exposure to coastal hazards has been addressed; and farming or primary production land.

Source: EPLGA (2007) Eyre Peninsula Coastal Development Strategy

Land biodiversity

Conservation areas, regional reserves and Indigenous Protected Areas (which cover more than 20 per cent of the Far North region) play an important role in supporting the region's biodiversity. Current conservation areas include the Flinders Ranges; the Vulkathunha-Gammon Ranges; the Witjira, Coongie Lakes, Lake Eyre, Lake Torrens and Lake Gairdner national parks; the Innamincka and Strzelecki regional reserves; the Mount Brown, Dutchmans Stern, Simpson Desert and Wabma Kadarbu Mound Springs conservation parks; and the Mount Willoughby, Nantawarrina, Walalkara and Watarru Indigenous Protected Areas. Another two conservation parks—Pualco and Bimbowrie—are being proposed.

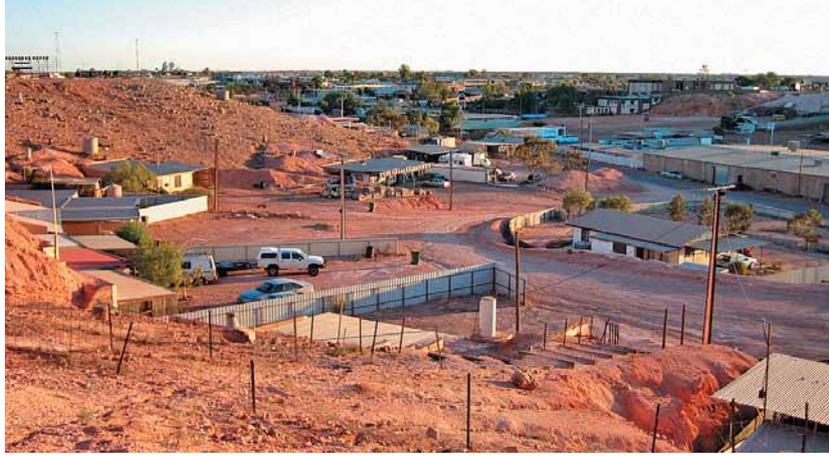
The retention and management of native vegetation and habitats across the region on both private and public land also play an important role in reversing the impacts of grazing and other human activities on soil quality, rate of erosion, loss of habitats, and the introduction of pest plants, animals and pathogens.

The South Australian Government (through the Department for Environment and Heritage) and the SA Arid Lands NRM Board are developing a South Australian arid lands biodiversity strategy covering the bioregions of the Stony Plains, Flinders Olary Ranges, Sandy Deserts, Gawler Ranges and Channel Country. The strategy will recommend actions for areas designated as conservation priorities and will include direction on necessary amendments to Development Plans to ensure priority areas are protected from inappropriate development.

Note: To protect the region's biodiversity, ecological investigations and impact assessments should be undertaken in areas that are proposed for rezoning or development.

Policies

- 1.7** Introduce a clear hierarchy of environmental areas to be protected to improve development certainty and transparency, and incorporate the protection of these areas into Development Plans and Structure Plans. The three categories in the hierarchy, which will be managed through Structure Plans and Development Plans, are:
- ▶ **areas of high environmental significance**, including protected public lands (such as National Parks and Conservation Parks), private/public lands under a Heritage Agreement, and land containing high-value native vegetation. These areas will be protected from development unless a specific regulatory exemption applies



- ▶ **areas of environmental significance**, including habitat areas and lands that have human uses, such as primary production, but also support biodiversity because the uses are of relatively low environmental impact. Higher impact land uses in these areas should be avoided. If development cannot be avoided, the impacts will be minimised and offsets provided
- ▶ **areas designated for human use**, where human use is the principal consideration. Development is to be consistent with Development Plans and existing legislation.

- 1.8** Recognise areas of high biodiversity value, and locate and design development to prevent the loss, degradation and/or fragmentation of native vegetation and any loss of species and/or ecological communities.
- 1.9** Provide for environmental connections to link areas of high biodiversity value and create buffers as a means of managing the interface with conservation areas.
- 1.10** Avoid any impact on biodiversity, where possible. If impact is unavoidable, it should be minimised and offset. A comprehensive offset scheme, based on existing offset provisions and drawing on models such as bio-

banking, will be developed to provide for a net gain to biodiversity through flexible offsets. The offsets could be made across regions or by funding designated rehabilitation programs. The scheme will also encourage carbon offsets.

- 1.11** Identify new areas of conservation significance and ensure their protection.

Scenic landscapes

The rugged Flinders Ranges and the vast outback rangelands distinguish the Far North from other parts of Australia and are valued by local communities and visitors.

In the Flinders Ranges in particular, attention is needed in the planning and design of development to ensure significant landscapes are retained.

Policies

- 1.12** Acknowledge, protect and manage areas of significant landscape and amenity value, including landscapes that form attractive backgrounds and entrances to towns and tourist developments.

Box 3 – Environment Protection and Biodiversity Conservation Act 1999

Applicants/proponents of developments may be responsible for forwarding development proposals to the Australian Government Environment Minister. The Minister is responsible for determining if the action is a controlled action, pursuant to the *Environment Protection and Biodiversity Conservation Act 1999*, and subject to assessment and approval processes under that Act.

1.13 Avoid development in areas with significant landscapes that can be viewed from tourist routes, walking trails, the beach and the sea unless the development requires such a location, such as a development of state significance, in which case the scale, height, design and siting of buildings must:

- ▶ protect views to, from and along the ocean and scenic coastal areas
- ▶ minimise the alteration of natural land forms
- ▶ be visually compatible with the character of surrounding areas
- ▶ restore and enhance visual quality in visually degraded areas, where feasible.

1.14 Avoid adverse impacts of development on landscapes through site selection and design alternatives that reduce the height or bulk of structures. Note that landscape screening to mitigate the visual impacts of development is not a substitute for re-siting or re-design.

Principle 2

Ensure the efficient use of water and energy

Ensuring water resources are managed within sustainable limits and reducing greenhouse gas emissions are priorities for the Far North region.

Other than Port Augusta and Woomera, the communities of the region depend on underground water sources of varying quality. There is scope to build on the re-use of stormwater and wastewater occurring in the region's larger towns.

The community recognises the need to regulate extraction from underground water resources to ensure ongoing supply. A mapping and capping program of existing bores has halved extraction from the Great Artesian Basin over the past 30 years, and a study to improve the understanding and long-term management of the basin is being undertaken by the Australian, South Australian and Northern Territory governments in conjunction with universities and other partners. Similar studies are required to guide the management of other groundwater resources in the region, including those supplying the APY Lands, to ensure settlements and industrial activities can be sustained.

Only Port Augusta, Quorn, Hawker, Woomera, Roxby Downs and towns along the transmission line to Leigh Creek are connected to the national electricity grid. Other communities and industries generally rely on diesel generators. Several communities are exploring hybrid renewable energy plants, and geothermal and gas energy sources.

Building design is one way of making the best use of available energy. Coober Pedy, for example, is renowned for its unique underground housing, which eliminates the need for heating and cooling in spite of extremes in weather.

Managing demand for energy use by raising awareness among new residents and visitors will also be important in achieving South Australia's water and energy efficiency targets and supporting remote communities.

Policies

2.1 Incorporate the efficient use of water into the design and planning of residential, commercial and industrial developments, including the petroleum and mining industries. Measure include innovative water capture, treatment, storage and re-use.



- 2.2** Maximise the use of rainwater, treated wastewater and stormwater in industrial, commercial, residential and recreation developments.
- 2.3** Reduce the energy requirements of industrial and residential buildings and estates by:
- ▶ requiring energy efficient design that ensures buildings are cooler in summer and warmer in winter, in accordance with the Building Code of Australia
 - ▶ actively supporting the use of renewable energy options in building designs and subdivisions
 - ▶ clustering and locating export industries near freight corridors, ports and intermodals to increase the efficiency of freight movement
 - ▶ in larger towns, providing safe and convenient pathways and bicycle parking facilities to encourage walking and cycling.

Principle 3

Protect people, property and the environment from exposure to hazards

Hazards include flooding, bushfires, erosion, salinity and landslides, as well as water, air and noise pollution, and site contamination. They can occur naturally or as a result of development activity. Inappropriately located or designed development and land uses can increase the exposure to, and impact of, hazards.

The Country Fire Service has identified the Flinders Ranges as a high fire risk area, and this must be considered in the planning and design of developments.

The potential impacts of climate change, such as increased extreme weather events, storm surges and sea level rise, are likely to increase the risk of hazards in affected locations. In particular, the very low gradients on coastal areas at the head of the Spencer Gulf mean that even very small sea level changes may significantly increase the exposure of coastal developments to the risk of flooding.

Policies

- 3.1** Design and plan development to prevent the creation of hazards and to avoid naturally occurring hazards.
- 3.2** Locate and design development and infrastructure to minimise the threat and impact of bushfires on life and property, including creation of buffers around towns/urban areas adjacent to native bushland.
- 3.3** Develop policies to minimise the impact of extreme bushfires in line with the findings of the 2009 Victorian Bushfires Royal Commission.
- 3.4** Develop partnerships and agreements between state and local government (particularly with emergency service agencies) to address identified risks and hazards and protect the health and wellbeing of the community.

3.5 Integrate adaptation to climate change and disaster risk reduction and hazard avoidance policies, standards and actions into strategic plans, Development Plan policies and development assessment processes using best practice models to:

- ▶ reduce the social, environmental and economic impacts arising from extreme events
- ▶ achieve more consistent and rigorous decision making for long term land-use planning aimed at reducing emergency and hazard risks
- ▶ enhance protection of critical infrastructure
- ▶ develop building standards and urban design approaches that create resilient environments for the future
- ▶ reduce risks and protect natural areas and biodiversity

- ▶ protect human health and the environment where contamination has occurred
- ▶ adopt appropriate processes and methods when remediating contaminated land and ensure its suitability for the proposed zoning
- ▶ address risk, hazard and emergency management issues in structure and precinct planning for new and existing urban areas.

3.6 Protect people, property and the environment from exposure to hazards (including coastal flooding, erosion, dune drift and acid sulfate soils) by designing and planning for development in accordance with the following principles:

- ▶ protection—establish works to protect existing development or facilitate major development (including stormwater discharge management to accommodate higher tide levels)

- ▶ adaptation—design buildings and infrastructure to minimise risk in the long term
- ▶ avoidance—avoid permanent development in and adjacent to areas at unacceptable risk from hazards.

3.7 Identify and rehabilitate areas and sites where land is contaminated as part of development processes.

3.8 Ensure new development is appropriately sited in relation to existing landfills to minimise the risk to people and property from landfill gas emissions. Continue to monitor gas emissions from landfill sites to ensure development is not placed at unnecessary risk.



Principle 4

Effectively manage waste, wastewater and stormwater

The Environment Protection Authority's guidelines and building codes provide guidance on the management of waste, wastewater and stormwater to prevent risk to public and environmental health. Protecting water quality and marine life from the impacts of stormwater, pollution and the release of nutrients is a priority.

Waste management facilities are located across the region and include landfills, transfer depots and recycling depots. Identifying and effectively managing suitable sites for waste facilities to meet the needs of residents and the many tourists that use the region are essential to creating healthy communities and protecting the fragile environment.

Realising the potential of these waste sources for re-use and as inputs to the recycling industry also needs to be considered in planning, including harvesting stormwater on site. However, it is recognised that in many of the smaller, remote towns the recycling and re-use of water and waste is neither always practicable nor economical.

Policies

- 4.1** Ensure that settlements and developments incorporate appropriate space, facilities, access, and construction methods to manage waste in accordance with the nationally accepted waste management hierarchy: avoid, reduce, re-use, recycle, recover, treat and, least preferably, dispose. Restrict ad hoc construction of isolated rural dwellings and subdivision of rural lands through the planned expansion of towns, density increases within township boundaries, appropriate intensification of existing rural living zones and strategic designation of new rural living zones outside areas of primary production significance.
- 4.2** Identify land suitable for waste management and resource recovery facilities to optimise opportunities for re-use and recycling of waste while maximising economic efficiencies, and protect this land from encroachment by sensitive land uses such as housing.
- 4.3** Manage stormwater to reduce the risk of flood and pollution, improve water quality, and maximise opportunities for re-use.
- 4.4** Plan for effective wastewater collection and treatment through mains sewers or community wastewater management systems (CMWS) wherever feasible, and maximise productive re-use opportunities.
- 4.5** Plan for the effective management of waste generated by visitors to the region.

Principle 5

Identify and protect places of heritage and cultural significance, and desired town character

Indigenous people have a long and strong association with the land and water. As well, many buildings and structures across the Far North date back to the early days of European settlement.

These heritage, character and cultural places and buildings link communities with the attitudes and values that have shaped the region. Identification and careful management of these sites enliven history, engender a sense of identity and provide a glimpse of the past that can help guide us in the future.

In some cases, the character and design of entire towns—such as Coober Pedy, Andamooka and Blinman—provide the distinct sense of identity that residents value and give visitors a unique outback experience. Other places may be distinguished by specific buildings or parts of a town.

The Flinders Ranges Council and the Port Augusta City Council are working with the councils of the Mid North region to review local heritage places to inform the updating of their Development Plans. In the unincorporated (out of council) areas, heritage surveys have been assessing and documenting the heritage of the Oodnadatta, Birdsville and Strzelecki tracks. Many places identified are being assessed for inclusion in the South Australian Heritage Register and places of local heritage value need to be incorporated in the Development Plan for the Land Not Within a Council Area (LNWCA).

It is essential that heritage and character places be protected and preserved in a way that retains their value. Non-Aboriginal heritage places of national and state significance are generally registered under various Acts, providing ready identification. The community should be involved in determining the desired character of places of local and heritage significance.

The Aboriginal Affairs and Reconciliation Division (AARD) of the State Government maintains a register of Aboriginal sites and objects. Although the list is not comprehensive, all sites are protected under the *Aboriginal Heritage Act 1988*, which prohibits any damage, disturbance or interference with the sites, objects or remains without authorisation by the Minister for Aboriginal Affairs and Reconciliation.



Aboriginal people and the AARD should be involved early in the planning or development process, to assist in identifying and protecting sites of cultural significance and for guidance in relation to native title and Indigenous Land Use Agreement (ILUA) requirements. An ILUA is a voluntary agreement between a native title group and others for the use and management of land and water.

Policies

- 5.1** Protect and conserve places and landscapes of heritage and cultural value, including state, national and local registered sites.
- 5.2** Identify the desired character for towns and parts of towns, and ensure the design of buildings and public places, such as streetscapes and entrances, supports the desired character.
- 5.3** Identify and protect sites that have Aboriginal cultural significance and provide guidance in relation to native title and ILUAs.

Principle 6

Create the conditions for the region to become resilient to the impacts of climate change

Reduced rainfall in recent years is affecting the region's pastoral activities and its water supplies, and also may impact on the tourism industry. Climate change predictions indicate that diminished rainfall will continue to affect the region in the future.

There are opportunities to make positive, long-lasting changes in water management in the region. Economically and technologically feasible measures are readily available to provide the water needed for the future. A well-managed water supply includes water-efficient technologies and measures to save or reduce water consumption in the future.

While not yet mandated for country areas, all new development should incorporate water-sensitive urban design (WSUD) principles. (*Water For Good* envisages that by 2013 South Australia will develop and implement the best regulatory approach to mandate WSUD, with targets to be introduced in 2010.)

Energy supply is limited in many parts of the region. Building design and innovative local energy technologies, including solar, wind and co-generation, can help make the best use of available and planned energy sources (refer Box 4).

Growing industry, residential and tourism-related development will place further pressures on energy and water supplies. Visitors are already increasing demands on these resources in addition to the permanent resident population. Managing this demand for water and energy use by raising awareness among both residents and visitors is essential to achieving the region's sustainable water and energy efficiency targets.

Policies

- 6.1** Promote carbon sequestration and greenhouse gas mitigation through land use/management practices (for example, reintroducing vegetation and restoring habitat), taking into account climate and soil suitability and species characteristics.
- 6.2** Provide buffer areas of sufficient width to separate development from the foreshore and coastal features and to accommodate long-term physical coastal processes.
- 6.3** Provide the opportunity for town/settlement-level energy efficiency through the promotion of alternative energy supplies (such as embedded generation).
- 6.4** Set building standards and design guidelines to create more thermal- and energy-efficient buildings.

