# North West Regional Plan

*planning for a stronger, more liveable and sustainable community*

**August 2010**


Queensland Government

## North West Regional Plan 2010-2031

(NW Regional Plan)

**Prepared by:**
Prepared by the Honourable Stirling Hinchliffe MP, Minister for Infrastructure and Planning in accordance with the *Integrated Planning Act 1997*, section 2.5A 10.

**With assistance from:**
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**For more information on the regional plan, contact:**

**Department of Infrastructure and Planning**
**post** PO Box 5666 Townsville Qld 4870
**visit** Level 4 State Government Building 187–209 Stanley Street Townsville
**tel** +61 7 4799 7379
**fax** +61 7 4760 7535
**email** northwest@dip.qld.gov.au
**web** www.dip.qld.gov.au/northwest

**Copies of the regional plan are available:**
**online** www.dip.qld.gov.au/northwest
**for viewing** at most council chambers, libraries and customer service centres within the local government areas covered by the regional plan
**for free collection** on CD-ROM or in hard copy by contacting Department of Infrastructure and Planning offices in Townsville, Mount Isa and Brisbane
**by phoning** +61 7 4799 7379
**by emailing** northwest@dip.qld.gov.au

**Department of Infrastructure and Planning offices:**

- Level 4, corner of Walker and Stanley Streets, Townsville
- Level 1, Mount Isa House, Cnr Camooweal and Mary Streets, Mount Isa
- Level 2, Orchid Plaza, 79-87 Abbott Street, Cairns
- Shop front, 63 George Street, Brisbane.

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# North West Regional Plan 2010—2031

*planning for a stronger, more liveable and sustainable community*

North West region vision—the North West region has a robust, diverse and sustainable economy and well-planned and coordinated infrastructure and services, built through the economic benefits of mining and agricultural industries. It is a place where people choose to live and visit due to its liveability, well-managed natural resources and the community's strong sense of cultural identity.

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## Map 1—North West Queensland locality map

# Part A—Introduction

## Background and purpose

*The North West is one of the largest regions in Queensland, covering more than 200 500 square kilometres—stretching from the Northern Territory border in the west to the Great Dividing Range in the east. It has a strong and proud multicultural heritage, with a significant population of Indigenous people.*

The regional plan applies to the North West region, which includes the local government areas specified in schedule 1, part 3 of the *Sustainable Planning Regulation 2009*.

The region (Map 1, page 4) includes the following:

- Flinders Shire
- Richmond Shire
- McKinlay Shire
- Cloncurry Shire
- Mount Isa City.

With an estimated population of approximately 28 700[1], 21,579[2] people live in Mount Isa City, with the balance of residents living in other shires.

Mining and mineral processing contribute significantly to the regional and national economy. The region has globally significant mineral resources, including over one quarter of the world's known lead and zinc reserves. Mineral extraction and processes generate significant wealth for the region and the nation. Although home to less than one per cent of the state's population, the region's mining activity contributes significantly to the state's revenue. Agriculture, particularly beef production, is also a significant primary industry, with a long history in the region.

The North West is characterised by diverse and spectacular natural features, including savannah and upland country, world-class fossil deposits and national parks. It is the source of numerous river systems and has five bioregions, some of which are home to endangered flora and fauna.

People who live and work in the North West face a number of opportunities and challenges, including:

- managing the cyclical nature of mining industry development in a way that complements other industry sectors in the region
- responding to new market opportunities
- encouraging economic diversity to maintain balanced growth, especially in agriculture
- providing social and economic opportunities to encourage people to remain in or return to the region
- meeting growing energy and water demands
- managing potential long-term population decline in the non-mining parts of the region
- adapting to increase cost of oil products (peak oil)
- adapting to long-term uncertainty regarding climate change
- attracting and retaining skilled workers and residents
- developing strategic guidance for infrastructure provision

1 ABS Cat. No. 3218.0 (2008)
2 ABS Cat. No. 3218.0 (2008)

- supporting increased economic opportunities in eastern shires
- positioning the region to take advantage of renewable energy resources
- accessing and providing essential services to smaller centres.

The Queensland Government developed the *Blueprint for the Bush*[3] initiative and *Rural Economic Development and Infrastructure Plan*[4] to respond to rural issues.

The North West Regional Plan (the regional plan) is an essential mechanism for managing change and shaping the future prospects of rural and mining communities in the region by:

- addressing key economic, social and environmental issues
- identifying infrastructure and service needs
- maximising benefits and managing impacts of major projects
- driving innovation and productivity
- mobilising public, private and community sectors
- aligning efforts across agencies and all levels of government.

The regional plan, whilst meeting some of the government's *Blueprint for the Bush* commitments, is also part of a wider process—ensuring that a consistent and contemporary regional land use planning framework is operating across all of Queensland.

## Glossary and bibliography

The glossary (page 74) defines particular words used in this regional plan. Other terms used in this regional plan have the meaning given in the *Sustainable Planning Act 2009* (SPA).

The bibliography (page 77) provides information about the Queensland and Commonwealth policies and documents referred to in the plan.

## Planning period

The North West Regional Plan provides the framework for integrating federal, state and local government planning agendas, linking infrastructure and service provision to manage future population change to 2031.

The regional plan also considers the region's potential needs beyond 2031 to ensure that planning decisions made today do not compromise options to meet longer-term needs. The regional plan addresses long-term issues such as climate change and infrastructure needs.

## Working with other plans and strategies

The desired regional outcomes of the regional plan cannot be achieved through land use planning mechanisms alone. Implementation of the strategies and actions of other plans are critical to achieving the region's vision.

The *Northern Economic Triangle Infrastructure Plan 2007-2012* (the NET Infrastructure Plan) is recognised in the regional plan as an important instrument for developing the region through the emergence of Mount Isa, Townsville and Bowen as a triangle of mineral processing and industrial development. Other regional planning initiatives in the North West region include the Southern Gulf Catchments and Desert Channels Queensland natural resource management plans. Statutory plans include the *Water Resource (Gulf) Plan 2007* and the *Water Resource (Great Artesian Basin) Plan 2006*.

The regional plan also influences the preparation of community plans under the *Local Government Act 2009*. The *Local Government (Finance, Plans and Reporting) Regulation 2009* stipulates that a local government community plan must identify local and regional issues that effect, or may in the future affect, the local government area. Consequently, a strong link exists between a regional plan and community plans.

## Inter-regional coordination

Due to its extensive transport networks, traditional associations and strategic location, the North West region has strong links with communities in the Gulf region and eastern parts of the Northern Territory, Townsville and the southern parts of Queensland, as well as the southern states.

The plan does not directly influence the planning processes or regulate the use of land in areas outside the North West region. It is important however, that the potential cross-regional planning issues be considered in a broader planning context.

3 *Blueprint for the Bush* is a 10-year plan to build a strong rural Queensland of sustainable, liveable and prosperous communities.

4 Queensland Government, AgForce Queensland and the Local Government Association of Queensland, 2006, *Blueprint for the Bush: Rural Economic Development and Infrastructure Plan*. Queensland Government, Brisbane.

## Preparation

The regional plan has been developed with extensive advice from the North West Regional Planning Committee (previously known as the North West Regional Coordination Committee) which was established under section 2.5A.3 of the *Integrated Planning Act 1997*. The role of the committee has been to:

- provide advice to the Minister on regional planning matters
- assist the preparation, implementation and review of the regional plan
- facilitate the resolution of regional planning issues
- promote a coordinated approach to regional planning.

The Regional Planning Committee (RPC) is an inclusive forum of regional stakeholders, appointed by the Minister, who have looked beyond individual interests to highlight matters of regional significance to be addressed through the regional plan.

The draft regional plan was made available for public comment for a minimum period of 60 business days in accordance with section 2.5A.13 of the *Integrated Planning Act 1997*. The regional plan has been prepared in good faith, taking into account all public submissions, to provide a framework for the management and development of the region.

## Application, implementation and review

The regional plan is a statutory instrument under the *Statutory Instruments Act 1992* and a planning instrument under the *Sustainable Planning Act 2009* (SPA). The regional plan provides the broad framework for addressing priority issues in the North West region for the next 20 years to ensure that planning decisions do not compromise longer-term planning needs.

If a local government is preparing a planning scheme, it must take into account the regional plan. This must be done by stating within the planning scheme how the scheme will reflect the regional plan (section 26(2) of SPA). Local governments are also required to amend their planning schemes to reflect the regional plan (section 29 of SPA).

Where a planning scheme conflicts with the regional plan, the regional plan prevails (section 26(3) of SPA).

The regional plan is not supported by state planning regulatory provisions in relation to land use.

The following parts of the regional plan are relevant when assessing a development application or a master plan application against or having regard to the regional plan:

- the regional activity centres network and narratives in Part D
- regional strategies and policies in Part E.

An application conflicts with the regional plan if it does not comply with the regional activity centres network in Part D or the regional strategies and policies in Part E.

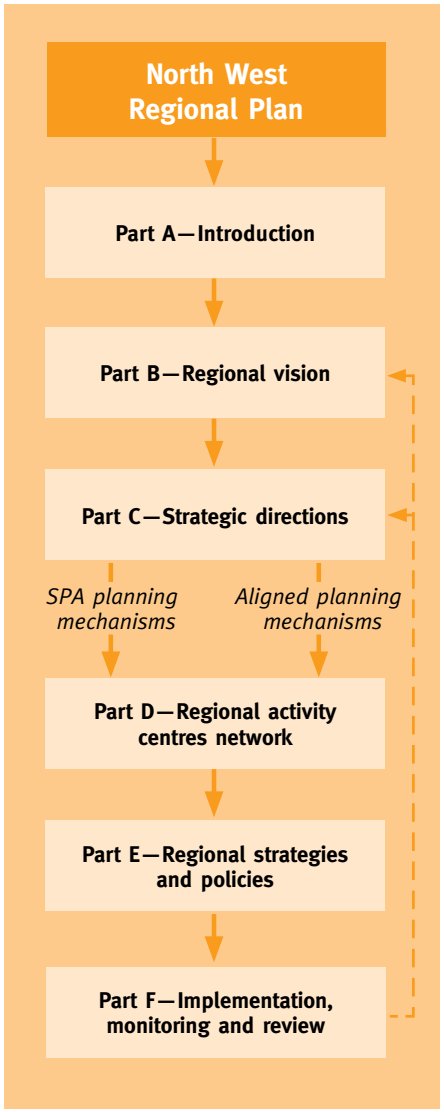
The regional plan directs state agencies, through Queensland Government-agreed strategies, policies and programs and is a key tool of Qplan, Queensland's planning, development and building system. The regional plan allows a region to achieve a sustainable planning foundation, and provides strategies and policies to manage growth and change at a regional level as shown in Figure 1.

**Figure 1. My Street. Our State**

| Legislative and policy framework | | Strategic outcomes and deliverables | Infrastructure |
|---|---|---|---|
| Towards Q2<br>*State Development and Public Works Organisation Act 1971* | Our state | Gateway upgrade project | State infrastructure plans and priorities |
| North West Regional Plan 2010-2031 | Our region | Northern Economic Triangle Infrastructure Plan | Regional infrastructure delivery programs |
| *Sustainable Planning Act 2009* | My town | Finders Shire Planning Scheme, McKinlay Shire Community Plan | Local infrastructure planning and delivery programs |
| *Petroleum Act 1923* | My local area | Nordale Industrial Estate | Neighbourhood infrastructure programs, location-specific infrastructure |
| *Building Fire Safety Regulation 2008* | My street | Smart eDA | Site-specific standards of service |

The statutory regional planning framework provides for a formal, state-wide monitoring and review process across the state which is an important element in any regional land use planning framework—see Figure 2. The outcomes and policies of the regional plan will be monitored and used in the formal review of the regional plan. A formal review will be undertaken at least every ten years. Notwithstanding the above, the Minister can amend the regional plan at any time under SPA.

**Figure 2. Regional plan flowchart**




## Structure of the regional plan

**Part A** **Introduction**—provides background material to establish the context and intent of the regional plan. It also outlines the need for the regional plan and its relationship with other planning processes and instruments.

**Part B** **Regional vision**—outlines the desired future for the North West region.

**Part C** **Strategic directions**—sets down the broad policy framework for the regional plan.

**Part D** **Regional activity centre networks and subregional narrative**—characterises townships, their facilities and services. Narratives indicate the strategic intentions for towns in the North West region and will guide local planning, location and coordination of services.

**Part E** **Regional strategies and policies**—provides the planning principles and guidelines for managing future land use, development and protection of the North West region. They should be reflected in all relevant plans, policies and codes being prepared or amended by the Queensland Government or local governments in the North West region, including planning schemes and community plans.

**Part F** **Implementation, monitoring and review**—sets out the proposed governance arrangements for implementing, monitoring and reviewing the regional plan.

## Maps

The regional plan is supported by six maps which provide spatial information to assist policy implementation and identify resources, values and areas of state significance. The maps are based on best available data at the time of printing.

The information sources used to prepare these maps may vary, with respect to scale, accuracy and currency.

The Department of Environment and Resource Management has prepared mapping showing areas of ecological significance. The maps have been prepared from high quality data sets of terrestrial vegetation, key threatened species' habitats, and wetlands. Given the size of the region, the scale used in the regional maps should only be used as general information.

More detailed information on the region's areas of ecological significance is available from the Department of Environment and Resource Management website. The maps in the regional plan are not regulatory maps and are used as information guides.

Strategies are designated with a letter of the alphabet. For example, strategy **3.4.A Promote and celebrate the region's cultural and artistic diversity** is found in:

Part **E**—Regional strategies and policies
Topic **3**—Strong communities
Subtopic **4**—Regional lifestyle, cultural heritage and the arts
Strategy **A**

The numbering system for the policies indicates their position in the plan. For example, land use policy **3.4.1 Identify and protect Queensland heritage places and local heritage places in local government planning schemes** is found in:

Part **E**—Regional strategies and policies
Topic **3**—Strong communities
Subtopic **4**—Regional lifestyle, cultural heritage and the arts
Policy number **1.**

# Part B—Regional vision

*The North West region has a robust, diverse and sustainable economy and well-planned and coordinated infrastructure and services, built through the economic benefits of mining and agricultural industries. It is a place where people choose to live and visit due to its liveability, well-managed natural resources and the community's strong sense of cultural identity.*

The vision for the North West region defines the community's long-term aspirations for the region and reflects the environment the community desires to live in now and protect for future generations. It was developed through contributions from the Regional Planning Committee (RPC). It recognises the link between the region's prosperity and the continued exploitation of mineral resources and the need to invest in other industries to provide an economically sustainable future.

The vision recognises that the long-term prosperity of the region is reliant on sound management of the region's natural resources and the ongoing viability of mining and agricultural sectors.

The vision is consistent with the state-wide ambitions of the Queensland government's blueprint for the future, *Toward Q2: Tomorrow's Queensland,* which sets targets for Queensland's future which are to be achieved by 2020. This vision is also consistent with the *Northern Economic Triangle Infrastructure Plan 2007–2012*.

The plan recognises that the region's Indigenous and multi-cultural heritage will continue to define the region's cultural identity. It also identifies the need for a well-educated community—one that offers a broad range of education and career opportunities for residents, to meet the region's long-term growth needs.

The vision is the foundation of the regional plan. It informs the strategies and policies to ensure the region's natural assets, social capacity and economic resources are managed and enhanced for future generations.

# Part C—Strategic directions

*The regional plan proposes a range of policies to achieve its vision and desired outcomes for the region which are based on the following strategic directions.*

## Creating a more sustainable future

A key strategic direction of the regional plan is to ensure economic development is managed sustainably. The plan aims to protect biodiversity, support a viable settlement pattern, build and maintain community identity, improve transport and information technology and infrastructure, and manage future demands for water and energy.