Box 4—Improving water and energy efficiency

Many approaches to the design of buildings and subdivisions maximise the re-use of stormwater and wastewater in residential and industrial developments. For example, stormwater at Mawson Lakes in Adelaide is filtered and plumbed back into houses for use in toilets, while Salisbury Council aims to have stormwater treated to drinking quality within three years. Some industries also re-use wastewater and stormwater for cooling and washing down machinery.

Energy demand can be reduced through innovative housing design and methods such as co-generation, which produces electricity and heat in a single process. More information is available on the Energy SA website, at <www.sustainable.energy.sa.gov.au>. The Energy Smart Toolbox, available at <www.energysmart.com.au/sedatoolbox>, provides tools for industry to help reduce energy costs.

ECONOMIC DEVELOPMENT

Overview

The Far North region is a major driver of economic growth in the state, being the focus of much of the increasing investment in mineral exploration. The region accounts for 70 per cent of South Australia's mining outputs and generates more than \$3 billion annually for the South Australian economy—the highest of any non-metropolitan region. Over coming years the region will play a significant role in achieving *South Australia's Strategic Plan* targets for mineral exploration, mineral processing, jobs and export targets.

In addition, defence and aerospace facilities of strategic importance to the state are located in the region, at Woomera and Cultana.

In terms of tourism income, the outback and Flinders Ranges are among the state's most visited regions. Tourism provides employment for many people living in those areas. *The Flinders Ranges and Outback SA Region Integrated Strategic Tourism Plan 2008–2014* provides direction for future growth of the industry.

Primary industries will remain a central component of the regional economy, and the services and retail sectors will continue to provide significant employment across the region.

All these industries are underpinned by high quality infrastructure of national strategic importance, including national highways and railways that provide critical transport links across the nation and connect South Australia with interstate markets and major export ports. Increasing investment in the development and maintenance of this infrastructure to support growth of the mining, defence and tourism industries is a priority.

The Plan ensures that development supports tourism by building on the natural assets of the region—a clean environment, the distinct character of towns, and buildings, sites and geological features of significance.

Adapting to climate change will be a challenge for the pastoral industry. The Department of Primary Industries and Resources SA (PIRSA) will continue to model and monitor changes in temperature, rainfall and sea levels to inform planning for pastoral activities, aquaculture and fishing.

Detailed Development Plan policies will also be informed by industry, the Northern Regional Development Board, relevant government agencies, and the Resources and Energy Sector Infrastructure Council (RESIC). In addition to supportive Development Plan policies,

investment in infrastructure, expanding local training opportunities, and attracting skilled labour will be critical to regional economic development.

The *Port Augusta Structure Plan* provides specific direction for the future development of the city.

Priorities for councils

- Review Development Plans to ensure they reflect the recommendations of the Resources and Energy Sector Infrastructure Council (RESIC)
- Plan for industrial and commercial land in Port Augusta and Coober Pedy to support mining activities
- Reflect in local strategic planning and Development Plans the directions of the *Flinders Ranges and Outback SA Region Integrated Strategic Tourism Plan 2008–2014*, which addresses positioning and branding, tourism infrastructure priorities, partnerships, and development opportunities.



Principle 7

Protect and build on the region's strategic infrastructure

Competitive and efficient transport, water and energy infrastructure are crucial elements of the value chain (see Box 5), enabling ongoing expansion of South Australia's mining, defence and tourism industries. Protecting and building on these assets and providing for the expansion of export-related and value-adding industries will enable capitalisation on investment in these assets, provide opportunities for more industry to move into the region, and provide support and certainty for existing industries.

The region's key infrastructure and facilities are:

- the Stuart Highway (part of the National Transport Network) and rail networks linking Sydney to Perth and Adelaide to Darwin

Box 5—Supporting the value chain

The term 'value chain' refers to the various value-adding activities that occur along the supply chain of every industry sector—from primary production through processing and transport to marketing and sales. Competitive advantage is gained by improving the movement of goods and adding value at every link in the chain.

Combining spatial analysis with value chain analysis is a powerful tool for strategic land-use planning. It involves identifying key infrastructure and synergies or potential conflicts between activities and assists in deciding the best use of land and locations for development to maximise a region's economic competitiveness.

- South Australian Government road and rail networks of importance to freight and tourist movements, which include Pimba to Roxby Downs/Olympic Dam (primary freight route); Port Augusta to Moomba via Leigh Creek (secondary freight route); Leigh Creek to Marree; and the Birdsville, Oodnadatta and Strzelecki tracks
- strategically located corridors and sites that could potentially provide for future infrastructure to support mining and/or defence expansions, including corridors providing access to the waters of the Upper Spencer Gulf
- defence and aerospace facilities at Woomera (including the Woomera Prohibited Area) and Cultana
- industry hubs at strategic junctions of rail and road corridors, such as Pimba
- strategic energy, water, electricity and ICT transmission/pipeline corridors, including the Moomba to Adelaide gas pipeline

- airports and aerodromes servicing the mining and tourism sectors and providing access to emergency medical and other essential services
- boat ramps and processing facilities supporting the fishing and aquaculture industries at Port Augusta.

The expansion of mining activities in the region will require significant investment in infrastructure. The Resources and Energy Sector Infrastructure Council (RESIC) is a high-level taskforce established by the State Government to plan and develop fit-for-purpose infrastructure to support mining operations. The Government will continue to assist the mining industry to identify cost-effective transport logistics solutions to service mine expansions.

Policies

- 7.1** Cluster, and provide for the future expansion of, production, processing and storage activities in strategic locations such as key freight transport nodes to maximise transport efficiencies.
- 7.2** Establish appropriate buffers to protect existing strategic infrastructure and sites and corridors identified as potential locations for future infrastructure from encroachment by uses that may compromise their future operation or expansion.
- 7.3** Provide for processing and storage activities on mining tenements to support mining activities.
- 7.4** Provide for development that increases the level of flood immunity for roads in flood-prone areas.
- 7.5** Reinforce and protect the roles of airports/aerodromes/airstrips to support economic and social development and for the Royal Flying Doctor Service. Ensure airports and aerodromes are protected from incompatible development in surrounding areas.
- 7.6** Ensure land uses surrounding airports/aerodromes/airstrips are compatible with and do not detract from their operation.
- 7.7** Identify land suitable for waste management and resource recovery facilities to optimise opportunities for re-use and recycling of waste while maximising economic efficiencies, and protect this land from encroachment by sensitive land uses such as housing.
- 7.8** Protect the transport functionality of road and rail corridors through planning policy in Development Plans
- 7.9** Designate and protect strategic freight corridors.



Courtesy of Petratherm

Principle 8

Provide and protect serviced and well-sited industrial land to meet projected demand

Industries supporting primary production, defence and mining activities play a critical role in the economies of many towns by providing local employment and strengthening the comparative advantage of the region. These industries include power stations, rail maintenance facilities, equipment manufacturing, sales and servicing, major transport and warehousing, small-scale metal fabricators, caterers, and home-based trades. Proactive identification of suitable sites for expansion of these activities and ensuring appropriate zoning to meet demand will assist in the processing of development applications and inform the planning and provision of infrastructure.

Major hubs identified for industrial activities are Port Augusta, Coober Pedy and Roxby Downs. There are also opportunities to build on existing industries in Quorn. The Plan also supports smaller firms locating to appropriate sites in towns. In particular, retaining and expanding small-scale industrial activities, such as metal fabricators, maintenance workshops and car wreckers, is encouraged in towns of the APY Lands to provide ongoing employment.

Policies

- 8.1** Provide a supply of well-sited and serviced industrial land in Port Augusta, Coober Pedy, Roxby Downs, Andamooka and Quorn, and encourage the clustering of related industries.
- 8.2** Ensure an adequate supply of appropriately located industrial land to provide opportunities for small-scale and local industries in towns where there is sufficient demand and where such developments would support the desired town character.

8.3 Site and locate industrial land to ensure:

- ▶ management of interfaces with residential areas and protection from encroachment
- ▶ provision for future expansion
- ▶ accordance with Environment Protection Authority policies, codes of practice and guidelines
- ▶ an efficient road freight network that minimises the impacts of freight movements on neighbouring areas
- ▶ access to required energy and water.

8.4 Use on-site generation of energy and/or water resources where energy or water infrastructure is the limiting factor to development and where doing so will not adversely affect residential areas.

Principle 9

Safeguard mineral, oil and gas resources and support further exploration, extraction and processing

Exploration for, and production and processing of, mineral and energy resources is important to the state and the region and will continue to drive economic growth. The South Australian Government strongly supports the industry.

The Minerals Council of Australia's 2006 National Scorecard of Mining Project Approval Processes gave South Australia the highest or second highest rating in 14 of the 17 criteria, including land access and planning approval.

The Plan seeks to ensure planning assessment processes continue to support the expansion of the mining sector. Specifically, it sets out the objectives and strategies that must be reflected in detailed Development Plan policies, which are the rules against which applications for development

are assessed.¹⁰ The Land Not Within a Council Area (LNWCA) Development Plan covers most of the geographical areas of the region, and has recently been reviewed and updated to ensure it supports the strategies set out below.

Protecting resources from encroachment from incompatible land uses and development is a priority. This includes the protection of small mines that provide construction materials, as they play a critical role in reducing costs associated with the construction of transport infrastructure, housing, and other mining developments in the region.

Continued exploration is expected to discover further deposits away from current focus areas. As the region has a sparse settlement pattern, the risk of other activities encroaching on potential mineral resources and ongoing mining operations is very low. Resources closest to urban areas are the precious stone fields around Coober Pedy and Andamooka. While the opal fields are not the main focus of the expanding

mining sector, they play an essential role in tourism activities in these towns.

Mining operations also require on-site accommodation and processing and related facilities. Development Plans must ensure policies enable these types of developments to occur on mining tenements.

Other priorities of the Plan are expansion of the industry through the protection and development of strategic infrastructure assets—including existing and potential transport networks/facilities, and energy, water and telecommunications infrastructure—and strengthening supporting industrial and commercial hubs. Additional South Australian Government initiatives to support expansion of the industry are discussed in Part 1 of this document.

Further information on mining and energy opportunities in South Australia, including detailed spatial information on mineral, gas and oil tenement locations, mineral occurrences and geology as GIS layers or hard copy maps is available from PIRSA Minerals and Energy at <www.pir.sa.gov.au>.

¹⁰ Mining production tenements are assessed under the *Mining Act 1971* and *Development Act 1993* (see Part 8: Special provisions relating to mining). Where a mine is deemed to be of major social, environmental or economic importance it can be declared a Major Project and is subject to a detailed environmental impact assessment process. The Major Project declaration specifies the scope of the assessment process and can include specific developments associated with the mining operations.



Courtesy of Alliance Resources Ltd

Policies

- 9.1 Provide for the expansion of mining activities; the development of mine-related accommodation and processing and support activities on mining leases; and the development of supporting infrastructure.
- 9.2 Establish and maintain buffers around mines, mineral resources and strategic infrastructure to prevent encroachment by housing and other developments, which may affect the viability of accessing and extracting the resource.

Principle 10

Reinforce the Flinders Ranges and the outback as iconic tourist destinations

The scenic landscapes, character towns, famous outback tracks, and rich geology of the Flinders Ranges and South Australia's outback have made the Far North region one of the state's most popular destinations for international and domestic tourists.

To support the growth of tourism, the planning and design of towns, buildings and land uses must protect and build on the elements that draw visitors to the region. The location, scale, character and design of developments and towns all need to be considered.

The *Flinders Ranges and Outback SA Region Integrated Strategic Tourism Plan* provides direction for growth of the industry and for positioning the region as a preferred adventure and nature-based destination.

The APY Lands Community Structure Plans identify opportunities for expansion of tourism activities in some communities. Activities centre on providing a unique experience of Anangu culture through arts and crafts (Ananguku Arts), tourism treks, and storytelling.

A fundamental issue affecting tourism is the availability of good quality accommodation, particularly:

- the development of quality, medium-scale accommodation
- the maintenance and upgrading of existing accommodation, including caravan parks and camping facilities, to contemporary standards and ensuring they provide for motor homes
- the provision of environmentally sound and affordable accommodation that is linked to the outback and/or character of towns
- the maintenance and enhancement of natural resources through appropriate tourism activities and the promotion of sustainable activities.

The *Responsible Nature-based Tourism Strategy 2004–2009* provides detailed guidance for the development of nature-based tourism. The *South Australian Tourism Plan 2009–2014* provides broader direction for the marketing and management of the industry. The *Outback Regional Recreation, Sport and Open Space Strategy 2005–2010* provides direction for the development of facilities and public spaces to support recreation tourism and should be considered in Development Plans.

Policies

- 10.1** Protect, enhance and promote the qualities that attract tourists and are of value to the community, including:
- ▶ natural landscapes, rivers and streams
 - ▶ open space, hiking and cycling trails, and scenic tourist drives
 - ▶ natural landscapes, protected areas, and parks and reserves

- ▶ heritage, cultural and/or the built character of towns, including town approaches, caravan parks and campsites, including provisions for motor homes (for example, facilities for effluent and rubbish, and sites for large recreational vehicles).

10.2 Reinforce the desired roles of various towns and locations in the Far North tourist experience:

- ▶ Port Augusta as a visitor gateway at the 'crossroads of Australia'
- ▶ Quorn and Hawker as visitor gateways to the Flinders Ranges, and Quorn as the home of the Pichi Richi Railway
- ▶ Coober Pedy as a premier desert tourism destination, diversifying beyond its opal mining heritage

- ▶ the Flinders Ranges as a location for nature-based, Aboriginal/cultural, active, geological and eco-tourism experiences
- ▶ Andamooka as a centre of opal mining heritage and character
- ▶ Olympic Dam for mine tours, particularly if the proposed open-cut mine proceeds
- ▶ Blinman, Parachilna, Copley and Beltana for geological, mining and heritage characteristics
- ▶ Pimba, Yunta and Glendambo as visitor service locations
- ▶ Oodnadatta, William Creek, Marree and Innamincka as visitor service locations supporting outback adventure and heritage experiences
- ▶ pastoral access routes as outback adventure experiences.



- 10.3** Facilitate sustainably designed tourist accommodation that is linked to the natural landscape and/or character of towns, including the upgrading of existing caravan parks and camping facilities to contemporary standards.
- 10.4** Facilitate tourism-related developments such as restaurants, specialist retail and accommodation that complement the character of towns and/or the natural landscape and add value to existing economic activities.

Principle 11

Retain and support ongoing aerospace and defence industry operations

Defence facilities at Woomera and Cultana will continue to be significant and essential sites for defence and aerospace activities in the long term. Covering extensive tracts of the region, both sites provide for unique, world-class training and experimental activities.

Testing and training at the facilities involve live firing. Extensive restricted/prohibited areas have been established to ensure the safety of the community and support the ongoing operations.

These operational environments must not be compromised by inappropriate land use and development nearby.

Policies

- 11.1** Retain the defence and aerospace facilities and associated restricted/prohibited areas to support their ongoing operations, manage the impacts of externalities (such as noise and vibrations) and ensure public safety.
- 11.2** Provide for the future expansion of defence and aerospace facilities and associated restricted/prohibited areas, and establish appropriate buffers to protect them from encroachment by other land uses.

Principle 12

Retain and strengthen the economic potential of pastoral lands

Sheep and cattle production will continue to play an important role in the regional and South Australian economies and provide ongoing employment to many people across the region, including those on the APY Lands.

Pastoral properties are managed in accordance with the *Natural Resources Management Act 2004*, the *Native Vegetation Act 1991*, the *Mining Act 1971*, the *Petroleum and Geothermal Act 2000*, and conditions set out in the 42-year leases issued under the *Pastoral Land Management and Conservation Act 1989*.

The leases include the types of primary production activities or land uses that can be undertaken on the land. These conditions, and the sustainable management of the land, are monitored by the Pastoral Board of South Australia.

The Plan complements the work of the Pastoral Board by protecting the freight transport infrastructure of strategic importance to primary industries, and enabling the construction of buildings and other developments essential to the ongoing operation of the industry. The Plan also supports the expansion of cattle production and the associated management of feral animals on the APY Lands, building on existing operations at Amata and Yunyarinyi (Kenmore Park).

Development Plans should also be informed by climate variation management plans and strategies. These are being developed by the South Australian Government in partnership with the SA Arid Lands NRM Board and industry.

Policies

- 12.1** Prevent the loss of productive pastoral lands by:
- ▶ focusing housing in towns, unless it is directly related to primary production
 - ▶ preventing fragmentation
 - ▶ managing interfaces with residential areas and mining and tourism activities.

Principle 13

Focus commercial development in key towns and ensure it is well sited and designed

Business and administrative services, retail and wholesale sectors employ more than a third of the region's workforce, and account for 41 per cent of total employment in Port Augusta. Employment in these sectors is expected to grow as mining and tourism activities expand.

In Development Plan terms, these sectors are referred to as 'commercial activities' and include shops, art galleries, banks, retail showrooms, personal services and government services.

Focusing major commercial activities in a selected number of towns across the region aims to ensure access to services, enables people to undertake a number of activities in one location, and supports the provision of public transport services.



Coober Pedy, Leigh Creek, Port Augusta and Roxby Downs dominate the region in terms of population and commercial activities. These centres, together with Port Pirie, Broken Hill and Alice Springs, will continue to be the region's major service centres.

Andamooka, Marla, Oodnadatta, Glendambo, Marree, Yunta and Innamincka are important towns, also providing accommodation, fuel and services to local communities and travellers.

Local/small-scale commercial and retail activities will continue to be located in other towns to support local communities and tourists.

Policies

- 13.1** Reinforce the primary commercial role of Port Augusta; the secondary commercial role of Leigh Creek, Roxby Downs and Coober Pedy; and the local commercial role of Marla and Andamooka.
- 13.2** Situate commercial activities in existing town centres or commercial zones. These centres/zones should be expanded where necessary to support activity commensurate with the township role.
- 13.3** Design development to be consistent with the desired character of the town or part of the town.
- 13.4** Prevent linear/ribbon development along major roads to support an efficient road network.
- 13.5** Proposals for major commercial areas in towns other than those identified in Policy 12.1 must demonstrate that they support and complement the commercial functions of these towns, including incrementally or cumulatively in the long term.
- 13.6** In general, cluster commercial facilities in main streets and/or local/town centres and ensure they are designed to support the desired town character.
- 13.7** Commercial areas proposed outside town centres must demonstrate that they:
- ▶ will not have adverse incremental or cumulative impacts on existing town centres
 - ▶ are clustered rather than linear developments that enable the safe and efficient movement of freight
 - ▶ are convenient and provide equitable access
 - ▶ support the desired character of the town
 - ▶ are not using land of strategic importance to industry.

Principle 14

Foster sustainable alternative energy and water supply industries

The remote and arid environment of the Far North region has made the exploration of renewable energy and alternative water supplies a necessity to support industry and local communities. Desalination plants currently supply potable water to Coober Pedy and Roxby Downs, and solar power is used as an energy source for communication facilities and buildings across the region.

Additional renewable energy and alternative water supply options are being explored, including the development of a solar power station at Coober Pedy, the upgrading of the solar power facilities at Umuwa, the exploration and testing of geothermal technologies, investigations for new water desalination technologies in the Upper Spencer Gulf, and exploration of gas-producing coal in the Arckaringa Basin.

The further development of sustainable, cost-effective energy generation and water supply methods is encouraged, including maximising the re-use of treated wastewater, and developing stormwater catchment schemes.

Policies

- 14.1** Provide for the development of alternative and innovative energy generation (for example, marine, biomass and geothermal technologies) and water supply facilities, and include guidance on environmental assessment requirements.
- 14.2** Support the incorporation of sustainable energy and water supply, conservation and efficiencies (for example, stormwater re-use, wind and solar technologies, green buffers, WSUD, building orientation to maximise solar access, and shaded areas) in the design of residential, commercial and industrial developments and subdivisions.

Principle 15

Support aquaculture and fishing industries at Port Augusta

The Upper Spencer Gulf is the focus of marine aquaculture activities and contains several aquaculture zones. It is also important for commercial fishing and recreational fishing, which is popular among both tourists and residents.

Development Plan policies need to recognise the requirements of the aquaculture and fishing industries in terms of their sites, infrastructure, and environmental conditions. These activities need to be supported by a range of on-land services such as storage, waste management and processing. Efficiencies can be gained in minimising the distance between the marine-based sites and associated processing facilities.

Policies

- 15.1** Provide for land-based processing clusters at Port Augusta in accordance with environmental requirements, including waste disposal facilities.
- 15.2** Situate boat launching facilities where they will support marine aquaculture licences and discourage boat launching across the beach.

POPULATION AND SETTLEMENTS

Overview

The Far North region is experiencing a resurgence in development activity. Investment in the region has increased significantly over the past five years mainly due to its rich mineral, gas and oil resources, specialty defence facilities, and attractive landscapes, combined with favourable market conditions. There also has been growth in housing, retail/commercial developments, tourist accommodation and industrial developments, particularly in Port Augusta, Quorn, Coober Pedy, Roxby Downs and Andamooka.

Employment opportunities are the main drawcard, particularly in the services and retail sectors, as well as in industries supporting mining. Ensuring a good supply of affordable housing—for rental and purchase—and facilities for workers and their families is a priority.

Growth in direct employment in mining has not necessarily increased the permanent population of local towns.¹¹ This is because mines in South Australia, including Challenger, Beverley and Moomba, operate on a fly-in/fly-out basis, with accommodation and facilities provided on the mining

tenements for employees to use only while they are working there.

The towns affected by increasing mining activity tend to be the main centres within 50–100 kilometres of a major mine. Hence, the decision by the South Australian Government to develop specific Structure Plans to guide growth and development of the cities of the Upper Spencer Gulf. The Department of Planning and Local Government is also monitoring the impacts of mining activity on other towns across the region, including Coober Pedy and Andamooka.

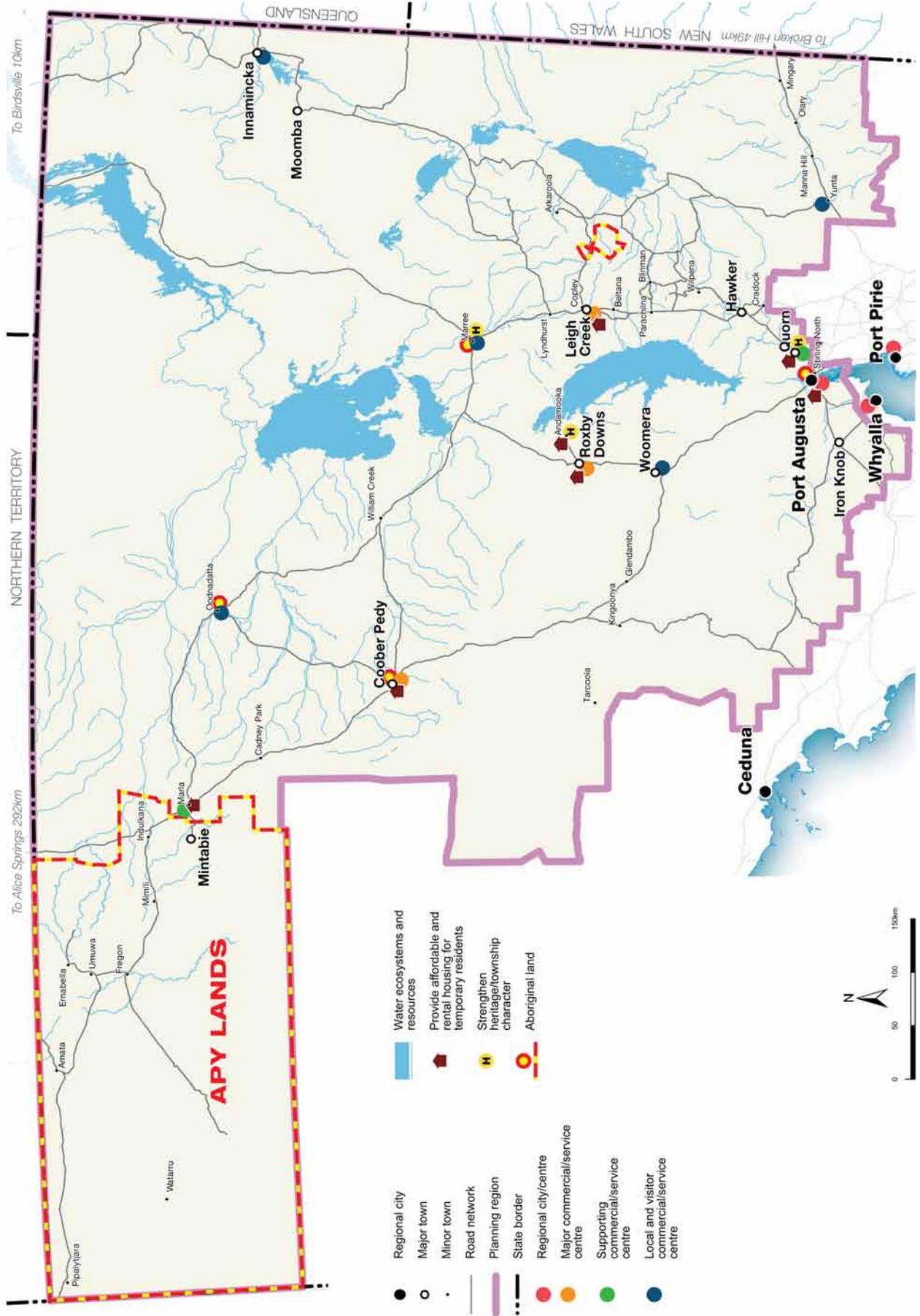
The Plan therefore considers the large and growing number of temporary visitors to the region, including contractors to mining operations, transitional Aboriginal communities, defence personnel, and tourists. Priorities for these people tend to be retail and recreational facilities, and temporary accommodation, including rental housing, serviced apartments and tourist accommodation.

The region is also home to a large number of service sector employees on short-term (one to two year) assignments, such as teachers, doctors and police. Ensuring a good supply of affordable and appropriately designed rental housing is critical in attracting service sector employees to the region.

The attraction of people to the region brings opportunities for local communities. However, housing and towns must be carefully managed and planned to ensure growth in population or visitor numbers does not compromise the elements that attract people to the towns, including township character, employment opportunities and scenic landscapes. Such planning also informs the future investment in infrastructure and services, which in a region with large population fluctuations can be quite complex.

Housing and facilities must also meet the needs of a changing demographic, such as the ageing of the population in Coober Pedy, Quorn, Port Augusta and Andamooka. In addition, the number of Aboriginal people living permanently or temporarily in Port Augusta and Coober Pedy has increased steadily during the past decade and this trend is expected to continue.

¹¹ Roxby Downs is the exception, and the proposed expansion of Olympic Dam is subject to a specific and detailed planning and assessment process.





The Plan is key to strategic and spatial planning for growth to provide places in which to live, visit and enjoy, while protecting the environment and supporting economic development.

Priorities for councils

- Identify the desired character of towns to guide the design of buildings and public places
- Ensure Development Plans reflect the directions of proposed urban design studies for Parachilna, Blinman and Andamooka. The development and design of the towns' buildings and public places must provide for connected and well-functioning towns, achieve desired character, and retain their appeal to tourists and residents
- Assess the need for structure planning (similar to the Community Structure Plans for the APY Lands) for other Aboriginal lands to guide their development and inform their infrastructure and service planning
- Develop a 10-year population, infrastructure and services master plan for Coober Pedy to inform amendments to its Development Plan
- Determine the demand for housing and the appropriate size and design of new homes to inform strategies to overcome homelessness and overcrowding in Aboriginal communities
- Assess the housing needs of older people in the region and audit the current supply to identify gaps in this segment of the market, and ensure Development Plans reflect the findings of the Port Augusta City Council's *Ageing Strategy 2007–2012*.

Principle 16

Reinforce the role, functionality and vibrancy of towns and settlements

Clarifying the current and desired future roles of different towns in supporting businesses and communities was integral to the preparation of the Plan (and the APY Lands Community Structure Plans). The success and vibrancy of the region depend on ensuring that towns have a balanced mixture of roles and functions.

Key considerations in assessing the roles of the region's towns are the location of their existing and planned social and economic infrastructure, travel distances between the towns, their population/visitor numbers, and their surrounding natural environment and productive land.

The towns' roles and functions include the larger commercial centre of Port Augusta, the tourist-focused towns of the Flinders Ranges and outback, towns providing essential local and/or tourist services, and smaller residential settlements. Port Pirie, Broken Hill and Alice Springs are major centres in neighbouring regions that also support the communities of the Far North.

Given the costs of providing and maintaining infrastructure and services in this remote region, the use of the existing infrastructure must be maximised. Developments outside existing populated settlements¹² are discouraged, except where infrastructure and services are provided and maintained by the developer, such as mine or tourism operators.

Policies

- 16.1** Reinforce the role of Port Augusta as the region's main centre, focusing in it the major retail, commercial, administrative, education, health and justice developments.
- 16.2** Build on the role of Port Augusta as a tourist gateway at the 'crossroads of Australia', and Quorn and Hawker as tourist gateways to the Flinders Ranges.
- 16.3** Reinforce the important commercial and service roles of Leigh Creek, Coober Pedy and Roxby Downs as the focus of retail, commercial, administrative, education, health, justice and recreational developments for their subregions.

- 16.4** Reinforce the supporting commercial and service roles of Quorn, Marla and Andamooka.
- 16.5** Reinforce the local service and tourist roles of Woomera, Andamooka, Yunta, Oodnadatta, Marree and Innamincka.
- 16.6** Retain the cultural/heritage tourist focus of Quorn, Woomera, Andamooka, Copley, Beltana, Parachilna, Blinman, Marree, Oodnadatta, Innamincka and Coober Pedy by strengthening their heritage and township characters.
- 16.7** Provide a range of accommodation in Coober Pedy, Port Augusta, Quorn, Leigh Creek, Hawker and Andamooka to enable residents to stay in the region as they age.

Principle 17

Strategically plan and manage township growth

Towns across the region are seeking to capitalise on the expanding mining activity and to reinvigorate the tourism industry. This has led to increased development in recent years in Port Augusta, Roxby Downs, Coober Pedy, Quorn and Andamooka.

Ensuring a good supply of industrial land and strengthening social services and retail activities are priorities. Equally important is the provision of housing for the existing community, new residents, and people living in the region on a temporary basis. This includes transitional accommodation and associated support services for the rising numbers of Aboriginal people visiting Port Augusta and Coober Pedy.

Recreation and sporting facilities, as well as public spaces, also need to be considered. The *Outback Regional Recreation, Sport and Open Space Strategy 2005–2010* is a guide to the provision and management of recreation and sporting facilities.

¹² Dormant and closed towns that have no resident population are not considered existing populated settlements.



The location for the expansion of communities on the APY Lands and the provision of additional housing should be determined by the APY Executive Board with the involvement of the communities and using any existing information such as Community Structure Plans.

A planned approach aims to balance a range of competing interests. In particular, structure planning, such as that which has been undertaken in Port Augusta, lays the groundwork for development of a well-functioning and appealing city. The Plan seeks to ensure development is focused in existing populated settlements and towns to build on existing and planned business, service and infrastructure investment while protecting landscapes of importance to tourism, the environment, and land of importance to industry.