The Queensland framework for ecologically sustainable decision making[5] has been used to inform the development of strategic directions, strategies and policies in the regional plan. The framework comprises:

- integrated and long-term decision making—incorporating long and short-term environmental, economic and social considerations
- intergenerational equity—ensuring the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations
- intergenerational equity—ensuring a fair share of resources and opportunity among present generations
- conserving biological diversity and ecological integrity—protecting the variety of all life forms, their genetic diversity and the ecosystem of which they form a part, recognising the various services they provide to humans as well as their intrinsic values
- internalising environmental costs—ensuring that the true costs and life-cycle costs (incurred from when inputs are produced through to waste disposal) of protecting and restoring environmental damage are reflected in the price of a product or service
- engaged governance—ensuring broad community involvement in decisions and actions that affect them
- precautionary principle—ensuring that where there are threats of serious or irreversible environmental damage, a lack of full scientific certainty is not used as a reason for postponing measures to prevent environmental degradation.

## Protecting regional landscapes and supporting regional production values

North West Queensland is characterised by distinctive rural and natural landscapes which support a range of uses and provide significant environmental, economic, cultural and social benefits to the region. This plan includes strategies and policies to protect and manage the regional landscape values of the North West region.

5 National Strategy for Ecologically Sustainable Development, ESD Sustainable Development Steering Committee, Commonwealth of Australia 1992.

Minerals are a significant economic resource in the region and the plan includes policies to protect and manage the impacts caused by the exploitation of these resources. Rural lands contribute to the agricultural production of the region and the plan sets strategies and policies to protect these lands and encourages sustainable practices.

In areas of the upper catchment of the Flinders River, there are opportunities for a sustainable irrigation area and to build on existing irrigation farming. The region includes water catchments and areas of high ecological value that are of regional significance and of state and national significance. Strategies and policies in the plan support existing legislation that protects and provides for the management of these ecological resources.

## Creating liveable communities

The regional plan seeks to provide positive land use and urban design responses to the region's communities. These responses aim to protect the heritage character and improve the visual amenity of existing towns, while maintaining and enhancing services in line with government and private sector priorities. The network of regional activity centres encourages the enhancement of the larger activity centres to support smaller communities.

## Promoting a dynamic, robust and diversified economy

The region's economy, primarily reliant on mining and agricultural production, contributes significantly to the regional and national economy. It is recognised that to ensure a sustainable future, the region needs to work towards building a diversified economy.


The regional plan supports mining and rural production to ensure they are not adversely affected by other land use activities, while encouraging diversification of the economy and the raising of productivity by addressing skills gaps and shortages. Greater support will be given to value-adding economic initiatives. This will be achieved through the creation of strategic opportunities and by improved planning and collaboration by government, industry and the community.

## Providing infrastructure and services

The regional plan addresses infrastructure and service requirements to meet the future and existing needs of North West communities through the *Northern Economic Triangle Infrastructure Plan 2007–2012*. The regional plan supports improved access to work places, essential services and recreation, and encourages stronger connections throughout the region to improve the liveability of regional communities. Water and energy capacity are recognised as limiting factors to future regional development.

## Integrating land use, economic activity and transport infrastructure

Quality of life and economic development opportunities for regional communities can be enhanced by access to an efficient transport system. The plan integrates land use and transport planning to:

- improve the efficiency of existing transport networks
- influence future transport infrastructure
- explore opportunities to align transport needs to land use to assist the region's economic growth
- link dispersed regional communities.

The plan recognises future transport strategies must take into account the impact of rising fuel prices on the cost of living in isolated communities, adapting to climate change and competing funding priorities, as well as the need for better access to national and international markets.

On a national level, Australia no longer produces enough oil to meet the nation's needs. Australia and Queensland are therefore becoming more dependent

on imported oil and oil-based fuels, which are affected by global supply and demand. As in many parts of the world, North West communities and industries rely on oil, making the region vulnerable to changes in the supply and price of oil.

Through the *ClimateQ: towards a greener Queensland* initiative, the Queensland Government is implementing programs to encourage the uptake of fuel efficient vehicles and alternative fuels. The Queensland Renewable Energy Plan supports the use of renewable energy sources as a means of reducing dependence on oil and oil-based fuels.

## Adapting to climate change

Scientific evidence overwhelmingly indicates climate change will impact on regional areas of Australia and this demands an urgent response. Climate change is likely to compound the effects of existing threats on the region's biodiversity, economy and liveability.

Research indicates significant economic benefits in responding early to climate change—both to mitigate and adapt to its effects. Early reduction of emissions and adaptation to climate change will incur less cost in terms of economic growth and lifestyle.

Longer-term projections for the North West Queensland region include an overall decline in rainfall with increasing temperature, evaporation and an increase intensity of rainfall events. This will result in more extreme climate events, such as flooding, drought, bushfire and cyclonic weather. Management of the regions' agriculture and industry activities are likely to be adversely affected by the projected increases in temperature and changing rainfall patterns. Table 1 illustrates projected impacts.

*Toward Q2: Tomorrow's Queensland* sets a target to cut Queenslanders' household greenhouse gas emissions from waste, fuel and electricity by one-third by 2020. Regional climate change actions for the North West will also be influenced by state-wide and national climate change initiatives and policies, including the Queensland Government's *ClimateQ: towards a greener Queensland*.

The regional plan's strategies and policies recognise the risks associated with climate change and the need to develop a research capacity to identify regionally specific implications and opportunities. The plan also recognises the need to develop planning strategies to reduce the region's climate change vulnerability.

## Managing mining growth

Growth in mining for base metals in the North West region has the potential to produce state-wide social and economic benefits for decades to come. However, it requires increased management of environmental, social and economic impacts on communities and appropriate mitigation strategies.

The regional plan, in conjunction with the *Northern Economic Triangle Infrastructure Plan 2007–2012,* the *Sustainable Futures Framework for Queensland Mining Towns* and the *Sustainable Resources Communities Policy* released by the state government in 2007 and 2008 respectively, address these impacts through a range of strategies and policies.

The strategies and policies focus on improving the gathering of quantitative information about the mining industry to support regional planning, address land use implications of individual projects, and build capacity and capability at a local government level to help to manage these impacts.

**Table 1. Specific climate change projections for the North West region**

| Variable | Season | 1971-2000 | 2030 | 2070 |
|---|---|---|---|---|
| | | Current historical mean | Medium scenario (projected change) | High scenario (projected change) |
| Temperature Centigrade (C°) | Annual | 25.2 | +1.1 (+0.7 to +1.5) | + 3.4 (+2.3 to +4.9) |
| Rainfall % | Annual | 534 mm | -2 (-11 to +8) | -5 (-31 to +24) |
| Potential evaporation % | Annual | 2775 mm | +3 (+2 to +4) | +9 (+6 to +14) |

Data Source: Commonwealth Scientific and Industrial Research Organisation 2007 & Bureau of Meteorology 2008.
Regional summaries prepared by Queensland Climate Change Centre of Excellence

# Part D—Regional activity centres network

*The regional activity centres network is a state-wide framework used to describe communities in terms of population, range and depth of business and employment types, educational facilities, service infrastructure, housing and community facilities.*

The regional activity centres network will identify key locations for the provision of state government services and infrastructure by:

- identifying nodes for key economic and social services
- identifying preferred growth locations to determine where infrastructure and services should be located
- identifying the projected level of service for each centre, assisting in the prioritisation and level of service
- identifying projected housing demand and key influences
- providing regional assessment criteria for planning applications.

Map 2 (page 67) shows the regional activity centres network for the North West region. These centres are significant places for economic activity and social interaction, with strong historical and cultural connections for regional communities.

| The North West region has five types of activity centres: | |
|---|---|
| **Major regional activity centres**—centres generally servicing catchments of regional significance and potentially areas outside the designated region. These centres have key concentrations of employment, business and major retailing facilities and services. They have populations ranging from approximately 5000 to 20 000 residents. | Mount Isa |
| **Major rural activity centres**—centres generally serving catchments of sub-regional to regional significance, accommodating concentrations of employment, business, services, commercial and retail uses in remote areas of the state. The population range of these centres is typically between 2000 and 5000 residents. | Cloncurry |
| **District rural activity centres**—centres providing essential functions at a district to sub-regional scale, often to a widely dispersed service population. They provide a range of goods and services for weekly shopping and may have a post office, pharmacy, grocery store or supermarket, bank, hardware store, real estate office, hotel or motel, caravan park and service station. The population range of these centres is typically from 200 to 2000 residents. | Julia Creek, Richmond, Hughenden |
| **Community activity centres**—centres with low resident populations and generally remote from larger centres. They provide limited services for locals and travellers. Typical services include service stations, small convenience stores, hotels and camping areas. They typically have populations of less than 200 residents. | Camooweal, Dajarra, Kajabbi, McKinlay, Kynuna, Nelia, Maxwellton, Stamford, Prairie, Torrens Creek |
| **Mining centres**—specialist urban precincts supporting a regionally or nationally significant economic activity, such as a major mining operation. A mine site typically has a mineral processing plant, power generators, maintenance and loading facilities, air strip, as well as administration offices. Accommodation facilities may be located nearby or adjacent to the mine. Most of these facilities are self-contained and place limited demand on local services and infrastructure. In many cases, the local infrastructure has been funded and built by the associated mine(s). | Ernest Henry, Cannington, Eloise, Osborne, Phosphate Hill, Trekelano, Mount Gordon, Leichhardt Copper Operation, Lady Annie |

# Centre narratives

| Mount Isa | |
|---|---|
| Population in Mount Isa | 2008: 20 684 (a) |
| Population in Mount Isa City | 2008: 21 570 (a) |
| Indicative planning population in Mount Isa City | 2031: 25 886 (b) |

| Activity centre classification | |
|---|---|
| Major regional | |
| **Major employers by industry (2006) (c)** | |
| Mining | 26.6% |
| Retail trade | 8.9% |
| Health care and social assistance | 8.6% |
| Education and training | 8.2% |
| Construction | 6.3% |

Data source:
(a) Planning Information Forecasting Unit (PIFU), 2007, North West region population report
(b) PIFU, 2008 edition population projections (medium series)
(c) Office of Economic and Statistical Research (2010), Queensland Regional Profiles.

# Mount Isa

With an estimated population of 21 570 in 2008, Mount Isa City is the only major regional activity centre in the North West region. Mount Isa is located within the North West Mineral Province, a world-class mining and minerals processing precinct centred on Mount Isa, Bowen and Townsville. Mount Isa is one of Queensland's major mining hubs for exploration, extraction and processing of base metals.

Mount Isa shares a boundary with the Northern Territory to the west. Geographically, Mount Isa is the second largest city (in area) in Australia.

## Infrastructure

The city is a regional transport hub, serviced by rail, road and commercial air networks providing transport services locally and interstate. The Barkly Highway is the main road transport route through the region, which links the Northern Territory to north Queensland and the rest of eastern Australia. Mount Isa has a taxi service with services to and from the neighbouring centre of Cloncurry. The city is serviced by Queensland Rail's passenger train the Inlander, which travels overnight to Townsville twice a week in each direction.

Located on the outskirts of the city centre, the Mica Creek Power Station supplies the local and surrounding area with electricity. The power station is gas fired and has the capacity to generate up to 325 megawatts of electricity[6].

The main supply of water for Mount Isa and its mining operations comes from Lake Moondarra. This artificial lake located on the Leichardt River can hold 114 000 megalitres at full capacity[7]. Lake Julius is another key source of water which is also located on the Leichardt River. The East Leichardt Dam is a potential source of water for the region however it is not currently utilised.

Additional infrastructure has been identified as a key factor in increasing the lifespan of some mines in the region and stimulating the development of new small and mid-size mines. An expansion of a range of infrastructure would support growth in the city, provide increased scope for the development and expansion of other industries and strengthen the local economy.

## Economy and employment

Industry in the city is based around Xstrata Mount Isa Mines. Other major industries are cattle grazing and tourism. Mount Isa is recognised as a secondary administration centre, supporting administrative activities in larger regional activity centres such as Townsville. It has a wide range of local and state government services and several major companies are based there. Mount Isa services catchments of sub-regional to regional significance and is the major service and supply centre for the surrounding mining industry.

Mount Isa provides health services to rural and remote communities within North West Queensland and surrounding regions, including residents of the Northern Territory.

The tourism industry is increasingly important to the region's economy. Events such as the Mount Isa rodeo, carnivals and race days, and the city's cultural and recreational facilities attract national and international attention.

## Industrial and residential land

Mount Isa has land available for residential, commercial and industrial development.

## Community services

The city offers primary, secondary and tertiary education with private and public schools, TAFE, university facilities and apprenticeship opportunities, including the Spinifex College which has a residential campus. The city also houses the Mount Isa School of Distance Education which services the needs of students to grade 10, and School of the Air. Mount Isa has facilities for students with varying levels of special needs, including an Education Queensland Special School.

6 Mount Isa to Townsville Economic Zone 2009 Investment Guide.

7 Mount Isa to Townsville Economic Zone 2009 Investment Guide.

## Growth opportunities and key challenges

Mount Isa is predicted to experience fluctuating growth over the next 20 years. However the city is expected to remain the major service centre for the North West, parts of the Central West and the Gulf region and the eastern Northern Territory during the life of this plan. The city has the potential to expand its industry role through continued exploration, processing and value-adding activities.

The overall sustainability of the city relies heavily on future mining development. Its ability to sustain additional mining-related growth, ancillary industrial activities and provide services to other activity centres will largely depend on the management and timely provision of essential infrastructure and services, and the availability and affordability of residential land and housing. Lowering the costs of electricity in the region and improving capacity of other infrastructure could increase the viability of previously explored mineral deposits and extend the life of several operating mines.

# Cloncurry

With an estimated population of 3394 in 2008, Cloncurry Shire is the only major rural activity centre in the North West region. Cloncurry has a proud pioneering history and is the birthplace of the Royal Flying Doctor Service and Queensland School of the Air.

## Infrastructure

The town has good access to rail and road networks as well as government-subsidised air, long distance coach and long distance rail services.

## Economy and employment

Cattle and mining provide the economic base for the town. The local mining industry generates employment in associated industries including transport, manufacturing, construction, accommodation and services.

| Cloncurry | |
|---|---|
| Population in Cloncurry | 2008: 2607 (a) |
| Population in Cloncurry Shire | 2008: 3394 (a) |
| Indicative planning population in Cloncurry Shire | 2031: 3208 (b) |

| Activity centre classification | |
|---|---|
| Major rural | |
| **Major employers by industry (2006) (c)** | |
| Agriculture, forestry and fishing | 16.6% |
| Transport, postal and warehousing | 13.3% |
| Mining | 13.2% |
| Public administration and safety | 9.9% |
| Construction | 6.6% |

Data source:
(a) Planning Information Forecasting Unit (PIFU), 2007, North West region population report
(b) PIFU, 2008 edition population projections (medium series)
(c) Office of Economic and Statistical Research (2010), Queensland Regional Profiles.

## Community services

Cloncurry provides primary to year 12 education and community and recreation facilities to the sub-region. Queensland Health provides a range of primary and secondary health services with specialists available on a visiting basis. The town is also a strategic centre for other government agencies, including the Department of Transport and Main Roads.

## Growth opportunities and key challenges

Over the next 20 years, Cloncurry has the potential to grow through the expansion of industries including fabrication and construction. Some of the Ernest Henry mine workforce is housed in the town. Expansion and further exploration in mineral processing is also probable, given the number of mineral reserves identified to the north and south of the town.

Opportunities to develop and exploit renewable energy resources such as solar and geo-thermal may also present in the future, providing energy for local and possibly national networks.

Population growth will be influenced by the workforce arrangements of mining industries. Previous industry trends have shown a prevalence of fly-in and fly-out work arrangements in the region.