Policies

- 17.1** Focus development in existing populated towns and settlements based on their role and function.
- 17.2** Expansions of towns should:
- ▶ support the role, function and desired character of the town
 - ▶ ensure new areas are adjacent to and form compact extensions of existing built-up areas

- ▶ prevent linear development along the coast and arterial roads
 - ▶ maintain the safe and efficient movement of freight and the ongoing operation of aerodromes
 - ▶ not encroach on areas of importance to economic development, including sites of existing or planned public infrastructure
 - ▶ support equitable access to health, community and education services and facilities, taking into account the future needs of the community and projected demographic changes
 - ▶ support the cost-effective provision of infrastructure and services (for example, health and education), and avoid unnecessary expansion or duplication of existing infrastructure and services
 - ▶ promote strong linkages between all parts of the town, particularly between residential areas, town centres, sporting and recreational facilities, and open space
 - ▶ support the provision of passenger/public transport within and between towns
 - ▶ protect places of heritage and cultural value, minimise adverse environmental and aesthetic impacts, and prevent the exposure of people and property to the risk of hazards
 - ▶ promote development on existing vacant land and surplus government land before providing further broadacre/greenfield sites
 - ▶ locate land for rural living allotments in towns in such a way that opportunities for future expansion are retained.
 - ▶ avoid potential interface issues by adequately separating incompatible land uses.
- 17.3** Developments outside existing populated settlements are discouraged, except where they are self-sufficient in energy, water supplies and wastewater management, and where these facilities are provided and maintained by the developer, such as mine or tourism operators.

Principle 18

Design towns to provide safe, healthy, accessible and appealing environments

The way in which towns are designed influences not only how they look, but also how well they function. The ease and safety of getting around town, the accessibility of services and facilities, and a sense of community and civic pride are all determined by the way a town is designed. The Master Plan for Roxby Downs and the Structure Plan for Port Augusta provide specific directions for achieving this in these settlements.

Towns and parts of towns can develop a strong identity and sense of place that builds on local history, unique natural features (for example, ranges and coastline), and community aspirations. This should be determined, in part, by those who live there. Features such as building heights, rooflines, scale, and building setbacks in new developments can contribute to the township and its landscape character.

Policies

- 18.1** Identify the desired character of towns, encompassing those elements considered important for amenity, identity, sense of community, and the attraction of visitors.
- 18.2** Reinforce those elements (natural and built) that contribute to the unique character and identity of towns, including landscapes, building and streetscape design, and built heritage.
- 18.3** Establish and retain distinct and attractive entrances to towns.
- 18.4** Retain town centres as the focus of retail, commercial, recreational, entertainment and civic activities in accordance with the role and function of the town.
- 18.5** Connect town centres and health, recreational and educational facilities with residential and tourist areas by providing easy walking and/or cycling access for people of all age groups and abilities.
- 18.6** Where possible, co-locate health/community facilities and services for easier access.
- 18.7** In coastal towns, provide strong linkages between the town centres and the coast.
- 18.8** Manage interfaces between residential areas, town centres and industrial areas to avoid potential conflicts.
- 18.9** Encourage active lifestyles and social opportunities for communities by:
 - ▶ providing open space and recreational facilities in major towns in accordance with the *Outback Regional Recreation, Sport and Open Space Strategy 2005–2010*
 - ▶ providing for walking and cycling in Port Augusta and Roxby Downs, and multi-use trails in Far North communities where practicable.
- 18.10** Develop safer towns by incorporating the principles set out in *Designing Out Crime: Design Solutions for Safer Neighbourhoods* (Department of Transport and Urban Planning, 2004) and through consultation with South Australia Police.



- 18.11** Design all developments such as housing, holiday homes and commercial and industrial buildings to ensure they are functional, attractive, contribute to the desired character of the area, and are sympathetic to the cultural and landscape features of there area.
- 18.12** Apply water sensitive urban design principles to all new development and public open spaces and encourage their application in existing development.

Principle 19

Provide residential land for a supply of diverse, affordable and sustainable housing to meet the needs of current and future residents and visitors

Considered planning is required to ensure a supply of housing to meet the needs of people who live and work in the region, taking into account demographic changes, temporary residents (such as mining employees, contractors and transitional Aboriginal people) and local employment opportunities.

The mining industry expansion will increase demand for housing in towns within a comfortable commuting distance of mining activities as well as in towns that have support industries and services. A good supply of affordable housing—for purchase and rent—is a priority.

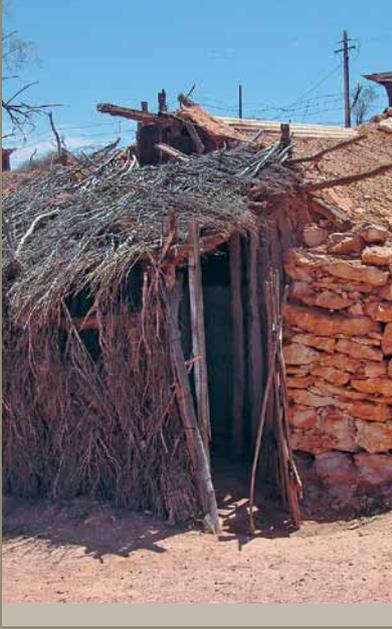
People have different housing needs and preferences depending on their age, health, income and cultural background. In the region's larger towns, areas need to be identified for a range of housing types, ensuring compatibility with township character, landscapes, environmental and industry needs, and proximity to infrastructure and services.

Particular attention needs to be given to ensuring a good supply of affordable temporary and permanent housing for Aboriginal people, to avoid overcrowding and associated poor health outcomes. There are cultural reasons for extended Aboriginal family groups to be housed in one dwelling; however, this can lead to excessive overcrowding if housing stock is not designed for large numbers.

Policies

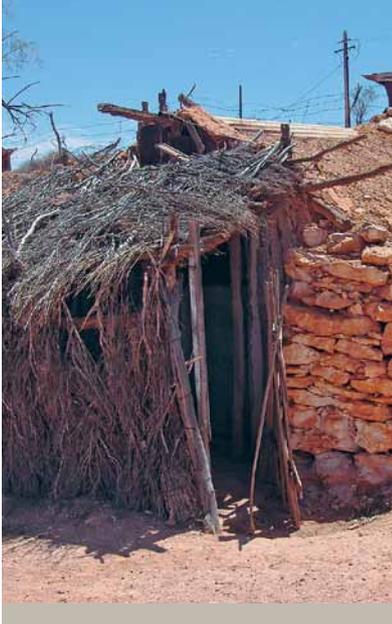
- 19.1** Focus housing in towns, including rural living allotments, to prevent encroachment on sensitive environments, productive economic lands and strategic infrastructure (for example, public infrastructure corridors; pastoral, mining and industrial land; major freight routes; ports and aerodromes); to minimise exposure to risks (for example, flooding, bushfire and pollution); and to best use strategic infrastructure.
- 19.2** Locate land for rural living in towns in such a way that opportunities for future township expansion are retained.
- 19.3** Ensure housing is designed in accordance with the desired character of the area.
- 19.4** Ensure zoning in Port Augusta, Coober Pedy, Quorn and Leigh Creek promotes a range of housing types and densities to enable people with a range of housing needs to stay in their communities.
- 19.5** Ensure housing on the APY Lands is designed to meet the needs of the local population, catering for large extended families, older people and people with a disability, and focus high-level care accommodation in towns with health services.
- 19.6** Locate higher density housing near the city centre in Port Augusta.
- 19.7** Ensure that land is made available for public and social housing in towns with a regional or major service role, and provide for appropriate housing responses to meet the needs of Aboriginal people.
- 19.8** Encourage the provision of rental housing in locations where there is high demand, particularly in Port Augusta, Coober Pedy, Roxby Downs, Andamooka, Quorn, Marla, and Leigh Creek.
- 19.9** Provide for 15 per cent affordable housing, including a 5 per cent component for high needs housing, in all significant new housing developments.
- 19.10** Involve Aboriginal people and newly arrived migrants in planning for housing to ensure their needs are met.
- 19.11** Provide for transitional housing in Port Augusta, Coober Pedy and settlements on the APY Lands to provide for Aboriginal people staying temporarily (for example, to access services, visit family and conduct other business).
- 19.12** Retain caravan parks and support a proportion of parks that are used to provide affordable rental housing, particularly for temporary accommodation.
- 19.13** Ensure housing is designed to maximise energy and water efficiency, and minimise adverse impacts on the local environment.





INFRASTRUCTURE AND SERVICE PROVISION

Chapter E



INFRASTRUCTURE AND SERVICE PROVISION

Chapter E

This chapter discusses the implication of the Plan for the provision and coordination of infrastructure and services in the region.

The State Government recognises the importance of integrating land use and infrastructure planning. This approach aims to build strong and healthy communities and ensure industrial and commercial land supplies remain competitive by making the best use of existing infrastructure capacity and ensuring new infrastructure and services are strategically planned for and proceed in a timely manner.

The *Strategic Infrastructure Plan for South Australia* (2005–06) is the first step in developing a coordinated long-term approach to infrastructure and service provision throughout the state. It provides a framework for the planning and delivery of infrastructure and services by all government and private sector providers, and identifies priorities for each region.

The *Far North Region Plan* confirms the infrastructure and services priorities for the region; clarifies where they are most required; and identifies other potential demands on infrastructure and services.

Generally infrastructure is the responsibility of the owner of the land (with the exception of

headworks). Given the long lead times associated with industrial development, the state needs to plan, coordinate and budget for infrastructure. This is particularly important with large parcels of land that have been identified as key future supply sites, but have significant constraints.

Further, infrastructure provision should be linked with the *Far North Region Plan* to ensure industrial and commercial land is market-ready when it is needed, and appropriate services are provided to support the population and visitors. This is crucial to ensure, firstly, that funding is not prematurely invested in infrastructure and services and, second, to avoid underutilisation. This reinforces the need for ongoing information gathering and liaison with the private sector and local government on industry and community needs.

Planning and developing infrastructure and services to support the mining industry are a priority in the region. The Resources and Energy Sector Infrastructure Council (RESIC) plans and develops fit-for-purpose infrastructure to support mining operations in South Australia.

The Department of Planning and Local Government will continue to work closely with RESIC to ensure the planning system supports timely development of the necessary infrastructure and services.

Priorities for the Upper Spencer Gulf and outback identified in the *Strategic Infrastructure Plan for South Australia, Regional Overview, 2005-06–2014-15*

Industrial land

- Develop industrial estates at Port Augusta.

Energy

- Ensure reliability of electricity supply by:
 - ▶ rebuilding Playford and Whyalla terminal substations
 - ▶ reinforcing Cultana and Wudinna substations
 - ▶ installing two new transformers at Davenport substation.
- Increase energy supply to support industry expansion by:
 - ▶ evaluating options for augmentation of energy supplies for expanded operations at Olympic Dam and other mining developments.



Water and wastewater

- Evaluate options to augment the water supply to support expanded mining developments and implement preferred options
- Identify and implement cost-effective improvements to the water supply for Andamooka, Hawker, Glendambo, Yunta and Mintabie
- Upgrade community wastewater management systems (CWMS) servicing the Oodnadatta township.

Transport

- Evaluate options to augment transport services for expanded operations at Olympic Dam
- Consider the upgrade of Yorkeys Crossing bypass
- Assess the need to upgrade the airport facilities at Port Augusta. Note: a Master Plan for the Port Augusta airport has been completed. Consideration should be given to upgrading the airport facilities in line with the Master Plan, if required by air services.
- Consider a private sector intermodal facility at Port Augusta as part of a statewide intermodal strategy to improve efficiency of freight movement

- Facilitate provision of infrastructure to support mining developments on a case-by-case basis.

Information and communication technologies (ICT)

- Develop a business case that identifies and aggregates sufficient broadband demand to support expanded services in larger towns and provincial cities, particularly Port Augusta, Roxby Downs and towns in the Flinders Ranges
- Upgrade ICT capacity around Woomera, including connecting to the SABRENet network at Edinburgh Parks.

ICT improvements are priorities for improving delivery of health, education and training across the region. In terms of health delivery, ICT improvements could reduce the number of journeys away from local communities to access health services and enable remote consulting, diagnostic support and ongoing monitoring. Better access to ICT could also expand education, training and professional development opportunities.

Health

- Continue to upgrade hospital facilities to support the collocated delivery of primary health care services, including general practice, allied health, mental health and Aboriginal health programs
- Expand the capacity of the wide area network
- Increase use of telemedicine facilities.

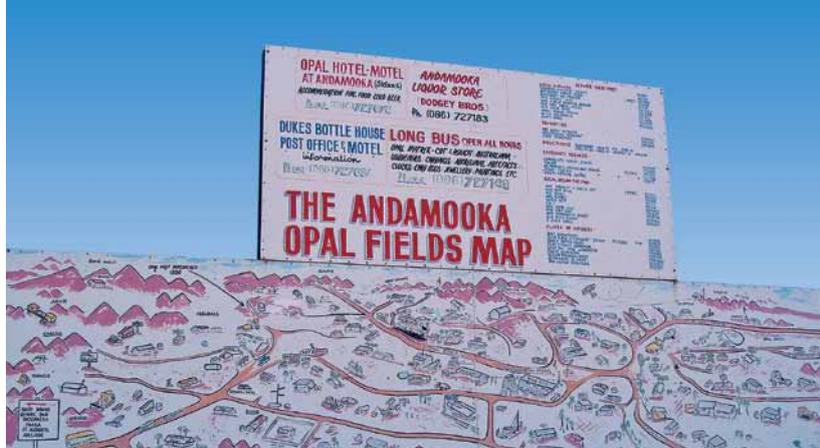
Country Health SA's Patient Journey Initiative has identified public transport availability and broadband access as priorities for improving access to health services in the region.

Justice and emergency services

- Develop a courthouse at Port Augusta (completed).

Education and training

- Rejuvenate local schools to support improved utilisation and integration of services.



Natural assets

Protect biodiversity by:

- developing and implementing works to improve biodiversity and land and water management.

Improve outback tourism facilities by:

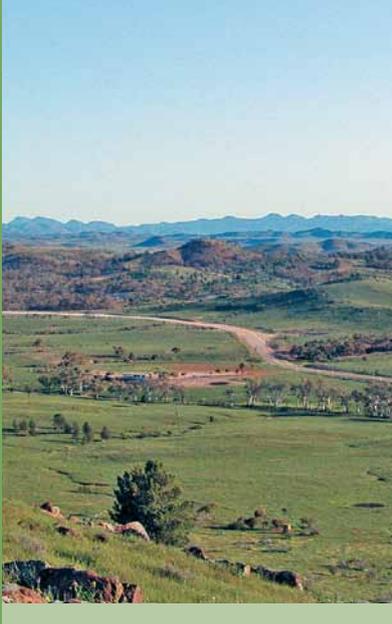
- redeveloping a range of facilities to support increased tourism in Innamincka, Oodnadatta, Woomera, Port Augusta and other outback communities.

Other infrastructure and service priorities and issues

The planning process leading to development of the *Far North Region Plan* identified several other priorities and issues related to infrastructure and service provision in the region, including:

- ensuring the capacity of energy supply to Coober Pedy is adequate to support future development, growth in visitor numbers, and declining household sizes
- ensuring the sewer system in Coober Pedy is adequate to meet demand and provides for water re-use

- providing strategic planning to inform efficient and effective provision and maintenance of infrastructure to small outback communities
- focusing attention on the increasing demand for housing and services to support ageing populations (including Aboriginal people moving from Aboriginal Lands) in Coober Pedy, Port Augusta, Quorn and Andamooka
- focusing attention on the increasing permanent and temporary populations in Coober Pedy, which are placing pressure on police and health services
- focusing attention on transitional housing facilities and services to support growing numbers of Aboriginal people from Aboriginal Lands accessing services in Port Augusta and Coober Pedy
- increasing ICT coverage along major transport corridors to improve outback safety and respond to demand from increasing numbers of business travellers, including a review of UHF radio repeater infrastructure in the Cooper Basin area
- maintaining safe, fit-for-use sport and recreation infrastructure to meet the needs of the community and visitors
- improving road safety measures to minimise risks to increasing numbers of visitors associated with tourism and mining, including policing and multilingual signs indicating health risks and preventative measures
- focusing attention on the increased size and volume of freight vehicles, which may affect the demand for police traffic escorts and the need to manage the interface with tourist vehicles, particularly those towing caravans or campervans on unsealed roads
- assisting the mining industry in identifying cost-effective transport logistics solutions to service mine expansions and move product in a way that minimise the impact on communities
- planning for a strategic network of all-weather 24-hour aerodromes to give remote locations access to emergency medical and other essential services, and assess the need to upgrade the airport facilities at Coober Pedy in response to significant growth in passenger numbers.



APPENDICES

APPENDIX 1

HOW THE PLAN WAS DEVELOPED

Land-use planning seeks to coordinate land supply for residential, commercial, industrial, recreational and other purposes. A range of environmental, cultural, economic and socio-demographic issues, as well as directions for infrastructure and service delivery, need to be considered to achieve this.

Initial research into these elements in the Far North region began in early 2007 when the Department of Planning and Local Government compiled statistical data on the region and held discussions with local councils, boards and state government agency representatives. Much of the statistical data (for example, Census data) was dated and local knowledge was therefore critical to achieve a clear picture of trends and emerging issues. Recent research and analysis prepared for government agencies, councils and boards informed this work (see Appendix 4 for a list of reports, strategies and plans).

This information was then brought together with an examination of opportunities and challenges for the region and compiled into an issues paper.

As well, various elements were mapped using geographical information systems (GIS) technologies. GIS enables the electronic layering of attributes such as native vegetation sites, strategic infrastructure and current land use. This allows the ready identification of locations best suited (and those not suited) for future residential, industrial, commercial and other development, as well as areas where conflicts between desired land uses may occur. These locations were compiled into a resource atlas with maps representing more than 70 themes and indicators.

The resource atlas and issues paper formed the basis of a workshop held in Woomera in May 2007, at which the councils, boards and agencies identified key opportunities and challenges for the region. Strategies to deal with potential conflicts and competing demands between land uses were also identified.

The workshop identified the need to undertake more detailed planning for specific parts of the region. In response, the Department of Planning and Local Government initiated the development of Structure Plans for Port Augusta, Whyalla and Port Pirie, and held meetings with the Northern Regional Development Board to further explore issues facing the Flinders Ranges and Coober Pedy.

A workshop was also held in Andamooka to explore options to manage development pressures. The outputs of the Woomera workshop and additional research informed the development of maps illustrating the preferred vision for the region and strategic priorities to guide action over the next five years.

A draft *Far North Region Plan* was prepared and issued to stakeholders for consultation at a forum in Port Augusta in August 2007. This draft was refined after consultation and released by the Minister for Urban Development and Planning to give the community and industry an opportunity to comment on the direction of the growth and development of the region.

Table 1.1 shows the stages of the planning process that were required to complete the *Far North Region Plan*.

Table 1.1 – Planning process for the *Far North Region Plan*

	STAGE 1 Compile data	STAGE 2 Interpret and analyse	STAGE 3 Test and refine	STAGE 4 Prepare draft	STAGE 5 Release and consult	STAGE 6 Finalise and release
PROCESS	<p>Input from councils, Northern Regional Development Board and SA government agencies</p> <p>Spatial and statistical data</p> <p>Planning Strategy for Regional SA (January 2003)</p>	<p>Workshops</p> <ul style="list-style-type: none"> ▪ Confirm issues and priorities ▪ SWOT analysis and map vision <p>Synthesis and analysis—DPLG in discussion with councils, Northern Regional Development Board and SA government agencies</p>	<p>Meetings with regional bodies to explore specific issues</p>	<p>Reconvene workshop groups</p> <ul style="list-style-type: none"> ▪ Present draft spatial plan ▪ Seek feedback <p>To Minister for Urban Development and Planning for consideration for public consultation</p>	<p>Release of draft Plan for public consultation</p> <p>Seek feedback</p>	<p>Refine document based on feedback</p> <p>To Minister for Urban Development and Planning for consideration to release</p>
OUTPUTS	<p>Issues paper Opportunities and priorities for the region</p> <p>Resource atlas Maps representing over 70 themes and indicators</p> <p>Regional profile Statistical summary of economic, socio-demographic and environmental attributes</p>	<p>SWOT summary Strategic priorities</p> <p>Vision maps Ideas for the future presented as series of thematic maps</p> <p>Areas of focus Priority locations and themes needing further refinement</p>	<p>Draft <i>Far North Region Plan</i> Includes:</p> <ul style="list-style-type: none"> ▪ maps representing preferred vision for region ▪ strategic priorities to guide actions over the next 2–5 years 	<p>Draft <i>Far North Region Plan</i></p>	<p>Feedback from community and industry on draft <i>Far North Region Plan</i></p>	<p><i>Far North Region Plan: A volume of the South Australian Planning Strategy</i></p>

APPENDIX 2

INFORMATION ABOUT THE FAR NORTH REGION

INFRASTRUCTURE AND SERVICES

A range of infrastructure and services supports the region's communities and economy.

These include National Land Transport Network roads and rail networks linking Adelaide to Darwin and Sydney to Perth, which cross the region and converge at Port Augusta. These networks are of strategic importance to the state.

South Australian Government road and rail networks of importance to freight and tourist movement include the Pimba to Roxby Downs/Olympic Dam primary freight route; the Port Augusta to Moomba via Leigh Creek secondary freight route; the Peterborough to Port Augusta and Hawker secondary freight route; the Leigh Creek to Marree route; and the Birdsville, Oodnadatta and Strzelecki tracks. In addition, a comprehensive network of public and private unsealed roads serves mining operators, pastoralists, tourists and local communities.

The region generates the largest intrastate freight movement outside Adelaide, with an estimated 40 per cent of interstate freight moving through the region. Increased mining and defence activities will see both volumes of freight and the size of vehicles grow substantially.

In conjunction with the proposed expansion of Olympic Dam, BHP Billiton is considering the construction of a railway line from Pimba to Olympic Dam, and a private haul corridor between the Upper Spencer Gulf and Olympic Dam.

The cost of maintaining unsealed roads in the Far North region is about six times that needed to maintain roads in metropolitan areas. Heavy storm and water flow events occur regularly across the region, often making roads impassable and resulting in costly reconstruction of both sealed and unsealed roads. Increasing the level of flood immunity of roads in flood-prone areas is a priority.

Airports in the region that cater for scheduled regional air services, significant charter services, or defence requirements include Coober Pedy and Port Augusta (council-owned), Woomera (defence), and Moomba, Leigh Creek, Olympic Dam/Roxby Downs and Prominent Hill (mining). Protecting these airports from encroachment by development is a priority.

Protecting the numerous private or community-owned aerodromes that provide access to emergency health and other essential services is also important. The South Australian Government is identifying a network of strategically located aerodromes to provide all-weather 24-hour access for medical emergencies. This includes aerodromes at Hawker, Balcanoona, Marla, Glendambo, Marree, William Creek, Oodnadatta, Innamincka, Manna Hill, Mungerannie and Mintabie. A number of airstrips on the APY Lands will also be included in this network.

Water supply and quality are critical issues. Further data on the capacity of surface water and groundwater resources across the region is required. These resources have limited use due to high salinity levels. As well, unreliable rainfall and high evaporation limit the quantity of surface water.

Coober Pedy and Roxby Downs are supplied by desalinated water drawn from the Great Artesian Basin.

Port Augusta and Woomera are supplied by water from the River Murray while SA Water manages groundwater systems at Marree, Parachilna, Blinman, Hawker, Quorn, Oodnadatta and Marla. Other settlements rely on community-maintained bores and rainwater. Dams, tanks and bores support stock on pastoral leases. Investigations into the feasibility of desalination plants at Whyalla and Port Augusta are underway. SA Water and the South Australian Arid Lands Natural Resources Management Board are assessing the state of groundwater supplies in 12 communities in the region. This work is essential to ensure water is available to support communities, industry, and the environment.

Energy supplies vary across the region. Port Augusta, Quorn, Roxby Downs, Woomera and Leigh Creek are supplied by the Port Augusta power stations. However, most outback towns rely on diesel generators and several communities are exploring the feasibility of small-scale hybrid plants based on renewable energy (solar, wind) and gas/diesel.

A \$7.1m solar power station is to be built at Coober Pedy, which will generate 13 per cent of the town's energy to complement the current diesel-generated supply. A new power station, supported by a solar farm, has been developed at Umuwa to service seven APY communities and a number of homelands. The feasibility of wind farms near Port Augusta to augment supplies is also being explored.

Energy supplies will need to expand significantly to meet the needs of mining operations, particularly the proposed Olympic Dam expansion and the associated desalination plant. The South Australian Government is working with mining companies to identify potential sources of energy. Geothermal technologies are being explored, as well as the feasibility of tapping into the gas supplies from Moomba for mines within the vicinity of the Moomba to Adelaide pipeline.

Wastewater is managed through a combination of sewer and septic systems in Port Augusta, and Roxby Downs is fully sewered. Community wastewater management schemes (CWMS) at Oodnadatta and Marla are maintained by the Outback Areas Community Development Trust. Coober Pedy also has a local scheme but only the main street area of the town is sewered. Systems in other towns are basic and are managed by local progress associations and by SA Water in the APY communities.

Port Augusta is seeking to maximise the re-use of wastewater and has already reduced outflows into the marine environment by one-third.

Information and communication technologies (ICT) vary across the region, and rely heavily on satellites. Major mines have comprehensive ICT networks to meet the needs of their operations. Ongoing defence and aerospace activities at Woomera will require an upgrade of ICT infrastructure.

Mobile phone coverage and ADSL broadband are limited to the major towns of Port Augusta, Coober Pedy, Roxby Downs, Leigh Creek and Woomera, and to spot mobile phone coverage along the major highways. Most towns have dial-up internet access. Travellers, commercial drivers and pastoralists in the region are supported by the Royal Flying Doctor Service (RFDS) and UHF radio networks maintained by the local community and the South Australian Government. While the Stuart Highway and the Oodnadatta Track are reasonably well serviced by UHF repeater towers, the north-east of the region—encompassing the Birdsville and Strzelecki tracks—is not. With the Cooper Basin area experiencing increasing commercial vehicle and tourist activity, additional repeater towers will be required to improve coverage in this remote area.

Improved ICT networks, particularly broadband, will be critical to the growth and development of the region. ICT networks enable education, training and professional development opportunities, improve health delivery, and provide critical support to industry—all essential to support the expansion of mining and defence activities and improve the wellbeing of communities.

Health services centre on Port Augusta, where the region's largest hospital is located. Many specialist services are available only in Adelaide. Local health services are provided at Oodnadatta, Marla, Andamooka, Marree, Coober Pedy, Roxby Downs, Woomera, Leigh Creek and Hawker. Nganampa Health Council is an Aboriginal owned and controlled health organisation operating through nine clinics across the APY Lands, including the Watarru Health Clinic, an aged care respite facility.

Health services focusing on early intervention, health promotion and chronic disease management are priorities, as are the health needs of Aboriginal communities and the ageing populations of Port Augusta and Coober Pedy. Pika Wiya Health Service at Port Augusta continues to be the centre for Aboriginal health services, with clinics at Copley and Nepabunna and outreach programs across the region.

A \$3m upgrade of the Royal Flying Doctor Service (RFDS) operational base at Port Augusta airport was opened in November 2007, providing—for the first time—one location for RFDS health, communication, aviation, administration and engineering facilities.

Family, disability and social housing services are provided across the region. Integrated Community Service Centres are being developed in Port Augusta and Coober Pedy to provide a one-stop service and improve service delivery.

Education and training opportunities also are provided across the region, with Port Augusta providing the most comprehensive range of primary and secondary schooling and technical college facilities. A TAFE campus is located at Coober Pedy and TAFE services are provided in several communities in the APY Lands. Secondary/area schools are located at Hawker, Leigh Creek, Quorn, Woomera, Roxby Downs, Coober Pedy, Amata, Ernabella and Mintabie. Yunta and Andamooka have primary schools, while Marree, Oodnadatta and the communities of the APY Lands have specialist Aboriginal schools. The School of the Air and distance education also play a critical role in the region.

Police stations are located across the region, with policing, justice and State Emergency Services coordinated out of Port Augusta. The courthouse in Port Augusta has been upgraded to provide modern legal facilities. A prison is also located at Port Augusta. An APY Lands police district was created in November 2005 and operates out of Umuwa, with police stations open in each major community at specific times.

Community recreational and sporting facilities are provided in towns and communities across the region, including racecourses, golf courses, ovals, outdoor courts, public pools, pistol ranges, recreation centres, BMX tracks and playgrounds. Several facilities have capacity for greater use, particularly in the towns of Leigh Creek and Woomera.

The remote and vast nature of the region presents many challenges for infrastructure and service delivery. Infrastructure and service assets outside council areas, Aboriginal lands, and mining leases are managed by myriad government and private service providers, as well as local progress associations funded through federal and state government grants.

ENVIRONMENTAL AND CULTURAL ASSETS

The Far North region is a vast area with a rich and fragile environment that supports many arid land bio-systems, some of which are unique to the region. A high percentage of natural cover remains; however, this is under threat from introduced plants and animals, increasing mining exploration, and tourism activities. Planning for the region must ensure development does not place increasing strain on this environment.

Native vegetation and biodiversity

Regional reserves, such as national and conservation parks and Indigenous Protected Areas (IPAs),¹³ comprise more than 20 per cent of the region and have 98 per cent of natural cover remaining. Habitats include gibber and gypsum plains, dune fields, sand plains and mountain springs. These habitats are the most intact in the state, being areas of almost continuous native vegetation. Many of the diverse species found in the area are unique to the South Australian arid lands.

Of the 24 IPAs declared in Australia, four are located in the region—Mount Willoughby in the far north, Nantawarrina in the Flinders Ranges, and Walalkara and Watarru on the APY Lands. The Walalkara and Watarru IPAs are culturally and biologically significant, and contain some of the highest diversities of reptile species found anywhere in the world and support populations of rare and endangered species.

Outside reserve areas, grazing and other human activities have significantly affected soil quality and erosion; resulted in loss of habitat for some species; and introduced pest plants, animals and pathogens. Managing feral animals, such as goats and camels, is critical to maintaining the biodiversity of the region.

¹³ An Indigenous Protected Area (IPA) is an area of Aboriginal owned land over which the traditional Aboriginal owners have entered into an agreement with the Australian Government to manage the land for the conservation of biodiversity and cultural values.

South Australia's Strategic Plan includes the development of Naturelinks in the region to provide connections for species travelling between areas of biodiversity significance. Comprehensive natural resource management (NRM) plans have been developed by the Northern and Yorke NRM boards (2009), and an NRM plan is being prepared by the South Australian Arid Lands NRM Board. These plans address a number of issues, including:

- the long timeframe required for visible results from human interaction and land management
- the management of the impact of introduced plants and animals over a large area
- the management of the impact of human activity due to increased tourism and mining.

The plans will establish targets and a detailed program of investment to better understand and manage natural resources in the region.

Water resources and biodiversity

The Far North region incorporates a significant part of the Lake Eyre Basin—one of the world's largest internally draining systems. The basin includes numerous creeks and river systems of high conservation value, including the Cooper and Warburton creeks and the Diamantina, Macumba, Peak, Neales and Alberga rivers. The region also includes Coongie Lakes, which is listed as a wetland of international importance under the Ramsar Convention.

The wetlands of the Lake Eyre Basin are important habitats for a number of species, with many recognised under Australian Government legislation as threatened ecological communities.

The Great Artesian Basin is a long-established water source for the region and the community recognises that extraction from it needs to be regulated to retain its water quality and supply. The health of the basin's wetlands depends on the maintenance of its water pressure. A mapping and capping program of existing bores has halved extraction over the last 30 years. The Australian, South Australian and Northern Territory governments, in conjunction with universities and other partners, have allocated \$14.6m for a study to improve the understanding and long-term management of the basin.

Cultural heritage

Aboriginal people have a long and strong association with the land and water of the region. Respect for the land and Aboriginal sites and objects on it is an important contributor to Aboriginal wellbeing. The region is also home to many historical buildings and structures that tell the stories of the pioneering days of overland transport, mining and pastoral industries in outback Australia. The identification and careful management of these sites enliven history, engender a sense of identity, and distinguish the Far North region from other places in Australia.

Non-Aboriginal heritage surveys have been prepared by the South Australian Government to document items of historical significance along the Oodnadatta, Birdsville and Strzelecki tracks, and in the Flinders Ranges. National, state and local heritage sites identified need to be reflected in local Development Plans to ensure they are protected from inappropriate development.