Attracting and retaining mining staff and families remains a challenge for the local community and government. Increasing the resident population will remain dependent on the provision of adequate infrastructure including roads, water, sewerage, residential land and housing, as well as access to social services. The need to sustain or increase the level of services in Cloncurry will depend on population change associated with mining expansion, the workforce arrangements of these industries and new mining developments in both Mount Isa and Cloncurry.

| Julia Creek | |
|---|---|
| Population in Julia Creek | 2008: 377 (a) |
| Population in McKinlay Shire | 2008: 961 (a) |
| Indicative planning population in McKinlay Shire | 2031: 863 (b) |
| Activity centre classification | |
| District rural | |
| Major employers by industry (2006) (c) | |
| Agriculture, forestry and fishing | 44.6% |
| Mining | 11.3% |
| Public administration and safety | 9.0% |
| Construction | 5.8% |
| Retail trade | 5.2% |

| Richmond | |
|---|---|
| Population in Richmond | 2008: 554 (a) |
| Population in Richmond Shire | 2008: 950 (a) |
| Indicative planning population in Richmond Shire | 2031: 825 (b) |
| Activity centre classification | |
| District rural | |
| Major employers by industry (2006) (c) | |
| Agriculture, forestry and fishing | 39.8% |
| Public administration and safety | 11.3% |
| Transport, postal and warehousing | 7.6% |
| Retail trade | 6.7% |
| Health care and social assistance | 6.5% |

| Hughenden | |
|---|---|
| Populationin Hughenden | 2008: 1195 (a) |
| Population in Flinders Shire | 2008: 1864 (a) |
| Indicative planning population in Flinders Shire | 2031: 1718 (b) |
| Activity centre classification | |
| District rural | |
| Major employers by industry (2006) (c) | |
| Agriculture, forestry and fishing | 35.8% |
| Transport, postal and warehousing | 10.9% |
| Public administration and safety | 9.4% |
| Retail trade | 7.4% |
| Education and training | 6.6% |

Data source:
(a) Planning Information Forecasting Unit (PIFU), 2007, North West region population report
(b) PIFU, 2008 edition population projections (medium series)
(c) Office of Economic and Statistical Research (2010), Queensland Regional Profiles.

# Julia Creek, Richmond and Hughenden

Julia Creek, Richmond and Hughenden are all classified as rural activity centres in the North West region. Regional communities gather regularly in these centres to celebrate events including the Dirt and Dust Festival in Julia Creek, the Fossil Festival in Richmond and the Country Music Festival in Hughenden. These shires sit on top of the Great Artesian Basin, one of the largest ground water basins in the world.

## Infrastructure

Located on the Flinders Highway and Great Northern Railway line, these centres are local transport hubs. West Wing Aviation provides both passenger and freight services from Mount Isa to Townsville. The Great Northern Railway runs east-west from Mount Isa to Townsville. This rail network is linked to the eastern sea ports. The main source of water is through the Artesian Basin.

## Economy and employment

Julia Creek (estimated population of 377) is the administration centre for the McKinlay Shire, and Richmond (estimated population of 554) and Hughenden (estimated population of 1195) are the administration centres for Richmond and Flinders Shires respectively. These shires are largely covered by productive black soils and high value Mitchell and Flinders grass. It is an important area for the production of beef, for both domestic and overseas markets. The BHP Cannington Mine operates within McKinlay Shire, with the majority of its labour force being fly-in and fly-out workers[8].

These centres have strong connections with Townsville for processing and export purposes.

Tourism in these centres is growing, with visitors drawn by a range of attractions including the region's national parks and

8 Mount Isa to Townsville Economic Zone 2009 investment guide.

fossil dinosaur attractions. Hughenden and Richmond are well known as part of Australia's Dinosaur Trail. Flinders Shire covers a variety of diverse landscapes, covering four bioregions. Amongst these bioregions are four National Parks.

## Community services

Each centre contains a small concentration of retailing business, professional services and offices. Residents also access larger centres outside of the region for higher order goods and services. District rural activity centres provide subregional health and education services through locally based professionals and facilities. Hospitals or health centres provide primary and emergency services, while patients requiring emergency specialists are evacuated by air. Specialists, ranging from nutritionists to speech therapists regularly visit the region. Education facilities range from childcare to secondary schooling.

Racecourses, rugby, golf, netball, swimming and athletics are amongst the major sporting groups/facilities in these centres. Hughenden has a multifunction entertainment centre, which is used for many events and functions including hosting sporting activities.

## Growth opportunities and key challenges

Historical trends show these centres are influenced by fluctuations in population, investment and employment due to commodity prices, resource demand, climate factors and availability of workers. Land for commercial, industrial and residential development is available in all centres, including large urban blocks to semi-rural acreage that are available for development.

While these centres are likely to experience only modest growth over the next 20 years, an ageing population and household change will place a different emphasis on service provision priorities. Services within each centre will need to be responsive to existing and future community needs. Identification of different service delivery approaches may contribute to improved provision of services to these centres in the future.

In Julia Creek there is potential for developing geothermal energy infrastructure and opportunities for the development of a transportation hub serving the shire and parts of the Gulf region. Richmond and Hughenden areas have potential for irrigation farming and associated agricultural industries. Tourism is also an area for expansion in terms of accommodation, restaurants and cafes and there is potential for tour operators to utilise the diverse nature of the centres and adjoining regions.

# Community activity centres

Camooweal, Dajarra, Kajabbi, McKinlay, Kynuna, Nelia, Maxwellton, Stamford, Prairie and Torrens Creek are all classified as community activity centres in the North West region. While these centres have fewer than 200 residents each and are not designated rural localities according to the Australian Bureau of Statistics, they provide important localised essential services and opportunities for social interaction.

The centres have very limited access to government services. Health services are generally provided by visiting healthcare professionals. Some towns such as Camooweal, Dajarra, Stamford and Prairie offer primary education. Some have community services such as police, a rural fire service and recreation facilities.

Community activity centres may provide important focal points for transport and tourism services and have facilities such as racecourses and service stations. Many of the centres located along the Flinders Highway and Great Northern Line were significant supply or distribution centres before transport networks were extended east to Mount Isa and into the Northern Territory.

The services provided in some of these towns were established at times when they had higher populations. Some towns exist because of a single industry or attraction. Population growth in these centres is not anticipated however, the need to sustain existing services is recognised. Different service delivery methods may be used in the future to provide services to these centres.

# Mining centres

The Ernest Henry, Cannington, Eloise, Osborne, Phosphate Hill, Trekelano, Mount Gordon, Leichhardt Copper Operation and Lady Annie mines are recognised as specialist activities centres. These sites are located between 30 and 138 kilometres from major urban centres.

The populations of these specialist activity centres are largely fly-in and fly-out workers who commute from regional and metropolitan centres. They are generally accommodated in single person's quarters located on or near mining leases. These catered accommodation arrangements usually provide communal dining areas, canteens and entertainment facilities. Medical facilities are also provided on site and are generally staffed by registered nurses.

Specialist activity centres are privately owned and managed. The future of these centres is determined by the global demand for metals, the rate of depletion of resources and exploration of new mineral deposits nearby. A number of prospective sites are being explored in the region, mostly in Cloncurry Shire, which may result in the emergence of new specialist activity centres in the region. The size and location of these centres depends in part on their proximity to other centres, the affordability of housing and liveability.

# Part E—Regional strategies and policies

*This section outlines the desired regional outcomes, strategies and policies that will guide planning and development assessment in the North West region over the next 20 years.*

The regional strategies and policies sections of the plan include six topic areas, each with a desired regional outcome. Each topic area includes a series of sub-topics and objectives, strategies and land use policies. Background context and explanatory notes are provided for each topic area which informs strategies or policies.

The topic areas are set out under the following headings:

1. Natural environment
2. Natural resources
3. Strong communities
4. Urban development
5. Economic development
6. Infrastructure.

Strategies are designed to achieve desired regional outcomes, generally through a collaborative and voluntary approach. They are aligned to other legislation, plans, processes and voluntary programs. They may be implemented by various stakeholders, including local, state and federal levels of government, non-government organisations such as community or natural resource management groups and the private sector. Strategies do not commit the government to funding any action or program. Resourcing of programs may come from government, non-government or private sector investment.

Land use policies are to be applied to guide planning processes and decision-making. They provide a response to strategies and are primarily implemented through local government planning schemes.

The vision and outcomes cannot be achieved through land use planning mechanisms alone—other statutory and non-statutory plans, policies, strategies and guidelines will play an important role in the plan's implementation.

The regional plan is the primary planning document in the North West region. Local government planning schemes must be consistent with the desired regional outcomes, objectives and policies, and seek to further the strategies contained within this plan.

# 1. Natural environment

## Desired regional outcome

A region where the natural environment is resilient to the impacts of climate change and one which is well-managed to maintain its rich biodiversity, ecological processes, water resources and scenic amenity.

The North West region is renowned for its natural environment, characterised by a range of vegetation types and diverse landforms, geology, soil types and climatic variations. From November to March summers are typically hot (see Table 2), with periods of intense rainfall. Winters are usually cool and dry[9]. The average annual evaporation is generally between 2000 and 3200 millimetres.

The region covers sections of five bioregions. These support diverse native flora and fauna including many endemic species, some of which are listed as endangered. Native flora and fauna are adapted to irregular rainfall and flooding events; however, the highly variable climate is one of the major challenges for the pastoral industry and local communities.

Projections indicate that climate change will result in reductions in annual rainfall. Even a slight increase in temperature (0.7–1.5 degrees centigrade) is likely to have significant impacts on biodiversity and natural systems and would place stress on the productivity and ecology of the region.

The North West region includes the source of six Gulf of Carpentaria rivers, three Lake Eyre catchments and is also part of the Great Artesian Basin. Wetlands and watercourses and their associated riparian areas are vital in maintaining biodiversity and the long-term sustainability, productivity and stability of rural and urban populations.

The region has several valuable natural features which have been recognised through Commonwealth legislation. The Australian fossil mammal site at Riversleigh was proscribed as a World Heritage Area[10] in 1994 and listed on the National Heritage List[11] in 2007. Elizabeth Springs is also nominated for inclusion in the National Heritage List. Eight sites are listed on the Register of the National Estate[12].

Regional waterways and landscapes hold important cultural and spiritual values for Indigenous people[13]. The complex linkages between natural resources, cultural heritage and the health of country must be recognised as part of the ongoing support of contemporary Indigenous culture.

The regional plan aims to promote the sustainable use and management of the natural environment. Human activities such as mining and agriculture need to be appropriately planned and managed to minimise adverse impacts on the natural environment.

9 Bureau of Meteorology website accessed January 2008 www.bom.gov.au

10 Environmental Protection Agency website accessed January 2008 www.epa.qld.gov.au

11 National Heritage List recognises and protects our most valued natural, Indigenous and historic heritage places and is managed by the Australian Heritage Council as outlined in the *Australian Heritage Council Act 2003*.

12 The Register of the National Estate is now part of the Australian Heritage Database.

13 World Wildlife Fund, 1999, *Opportunities for Biodiversity Conservation* in Northern Australia: A report for the World Wide Fund for Nature: Tropical Wetlands of Oceania Program, May (1999).

**Table 2. Climate statistics for locations in North West Queensland**

| Location | Annual temperature (C°) | | Mean rainfall (mm) | Years of data recorded (temperature/rainfall) |
|---|---|---|---|---|
| | Mean maximum | Mean minimum | | |
| Camooweal | 32.9 | 17.6 | 392.3 | 100 |
| Mount Isa | 37.1 | 23.0 | 446.0 | 42 |
| Cloncurry | 33.3 | 18.8 | 507.5 | 15 |
| Julia Creek | 33.3 | 17.4 | 460.3 | 35/94 |
| Richmond | 32.8 | 16.7 | 475.2 | 115/119 |
| Hughenden | 31.6 | 16.3 | 492.4 | 92/117 |

Source: Australian Government Bureau of Meteorology

## 1.1 Biodiversity conservation

### Objective

**Protect and manage the region's biodiversity and its ecological integrity to enhance its resilience to climate change and other biophysical pressures.**

Conserving biodiversity is vital to healthy ecosystems and fundamental to achieving ecological and economic sustainability in the region. Loss of biodiversity can result in multiple negative impacts for people, the economy and the region's ecosystems. Conserving biodiversity is one of the central principles of the National Strategy for Ecologically Sustainable Development and is fundamental to natural resource management. Understanding how human activities impact on these resources is essential to developing sustainable land use practices. Map 3 (page 68) shows areas of high and general ecological significance.

The North West region overlies part of the Great Artesian Basin. It includes the headwaters and upper catchments of Cooper Creek and the Diamantina, Flinders, Georgina, Gilbert, Leichhardt, Nicholson and Norman rivers. The region has several nationally important wetlands including the Gregory River, Lake Moondarra, Thorntonia Aggregation and Lignum Swamp. The Gregory River and its tributaries were declared a wild river area[14] under the *Wild Rivers Act 2005*[15] in 2007. These wetlands support diverse riparian vegetation and provide important corridors for fish and other native fauna moving between the lower and the upper reaches of the river system. Most tributaries within the region have intermittent flow regimes which must be maintained to protect ecosystems and biodiversity.

The region covers sections of the Gulf Plains, Mitchell Grass Downs, North West Highlands, Einasleigh Uplands and the Desert Uplands bioregions[16]. The National Reserve System identifies bioregions that are considered to be under-represented in protected areas. The North West region has notably avoided the widespread clearance of native vegetation which has taken place elsewhere in the state. With a low, dispersed population and limited access to much of the land, the region has maintained high levels of biodiversity. It supports large state leasehold lands with grazing and mining activities that present opportunities and potential threats to biodiversity.

A number of threats to the region's ecosystems have been identified, including:

- increased grazing pressures
- poor mining practices
- exotic weeds and feral animals
- changed fire regimes
- vegetation clearing
- habitat fragmentation
- changed hydrology
- pollution
- introduced pathogens
- climate change.

Threatened species in the region includes the Julia Creek dunnart (below), a marsupial which is classified as endangered under the *Environment Protection* and *Biodiversity Conservation Act 1999* and the *Nature Conservation Act 1992*[17]. A range of management and conservation measures are in place to protect the dunnart and its habitat.

14 For more information about wild rivers visit www.derm.qld.gov.au

15 Department of Natural Resources and Water, 2007. *Gregory Wild River Declaration 2007*. Queensland Government, Brisbane.

16 Sattler, P and Williams, R 1999, *The Conservation Status of Queensland's Bioregional Ecosystems*. Queensland Environmental Protection Agency, Queensland Government, Brisbane.

17 Department of the Environment, Water, Heritage and the Arts website accessed June 2008 www.environment.gov.au

Grazing is the predominant land use in the region, the impacts of which may cause loss of pasture productivity, soil erosion and weed invasion where poor management practices are used. Pastoral land use practices are undergoing consistent improvement over much of the region and will continue to do so under the Delbessie Agreement *(State Rural Leasehold Land Strategy)* which came into effect in January 2008[18]. The agreement provides a framework for the sustainable use of rural leasehold land and provides leaseholders with incentives for demonstrating strong stewardship of the land and protecting its productivity. The plan recognises scope for enhanced productivity and agricultural diversification.

## Biodiversity conservation strategies

1.1.A Promote the protection and management of riparian areas to preserve and enhance biodiversity, ecological, recreational, cultural and corridor attributes.

1.1.B Update and improve understanding of the processes that threaten biodiversity.

1.1.C Minimise impacts on state and regional corridors and encourage habitat rehabilitation to improve connectivity and resilience of ecological communities.

1.1.D Support and promote the important role of Traditional Owners in natural resources planning and management.

1.1.E Establish and implement a regional settlement pattern that accommodates urban and economic growth while minimising impacts on significant biodiversity values.