Although not all places of significance to Indigenous people are on a formal register, they are still protected under the Native Title Act. Indigenous land use agreements (ILUAs) are being developed between Aboriginal communities, governments and mining companies. The agreements commit the parties to work cooperatively to protect and preserve Aboriginal heritage. A number of native title claims are also active in the region.

Managing climate change

Planning must consider the implications of climate change on ecosystems, natural resources, pastoral and grazing activities, mining operations, housing, and infrastructure. Increased temperatures may affect future settlement patterns and housing designs, particularly in the north of the region where temperatures already reach 50°C in summer.

Planning must also consider facilitating means to reduce CO₂ emissions as any decrease has the potential to reduce the impacts of climate change.

Coastal and marine resources

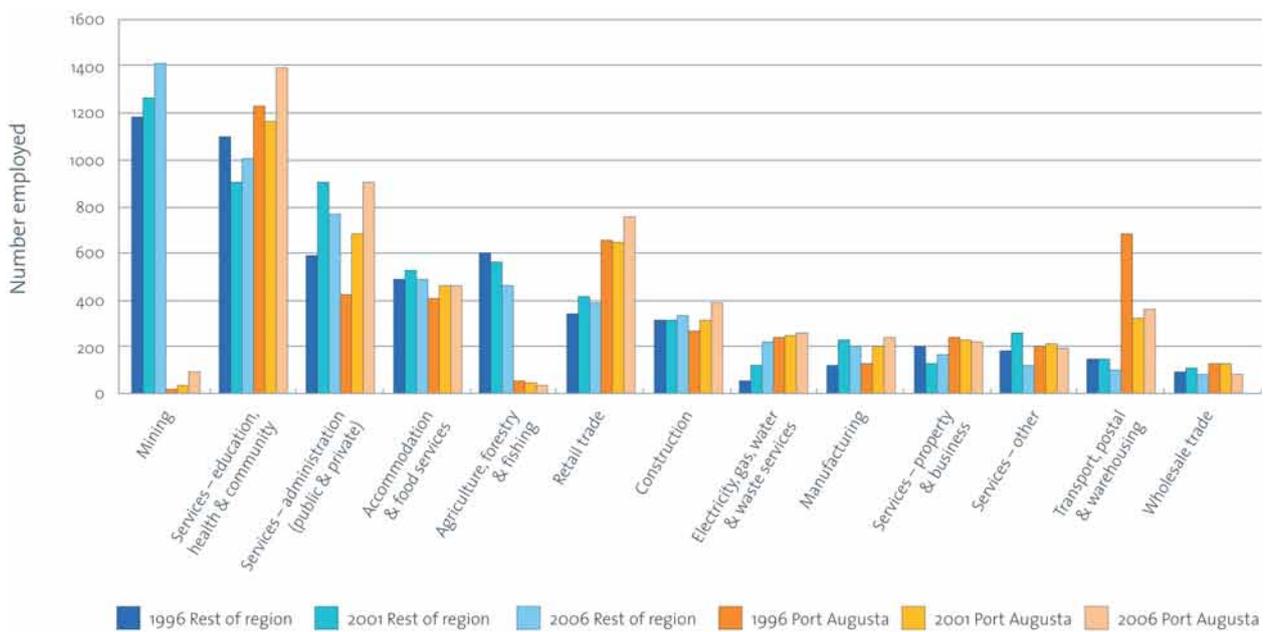
While the majority of the region is inland, Port Augusta is located at the headwaters of the Spencer Gulf. The Upper Spencer Gulf wetland system is included in A Directory of Important Wetlands in Australia,¹⁴ acts as a fish nursery, and provides physical protection from coastal waters. The grey mangroves in the Winninowie Conservation Park are considered to form part of the largest undisturbed stands of the species remaining in South Australia.

While proximity to the gulf gives housing development the advantage of views and access to the coast, it is important that coastal and marine habitats be retained. Poorly located and designed coastal developments in areas prone to natural processes such as erosion, flooding, acid sulfate soils and sand drift also can put people, property and infrastructure at risk.

The Upper Spencer Gulf Marine Plan, once finalised, will provide guidance on development in the marine environment and inform Development Plans. The South Australian Government is committed to creating 19 marine protected areas (or marine parks) by 2010, including one in the Upper Spencer Gulf. These areas and parks are being developed with the close involvement of local communities.

¹⁴ Environment Australia, *A Directory of Important Wetlands in Australia, Third Edition*, Environment Australia, Canberra, 2001.

Figure 2.1 – Employment by industry, Port Augusta and rest of Far North region, 1996, 2001, 2006



Source: ABS Census of Population and Housing, 2006

A GROWING ECONOMY

The Far North region will be a significant driver of economic growth in South Australia over the coming decades. Rich in mineral and energy resources, the Far North is the focus of 70 per cent of South Australia’s mining output.

In addition to mining, the region has strong tourism, primary industry and services sectors. Figure 2.1 highlights the important service and retail role of Port Augusta. On the APY Lands employment opportunities will continue to be provided through the arts, bush tucker market gardens, mining, local services, and the potential development of the tourism and pastoral industries.

Employment across the region has grown nine per cent during the past decade.¹⁵ Jobs growth has been strong in manufacturing, public administration and utility services, as well as in the mining, construction and retail sectors. These trends are expected to continue over the next decade as the mining sector continues to expand.

¹⁵ Based on employment data for people permanently living in the region.

Minerals and energy

The South Australian Government is committed to supporting the continued growth of the mining sector in South Australia, particularly in the highly prospective Far North region. During the next few decades mining investment and outputs are expected to grow substantially. (For further information, refer to the map of major operating mines and mineral development projects at <www.pir.sa.gov.au/minerals/geology/mineral_resources>).

High commodity prices and the success of the South Australian Government's Plan for Accelerating Exploration (PACE) program in raising awareness of South Australia's mineral potential has seen expenditure on mineral exploration in the state rise eight-fold, from \$32.5m in 2001–02 to \$260.7m in 2006–07.

Between 2004–05 and 2005–06, the value of mineral production in the state rose 50 per cent, from \$1.59m to \$2.37m.

This growth has exceeded *South Australia's Strategic Plan* targets, and South Australia's mining sector has out-performed every other state or territory besides Western Australia. The focus of much of this activity has been the highly prospective Far North region.

The proposed \$7b Olympic Dam expansion would significantly contribute to continued growth of the sector. The expansion would make Olympic Dam one of the largest mines in the world and directly employ about 2000 permanent workers and more than 1000 contract workers. The proposal is subject to a formal Major Development Assessment process.

In addition, there are many other mining projects underway in the region. Major mines currently in production include Challenger (gold), Olympic Dam (copper, uranium, gold, silver), Beverley (uranium), Middleback Range/Project Magnet (iron ore), Angus (zinc, lead), Leigh Creek (coal) and Prominent Hill (copper, gold). Honeymoon has received approval to start operations.

On a smaller scale, opal is mined at Coober Pedy, Mintabie, Andamooka and Lambina. Construction materials also are mined locally, and they play a critical role in reducing costs associated with the construction of transport infrastructure, housing, and mining developments in the region.

Many other projects are emerging as exploration in South Australia accelerates. These include: Cairn Hill and Peculiar Knob near Coober Pedy; Carrapateena, Beverley 4 Mine, Kalkaroo and

White Dam in the north-east; and Jacinth - Ambrosia, Tripitaka, and Menninnie Dam in the west (and north of Eyre Peninsula). In addition, continued exploration can be expected to discover further deposits away from current focus areas.

Gas and oil production and exploration, centering on the Cooper and Eromanga basins, is also expanding. Since the 1970s, cumulative petroleum sales from this region have reached \$21.3b. More recently, investment in exploration doubled in just two years. Interest in a unique heat flow anomaly under the east of the region has also seen a rapid rise in interest in geothermal energy, with more than 100 applications for exploration having been lodged.

The region's mineral and energy resources are in various stages of development—from early exploration through to construction and full production. The exploration and planning stages can take many years and involve much uncertainty. Such uncertainty has been one of the challenges in developing the *Far North Region Plan*.

The impacts of mining activity on the region, and on other parts of the state, differ with each mine and depend on factors such as the type and location of the mine; transport logistics and infrastructure; whether it is a fly-in/fly-out operation; and the preferred location for support industries and mineral processing.

Short-term forecasts predict direct mining employment to rise by 5000 people during the next six years.¹⁶ Growth of the minerals and energy sectors continues to generate increased demand for supporting industries and services, such as mine planning, engineering, procurement and logistics, project and construction management, maintenance, information and communication technologies (ICT), technical support, environmental management and rehabilitation, and equipment manufacturing and maintenance. It is estimated that the proposed Olympic Dam expansion alone could generate more than 20,000 jobs statewide.

The South Australian Government is working closely with the industry and the education sector on the workforce development required. Several programs are underway, including the \$8.4m Mineral Resources and Heavy Engineering Skills Centre in the Upper Spencer Gulf.

In addition, significant infrastructure is needed to support new, large-scale projects. The Resources and Energy Sector Infrastructure Council (RESIC) task force established by the South Australian Government will plan and develop fit-for-purpose infrastructure to support mining operations in South Australia.

Tourism

The Far North region is one of the state's premier tourism destinations. In 2006, 962,000 people visited the region, with visitors staying more nights than in any other tourism region of the state except Adelaide. Tourists to the region tend to be activity seekers, young (15–29 years) overseas backpackers and 'grey tourists'. The growing market segment of older, non-working couples accounted for nearly a third of all visitors to the outback in 2006.

The region offers magnificent natural landscapes including the Flinders Ranges, Lake Eyre and the Gammon Ranges National Park. Nature tourism, bushwalking, wildlife viewing, four wheel driving, camping, and Aboriginal and non-Aboriginal heritage are major tourism attractions. The Mawson Trail for off-road cyclists and the Heysen Trail for walkers are also drawcards. At Port Augusta, the Wadlata Outback Centre and the Australian Arid Lands Botanic Garden offer the perfect introduction to the region. Further north is Coober Pedy, with its unique underground accommodation and active opal fields that produce about 85 per cent of the world's opals. Many smaller communities offer popular food, art and horseracing events that attract thousands of visitors.

Tourism is critical to the survival of many of the region's towns and is a major contributor to the South Australian economy. Accommodation takings alone in the region generated \$27.6m in 2006. The industry directly provides 961 jobs (or 8 per cent of regional employment) with many more indirect jobs in sectors such as retail. The South Australian Tourism Commission is working with local councils, communities and tourism operators to further increase visitor numbers and expenditure in the region.

¹⁶ *Estimated Demand for Labour in the Mining Sector 2006-2014*, South Australian Centre for Economic Studies.

Tourism also presents several challenges. Local communities, the Outback Areas Community Development Trust (OACDT) and the South Australian Government fund facilities to support tourism growth. Growing tourism demand is already placing great stress on available facilities, such as water, waste and wastewater treatment. Increased visitor numbers also affects roads and pastoral access routes, and requires more resources to manage and repair tourist impacts. The current capacity will be further tested if there is tourism growth without adequate planning. Ensuring development has a positive impact on visual qualities and character will enhance the appeal of the region to visitors.

Services and retail sectors

The services and retail sectors are major employers of people living in the Far North region.

In 2006, 41 per cent of employed people in Port Augusta worked in the health, education, training and administration (public and private) service sectors, while in the rest of the region the figure was 29 per cent.

Employment in the services and retail sectors continues to grow. In Port Augusta, administrative services jobs have doubled during the past decade.

Meanwhile, elsewhere in the region, administrative services jobs grew by 29 per cent and employment in the electricity, gas, water and waste sector increased three fold.

Retail employment is also important, particularly in Port Augusta, where it provides 14 per cent of all jobs.

These trends are expected to continue as mining activity in the region accelerates and Port Augusta expands its role as the regional service centre for the Far North.

Primary industries

Sheep and cattle stations cover more than 400,000 square kilometres (km²) of the Far North region, and in 2005 carried 140,000 cattle and 923,000 sheep. New technologies, changing farm practices, and the competing demand for labour from the mining industry have seen employment in the industry decline 23 per cent over the past decade. However, livestock production continues to play an important role in the region and remains a strong contributor to the South Australian economy. In 2005–06 the region generated \$116.35m or 13 per cent of the state's farm-gate value for livestock.

Pastoral properties are managed in accordance with conditions set out in the 42-year leases issued under the *Pastoral Land Management and Conservation Act 1989*. Pastoralists are instrumental in managing feral animals and providing sustainable management of the land. The leases are operated as 220 stations, runs or management units. The stations can be very large, and the region is home to the two largest contiguous cattle and sheep runs in Australia—Anna Creek (23,800 km²) and Commonwealth Hill (9800 km²).

Fishing and aquaculture, focused at the head of the Upper Spencer Gulf, are other primary industries of importance to the region.

Defence and aerospace

Defence and aerospace activities are making a resurgence in the region. An expansion is planned for the army training facilities at Cultana, which extend between Whyalla and Port Augusta in the Upper Spencer Gulf. While it is not envisaged that the expansion will bring permanent population increases to Port Augusta, personnel are likely to visit the city for recreation and shopping. In addition, the expansion may generate support industries such as catering and laundering.

The Australian Government's Woomera aerospace and defence facility is of strategic importance. Unique in the world, the facility continues to support a range of international experimental projects. Woomera township is well planned, with facilities such as a theatre, swimming centre, sports ground, observatory, shopping complex and bowling club and is well-positioned to support both the resident population and visiting defence and aerospace employees.

The arts and creative industries

The region's spectacular landscapes and historical towns have featured in many paintings, films, television series and commercials, and continue to attract interest from Australian and overseas artists and producers. The region is also a popular setting for South Australian arts events, such as Opera in the Outback. Small-scale annual art exhibitions are held at venues across the region, and interest in Aboriginal art from the region continues to grow.

The arts industry of the APY Lands is an important and growing element of the local economy, as well as a means of maintaining traditional skills in the communities. Operating under Anangu Arts banner, artists work through art centres located at Ernabella, Indulkana (Iwantja), Fregon (Kaltjiti), Mimili and Amata (Tjala). Ernabella Arts is known internationally for textile printing and ceramics, and services about 70 local artists who have exhibited around the world. Kaltjiti Crafts is beginning to expand beyond its production of batiks and paintings. A large proportion of the wood carvings produced by an estimated 250 Anangu artists are marketed through Maruku Arts in Uluru.

A UNIQUE AND DIVERSE DEMOGRAPHIC

Region-wide statistics mask the demographic diversity of the Far North region (see Table 2.1). More than three-quarters of the population live in the major urban centres of Port Augusta, Roxby Downs, Coober Pedy and Quorn. In addition, the region includes the largest statutory Aboriginal lands in South Australia (APY Lands) and some of the most sparsely populated areas of the state.

Table 2.1 – Demographic summary, Far North region, South Australia 2006

	Far North Regional Balance ^a	Port Augusta	APY Lands	Roxby Downs	Cooper Pedy	Flinders Ranges Council Area	Far North Region Total	South Australia
Population	2925	13,874	2230	4054	1913	1731	26,727	1,514,336
Under 14 years	18%	21%	27%	28%	17%	20%	22%	19%
24–54 years	49%	42%	41%	55%	42%	37%	44%	41%
Over 65 years	7%	12%	5%	0.5%	13%	20%	10%	15%
Indigenous	13%	17%	85%	2%	14%	8%	19%	2%
Workforce participation	72%	56%	52%	82%	48%	50%	58%	59%
Unemployment rate	3.9%	6.0%	7.6%	0.3%	6.4%	2.9%	7.5%	5.2%
Median weekly household income	\$894	\$795	\$891	\$2033	\$533	\$655	\$967	\$887

Note: ^a Far North region excluding Port Augusta, APY Lands, Roxby Downs, Cooper Pedy and the Flinders Ranges Council area.

Source: ABS Census of Population and Housing, 2006; Department of Employment and Workplace Relations, June 2007.

Outside the major centres and the APY Lands (Far North Regional Balance in Table 2.1), the region's demography reflects the remote environment and the dominance of mining and pastoral industries. Its characteristics include:

- a high proportion of working age population (59 per cent compared with the state average of 41 per cent)
- a high proportion of Aboriginal people (13 per cent compared with the state average of two per cent)
- a very low proportion of people over 65 years (seven per cent compared with the state average of 15 per cent)
- a very high workforce participation rate and low unemployment.