## Land use policies

1.1.1 Avoid or minimise urban development occurring outside urban zoned land, and in areas of high ecological significance, unless it can be demonstrated that there is an overriding public need.

1.1.2 Avoid or minimise impacts of infrastructure on areas of high ecological significance, through appropriate location and responsive design and management.

1.1.3 Development adjacent to areas of high ecological significance is designed, constructed and operated to avoid or mitigate adverse impacts on ecological values.

1.1.4 Where development impacts on high ecological values cannot be avoided, prioritise the use of offset strategies to minimise regional impact.

1.1.5 Development for urban purposes in areas of general ecological significance is designed and operated to minimise adverse impact on ecological values.

## Explanatory notes

An important consideration to enable local land use planning is the need to establish more effective land use planning mechanisms that integrate biodiversity in strategic development and infrastructure planning[19].

Urban and economic growth is often occurring without systematic and long-term planning and without regard for maintaining environmental values[20].

Key challenges include:

- managing vegetation clearing while recognising continued community needs for improved infrastructure including roads, power lines, and urban and agricultural development
- planning and implementing development management strategies that minimise the impact of infrastructure and urban uses on key natural resources
- encouraging land use practices that leave vegetative cover as a buffer against soil erosion and degradation and to trap sediment moving from the landscape into waterways
- land use planning that fully recognises land capability including the potential for off-site impacts
- determining priorities for nature conservation values versus productive uses[21].

To achieve this, trade-offs between productive use and conservation goals will need to be made. It is important that the community understands these compromises so that benefits can be maximised for the wider public interest. Understanding these issues requires full resource assessment that identifies social, economic and environmental benefits and the costs of resource use[22].

Urban zoned land is defined as land zoned for urban purposes in a local government planning scheme. To allow urban development in non-urban zoned land, an application must establish that there is an overriding need for the proposed development in the public interest. To demonstrate this, an application must establish the overall social, economic and environmental benefits of the proposed development, weighed against any detrimental impact upon the natural values of the site and any conflicts with the desired regional outcomes of the regional plan. An overriding need for the proposed development in the public interest could also be demonstrated by establishing that the community would experience significant adverse economic, social or environmental impacts if the proposed development were not to proceed.

18 Department of Natural Resources and Water, 2007, *Delbessie Agreement* (State Rural Leasehold Land Strategy) Queensland Government, Brisbane.
19 For more information visit www.environment.gov.au/biodiversity
20 Australia's Biodiversity Conservation Strategy 2010-2020, consultation draft, March 2009. National biodiversity strategy review task group.
21 Australian Natural Resources Atlas, natural resource topics accessed March 2010 www.anra.gov.au/topics/coasts/pubs/estuary_assessment/est_ass_forward.html
22 Australian Natural Resources Atlas, natural resource topics accessed March 2010

In order to make land use more sustainable within the context and constraints of our natural resources, while maintaining or enhancing productivity, environmental offsets are a viable option. Environmental offsets are positive measures taken to counterbalance negative environmental impacts that cannot be otherwise avoided or minimised, and ensure that there is no net loss of ecological values.[23] Offsets provide alternative beneficial environmental outcomes where social and economic growth impact negatively on the environment.[24] This provides opportunities to achieve long-term conservation outcomes, while providing flexibility for proponents seeking to undertake development that has negative impacts but provides significant public or economic benefit.

Specific development controls are required in areas of high ecological significance identified by the state government. These areas include:

- wetlands areas
- conservation estate
- corridors
- threshold ecosystems
- assessable non-remnant or regrowth endangered and of concern regional ecoystems.

Areas of general ecological significance include other areas containing remnant vegetation and wetlands of particular conservation value. This includes not-of-concern vegetation under the *Vegetation Management Act 1999*. Planning decisions that need to consider areas of general ecological significance are developments that are assessable under the *Sustainable Planning Act 2009*.

Corridors and networks establish connections between core areas of remnant vegetation and provide opportunities for flora and fauna to adapt to impacts on their environment. These corridors contain a mix of habitats and maximise connectivity between large patches of remnant vegetation. The areas should be protected, managed and enhanced in line with policies related to areas of high ecological significance.

Mapped areas of high ecological significance (see Map 3, page 68) do not include all essential habitat for protected species listed under the *Nature Conservation Act 1992*. Areas that are likely to contain protected species listed under the *Nature Conservation Act 1992* will require further survey work to establish their existence, distribution and habitat requirements. Investigating and mapping areas of high ecological significance, threatened species and their habitats remain priorities.

The Department of Environment and Resource Management (DERM) has prepared maps showing areas of ecological significance. Further information about biodiversity mapping can be found on the DERM website.

The Australian Natural Resource Atlas has identified a number of management responses for each bioregion[25]. At a broad level, the climate change response strategy for biodiversity is to protect diversity of habitat, protect areas outside of the reserve network and maximise resilience and connectivity. As numerous core areas of biodiversity significance are located within protected area estates, the protection and enhancement of habitats and corridors between these core areas is an essential policy outcome for the regional plan.

Programs and projects that aim to achieve regional biodiversity benefits at a property scale (individual landholders) include:

- the *Back on Track species prioritisation framework*
- recovery plans for specific threatened identified species
- the *Delbessie Agreement*
- Initiatives of the Southern Gulf Catchments and Desert Channels Queensland natural resource regional bodies

## 1.2 Pest plant and animal management

### Objective

**Manage pest plants and animals to protect present and future land use and productive capacity of natural resources.**

Invasive species pose serious threats to the environment and primary production. Feral pigs, dogs, cats and camels are considered particularly damaging to the region's environment. Land use, climate change and grazing are factors that need to be considered in the implementation of pest plant and animal management strategies.

Climate change can potentially alter the distribution of pest species. Hotter weather, less rainfall, and carbon dioxide fertilisation will affect plant growth and productivity, and may change native and cultivated pastures. There could be a shift in the distribution of existing pests, diseases and weeds, and new ones may appear.

Mining exploration and related activities may introduce a range of weeds and pests into previously unaffected areas through poor site practices, including cross-contamination by vehicles, machinery and tools from other sites. Exploration licences are issued through environmental authorities. Via these authorities, scope exists for stricter management and remediation conditions to be implemented as conditions of licences.

### Pest plant and animal management strategies

1.2.A Implement pest management practices to protect the environment and the productive capacity of natural resources, communities, industries and business.

23 Queensland Government Environmental Offsets Policy 2008 accessed March 2009 www.epa.qld.gov.au/publications/p02501aa.pdf/Queensland_Government_environmental_offsets_policy.pdf

24 Environmental Protection Authority, Environmental Offsets (Position Statement No. 9) January 2006 accessed March 2009 www.epa.wa.gov.au/docs/1863_PS9.pdf

25 Australian Natural Resources Atlas website accessed May 2008 www.anra.gov.au

1.2.B Encourage further development of partnerships with the pastoral industry, local government and lessees, to build capacity to control and manage weeds.

## Explanatory notes

Pests are weeds or pest animals declared under the *Land Protection (Pest and Stock Route Management) Act 2002*. This term also includes non-native plants that are not a declared pest.

The *Vegetation Management Act 1999* regulates the clearing of native vegetation. Under the Vegetation Management Act, clearing that is necessary for controlling non-native plants or declared pests is one of the purposes for which landholders can apply for a development approval.

Certain types of development applications are required to include a property vegetation management plan under the *Vegetation Management Act 1999*. This is a property-level plan of the proposed areas to be cleared for purposes such as weed control.

The principles of pest management are included in state strategies and policies including the *Queensland Weeds Strategy, Queensland Pest Animal Strategy, Queensland Wild Dog Management Strategy, Queensland Feral Pig Management Strategy* and North West Queensland cattle tick control strategies. These strategies identify actions required to be undertaken by landholders to control the impacts of these pests and associated environmental impacts.

# 1.3 Scenic amenity and outdoor recreation

## Objective

**Protect and manage the natural scenic amenity and outdoor recreational assets of the region.**

The region's diverse environment provides a range of nature-based recreation opportunities. High scenic qualities contribute to the recreational experience that visitors and locals seek when exploring outback Queensland. Visitors seeking nature-based tourism make a substantial contribution to the local and regional economy.

The region's highways and roads pass through a number of scenic landscapes that include White Mountains, Porcupine Gorge and Blackbraes National Parks. Opportunities to improve infrastructure in protected area estates and other areas for recreation can assist in supporting increased visitation while providing improved management capability and protection of the area's natural assets.

Tourism Queensland, in conjunction with Queensland Parks and Wildlife Service (QPWS), and the Flinders and Dalrymple Shire Councils, has coordinated the development of a sub-regional tourism strategy for the shires' national parks and council recreation reserves. The strategy provides the framework for a systematic and coordinated approach to tourism infrastructure development and visitor management by comparing current and potential tourism demand with the visitor appeal and capabilities of the parks and reserves. The focus of the strategy is the long-term sustainable management and development of the regions' protected reserves.

## Scenic amenity and outdoor recreation strategies

1.3.A Continue to implement the sub-regional tourism strategy for areas of nature conservation value.

1.3.C Identify and maintain a hierarchy of open space and recreational trails that provides opportunities for public access and interaction with the natural environment while ensuring sustainable use.

1.3.D Develop a region-wide inventory of all lands held for public recreation.

## Land use policies

1.3.1 Identify and protect areas of scenic amenity from inappropriate land uses.

1.3.2 Plan outdoor recreational land use developments within natural areas in a way that does not diminish the environmental values of the area.

1.3.3 Plan, design and develop infrastructure to protect, manage and enhance regional landscape values.

## Explanatory notes

Prioritising regional landscape areas that demonstrate a range of values can help to build and sustain the capacity of regional landscapes to provide community benefits such as outdoor recreation and liveability. Outdoor recreation activities contribute to better social, health, economic, tourism, cultural and environmental outcomes.

*Towards Q2: Tomorrow's Queensland* sets a target to protect 50 per cent more land for nature conservation and public recreation by 2020. As part of these initiatives, the state government is looking to work with local governments to:

- protect more areas of national park
- protect green spaces for recreation
- provide recreational facilities
- develop a state-wide inventory of all land held for public recreation.

# 1.4 Air and noise emissions

## Objective

**Locate and manage development to maintain or improve air quality, and minimise the effects of adverse acoustic emissions on the health and wellbeing of the community and the natural environment.**

Low population and dispersed concentrations of industrial development have resulted in good air quality for the majority of the region. However, air quality and adverse acoustic impacts can result from agricultural and other industries. These impacts require consideration in land use planning and environmental management decisions in order to protect the amenity and health of residents and workers in the region.

The Xstrata Mount Isa Mines complex is one of the largest metal mining and smelting operations in the world. Due to the size and nature of its operations, the Mount Isa Mines complex produces significant air emissions, including sulphur dioxide and heavy metals. Air pollution control equipment and procedures are in place to monitor and limit emissions. Air quality monitoring stations throughout the city monitor air quality and assist in actively managing emissions through staged reductions in smelter activities.

Mount Isa is nominated as the major regional activity centre for the region and population levels are estimated to grow during the life of the plan. Acceptable air quality is a key factor in ensuring the city's prosperity, health and amenity.

## Air and noise emissions strategies

1.4.A Investigate collaborative models involving community, industry and government to oversee the collection of base-line data and recommend long-term management options for integrating mining and town-based activities.

## Land use policies

1.4.1 Development that generates air and acoustic emissions must be adequately separated, designed, constructed and operated to avoid impacts of emissions on sensitive land uses.

### Environmental management of lead in Mount Isa

Mining commenced in Mount Isa in 1924 after John Campbell Miles discovered a rich seam of silver and lead where the city is located today in 1923. The mine and metal processing facilities continue to be recognised as key to the city and region's ongoing prosperity.

Mining and processing activities have, however, also caused a range of environmental management issues. Improved technology and increased knowledge have resulted in many improvements in monitoring and mitigating damaging by-products of mining and processing activities.

There is continued concern about elevated lead levels and the possible impacts on the health of residents, particularly children. Actions that have been taken, or are proposed to occur, to address these concerns include:

- changes to the environmental regulations under the *Environmental Protection Act 1994* will transition mines to contemporary standards in line with other mining interests in the state
- Xstrata has committed to implementing best practice emissions controls
- the air quality monitoring system in Mount Isa is the most intensive of any city in Australia
- the Mount Isa Living with Lead Alliance will provide a forum for driving and guiding action on the issue of lead in the community of Mount Isa.

## Explanatory notes

Eliminating the impacts of air and noise pollution is not always possible. Providing separating distances between industry and other land uses serves to reduce the impacts on health, amenity and quality of life that may result from hazards or from air or noise emissions.

Wherever possible, sensitive land uses such as residential development should be located away from industrial or intensive agricultural uses, or major transport routes. Air and noise pollution is managed through the *Environmental Protection Act 1994*. This legislation establishes local, regional or state standards for air quality and acoustic quality.

# 1.5 Greenhouse gas emissions

## Objective

**Develop a regional approach to minimising greenhouse gas emissions.**

Western Queensland regions are well-placed to harness solar energy resources, as there is more available land than in most other areas in Australia and significantly higher solar energy compared to coastal settlements[26]. The region also has geothermal energy potential; the generation of which produces considerably less greenhouse gas emissions than the production of other energy forms. Alternative sustainable energy sources may result in significant reductions in the amount of greenhouse gas emissions in the region.

## Greenhouse gas emissions strategies

1.5.A Manage greenhouse gas emission levels responsibly through:

- promotion of responsible management of emissions
- development of mechanisms to ensure land use and natural resource management processes consider the greenhouse gas effect and are consistent with the regional strategy
- promotion of alternative, renewable energy sources
- promotion of economic instruments, such as carbon trading.

1.5.B Support research and development of clean energy technologies.

1.5.C Promote and support the development of solar towns that capitalise on the region's solar energy resources.

1.5.D Promote knowledge of carbon sequestration[27] opportunities and constraints to increase understanding and participation in emerging carbon markets.

1.5.E Identify and map areas with significant potential for generating renewable energy.

## Land use policies

1.5.1 Protect key locations identified as suitable renewable energy generation sites from inappropriate land uses.

1.5.2 Improve energy efficiency through siting, design, construction and use of demand management technologies to reduce greenhouse gas emissions.

1.5.3 Increase the local provision of renewable energy and low emission technology.

1.5.4 Increase stored carbon through the retention or planting of trees or other vegetation and other land management practices that provide sustainability outcomes.

## Explanatory notes

*Toward Q2: Tomorrow's Queensland* sets a target to cut Queenslanders' carbon footprint by one-third through reduced car and electricity use by 2020.

*ClimateSmart 2050* is the Queensland Government's contribution to the national and global effort to tackle climate change. The strategy commits Queensland to play its part in reducing national greenhouse gas emissions to 60 per cent of 2000 levels by 2050 and includes a range of initiatives across all sectors to mitigate greenhouse gas emissions and reduce climate change impacts. The strategy also supports use of renewable energy technologies, carbon offsets and improvements in energy and fuel efficiency.

*ClimateQ: toward a greener Queensland* presents the next phase in Queensland's response to the challenge of climate change. This strategy presents investments and policies to ensure Queensland remains at the forefront of the national climate change response.

Queensland supports the expanded National Renewable Energy Target which will result in an additional annual 45 000 gigawatt hours of renewable energy generated nationally. In order to achieve this, the Queensland Government has released the Queensland Renewable Energy Plan (QREP), a comprehensive economic and industry development strategy aimed at accelerating the growth of the renewable energy sector in Queensland.

The primary objective of the QREP is to increase the use of renewable energy infrastructure in Queensland. Therefore it will provide incentives to encourage industry development towards new opportunities. QREP includes a number of initiatives that will be relevant to the region, including the development of solar thermal options (see Section 5.0 Economic Development) for regional Queensland, government-owned generators partnering with industry to identify renewable energy solutions, increased opportunities for distributed electricity generation and resource mapping to identify potential renewable energy sites.