By way of comparison:

- Roxby Downs has a high proportion of children and working-age people, with near full employment
- the Flinders Ranges Council area¹⁷ has a much older population than elsewhere in the region or the state, with more than half the population aged over 45
- Coober Pedy and Port Augusta have similar demographic profiles to the rest of the state, apart from very high proportions of Aboriginal people.

The APY Lands have a particularly unusual demographic. They have a higher proportion of Aboriginal people than any other area of South Australia (1884 people or 85 per cent of the population). In addition, 64 per cent of the population is aged under 35 years compared with the state average of 44 per cent.

In terms of employment, Roxby Downs has a workforce participation rate of 82 per cent and a median household income of \$2033 per week—the highest in South Australia. By comparison, Coober Pedy has a workforce participation rate of 48 per cent and a median household income of \$533 a week. The APY Lands, Coober Pedy and Port Augusta have the highest unemployment rates in the region.

Managing the impacts of increasing mining activity on settlements

As mining activities in the region shift from exploration to extraction, it is critical to plan for the impacts on towns, small service centres and existing industries. The impacts range widely from population growth, housing, services and infrastructure to competing demand for limited resources of trade expertise, labour and natural resources.

BHP Billiton, via the Major Developments Assessment Process, is preparing for the expansion of Roxby Downs in line with the proposed Olympic Dam mine expansion.

A separate zoning process has been undertaken by the State Government for the Roxby town centre. As such, Roxby Downs is not considered in detail in the *Far North Region Plan*.

While developing the Plan it became clear that Port Augusta and Andamooka required more detailed master planning to manage increasing development activity in recent years.

Port Augusta is the major administrative and service centre for the region. Since 2001 the population has remained steady at about 13,800 people. This follows two decades of sustained population loss. The turnaround is being driven by the expansion of retail, services and some industry sectors in response to increased mining and defence activities in the region. Dwelling applications have risen five fold. The South Australian Government (through the Department of Planning and Local Government) is working with the Port Augusta City Council and the Northern Regional Development Board to prepare a Structure Plan for Port Augusta to guide growth and development and inform infrastructure and service provision. Similar plans are being developed for Port Pirie and Whyalla.

¹⁷ Includes the towns of Quorn and Hawker, which are tourist gateways between the southern and northern Flinders Ranges.

Development applications for Andamooka, located only 32 kilometres from Roxby Downs, have risen from an average of three a year to 80 in 2005–06. Dislocation of longer-term residents and increased demands on existing infrastructure prompted a master planning exercise, which resulted in the incorporation of further guidance to development in the local Development Plan. The South Australian Government (through the Department of Planning and Local Government) is working with the Andamooka Progress and Opal Miners Association to manage future development in the town.

While a small number of Olympic Dam employees have settled in Woomera, located 80 kilometres from Roxby Downs, the main focus of the town continues to be supporting users of the defence and aerospace facility. Developed and managed by the Australian Government, the township is well planned.

Cooper Pedy is experiencing growing interest in industrial and residential development in association with emerging mines at Prominent Hill, Cairn Hill and Peculiar Knob, and the town has a good supply of zoned industrial and residential land. The District Council, local business leaders and the Northern Regional Development Board have been engaging with mining companies, and have prepared a community plan to position the town to capitalise on emerging opportunities.

For other smaller settlements in the region, such as Oodnadatta, the mines and exploration activity have provided new opportunities for the unemployed. It has also resulted in the loss of skilled labour as people take up higher paying positions in the mining sector. With small populations and a dependence on local volunteers to maintain infrastructure and services, the loss of just a few people can have a significant impact on such towns.

Outside the established towns, mining companies are developing accommodation for employees at mine sites. These developments are not formal towns, rather housing and facilities to support fly-in/fly-out operations.

The impacts of new and expanding mines on towns across the region, including settlements in the Far North, the APY Lands, the Flinders Ranges and along the Barrier Highway, will continue to be monitored. Implications for other regions of the state and metropolitan Adelaide are also being assessed.

Planning with Aboriginal people

The Far North region has the highest proportion of Aboriginal people in the state. It also encompasses a number of Aboriginal lands, including the APY Lands (far north west), Nepabunna (Flinders Ranges), Iga Warta (Flinders Ranges), Umoona (adjacent Coober Pedy), and Davenport (Port Augusta). These communities have highly transient populations.

Improving the wellbeing of Aboriginal South Australians is a priority of *South Australia's Strategic Plan*. Involving Aboriginal people in planning for the future growth and development of the Far North region is one mechanism for achieving this target.

This started with a three-year consultative process to prepare detailed Community Structure Plans for nine of the major communities of the APY Lands. The purpose of these plans is to express how the Anangu want their communities to develop; to ensure housing and other structures are sited in suitable locations; and to ensure that places of cultural significance are protected. In the past, government authorities have initiated building works in some communities by without reference to clearly defined plans. This has resulted in some buildings being located where they could be adversely affected by environmental conditions, such as flooding, or where they undermine the functioning of towns.

The Community Structure Plans and the *Far North Region Plan* have been prepared during a re-evaluation of past government policies towards remote Indigenous communities. This has included taking account of the uncertainty about the future of the smaller communities in the APY Lands, which may have implications for larger communities both on and off the Lands. The outputs of these plans will be evaluated to ensure subsequent plans continue to be of use to the APY communities.

In addition, the Department for Families and Communities, Aboriginal Asset Services has been conducting an audit of buildings on the APY Lands to form a comprehensive asset database. Further detailed planning for Port Augusta and Coober Pedy will also involve input from Aboriginal people.

Coober Pedy has a relatively static, permanent Aboriginal population and there is a good supply of housing throughout the town and on the Umoona Community Lands. However, transitional accommodation, public transport, and increased policing are needed to provide for the growing number of people visiting periodically from the nearby Aboriginal lands.

Increasing numbers of people from the northern Aboriginal communities have been staying in the Lakeview transitional camp in Port Augusta during the past few years, with many seeking to live permanently in the city. This is expected to continue in the short to medium term as people move to access greater employment opportunities and services. Consideration will need to be given to this growing population in Port Augusta and the Davenport community to ensure an adequate supply of housing and appropriate funding of social services.

Other initiatives to ensure Aboriginal people in the region have access to services, housing and employment opportunities include:

- a review of the infrastructure and service assets across the unincorporated areas and APY Lands by the South Australian Government, together with the Commonwealth Government, APY Executive Board, and outback communities to inform future planning, investment, and management
- a commitment by the South Australian Government to increase the number of police and police stations for Mimili, Pukatja and Amata; youth workers and counsellors on the APY Lands; and funding for the Nganampa Health Council and mobile outreach services. The government has introduced a rebate on electricity supplying APY Lands community stores to improve access to fresh food, and is supporting the establishment of bush food plots in two APY Lands communities

- work by the Northern Regional Development Board with Aboriginal communities to identify economic opportunities, including arts, agricultural and tourism ventures
- liaison work by the South Australian Government (through PIRSA) between the mining companies and the Pitjantjatjara and Yankunytjatjara people to ensure heritage sites are protected, and to identify employment and training opportunities as a result of the accelerating mining exploration on the highly prospective Musgrave Ranges in the APY Lands.

Planning for a transient and remote population

In addition to a transient Aboriginal population, the region has a large number of temporary residents associated with mining operations and tourism. ABS data¹⁸ reveals that in addition to the permanent population, a further 3587 people were visiting the region on Census night. In 2006, 60 per cent of whom were staying outside the major towns in the outback and Flinders Ranges.

Many of these people are likely to be employees of mining companies, contractors working on a fly-in/fly-out basis, and people using the Woomera defence facility. These people are not included in the Census as permanent residents. Nevertheless, these temporary residents—whose numbers are expected to grow—need to be considered in planning for future housing, services and infrastructure.

Tourists can also bring considerable fluctuations in population. Small outback towns such as Innamincka in the far north-east can grow from a population of about 20 to 400 during winter when tourism is at its peak. On the other hand, during the very hot summer months the settlements in the region's north, including the Aboriginal lands, decline significantly as even permanent residents escape the heat.

Providing infrastructure, services and environmental services and management where there are such significant seasonal fluctuations in population is a challenge.

Similarly there are many challenges associated with servicing the small remote populations across the region. The Plan recognises the important role that these towns, which include Glendambo, Pimba, Innamincka, William Creek, Marree, Oodnadatta and Yunta, play in supporting local communities and pastoralists as well as providing accommodation, fuel and services to travellers in the outback.

Managing the impacts of increased access by people and off-road vehicles is another challenge.

Many of these towns have a rich history, providing an insight into the pioneering days of overland transport and the pastoral industry, and are popular tourist gateways to outback attractions such as Lake Eyre, Dalhousie Springs and the Simpson Desert.

Managing development in the Flinders Ranges

The Flinders Ranges is the most densely settled part of the region, is relatively close to Adelaide (five hours drive) and Port Augusta, and is an iconic Australian tourist destination. The area has spectacular natural landscapes and character towns valued by locals and visitors.

¹⁸ ABS, *Census of Population and Housing, 2006*, cat. no. 2003.3, ABS, Canberra, 2006

The tiny settlements of Parachilna and Blinman, together with resorts at Wilpena and Arkaroola, offer a range of accommodation and are ideal bases for exploring the national parks of the area. A number of stations, Aboriginal communities and towns such as Lyndhurst and Copley also cater for tourists.

Developing a clear vision for the character of towns and landscapes of the Flinders Ranges will ensure development has a positive impact and retains their appeal to visitors.

The pressures on Quorn, the largest town in the Flinders Ranges, differ from those facing the smaller tourist towns. While the population has remained relatively static, development activity has increased during recent years as an increasing number of retirees and people who commute to work in Port Augusta, 40 kilometres away, settle in the town. This pressure is likely to continue in the foreseeable future, placing increasing demand on electricity, wastewater and water infrastructure.

Ageing populations

While the region as a whole has a relatively young population, the major centres of Coober Pedy, Port Augusta and Quorn are seeing shifts in the demographic balance as the population ages and people from across the region move to the towns to retire. Similar trends can be seen in the opal mining towns of Andamooka and Mintabie. An increased proportion of aged people will have implications for community services and facilities, including health and public transport. Despite some excellent existing facilities, additional aged care accommodation and nursing homes are likely to be required to meet future needs and allow people to stay in the region as they age.

Income disparities, housing affordability and rental accommodation

Across the region there is a wide disparity in incomes. Growth in high wage jobs in the mining sector means this trend is likely to continue. In addition, property values have risen during the past five years, particularly in Port Augusta and Roxby Downs, as a result of increased demand. While providing benefits to the region, over time this is likely to affect its capacity to attract and retain workers in the growing retail and services sectors and to meet the housing needs of disadvantaged groups.

Purchasing a home may not be an option for many professionals working in the region on short-term contracts, low-income workers, single or young people, and much of the region's Aboriginal population. Ensuring an adequate supply of appropriate and affordable rental housing is a priority, particularly in major centres such as Port Augusta, Roxby Downs, Coober Pedy and Quorn.

APPENDIX 3

CONTRIBUTION OF THE PLAN TO SOUTH AUSTRALIA'S STRATEGIC PLAN TARGETS

During 2006, *South Australia's Strategic Plan (SASP)* update team oversaw a community engagement program to improve understanding of the plan's contents; update the community about progress toward the SASP targets; foster partnerships around the targets; and obtain considered input from interest groups, community organisations and individuals about what they would like to see reflected in this whole-of-state plan. The update team consisted of 26 community leaders drawn from key government advisory boards.

The engagement program, conducted under the banner of 'Have Your Say SA' from April to June 2006 at venues across South Australia, involved 14 regional consultations ('Talking Regions'); meetings structured around the six SASP objectives ('Talking Targets'); 10 public meetings ('Community Forums'); presentations to various groups and organisations; and written submissions, including emails and a website survey. Over 1600 South Australians attended the various meetings; further, 369 written submissions were received.

At least one regional planning day was held in each of the state's seven Local Government Association (LGA) regions. Local leaders representing a wide cross-section of the community were invited.

Each meeting included the following:

- a presentation by Jeff Tryens, Executive Director, SASP Community Connection, on regional data and background information
- presentations by local leaders who could speak with authority, knowledge and experience on that LGA region's perspective on the SASP objectives and targets
- a survey of participants to gauge their perceptions of their region's strengths
- break-out sessions to consider local concerns and actions
- identification of the priority issues for the region.

On 24 January 2007, the Premier launched the update of *South Australia's Strategic Plan*, which reflected many of the suggestions raised during the community engagement program. Copies are available online at <www.saplan.org.au>.

The following is a summary of the 'Talking Regions' session held by the SASP update team at Port Augusta in May 2006 to identify priorities for the Far North region relating to SASP and to gather ideas about how SASP could be improved.

The issues raised in this session were also considered in the preparation of the *Far North Region Plan*. Table 3.1 shows the linkages between the Plan's principles and the SASP targets.

Regional priorities for Spencer Gulf and Far North region

'Talking Regions' held at Port Augusta on 11 May 2006

Attendees: 75

Participants identified the following priority areas for the region:

Education and training

- Literacy and numeracy 0–5 years of age
- More funded training places
- Attraction/retention of teachers
- Community education/family support
- The right training for young people, especially Aboriginal young people

Infrastructure (soft)

- Better planning
- Facilities/services
- Process for priority settings/needs vs. population numbers
- Need local government structure in outback

Infrastructure (hard)

- Power/water/roads/transport
- Affordable housing
- Sustainable/renewable fuels etc

Engagement and participation of Aboriginal people

- Across all areas
- Aboriginal wellbeing
- Teaching leaders to lead so that all communities can work together (leadership development at a young age)
- Anti-poverty strategy development—local government system to deliver (local government authority) particularly in outback

Employment

- Attraction/retention
- Apprenticeships/traineeships
- Develop state employment strategy
- Linkages between business and training
- Coordinated planning for recruitment and retention

Retention of youth

- Education and training
- Creation of new employment opportunities
- Strategies to address risk-taking behaviours, for example, drugs/alcohol
- More marketing and promotion of region

Planning

- Create new structures to plan locally
- Triple-bottom-line approach

Safety/crime prevention

- Reduce domestic violence
- Safety on streets and home
- Reinvest in the region (six stars)
- Change mindset/attitude
- Learning/work/community participation/arts

For the full transcript of the day-long consultation, see <www.saplan.org.au/documents/TemplateFINALPortAugusta-table7added1.pdf>.