In addition, the Queensland Government has invested in a number of renewable energy generation assets through the state's government-owned corporation, including wind, solar thermal, hydro, biogas and Australia's first wet geothermal plant.

26 Australian Government, Geoscience Australian website accessed March 2009 www.ga.gov.au/education/geoscience-basics/dimensions/climatic-extremes.jsp#temp

27 Carbon sequestration is the storage of carbon dioxide in a solid material through biological or physical processes

# 2. Natural resources

## Desired regional outcome

The economic, environmental, social and cultural values of the region's natural resources are recognised and managed to enhance regional prosperity and maintain ecological sustainability.

Land, water, vegetation, mineral and energy resources are critical to the economic development of North West Queensland (see Map 4, page 69). The region is predominantly state land, the majority of which is leasehold for grazing and mining. Since European settlement, the region's wealth has largely been derived from mining and agriculture.

Water resources are critical to the region, with the Great Artesian Basin providing the majority of water for the grazing industry and towns such as Julia Creek, Richmond and Hughenden. Shallow bores also provide water for the region. Many of these are within streambeds and are used for both agricultural and town water purposes. The environmental flows to downstream ecological assets and the security of supply to the primary water-using industries are important. Industry practices in relation to using and maintaining bores is improving. A number of water schemes operate within the region with dams servicing Mount Isa, Cloncurry and other centres.

Mount Isa and Cloncurry are located within the North West Mineral Province. The province covers an approximate area of 312 155 square kilometres. The North West Mineral Province is a world-class ore resource area containing an estimated 75 per cent of Queensland's total metal resources. It is recognised as Australia's premier base metal province, producing zinc, lead, silver and copper concentrate.

The beef industry is also an important economic contributor to the region. Cattle are the predominant grazing animal, although sheep are also grazed. Good agricultural land is a limited resource and should be given due consideration in land use planning and development decisions.

The region also includes less tangible assets including extensive landscapes that attract tourists and artists and provide opportunities for palaeontologic research, natural history education and outdoor recreation.

Major challenges for natural resource management include maintaining sustainable production in the face of climate change and depletion of non-renewable resources. Natural resources are highly dependent on ecosystem services such as water regulation, genetic resources, nutrient cycling and pest regulation.

Natural resource management planning needs to be looked at holistically to include regional social and economic factors. Indigenous knowledge and interests should be used and considered when addressing natural resource matters.

The sustainable management of natural resources through cropping, cattle grazing, urban activities, mining and conservation, is critical to the liveability and prosperity of the region.

# 2.1 Land and natural resource use and management

## Objective

**To coordinate development and use of the region's natural resources using ecologically sustainable land management practices to achieve the community's economic and environmental objectives.**

The region takes in a wide range of land, water, soil, mineral resources and a diverse range of ecological systems and cultural resources. While some natural resources have been mapped, gaps in this knowledge exist.

Effective management of natural resources relies on building cooperative relationships between all stakeholders. Southern Gulf Catchments and Desert Channels organisations have prepared management plans to address some of the gaps in knowledge of how human activity impacts on the region's natural assets.

Challenges for North West communities, industries and governments in managing and maintaining natural resources include:

- ensuring efficient and sustainable use of water, including maintaining downstream environmental flows
- identifying alternative sustainable means of using seasonal water sources to improve agricultural diversity and regional prosperity
- moving toward sustainable agricultural systems
- increasing understanding of the environmental processes and interactions with economic and social activities
- developing effective plans and strategies for environmental and natural resource management
- managing pest plants and animals that affect environments and production
- managing areas protected for biodiversity
- identifying key resource areas, providing certainty for long-term mining and minimising conflicts with adjoining uses.

## Land and natural resource use and management strategies

2.1.A Engage the community, Traditional Owners, landholders and industry in promoting and practicing adaptive and sustainable natural resource management.

2.1.B Promote sustainable development and use of natural resources for recreation and other economic development.

2.1.C Encourage efficient planning and management to ensure equitable access to the region's natural resources.

2.1.D Encourage innovative use of technology and systems for the management of the region's natural resources.

2.1.E Encourage climate change adaptation studies that examine long-term fluctuations in climate and inform risk management strategies.

2.1.F Investigate the establishment of a regional research centre or centre of excellence to identify practical ways of advancing natural resource management.

## Land use policies

2.1.1 Identify and protect natural economic resource areas from further fragmentation and inappropriate land use.

## Explanatory notes

The *Delbessie Agreement* supports the sustainable use of rural leasehold land in line with best practice natural resource management. This strategy includes balancing profitable use of land with maintenance of healthy land, vegetation and water, while improving the capacity of land managers to adapt to emerging issues. The strategy provides security of tenure for leaseholders, clarifies duty of care and establishes a process to develop land management agreements and assess the condition of leasehold land.

Knowledge of natural resource management issues, principles and techniques is continually expanding and improving. Greater emphasis is also being placed on local solutions to meet natural resource management needs and recognise opportunities for improved community prosperity. Responsive adaptation to improvements in scientific knowledge and techniques is seen as critical to the ongoing well-being of communities. The use of local community knowledge and expertise, and ensuring that research is kept regionally relevant are key ways to better facilitate and develop regional adaptive management principles.

# 2.2 Water management and use

## Objective

**Manage the region's river systems, ground water, and wetlands for sustainable use by industries and communities, and protect dependent ecosystems and water quality.**

The region is the source of a number of major rivers that flow into the Gulf of Carpentaria and the Lake Eyre Basin. The Great Artesian Basin also supports the region. The characteristics of the water resources in north Australia are distinctly different from other parts of Australia.

The region relies on a range of water sources to supply urban, mining, agricultural and industrial users. Water has been identified as a critical issue for the region and the need to install new infrastructure, improve utilisation of existing water catchments, recycle water and develop more innovative ways of using water are recognised[28] as leading factors which are most likely to benefit the region's long-term growth.

A number of projects that have been completed or are being undertaken by the Commonwealth and state governments provide insights into management of water resource in northern Australia in the future.

The Northern Australia, Land and Water Taskforce report on sustainable development in northern Australia recognised that future development needs to be smart and build on the area's special attributes[29].

The taskforce's findings most relevant to the region include:

- Small-scale, widely distributed 'mosaic' agriculture has potential to operate with a relatively small environment footprint compared with large-scale contiguous agricultural developments.
- Small-scale off-stream storage options may be viable when considered in the context of supplementary irrigation operations.
- Assumption that the large-scale capture and storage of surface water required to support irrigation during the dry season is unlikely to meet public cost-effectiveness criteria.
- Development of groundwater resources provides the best prospect to support new consumptive use of water in northern Australia.
- Mining water needs should be considered as part of an integrated development approach in conjunction with other industries and regional priorities.

One of the key principles adopted by the taskforce is that an economic future must recognise the region's (northern Australia) significance for Indigenous people and their intrinsic connectedness to land and water.

The *National Water Initiative (NWI),* agreed in 2004 by the Council of Australian Governments, is the national blueprint for water reform.

The *Water Resource (Gulf) Plan 2007* and *Gulf Resource Operations Plan* provide strategies and outcomes for the sustainable allocation and management of the area's water resources and are consistent with the NWI. The Georgina and Diamantina Rivers drain more of the plan area than Cooper Creek. These rivers occasionally flow into Lake Eyre. The water resource plans for the Diamantina and Georgina Rivers and Cooper Creek provide for sustainable allocations.

Potential exists for the development of off-stream storage for agriculture in McKinlay, Flinders and Richmond Shires. Between 2000 and 3000 hectares of land is irrigated in the Flinders and Richmond Shires through off-stream storages and direct irrigation from rivers and streams. More than 25 000 megalitres of water entitlements have been granted to support irrigation development in the Flinders River catchment. The *Water Resources (Gulf) Plan 2007* has identified a further 100 000 megalitres/annum of unallocated water as being available for future development in the Flinders River catchment.

Considering the range of issues associated with water use and management in the region, demands by mining and agriculture, possible future investigations by the Commonwealth Government and the uncertainty associated with the impacts of climate change, a precautionary approach should be taken in determining future water needs and priorities in the region.

## Water management and use strategies

2.2.A Support the use of a range of mechanisms to protect, conserve, enhance and restore the environmental, social and economic values of river systems, ground water and wetlands.

2.2.B Eliminate point source wastewater discharge of pollutants into water where practicable.

2.2.C Manage reused or recycled water in accordance with best practice environmental management principles to protect or enhance environmental values and meet water quality objectives.

2.2.D Actively involve Traditional Owners in water planning and management as part of collaborative management forums and regimes operating in the region or through on-site practices on country.

2.2.E Promote the development and implementation of water efficient technologies and management strategies for industrial, agricultural and private purposes.

28 Priority Projects for Mount Isa, Cloncurry, McKinlay and Burke, Minister for Department of Tourism, Regional Development and Industry, 17 July 2008, Mount Isa.

29 *Sustainable Development in Northern Australia*, Department of Infrastructure, Transport, Regional Development and Local Government, December 2009

2.2.F Implement the Great Artesian Basin Sustainability Initiative, as identified in the *Blueprint for the Bush* program.

2.2.G Improve catchment management to maintain water quality and the health of the Lake Eyre Basin and the lower Gulf of Carpentaria river catchments.

2.2.H Investigate the benefits and impacts of mosaic irrigation.

2.2.I Facilitate mapping of land and soil resources at a fine scale to facilitate more detailed planning for irrigation.

## Land use policies

2.2.1 Plan, design, construct and operate development in accordance with best practice environmental management principles that meet water quality objectives.

2.2.2 Consider the impacts of developments on the water quality and health of rivers and streams flowing into the lower Gulf of Carpentaria and the Lake Eyre Basin.

2.2.3 Adopt demand management principles for the planning, design and construction of water infrastructure.

2.2.4 Incorporate industry best practice water saving methods and technology in all development.

2.2.5 Incorporate water sensitive urban design principles in urban areas.

2.2.6 Avoid clearing native vegetation or development within a waterway, wetland, riparian area or flood plain through the use of appropriate set backs and buffer zones, and where unavoidable mitigate through best practice design, rehabilitation and management.

## Explanatory notes

The National Water Initiative (NWI), agreed in 2004 by the Council of Australian Governments is a shared commitment by governments to increase the efficiency of Australia's water use, leading to greater certainty for investment and productivity, for rural and urban communities, and for the environment.

Under the NWI, governments have made commitments to:

- prepare water plans with provision for the environment
- deal with over-allocated or stressed water systems
- introduce registers of water rights and standards for water accounting
- expand the trade in water
- improve pricing for water storage and delivery
- meet and manage urban water demands.

The Queensland Government is committed to the NWI and has produced the *Water Resource (Gulf) Plan 2007, Water Resource (Cooper Creek) Plan 2000, Water Resource (Georgina and Diamantina) Plan 2004* and *Water Resource (Great Artesian Basin) Plan 2006*.

Other legislation and instruments which relate to improving water conservation and sustainable management of waterways and wetlands include:

- the *Environmental Protection Act 1994*
- the *Environmental Protection (Water) Policy 2009*
- the *Vegetation Management Act 1999*
- the *Wild Rivers Act 2005*
- the *Water Act 2000*
- the National Water Quality Management Strategy[30].

The Rural Water Use Efficiency Initiative[31] is a state government and industry partnership which aims to improve water use management and promote sustainable irrigation practices in the agricultural sector. This can assist irrigators to improve productivity and meet some of the challenges of water reform. The program includes on-farm trials, demonstrations and system assessments and financial incentives to upgrade irrigation and effluent management systems.

# 2.3 Mining and extractive resources

## Objective

**Manage mining and extractive resources to maximise economic opportunities, while minimising negative environmental and social impacts for present and future generations.**

Mining is the dominant industry in the North West region in terms of employment, economic activity and gross regional product. Most of Queensland's base metal production is from the North West Mineral Province, one of the world's leading base metal provinces with internationally ranked resources of copper, zinc and lead. These deposits also produce significant quantities of precious metals (silver and gold) as co-products and by-products. The region has a range of other metal deposits and an important commercial source of phosphate rock for fertilisers[32].

The extent of major mines and resources in the North West Queensland Minerals Province is shown on Map 4 (page 69). Century Mine is just outside of the northern boundary of the North West region however Mount Isa plays a significant role in servicing this mine. The majority of mining occurs in Cloncurry and Mount Isa City local government areas, with a few mines in the McKinlay and Richmond Shires.

The impact of base metal mining on the region's landscape is generally less than

30 For more information visit www.environment.gov.au/water

31 For more information visit www.derm.qld.gov.au/rwue

32 Australian Atlas of minerals resources, mines and processing centres website accessed March 2009 www.australianminesatlas.gov.au/aimr/commodity/phosphate.jsp

the coal mines in the Bowen and Surat basins. This is because operations tend to be underground or are restricted to open pits with a smaller footprint area than most coal mining. Mining companies are required to comply with the requirements of any environmental authority under the *Environmental Protection Act 1994* or in the case of Mount Isa, *Mount Isa Mines Limited Agreement Act 1985*.

Mining impacts may include surface water and groundwater contamination, alteration in topography, loss of soil fertility and visual amenity and affects on surrounding land use activities and infrastructure. New mines need to be accompanied by a commitment to identify the suitable post mining land use of the area proposed for disturbance prior to disturbance of the land. Public involvement in decisions relating to mining issues, including rehabilitation, is an important factor in achieving long-term outcomes which are supported by the community.

Many of the mines in the region are at a mature stage of the mining cycle and several operations are scheduled for closure in the period 2015–2020. However, ongoing exploration has identified several new mineral discoveries and possible extensions of known deposits. In particular, new mining operations are proposed for around Mount Isa and north and south of Cloncurry. These proposals and new discoveries will provide a likely basis for long-term mining activity in the region and the industry is expected to continue as a dominant economic force during the life of the plan. It is important to safeguard mineral resources of economic importance from sterilisation by incompatible development that could limit future growth of the industry.

Quarry sites are located in the region. Two of these sites are designated as key resource areas under *State Planning Policy 2/07: Protection of Extractive Resources*. This policy seeks to maintain the long-term availability of major extraction resources by protecting the resource and their main transport routes from incompatible land uses. This is achieved through local government planning schemes and the assessment of development located near these sites.

Planning schemes will need to consider the supply of serviced land with infrastructure of sufficient capacity to support mining and extractive resources activities. Local government areas that surround these mining and extraction activities will need to assess their planning schemes to cater for any future development.

Policies in relation to social impacts of mining are considered in sub-section 3.2.

## Mining and extractive resources strategies

2.3.A Consider future uses of sites in post-mining site planning, particularly if located near an urban centre or area of potential agricultural significance.

2.3.B Promote access to fossicking areas in the region for tourism and associated economic development opportunities.

2.3.C Minimise, mitigate, rehabilitate and offset impacts of mining, energy and other extractive activities on the environment through regional innovation and opportunities.

2.3.D Establish a coordinated process for accumulating mining industry data and regular monitoring to assist in informing strategy development and delivery.

## Land use policies

2.3.1 Identify mineral, energy and extractive resource areas and protect them from inappropriate land use activities.

2.3.2 Focus land use planning on maximising economic benefits for the community, with minimal negative impact on communities and the environment.

## Explanatory notes

The regional plan recognises that the resources sector operates within specific legislative regimes. Mines are essentially exempt from the *Sustainable Planning Act 2009*. Coordination of exploration and mining development occurs under the *Mineral Resources Act 1989*, with ancillary mining development regulated by planning schemes. The *Mineral Resources Act 1989* requires the relevant local government to be notified of the granting of mineral development licences and mining leases and must note these on the planning scheme. There are no equivalent provisions in the *Petroleum Act 1923* or the *Petroleum and Gas (Production and Safety) Act 2004*.