Table 3.1 – Linkages with *South Australia's Strategic Plan*

<i>Far North Region Plan Principles</i>	<i>South Australia's Strategic Plan Target</i>
ENVIRONMENTAL AND CULTURAL ASSETS	
1. Recognise, protect and restore the region's environmental assets	T3.1 Lose no species; T3.2 Land biodiversity; T3.4 Marine biodiversity; T3.7 Ecological footprint; T3.9 Sustainable water supply
2. Ensure the efficient use of water and energy	T3.5 Greenhouse gas emissions reduction; T3.7 Ecological footprint; T3.9 Sustainable water supply; T3.13 Energy efficiency—government buildings; T3.14 Energy efficiency—dwellings
3. Protect people, property and the environment from exposure to hazards	T2.4 Healthy South Australians; T2.5 Aboriginal healthy life expectancy; T2.7 Psychological wellbeing
4. Effectively manage waste, wastewater and stormwater	T3.7 Ecological footprint; T3.8 Zero waste; T3.9 Sustainable water supply
5. Identify and protect places of heritage, character and cultural significance	T6.1 Aboriginal wellbeing; T2.7 Psychological wellbeing; T4.5 Understanding Aboriginal culture; T5.9 Regional population levels
ECONOMIC DEVELOPMENT	
6. Protect and build on the region's strategic infrastructure	T1.1 Economic growth; T1.2 Competitive business climate; T1.14 Total exports; T1.21 Strategic infrastructure
7. Provide serviced and well-sited industrial land to meet projected demand	T1.1 Economic growth; T1.2 Competitive business climate; T1.5 Business investment; T1.10 Jobs; T1.14 Total exports; T1.26 Aboriginal unemployment
8. Safeguard mineral, oil and gas resources and support further exploration, extraction and processing	T1.1 Economic growth; T1.10 Jobs; T1.14 Total exports; T1.17 Minerals exploration; T1.18 Minerals production; T1.19 Minerals processing, T1.26 Aboriginal unemployment
9. Reinforce the Flinders Ranges and the outback as iconic tourist destinations	T1.10 Jobs; T1.5 Business investment; T1.15 Tourism industry; T1.21 Strategic infrastructure; T1.26 Aboriginal unemployment; T4.5 Understanding of Aboriginal culture; T5.9 Regional population levels

Far North Region Plan Principles	South Australia's Strategic Plan Target
10. Retain and support ongoing defence and aerospace activities	T1.13 Employment in the defence industry; T1.20 Defence industry; T5.9 Regional population levels; T4.9, 4.10, 4.11 Investment in science, research and innovation
11. Retain the economic potential of pastoral land	T1.1 Economic growth; T1.10 Jobs; T1.14 Total exports; T5.9 Regional population levels
12. Focus commercial development in key towns and ensure it is well sited and designed	T1.1 Economic growth ; T1.5 Business investment; T1.10 Jobs; T1.26 Aboriginal unemployment; T5.9 Regional population levels
13. Foster sustainable alternative energy and water supply industries	T1.10 Jobs; T3.12 Renewable energy; T3.7 Ecological footprint; T4.7 Business innovation; T4.6 Commercialisation of research; T4.11 Business expenditure
14. Support expansion of aquaculture and fishing industries at Port Augusta	T1.1 Economic growth; T1.10 Jobs; T1.14 Total exports
POPULATION AND SETTLEMENTS	
15. Reinforce the role, functionality and vibrancy of towns and settlements	T1.22 Total population; T1.21 Strategic infrastructure; T5.9 Regional population levels
16. Strategically plan and manage township growth	T1.22 Total population; T3.7 Ecological footprint; T5.9 Regional population levels
17. Design towns to provide safe, healthy, accessible and appealing environments	T2.3 Sport and recreation; T2.4 Healthy South Australians; T2.8 Statewide crime rates; T5.9 Regional population levels; T6.1 Aboriginal wellbeing
18. Provide residential land for a supply of diverse, affordable and sustainable housing to meet the needs of current and future residents and visitors	T1.22 Total population; T1.24 Overseas migration; T2.5 Aboriginal healthy life expectancy; T5.9 Regional population levels; T6.7 Affordable housing, T6.8 Housing stress; T6.9 Aboriginal housing; T6.10 Housing for people with disabilities

APPENDIX 4

RELATED REPORTS, STRATEGIES AND PLANS

Various plans, strategies and research have been considered during the development of the *Far North Region Plan*. Many of these documents were developed in consultation with industry and the local community. The detailed research and analysis contained in these documents underpin and complement the Plan.

Collins Anderson Management (2005) *Outback Regional Recreation, Sport and Open Space Strategy 2005–2010*

Department for Environment and Heritage (2001) *Summary—Biodiversity Plan for the Northern Agricultural Districts*

Department for Environment and Heritage (2003) *Heritage Directions: A Future for Built Heritage in South Australia*

Department for Environment and Heritage (2003) *NatureLinks—Implementing the Wild Country Philosophy in South Australia*

Department for Environment and Heritage (forthcoming) *Estuaries Policy and Action Plan for South Australia*

Department for Environment and Heritage (2007) *Conservation Assessment of the Northern and Yorke Coast*

Department for Environment and Heritage (2006) *Marine Planning Framework for South Australia*

Department for Water Resources (2000) *State Water Plan*

Department of Housing and Urban Development (1994) *Human Services Planning Kit, (2nd ed)* South Australian Urban Land Trust

Department of Human Services and Environment Protection Authority (1999) *South Australian Reclaimed Water Guidelines*

Economic Development Board (2003) *A Framework for Economic Development in South Australia*

Environment Australia (1999) *Strategic Plan of Action for the National Representative System of Marine Protected Areas: A Guide for Action*

Environment Australia (2001) *A Directory of Important Wetlands in Australia, Third Edition*

Environment Protection Authority (1998) *EPA Guidelines Major Solid Waste Landfill Depots*

Environment Protection Authority (2001) *Environmental Guidelines Resource Recovery and Waste Transfer Depots*

Environment Protection Authority (1997) *Stormwater Pollution Prevention Code of Practice for Local, State and Federal Government*

Environment Protection Authority (1997) *Stormwater Pollution Prevention Code of Practice for the Community*

- Environment Protection Authority (1999) *Stormwater Pollution Prevention Code of Practice for the Building and Construction Industry*
- Environment Protection Authority (2003) *Environment Protection (Water Quality) Policy and Explanatory Report 2003*
- Environment Protection Authority (2003) *The State of our Environment: State of the Environment Report for South Australia 2003*
- Government of South Australia—Department of Justice (various) Crime Prevention Through Environmental Design Program. Refer Crime Prevention Unit, <www.cpu.sa.gov.au/cpted.html>
- Government of South Australia (2001) *State Food Plan 2001–2004*
- Government of South Australia (2003) *South Australia's Draft Transport Plan*
- Government of South Australia (2004) *Blueprint for the South Australian Representative System of Marine Protected Areas* (DEH)
- Government of South Australia (2004) *Prosperity Through People: A Population Policy for South Australia*
- Government of South Australia (2004) *South Australia's Broadband Strategy*
- Government of South Australia (2004) *South Australia's Strategic Plan, Creating Opportunity*
- Government of South Australia (2004) *Unlocking South Australia's Mineral and Energy Potential: A Plan for Accelerating Exploration*
- Government of South Australia—PIRSA (2005) *Eastern Spencer Gulf Aquaculture Management Policy Report* (Gazetted on 15 December 2005)
- Government of South Australia (2005) *Housing Plan for South Australia*
- Government of South Australia (June 2005) *South Australia's Strategic Plan: Preliminary Community Engagement Report*
- Government of South Australia—Zero Waste SA (2005) *South Australia's Waste Strategy 2005–2010*
- Government of South Australia (2005) *Strategic Infrastructure Plan for South Australia: Regional Overview 2005–06—2014–15*
- Government of South Australia (2006) *Draft Spencer Gulf Marine Plan*
- Government of South Australia (2006) *Tackling Climate Change: South Australia's Greenhouse Strategy 2007–2020*
- Lothian, A (2005) *Coastal Viewscapes of South Australia* (prepared for Department for Environment and Heritage)
- McInnes KL, Suppiah R, Whetton PH, Hennessy KJ & Jones RN (2003) *Climate Change in South Australia—Report on: Assessment of climate change, impacts and possible adaptation strategies relevant to South Australia*, CSIRO Atmospheric Research
- Minerals Council of Australia (2006) *National Scorecard for Mining Approval Processes*
- Outback Areas Community Development Trust (2005) *State of the Outback Report*
- Planning SA (1998) *Planning Bulletin Industrial Development*
- Planning SA (1999) *Good Residential Design SA: A Resource for Planning, Designing and Developing Neighbourhoods and Homes*
- Planning SA (2000) *Planning Bulletin Waste Infrastructure—Resource Recovery Centres*
- Planning SA (2001) *Planning Bulletin—Development in Rural Areas*
- Planning SA (2003) *Planning Strategy for Regional South Australia*

- Planning SA (2003) Planning Bulletin—Extractive Industries
- Planning SA (2004) *Designing Out Crime: Design Solutions For Safer Neighbourhoods*
- Planning SA (2006) *Planning Strategy for Metropolitan Adelaide*
- Planning SA (2006) *Planning Strategy for Outer Metropolitan Adelaide Region*
- Primary Industries and Resources SA (2001) *State Dryland Salinity Strategy and Directions for Managing Salinity in South Australia*
- South Australian Arid Lands Natural Resources Management Board (2006) *Catchment Water Management Plan*
- South Australian Coast Protection Board (1992) *Coastline: Coastal Erosion, Flooding And Sea Level Rise Standards And Protection Policy*
- South Australian Coast Protection Board (2002) *Coast Protection Board Policy Document*
- South Australian Coast Protection Board (2003) *Coastline: A Strategy for Implementing CPB Policies on Coastal Acid Sulfate Soils in South Australia*
- South Australian Tourism Commission (2002) *South Australian Tourism Plan 2003–2008: Inspiring Partnerships for Sustainable Tourism*
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- South Australian Tourism Commission and Department for Environment and Heritage (2003) *Responsible Nature-based Tourism Strategy 2004–2009*
- South Australia Tourism Commission (2009) *South Australian Tourism Plan 2009–2014*
- Taylor Burrell Barnett Town Planning and Design (2008) *Pipalyatjara Community Structure Plan No. 1*; (2008) *Amata Community Structure Plan No. 1*; (2008) *Pukatja Community Structure Plan No. 1*; (2008) *Nyapari Community Structure Plan No. 1*; (2007) *Kanpi Community Structure Plan No. 1*; (2008) *Indulkana Community Structure Plan No. 1*; and (2008) *Yunyarini Community Structure Plan No. 1*
- Urban and Rural Planning Solutions (2007) *Port Augusta City Council Ageing Strategy 2007–2012*
- Urban and Rural Planning Solutions (2009) *Flinders Ranges and Outback SA Region Integrated Strategic Tourism Plan 2008–2014*



GLOSSARY

GLOSSARY

Acid sulfate soils	The common name given to naturally occurring soils containing iron sulfides (predominately pyrite). When exposed to oxygen due to drainage, excavation or disturbance, they produce sulfuric acid and trigger the release of iron, aluminium and heavy metals. Once mobilised, the acid and minerals can kill vegetation, destroy building materials and seep into wetlands, killing fish and other aquatic organisms. Acid sulfate soils are found in the River Murray, the adjacent wetlands and the Lower Lakes close to the Murray mouth.
Affordable housing	Affordable housing is housing that is appropriate to the needs of households with low and moderate incomes (that is, up to 120 per cent of gross annual median income). The indicative affordable house purchase price for these groups—currently \$225,000—is determined by the affordability indicators gazetted on 8 October 2009 (p. 4818) or as amended from time to time under the <i>Development Act 1993</i> and South Australian Housing Trust (General) Regulations 1995.
Biodiversity	The variety of life in all its forms and at all levels of organisation, as well as the ecological and evolutionary processes through which genes, species and ecosystems interact with one another and with their environment.
Community Wastewater Management System (CWMS)	A system or scheme that is installed and operated by an individual council for the collection, treatment and disposal (including by recycling) of wastewater.
Community Structure Plan	Community Structure Plans provide a strategic framework for the consideration of land-use planning and development in Aboriginal communities, which are generally in unincorporated (out of council) areas in rural or remote parts of the state. They are non-statutory documents intended to guide decision-making by the land holding authority, the community and the development authority.
Density	Density is a measure of the population (persons) or the number of dwelling units in a given area (see Gross density and Net residential site density, below).

Development Plan reviews (S.30 reviews)	Development Plan reviews (required under section 30 of the <i>Development Act 1993</i>) provide an important opportunity for local government councils to ensure the entire Development Plan is relevant and appropriate, both in terms of the South Australian Planning Strategy and local strategic directions. Development Plan reviews help to ensure that a holistic approach is taken to resolving planning issues and problems.
Development Plans	Development Plans should seek to promote the provisions of the Planning Strategy and may set out to include planning or development objectives or principles. They are the principal document in South Australia used to assess development.
Distributed or embedded generation	Where a generating unit is connected to a distribution network and not having direct access to the transmission network.
Freight corridors	Road or rail corridors for the movement of freight.
Greenhouse gas emissions	Polluting carbon substances released into the atmosphere.
Green industry	Green industries are primarily concerned with the supply of energy from renewable sources such as wind, solar and water (including waste), and those industries concerned with assisting other sectors of the economy to meet the climate change challenge by reducing their reliance on carbon-based energy supply.
Gross density	Density of a given area calculated by dividing the total number of dwellings by the total land area (in hectares) that they occupy (no land is excluded from the calculation) and expressed as dwelling units per hectare (du/ha).
Gross state product (GSP)	Gross state product is the measurement of economic output of the state. It is the sum of all value added by industries in the state.
Growth areas	Areas identified for urban expansion that will be subject to further intensive investigations and public consultation.

Housing and Employment Land Supply Program	The program combines the Metropolitan Development Program and the Industrial Land Program. The program's fundamental role is to ensure that there is land capacity to meet the annual housing and employment targets, and that capacity is spread equitably across the region to avoid market volatility.
Indigenous Land Use Agreement (ILUA)	An Indigenous Land Use Agreement is a voluntary agreement between a native title group and others for the use and management of the land and/or water covered by the agreement.
ICT	Information and communication technology.
Intermodal	The movement of goods in one and the same loading unit or road vehicle, which uses successively two or more modes of transport without handling the goods themselves in changing modes. By extension, the term 'intermodality' has been used to describe a system of transport whereby two or more modes of transport are used to transport the same loading unit or truck in an integrated manner, without loading or unloading, in a door-to-door transport chain.
Mixed uses Mixed-use living	Mixed uses include a combination of major land-use types, such as residential, retail, office, commercial, civic and light industrial. The mixture of uses can be both vertical and horizontal, but not necessarily in the same building or site. Activity centres, transit nodes, the areas surrounding major employment nodes and parts of the city centre, and urban regeneration areas are considered to be ideal locations for mixed-use development.
Regional Implementation Strategy	A Regional Implementation Strategy gives a spatial expression to the Plan's policies, targets and major infrastructure priorities at the regional level. It distributes the overall growth targets for a region between various growth areas (for example, transit corridors, transit-oriented developments, redevelopment sites).
Residential Development Code	The Code has expanded the categories for complying development by essentially providing a 'tick-box' assessment for a proposal against a set series of criteria known as 'performance controls'. These include issues such as location, height, setback and site coverage. One of the benefits is simpler, faster and cheaper planning and building approvals for home construction and renovation.

Revitalisation	Improving the amenity and character of existing neighbourhoods and suburbs through several initiatives. These initiatives may include improved open-space provisions, better street lighting, increased public transport, new shopping centres, community services, quality urban design guidelines and increased residential densities.
Rural living	Large residential allotments outside towns that allow for minor primary production activity.
State Significant Areas	Areas that the Minister can declare as state significant and take charge of all the planning and development issues for the site.
Strategic Management Plans	The <i>Local Government Act 1999</i> requires councils to apply a strategic approach in all actions they undertake through the preparation of Strategic Management Plans. These plans articulate council goals and objectives and the vision for the community and are intended to complement the regional volumes of the South Australian Planning Strategy.
Structure Plan	A Structure Plan describes the broad development outcomes that the State Government wants to achieve in a growth area (for example, a transit corridor) and distributes the growth target from the Regional Implementation Strategy in this growth area between, for example, transit-oriented developments and areas that require precinct planning, etc.
Sustainable development	Forms of development that meet the needs of the present without compromising the ability of future generations to meet their needs.
Water demand	Water demand is taken to be the measurement of all water uses in the region from all water sources for the purposes of essential human needs, the economy and the environment.
Water infrastructure	Water infrastructure includes treatment systems (including wetlands), pumps, pipelines, storages (including aquifers) and other natural or constructed means of transferring water of appropriate quality from its source to the demand point.
Water security	Water security has been taken to mean the availability of an appropriate quantity of water at an appropriate quality to meet the needs of the community. This includes the provision of potable and fit-for-purpose water supplies, collection and treatment of wastewater and the management of stormwater and groundwater resources.

Water-sensitive urban design (WSUD)	<p>Water-sensitive urban design (WSUD) is an approach to urban planning and design that integrates the management of the total water cycle into the urban development process. It includes:</p> <ul style="list-style-type: none">■ the integrated management of groundwater, surface run-off (including stormwater), drinking water and wastewater to protect water-related environmental, recreational and cultural values■ the storage, treatment and beneficial use of run-off■ the treatment and re-use of wastewater■ using vegetation for treatment purposes, water-efficient landscaping and enhancing biodiversity■ using water-saving measures inside and outside domestic, commercial, industrial and institutional premises to minimise requirements for drinking and non-drinking water supplies. <p>WSUD incorporates all water resources, including surface water, groundwater, urban and roof run-off, and wastewater.</p>
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