The investigation of issues associated with post-mining land use are generally dealt with in an environmental impact statement prepared by the company as part of a proposal for a new mine or major expansion. Post-mining rehabilitation is generally conditioned under the *Environmental Protection Act 1994*. The identification of regional and subregional objectives can play a key role in assisting such assessment processes when required under legislation.

# 3. Strong communities

## Desired regional outcome

A region that has safe, healthy and prosperous communities with a vibrant civic culture, a strong sense of identity and place, social equality and access to services.

There are a number of constraints on the liveability of communities in the North West region. Growth in the mining industry across parts of western Queensland has resulted in strong competition for labour and capital for infrastructure.

Regions that experienced strong mining growth, such as North West Queensland, increasingly face challenges including[33]:

- lack of affordable housing
- limited availability of housing of appropriate type, design and quality
- inadequate supply of social infrastructure
- lack of social services to support the community
- limited access to affordable transport
- fluctuating population and its effect on reaching or maintaining population thresholds for services
- a high cost of living, particularly in the mining centre of Mount Isa
- income inequality between the mining workforce and non-mining industries has resulted in shortages of workers in other industries
- high prevalence of fly-in and fly-out worker arrangements instead of more locally-based workforce arrangements.

The Mount Isa resource community summit 2008 convened by the Queensland Government reaffirmed these issues.

## Population

The region's resident population was estimated at 28 739 at 30 June 2008[34], accounting for just 0.7 per cent of the Queensland total. The population density of the 200 500 square kilometre region is 0.14 people per square kilometre.

Overall the region's resident population declined from 30 099 to 28 739 between 1996 and 2008 (Table 3), with large losses apparent in all local government areas (LGAs) between 2001 and 2006. A number of economic factors contributed to these changes, including fluctuations in commodity prices, structural reform within the mining industry, and the increasing use of fly-in and fly-out workforces rather than locally-housed workers. In predominantly rural shires, population decline has been closely associated with urban drift due to prolonged periods of drought, and the influence of an ageing population.

Despite these influences, a recent resurgence of activity in the mining industry has influenced some positive population growth in the region. The Australian Bureau of Statistics (ABS) estimated that the resident population of Mount Isa City increased on 2007 figures by 287 people or 1.3 per cent for the year to 30 June 2008, while McKinlay Shire remained stable (Table 3). In light of reported growth in the mining industry, it is likely that these estimates are slightly understated.

33 The Mount Isa resource community summit 2008 convened by the Queensland Government reaffirmed these issues.

34 (a) ABS, *Regional Population Growth, Australia* cat. no. 3218.0. (results for 2007 are provisional) (b) Planning and Information Forecasting Unit (PIFU), 2007, North West region population report.

**Table 3. Estimated resident population for local government areas in North West region, 30 June 1996 to 30 June 2007[35]**

| LGA | 1996 | 2001 | 2006 | 2007 | 2008 | Per cent annual growth 2006–2007 |
|---|---|---|---|---|---|---|
| Cloncurry (S) | 3 193 | 3 827 | 3 366 | 3 359 | 3 394 | 1.0 |
| Flinders (S) | 2 234 | 2 090 | 1 911 | 1 882 | 1 864 | -1.1 |
| McKinlay (S) | 1 157 | 1 066 | 955 | 961 | 961 | 0.0 |
| Mount Isa (C) | 22 386 | 21 149 | 21 114 | 21 283 | 21 570 | 1.3 |
| Richmond (S) | 1 129 | 1 150 | 969 | 949 | 950 | 0.1 |
| **Total** | **30 099** | **29 282** | **28 315** | **28 434** | **28 739** | **1.1** |

**Table 4. Full time equivalent population for local government areas in North West region, 30 September 2007[35]**

| LGA | Estimated resident population at 30 September 2007 | Non-resident workers at 30 September 2007 | | | FTE population as at 30 September 2007 |
|---|---|---|---|---|---|
| | | Living in towns in non-private accommodation | Mining workers living in on-site single person quarters | Total non-resident workers | |
| Mount Isa (C) | 21 798 | 654 | 848 | 1 502 | 23 300 |
| Cloncurry (S) | 3 340 | 64 | 830 | 894 | 4 234 |
| McKinlay (S) | 968 | 0 | 723 | 723 | 1 691 |
| **Total** | **26 106** | **718** | **2 401** | **3 119** | **29 225** |

## Non-resident workers

Information gathered from industry sources indicates that the number of mining and processing jobs in the region increased by around 540 between mid-2006 and September 2007[36]. Many of these jobs were taken by workers who chose to reside in Mount Isa, indicated by the upsurge in that area's resident population, but others were filled by fly-in and fly-out workers. As these non-resident workers are not included in the ABS resident population estimates, the total increase in mining employment is not fully reflected in the population growth estimates for local government areas (LGAs).

Non-resident workforces play a significant role in the region's mining boom, with fly-in and fly-out workers filling two out of every five mining jobs at the end of September 2007. Some workers fly directly to the mine from their home region and stay in on-site worker villages (known as single person quarters). Other fly-in and fly-out workers reside in Mount Isa and Cloncurry, occupying hotels, motels, caravan parks and leased dwellings during their stay.

To capture the impact of non-resident workforces, the Department of Infrastructure and Planning has prepared full time equivalent (FTE) population estimates for those LGAs affected by mining (Table 4). The FTE population measure, which adds the number of non-resident workers to the resident population, provides a more complete estimate of the total demand for services, goods and infrastructure. Note that the resident population component shown in Table 3 is based on actual mining job growth to September 2007, and illustrates a slightly higher population for Mount Isa than the ABS estimated resident population figure for 30 June 2007.

As Table 4 illustrates, some 3119 non-resident workers were present in the region at 30 September 2007, making up 11 per cent of the total FTE population. Around 2401 (or 77 per cent of total non-resident workers) were living in single persons quarters located on mining leases, while 718 occupied commercial accommodation in Mount Isa and Cloncurry. The LGA of Mount Isa City had an FTE population of 23 803 people, comprising 1502 non-resident workers and 21 798 residents.

35 (a) ABS, *Regional Population Growth, Australia* cat. no. 3218.0. (b) PIFU, 2007, *North West region population report.*

36 PIFU, 2007, *North West region population report.*

## Population projections

The 2008 edition of the Queensland Government's LGA level population projections[37] takes into consideration the impact of fluctuating mining activity and assumptions of continued industry growth over the longer-term. They indicate that the region's resident population will grow to 32 500 people by 2031, with most growth occurring in Mount Isa City (see Table 5). Other LGAs in the region are not projected to grow, due largely to population ageing and the likely distribution of mines with non-resident workforces.

Mount Isa is the largest urban centre in the North West region, having a population of 20 684 (estimated) people or 72 per cent of regional total in June 2008 (Table 7, page 34). The balance of urban population in June 2008 (estimated) was distributed among smaller towns, of which Cloncurry (2607), Hughenden (1195) and Richmond (554) were the only centres to exceed 500 people.

**Table 5. Population projections, medium series North West region, 2006–2031[37]**

| Area | Year | | | | | |
|---|---|---|---|---|---|---|
| | 2006 | 2011 | 2016 | 2021 | 2026 | 2031 |
| Cloncurry (S) | 3 366 | 3 332 | 3 272 | 3 232 | 3 215 | 3 208 |
| Flinders (S) | 1 911 | 1 868 | 1 818 | 1 760 | 1 734 | 1 718 |
| McKinlay (S) | 955 | 942 | 908 | 871 | 867 | 863 |
| Mount Isa (C) | 21 114 | 25 056 | 23 883 | 24 013 | 24 740 | 25 886 |
| Richmond (S) | 969 | 922 | 864 | 832 | 829 | 825 |
| **Total** | **28 315** | **32 120** | **30 745** | **30 708** | **31 385** | **32 500** |

(S) shire, (C) city.

### Influence of fly-in and fly-out mine workers on the North West regional population

Job growth in the mining sector does not always result in local population growth. The use of fly-in and fly-out workforces and on-site worker camps means that many mining workers and their dependents are counted in the population for the area where they usually live, rather than in the area where the mine is located.

Top line statistics on fly-in and fly-out workers (Table 6) include:

- Non-resident workers made up just over one third (35 per cent) of the region's 6956 mining and associated jobs in September 2007.
- Most mining jobs in Cloncurry and McKinlay shires were non-resident workers (83 per cent and 99 per cent respectively).
- By contrast, around 84 per cent of mining jobs in Mount Isa were filled by workers who chose to live locally.

**Table 6. Workforce numbers for mining operations in North West region, 30 September 2007**

| LGA where operation is located | Resident mining workers, 30 Sept 2007 | Fly-in and fly-out workers, 30 Sept 2007 | Total mining workforce, 30 Sept 2007 |
|---|---|---|---|
| Mount Isa (C) | 84% | 16% | 5228 |
| Cloncurry (S) | 17% | 83% | 999 |
| McKinlay (S) | 1% | 99% | 729 |
| **Total** | **65%** | **35%** | **6956** |

37 PIFU, 2008 edition population projections (medium series).

**Table 7. Estimated resident population of urban centres in North West region, 2008[38]**

| Centre | 2008 |
|---|---|
| Mount Isa | 20 684 |
| Cloncurry | 2 607 |
| Hughenden | 1 195 |
| Richmond | 554 |
| Julia Creek | 377 |
| Camooweal | 183 |

## Age profile

The age profile of the North West region (Figure 3) is younger than for Queensland overall because of a range of factors, including:

- the regions sizeable Indigenous population having a relatively shorter life expectancy and larger family size than the non-Indigenous population
- the mining industry attracting younger working-age singles and families to the area
- low numbers of retirees residing in the region.

Children aged 0–14 comprise around 25 per cent of the regional population, compared to only 20 per cent state-wide. The age group commonly associated with younger working families (25–34 years) is also more highly represented in the region (17 per cent) than for Queensland overall (13 per cent). By contrast, retirees (aged 65 and over) make up a lower proportion of the regional population (7 per cent) than the state average (12 per cent).

**Figure 3. Age groups in North West region compared to Queensland average, 2006**

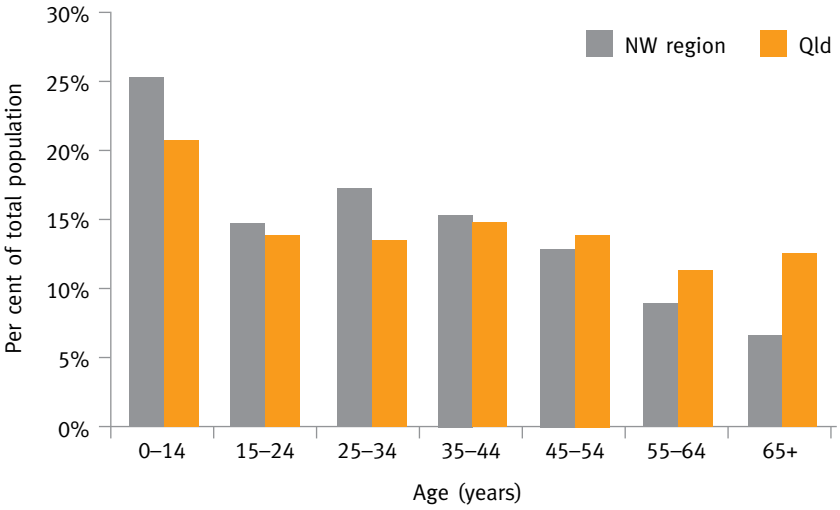
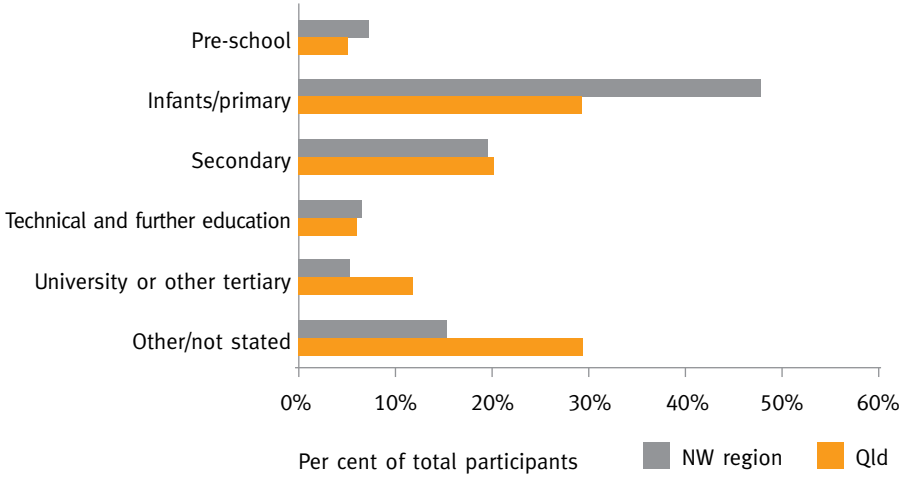



**Figure 4. Participation in formal education programs, North West region and Queensland average, 2006.**




## Education

In 2006, some 6400 people in the region participated in formal education, ranging from preschool to tertiary levels[39]. The region (Figure 4) had higher proportions of residents participating in preschool (7 per cent) and primary school (48 per cent), compared to Queensland's overall average (5 per cent and 29 per cent respectively).

While these rates are largely due to the region's younger population, they also reflect lower participation in tertiary education such as university (5 per cent, compared to the state average of 12 per cent). This comparatively low rate may be partially explained by the absence of a permanent university campus. The participation rate in Technical and Further Education (TAFE) programs in the region, by contrast, was similar to the state average (around 6 per cent).

38 2008, Calculated by PIFU, Department of Infrastructure and Planning based on ABS unpublished data and 2006 Census Counts

39 ABS, 2006, *Census of Population and Housing*. Total excludes those census returns where Indigenous status was not stated.

## Indigenous people

According to the 2006 Census, some 4216 usual residents of the region self-identified as being of Aboriginal heritage, making up around 18 per cent of the region's total population[40]. Mount Isa, as the regional hub, also services Indigenous communities located in the Gulf and the eastern regions of the Northern Territory[41]. The total Indigenous population of the region is likely to be higher than indicated by the usual resident population, since this measure does not include transient people and short-term visitors.

On average, Indigenous households have more children than non-Indigenous households. Some 40 per cent of the Indigenous population of the North West region is aged 0–14 years (1700 children), compared to 22 per cent of the non-Indigenous population (4200 children).

The lack of data on Indigenous mobility and migration has serious implications for planning and policy purposes. Population movement can have significant impacts on the ability of all levels of government to design forward-looking policy at a local level that takes into account the Indigenous population.

The Council of Australian Governments signed the National Indigenous Reform Agreement in which all levels of government agreed to work with Indigenous communities to achieve the Closing the Gap strategy to reduce Indigenous disadvantage. The North West regional plan contributes to achieving Closing the Gap targets by aiming to reduce the gap in employment between Indigenous and non-Indigenous workers within a decade.

## Summary

The region's future population profile will reflect changes in the mining industry. Attracting and retaining employees will depend on the provision of quality services and facilities and creating liveable communities in order to attract workers. The remoteness of operations from towns will be a determining factor in where workers decide to live. Development in other industry sectors may also contribute to population growth.

New mines located close to Mount Isa and Cloncurry will have the option of housing workers locally. More distant operations are likely to utilise fly-in and fly-out workforces and on-site single person's quarters. These operations will have negligible effect on the resident population, but will increase the full time equivalent (FTE) population.

Mount Isa's future is linked to the city's continuing role as the regional hub for support services and its capacity to attract and retain employees across industries. Many mining and construction support services are performed by subcontractors who are not usual residents, and who utilise commercial accommodation. Creating more liveable communities and increased employment opportunities in the mining industry may provide incentive for subcontractors to reside permanently in the region.

The region's capacity to accommodate population growth will depend on the timely provision of essential infrastructure, including water, sewerage and housing.

# 3.1 Education and learning

## Objective

**Encourage and support a regional culture of lifelong learning and education.**

High-quality education and training systems are vital for the region's prosperity and community wellbeing. Access to quality education increases people's employment opportunities, life skills and provides for economic growth. Socially, it provides individual fulfilment, supports those who are isolated from their communities and facilitates community capacity building. The location of primary, secondary and tertiary schooling should be based on existing and projected demand as described in the regional narratives.

The remoteness of many communities in the region means children are often required to participate in distance education. This is provided by the Mount Isa School of the Air.

Impediments to accessing education include:

- geographical location—many students reside on properties hundreds of kilometres from towns with education facilities
- costs—access to technology required for remote education such as telephone and internet is high as is the cost to supply curriculum in hard copy where internet access is not available
- technology—the speed and quality of internet access is limited in many areas
- unreliable energy—some properties are powered by generators and classes are restricted to times when sufficient power is available.

While distance education strategies provide support for remote students, other training delivery strategies must be explored.

40 ABS, 2006, *Census of Population and Housing*. Total excludes those census returns where Indigenous status was not stated.
41 Data from the 2006 Census indicate that around 550 Indigenous people live in the Northern Territory within 450 km of Mount Isa.

Education outcomes for Indigenous students must also be supported through culturally appropriate, locally tailored strategies to increase training, education and career opportunities and to create a better understanding of, and respect for, Indigenous cultures.

A range of strategies and approaches needs to be undertaken to support improvements in the way high-quality educational services are delivered to Indigenous youth. Fundamental to success will be the engagement of Indigenous people and working in partnership with schools and the community to address barriers to the take-up of educational services. It is necessary to create a framework which provides school systems with greater resources and flexibility to develop strategies that respond to the circumstances of each school community, particularly in remote areas with high Indigenous populations. This will be essential in helping young Indigenous Australians achieve higher educational attainment.

## Education and learning strategies

3.1.A Utilise the centre narratives in terms of planning for the level of service and location of existing and projected demand in provision of primary, secondary and tertiary schooling opportunities.

3.1.B Investigate opportunities to increase and extend higher level education and training options across the region, through a range of delivery modes, in accordance with the intent of the regional activity centres network.

3.1.C Promote and support culturally appropriate education and training to improve Indigenous career outcomes and create a better understanding of, and respect for, Indigenous cultures within the broader community.

3.1.D Assess and improve access for young Indigenous people to high quality education.

3.1.E Promote educational development for young Indigenous people as a priority need to achieve the Closing the Gap targets and to maximise wider community prosperity.

3.1.F Develop mentoring and leadership programs for Indigenous youth.

## Explanatory notes

The region needs flexible, responsive and affordable education and training services. North West Queensland is looking to maximise the resources available, take up new opportunities and combine people's skills to manage change. Opportunities for enhancing education, training and skills development in the region include:

- improving partnerships between local education providers and the resource industry
- creating positive education outcomes for Indigenous youth and helping them progress toward further education
- developing mentoring and leadership programs for Indigenous youth
- investigating opportunities for higher (tertiary) education in the region
- creating flexible education delivery packages which take advantage of new communications technologies to reduce the impact of remoteness
- improving the recognition of prior learning and rural life skills.

# 3.2 Social planning and social infrastructure

## Objective

**Meet the current and future needs of communities through coordinated and timely planning and provision of a range of social services and facilities.**

Social planning and research is carried out to manage social change and impacts arising from development[42] and are essential components of land use planning. Integrating social planning into planning processes can help identify necessary community facilities and services, and land for community purposes.

42 Planning Institute Australia website accessed August 2008 www.planning.org.au

North West Queensland is a remote and diverse environment where some regional communities are significantly more developed than others. Key issues impacting on the provision of social infrastructure and services are population decline, the critical mass population levels required to justify additional amenities and the level of industry diversity in the region.

Historical trends have shown fluctuations in population for towns and communities in the region. Changes to demographic profiles and to lifestyle choices have implications for the provision of social services and facilities within the region. Managing these changes requires a coordinated approach to service delivery.

Non-resident mining workers create additional demand for goods, services and infrastructure. Continued research to determine the full extent of this demand will assist government and the community to gain a better understanding of the social impacts associated with these developments. This will allow the private sector and government to better provide the necessary infrastructure and services for this workforce.

## Social planning and social infrastructure strategies

3.2.A Implement social infrastructure auditing to more clearly identify needs.

3.2.B Identify mitigation and management strategies to address the social impacts of large-scale development projects.

3.2.C Encourage communities to collaboratively participate in community planning and developing social capacity.

3.2.D Encourage partnerships between governments and private organisations to identify and provide essential community facilities.

3.2.E Identify protocols for the sharing of mining workforce information between the mining sector and government.

3.2.F Identify specific social impact assessment protocols and criteria to reflect ongoing needs of the community, utilising existing frameworks.

3.2.G Better utilisation of the findings of social impact assessments in social research and policy and program development to assist local and state government in guiding future development decisions and strategic planning for resource communities.

## Land use policy

3.2.1 Use best available demographic information to identify existing and future community infrastructure needs.

## Explanatory notes

Social impact assessments may be undertaken by proponents of major new and expanded mining and petroleum developments as part of the application and approval process for the grant of mining and petroleum tenures. These assessments may be required as part of existing environmental impact statement processes under the *Environmental Protection Act 1994* and under the *State Development and Public Works Organisation Act 1971* for projects declared to be significant projects under that Act.

The social research conducted by resource companies as part of a social impact assessment is required to provide government with improved information on the cumulative social impacts of mining and petroleum developments on communities. This information is critical in guiding future development decisions and strategic planning for resource communities for land use, service delivery and infrastructure requirements.

The state government, in partnership with industry and local government, is committed to strengthening social impact assessment in the mining and petroleum industries through the *Sustainable Resource Communities Policy 2008*. This policy includes initiatives that aim to build equitable and sustainable resource communities.

### Social infrastructure

Social infrastructure refers to the community facilities and networks which help individuals, families, groups and communities meet their social needs, maximise their potential for personal development and enhance community wellbeing. These include:

- facilities that provide education, training, health, open space, recreation and sport, safety and emergency services, religious, arts, cultural and community meeting places
- lifecycle-targeted facilities such as those for children, young people and older people
- targeted facilities for groups with special needs.

## 3.3 Social services

### Objective

**Meet the diverse needs of communities through a range of services and facilities that are inclusive and enhance lifestyle.**

A supportive upbringing, ready access to information and services, safe communities, development of life skills and broad opportunities for making healthy choices are important elements contributing to dynamic and functional communities. Both government and community-based organisations provide programs and activities throughout the region. Services and programs in the region address the following areas:

- counselling on domestic violence, childcare, effective parenting, sexual abuse, addictions, homelessness, and community safety and security
- culturally sensitive face-to-face services for families
- employment, education and skills development
- physical and mental wellbeing
- access to regional health services.

There is a shortage in crisis and short-term accommodation in many locations throughout the region. Overcrowding in the homes of Indigenous people is common. Homelessness is an increasing problem in the region.

A range of housing types and tenure is needed to meet the differing needs of the community, including housing for special needs' groups such as crisis accommodation (see 4.0 Urban development). Prioritising whole-of-community solutions to prevent and intervene early to help individuals and families may assist in achieving a better quality of life for members of the community.

Major new and expanded mining ventures place added pressure on social services, such as housing and community services. This may create quality of life issues, such as access to education and health services, which can impact upon the social structure and overall wellbeing of local and regional communities[43].

### Social services strategies

3.3.A Identify critical community service needs and priorities.

3.3.B Reduce duplication and increase efficiency of services through a coordinated network between social service providers.

3.3.C Continue to build a strong partnership approach to crime prevention between police, different levels of government and community groups in the region, including programs targeting at-risk youth.

3.3.D Review adequacy of crisis and short-term accommodation and support programs and improve service provision to reduce homelessness within the region.

### Explanatory notes

Some local programs and services are under strain or not reaching their full potential due to:

- a lack of resources and inadequate funding
- a lack of interest and commitment from at-risk groups
- duplication of programs that could have otherwise been partnered to ensure the most efficient use of resources and funding.

Greater communication and collaboration is required to address the many remaining gaps in services in the region. Further work is required to engage targeted groups and encourage continued involvement and attendance in programs.

## 3.4 Regional lifestyle, cultural heritage and arts

### Objective

**Celebrate and enhance the region's sense of place and local identity through arts and cultural development.**

The culture of a community is revealed through its artistic and community events, collections, heritage, traditions, and creative enterprise and innovation. These avenues can be particularly relevant to land use and cultural heritage preservation. Protection of cultural heritage places and values and the continuation of regional arts programs are essential for the ongoing development of dynamic communities.

Communities across the region come together for local events such as rodeos, racing events and sporting and cultural activities, including festivals. These events are important to locals, contributing to their sense of identity and the overall health and wellbeing of communities.

All levels of government and the community have an obligation to present and future generations to identify, manage and conserve places of cultural significance. Acknowledging and conserving aspects of the past is a measure of a strong society, one in which the past is valued for its contribution to the present and its potential to contribute to the future[44]. Places of cultural heritage can be of local, state, national or international significance. Within the region, some places of significance have already been identified, such as the World Heritage Area of Riversleigh fossil site and state interest places like national parks, heritage listed buildings and Indigenous sites.

The community's sense of place and identity is influenced by the built environment. Heritage-listed buildings

43 Sustainable Resource Communities Policy – Social Impact Assessment in the Mining and Petroleum Industries.

44 Extract from Using the criteria: *a methodology – Queensland Heritage Council, 2006,* Queensland Government, Brisbane.

contribute to the rural character of communities and provide a tangible link to the past. These include Camooweal Community Hall, the former Underground Hospital in Mount Isa, Cloncurry Post Office, Saint John Baptist Anglican Church complex in Richmond and the Grand Hotel in Hughenden[45].

Through the naming of sites and crossings, the region displays a strong history of Traditional Owner groups and Indigenous elders. Traditional Owners of the region include the Indjilanji, Dithannoi, Kalkadoon, Waluwarra, Yulluna, Mitakoodi, Mayi, Juhnjlar, Wanamara, Yirendali and Ngawun peoples. Indigenous peoples have elaborate cultural rituals, sacred sites and social structures aligned with their relationship to country. This relationship is a key factor in influencing the manner in which Indigenous people approach a range of issues. This relationship should be a consideration in the decision-making process of government agencies and other organisations.

## Regional lifestyle, cultural heritage and arts strategies

3.4.A Promote and celebrate the region's cultural and artistic diversity.

3.4.B Support and promote cultural heritage-based activities and education within the region.

3.4.C Identify the historical themes that have influenced the growth of the region and protect the interpretation of the themes at a local, regional and state level.

3.4.D Promote an understanding of Indigenous cultural heritage.

3.4.E Investigate opportunities for naming local buildings and developing signage that denotes historical interests and Traditional Ownership.

## Land use policies

3.4.1 Identify and protect Queensland heritage places and local heritage places in local government planning schemes.

3.4.2 Ensure local government planning schemes incorporate measures to protect items and places of Indigenous cultural heritage significance.

3.4.3 Development does not compromise the integrity of Queensland heritage places, local heritage places and Indigenous cultural heritage significance.

3.4.4 Identify public spaces for cultural activities, events and festivals in local government planning schemes in accordance with the intent of the regional activity centres network.

3.4.5 Use development to enhance the local rural character and amenity of towns and communities based on their cultural and heritage features and values.

## Explanatory notes

The strategies and policies refer to both Indigenous and European heritage, to which the *Aboriginal Cultural Heritage Act 2003* and *Queensland Heritage Act 1992* apply respectively.

Cultural heritage includes artefacts, places and buildings to which the *Queensland Heritage Act 1992* applies. Development on a Queensland heritage place may be assessable development under the *Sustainable Planning Act 2009*. The *Queensland Heritage Act 1992* also requires local governments to keep a local heritage register of places of cultural heritage significance in their area.

The use of planning scheme codes to address Indigenous cultural heritage protection, rather than maps of significant sites, is encouraged. Using maps to inform a planning scheme code can create a false impression regarding the location of heritage and incorrectly implies that unrecorded sites or artefacts are not protected.

The Department of Environment and Resource Management administers the *Aboriginal Cultural Heritage Act 2003* and has a significant statutory role in protecting Indigenous cultural heritage. The legislation includes provisions for blanket protection of significant sites, duty of care, the establishment of a cultural heritage register, means of assessment of sites, management plans, existing agreements, access, and enforcement.

45 Environmental Protection Agency website accessed July 2008 www.epa.qld.gov.au/chims/basicSearch.html

# 3.5 Promoting health and wellbeing

## Objective

**Ensure the community has access to high-quality, safe and sustainable health services and urban infrastructure that promote healthy lifestyles.**

There are many challenges in providing health services to North West communities, including:

- low population density
- poor living conditions in some communities or households
- social isolation
- distance from health services
- high Indigenous representation within the health service and associated health implications
- declining population
- ageing population
- fluctuating populations due to factors including fly-in and fly-out workers and transient Indigenous populations
- a high proportion of workers participating in industries which require physical activity resulting in associated health risks.

The high cost of delivering public and commercial health services over large distances means that small communities in the region are generally unable to provide stand-alone health services. The remoteness of some communities also limits their capacity to recruit and retain skilled health workers, impacting on the safety of workers and the availability of health services in the region. The *Blueprint for the Bush* program recommends that Queensland Health and the Australian Government outline a minimum suite of health services that small communities should have access to locally.

The link between physical activity and wellbeing is widely recognised and is a key component in making Queenslanders Australia's healthiest people as outlined in *Towards Q2: Tomorrow's Queensland*. The target is to cut obesity, smoking, heavy drinking and unsafe sun exposure by one third by 2020. The regional plan expands the scope of public health to include environments that support healthy lifestyles to reduce chronic illnesses. Safe and well-designed urban landscapes that incorporate walkways, cycle tracks, open spaces and recreation facilities such as playgrounds and sporting fields contribute to the mental and physical wellbeing of communities.

## Promoting health and wellbeing strategies

3.5.A Provide health services in a way that is consistent with agreed universal service obligations.

3.5.B Give consumers the opportunity to be actively involved in the planning of health services to ensure these services are responsive to community needs and culturally sensitive to all community sectors.

3.5.C Deliver health services through effective partnership arrangements between all agencies who contribute to health outcomes for communities.

3.5.D Provide and locate health services along a continuum from preventative to primary health care, acute, rehabilitative and extended care in accordance with the intent of the regional activity centres network.

3.5.E Attract, retain and support skilled health professionals in the region.

3.5.F Continue to provide ongoing training to the medical and nursing staff who work within the region.

3.5.G Investigate and support opportunities for the cross-skilling of health professionals.

## Land use policies

3.5.1 Include provisions and design guidelines for walking tracks, pathways, cycle tracks, open space and recreational areas.

3.5.2 Consider crime prevention through environmental design principles.

3.5.3 Developments incorporate measures to provide shade for public walkways, sporting and recreation facilities, playgrounds and public open space.

3.5.4 The location of health infrastructure and services is consistent with the intent of the regional activity centres network.

## Explanatory notes

The *State-wide Health Services Plan 2007–2012* identifies the need to plan for safe and sustainable services for small communities. The plan identifies the need to develop a minimum suite of health services that communities of 200 - 2000 people will have access to, locally through a universal service obligation. The range of services offered must address the needs of the community, be

linked to services provided in the larger communities, and be delivered in an adaptive and effective manner.

A range of health services are funded by Queensland Health for North West communities. These services are provided from Mount Isa and the activity centres of Julia Creek and Cloncurry. Larger facilities in Townsville and Brisbane provide tertiary health services to the region. A number of visiting specialist services are also provided. Service delivery varies with some services offered daily, while others range from weekly to annually.

Mount Isa is the principal health service provider for the North West, with hospitals and health clinics throughout the region. Uncomplicated and low risk birthing services for the North West are offered through Mount Isa and aged care residential facilities are provided at Mount Isa and Cloncurry.

Provision of health services by Queensland Health has been complemented by a range of other specialist providers over many years within the region. The state government recognises the importance of this ongoing contribution to the region and regularly reviews the range of services available and works with partners to ensure the provision of services.

A suite of services has been provided through partnerships with existing organisations such as the Division of General Practice through its allied health arm North West Queensland Primary Health Care, Education Queensland, the Departments of Police, Corrective Services and Community Services, the Royal Australian Flying Doctor Service, Queensland Ambulance Service, local government and other community organisations.

Consultation is continuing with communities and service providers to determine sustainable service options into the future in a manner that is both receptive to the needs of individual organisation and those of the community. Future service decisions will be guided by analysis of changes in need, demand, service models, workforce, economic circumstances and other parameters.

# 3.6 Leadership, networks and coordination

## Objective

**Facilitate strong leadership, networks and coordination in the region's planning and development.**

The North West Regional Plan is a result of effective collaboration and cooperation between the community, organisations and governments through leadership, networking and coordination. Its ongoing delivery will also rely on coordination and networking between community, organisations and government to ensure initiatives and policies are implemented with consideration to community concerns and needs. Supportive leadership is an essential component of achieving improved collaboration and cooperation.

The capacity of community-based organisations to improve service delivery can be strengthened by identifying opportunities to network and collaborate with government, other community groups, education, training and business organisations. Collaboration can have a number of benefits for organisations including the sharing of overhead costs, consistency of decision-making processes across the region, improved flow of information, improved access to expertise and current and accurate data.

To ensure the best possible arrangements, emphasis needs to be placed on building leadership capacity, networking opportunities and coordination. All levels of government and non-government organisations must work together to address the region's needs, and work toward achieving the vision and policies outlined in the regional plan.

## Leadership, networks and coordination strategies

3.6.A Encourage coordination between governments and community service providers.

3.6.B Increase collaboration and cooperation between all levels of government, non-government organisations and the community.

3.6.C Involve regional stakeholders from all levels of government, community and industry groups in cross-sector forums, working groups and advisory bodies.

3.6.D Encourage a regional culture of information sharing to broaden community understanding of significant regional issues.

3.6.E Encourage inter-agency collaboration through measures such as resource sharing.

## Explanatory notes

A number of organisations already exist within the North West region that engage the community, local and state government to achieve mutually beneficial partnerships and share knowledge. These include:

- the North West Regional Managers Coordination Network—a forum for state managers to coordinate and integrate service delivery
- Townsville and North West Queensland Centre of Enterprise—explores and promotes opportunities for business investment and industry development through partnerships between businesses, community and government stakeholders
- the Mount Isa to Townsville Economic Development Zone—represents the area spanning Mount Isa to Townsville, which share common economic and social objectives, both commercially and administratively
- Southern Gulf Catchments Ltd and Desert Channels Queensland—community based organisations that identify and develop ways to address community and key stakeholders' issues
- the *Northern Economic Triangle Infrastructure Plan 2007-2012*—details a leadership and collaboration action plan
- the Mount Isa Living with Lead Alliance—provides a forum for driving and guiding action on the issue of lead in the community of Mount Isa.

# 4. Urban development

## Desired regional outcome

A progressive region where diversity and quality of life are sustained through high-quality built environments.

Centres within the region are separated by large distances and are generally connected by road, rail and air to major centres. They provide varying levels of service delivery, infrastructure and employment. Most centres in the region have retained their rural character, with parklands, wide main streets and historical buildings adding to the region's attractiveness.

The provision of quality, affordable housing continues to be a challenge due to the limited quantity and poor utilisation of housing stock, the low standard of housing and the lack of maintenance. There is a strong need to build more diverse, higher quality and affordable housing, supported by appropriate levels of infrastructure, to complement the region's lifestyle and attract high-end service providers and businesses.

Land in the region is largely dominated by pastoral leases which remain in the ownership of the state, with some freehold tenure around the townships. Much of the land is affected by native title claims. Industrial uses are generally concentrated in outlying areas of the major centres, with established connections to the highway network.

Ready access to adequate land supplies imposes a significant constraint on urban development in the region. This is influenced by the extensive areas affected by leasehold tenure and native title around most urban centres and parcels of state-controlled land still held for redundant purposes.

The region is susceptible to various natural hazards. Impacts associated with such events are expected to become more frequent and more severe as a result of climate change. This could have significant impact on the region's community and economy through potential loss of life and damage to property, business and industry.

## 4.1 Urban structure and settlement pattern

### Objective

**Accommodate regional growth needs in strategically located, well-planned activity centres.**

With the exception of Mount Isa, the region's settlement pattern is characterised by small population centres located over vast areas, giving rise to challenges in providing efficient services and infrastructure. Many towns also rely on high order centres within and outside of the region for tertiary health, education, retail and commercial services. The distribution of services is important for the development potential of rural areas. This provides the physical framework which guides the location of future development.

In addition to a settlement pattern which supports the role of each activity centre within the region, activity centres themselves must be well planned with a long-term vision for the physical form and character of its town centre. The objective is to direct future growth within a centre in a manner that builds upon the existing town structure, context and character, including social and cultural amenities, historical assets and market strengths, while also acknowledging a centre's potential for transformative growth and maturation. This includes a development pattern that provides a logical hierarchy of streets within the central core and surrounding township, and facilitates access to conveniently located commercial and community services.

While significant economic opportunities exist in mining, tourism, and agricultural development, regional conflicts may result if land use is not adequately planned and managed. Uncertainty surrounding the mining sector has made it difficult to undertake strategic planning for time frames greater than five years.

There are shortages of residential, commercial and industrial land in some communities within the region. This has flow-on effects in relation to living costs, reductions in social services and liveability. The assessment processes for native title and state-owned land are complex and often lengthy, which can further impact upon the supply of available land for development. Land availability is critical for the growth, prosperity and quality of life in these communities.

These challenges require careful consideration. Some of these challenges can be addressed through appropriate provisions and land use designations in local government planning schemes. This will guide development and encourage growth in areas where adequate infrastructure exists, or can be provided efficiently.

## Urban structure and settlement pattern strategies

4.1.A Encourage investment in urban infrastructure in accordance with the intent of the regional activity centres network.

4.1.B Investigate opportunities to release parcels of state-owned land for future development in a timely manner.

4.1.C Investigate options to service development by various modes of public and private transport.

## Land use policies

4.1.1 Sequence and support urban expansion by appropriate services and infrastructure, in accordance with the intent of the sub-regional narratives.

4.1.2 Designate sufficient land for residential and broader urban purposes in local government planning schemes that reflect long-term strategic needs.

4.1.3 Ensure development of regional activity centres results in consolidation in the central core and surrounding township, is of an appropriate type and scale, and is accommodated by efficient use of land and buildings.

4.1.4 Ensure that proposals to alter land use do not result in conflict with the broader strategic planning aims of local government areas and the activity centres network.

## Explanatory notes

Infrastructure planning is a fundamental component of land use planning. Under the *Sustainable Planning Act 2009,* infrastructure planning must be coordinated and integrated with the preparation of planning schemes, including provisions for dealing with out-of-sequence developments. Priority infrastructure planning and land use planning must be carried out in a manner that supports economic development, environmental protection, social planning and community wellbeing.

Consideration must be given to ensure that a proposed zone furthers the North West regional plan strategies and associated land use polices and the sub-regional narratives. The form and location of development will facilitate the achievement of the desired settlement pattern for the centre minimising ad hoc development. Ensuring consistency with the strategic vision and other planning policies is vital in determining the merits of a proposed development.

The Department of Environment and Resource Management (DERM) administers non-freehold land in accordance with the *Land Act 1994*. Before land is allocated under this Act, it must be evaluated to determine the most appropriate tenure and use. The evaluation process must take into account state, regional and local planning strategies and policies, and the intent of the *Land Act 1994*. Given the prevalence of state-owned land within the region, DERM believes an opportunity for varied assessment processes for regional and remote communities warrants further investigation. Assessment of native title will still be a consideration.

The state government has released a number of parcels of unallocated state land in recent years throughout the region for the purposes of residential and industrial development. Indigenous Land Use Agreements (ILUAs) have been negotiated over a number of parcels, including Hughenden's industrial estate, Cloncurry industrial estate, the Kalkadoon industrial estate and the Kalkadoon Gliderport residential estate in Mount Isa.

The supply of additional urban land is heavily dependent on the availability of unallocated state land (USL) which is largely affected by native title claims. The release of USL in small amounts has not adequately catered for the region's strategic land needs or met immediate residential land needs. The Mount Isa Resource Communities Summit in 2008 recognised that a more comprehensive land release regime is required.

# 4.2 Urban design, character and form

## Objective

**Design and site development to be responsive to the local climate, improve liveability and achieve innovation through sustainable urban design principles.**

Effective planning and design of North West Queensland towns can have a positive impact on the liveability of residents. Well planned towns protect areas of environmental value, encourage investment, provide safe and attractive public spaces and enhance local character.

Principles for sustainable urban design include the following:

- Walkability—ensure effective access to services, facilities, employment and other places of interest.
- Diversity—provide for a mix of land uses and housing design which enable a multi-use design that is responsive to the current and expected demographic and cultural needs of the area.
- Legibility—provide a street, pedestrian and public transport network, as well as spatial location of land uses, that enables ease of navigation.
- Sense of place—provide a development form that is responsive to, and enhances the character of the town, through the creation of public places of interest which cater for the varied work hours of rural and mining communities.
- Self-sufficiency—provide a sufficient range of uses to enable residents to meet most of their lifestyle, work and recreational needs.
- Integration of land use infrastructure—provide for a range of uses that are well-connected, through effective use of transport links and services offering good proximity between complementary land uses.
- Environmental responsiveness—provide a development form that:
  - responds to the local topography
  - maximises and takes advantage of views and vistas in the area

- is designed for the local climate by being energy efficient and resilient to the impacts of climate change
- recognises and incorporates landscape elements of the immediate area and any hinterland backdrops
- uses natural solutions in civil engineering and built development form.

## Urban design, character and form strategy

4.2.A Promote housing design that is culturally appropriate for Indigenous families living in an urban environment.

## Land use policies

4.2.1 Planning for town centres on sustainable urban design principles that are water and energy efficient, climate sensitive and which reflect the uniqueness and individual needs of the community.

4.2.2 Integrate development within existing town centres to enhance character and function.

4.2.3 Ensure planning schemes reflect sustainable urban design principles in their codes and infrastructure plans.

4.2.4 Plan activity centres with provision for walking and cycling connections.

## Explanatory notes

Development should recognise and reflect the region's diverse climate, landscape, and culture when applying design principles. The Urban Design Alliance of Queensland outlines the following fundamental ideas that can be used as a framework to achieve desirable urban qualities within the region. Urban centres must be:

- sustainable
- liveable
- viable
- responsible
- memorable.

The Queensland Government has established the Board for Urban Places[46] to advise on high-quality urban design and provide advice on planning, landscape architecture, sustainability and other built environment issues.

# 4.3 Housing mix, affordability and design

## Objective

**Plan and provide a range of housing options to meet diverse community needs.**

Housing affordability is a significant problem for the region. Housing supply and affordability in the region are affected by several factors, including land availability, workforce influx for major projects, high transport and building costs, difficulties in securing finance, and training and maintaining skilled workers. Low levels of investment in private housing have contributed to the region's lack of affordable, quality and available housing stock. Most housing is single detached housing, with some multi-unit accommodation available in larger centres.

New housing should be responsive to the region's variable climate, consider appropriate orientation and design of buildings and allotments and use energy efficient appliances and materials. Increased diversity in housing type and tenure could also assist in satisfying broadening community needs. Applying principles for sustainable urban design can contribute to achieving a diverse housing mix in an attractive setting, including affordable housing.

The high cost of construction and maintenance discourages building and renovation of many existing accommodation buildings. Opportunities should be investigated to increase sharing of government-owned housing stock between departments.

## Housing mix, affordability and design strategies

4.3.A Monitor housing prices, land availability and other factors that affect housing costs.

4.3.B Consult in the design and construction of culturally appropriate housing for Indigenous people in urban settings.

4.3.C Develop further guidance for the delivery of high-quality housing design outcomes for western Queensland.

## Land use policies

4.3.1 Provide housing choice through a range and mix of dwelling type, size and location in residential developments.

4.3.2 Planning schemes provide for increased residential densities in Mount Isa and Cloncurry.

4.3.3. Planning schemes provide sufficient zoned land for projected residential growth.

4.3.4 Investigate housing demand projections and accommodate fluctuations in demand relating to resource communities.

4.3.5 Support an increased provision of affordable housing through community-based, not-for-profit entities and housing cooperatives.

46 For more information visit www.dip.qld.gov.au

## Explanatory notes

Influencing housing supply and affordability is recognised as a priority in Australia. This involves ensuring efficient release of adequate land for housing, facilitating housing mix in terms of size and type, limiting development controls that push up the cost of housing, coordinating the provision of infrastructure, and ensuring efficient approval processes.

The National Affordable Housing Agreement and four related National Partnership Agreements (Homelessness, Indigenous Housing, Social Housing and Nation Building and Jobs Plan)[47] reform agenda is being implemented at a state level by the responsible state agency as a means of achieving these goals. In aligning with Commonwealth and broader state policies related to housing, the regional plan aims to address the issue of unmet housing needs experienced throughout the region.

Various state government strategies and plans have been developed to promote sustainable and affordable housing and can assist councils and developers to identify appropriate urban design criteria suitable for the North West region. These include:

- Smart Housing Initiative[48]—aims to promote best practice in designing, planning and building homes to make them more socially, environmentally and economically sustainable.
- *Queensland Housing Affordability Strategy*—aims to ensure land and housing is on the market quickly and at the lowest cost.
- *Improving Sustainable Housing in Queensland Strategy discussion paper 2008*—details measures that are designed to encourage house and unit owners to use less water and energy.
- *Affordable Housing in Sustainable Communities Strategic Action Plan 2001*—establishes the Department of Communities role in providing leadership to support the provision of affordable housing in Queensland and contribute to the sustainability of communities.
- *State Planning Policy 1/07: Housing and Residential Development*—has effect when a local government prepares a new scheme, amends an existing planning scheme, or is required to amend their planning scheme as a result of this regional planning process. This policy will be most applicable to Mount Isa.

Local governments can also ensure development has regard for housing mix, type, tenure, location and environmental factors, through planning policies and planning scheme provisions.

# 4.4 Hazard mitigation

## Objective

**Reduce the community's risk to the adverse impact of natural and human-made hazards.**

Both natural and human-made hazards have the potential to cause loss or harm to the community, economy and environment. The main natural hazards experienced in the North West are flooding, gales, drought and bushfires. Climate change is likely to compound these hazards and they need to be considered when planning for land use and development. Some parts of the region are also susceptible to mine related incidents, such as tailing dam failure.

The risks and consequences associated with these hazards vary across the region, depending on the location, physical characteristics of the land and type of development[49]. Effective land use planning is an important means to reduce the community's vulnerability to natural hazards and promote resilient communities.

The North West can reduce community risk and exposure to the adverse effects of hazards by:

- considering the impacts of natural disasters and the effects of climate change in land use planning and decision-making processes
- appropriate siting of development and use of buffers
- considering emergency service needs in planning design
- developing a coordinated approach to disaster management throughout the region.

47 For more information visit www.works.qld.gov.au

48 For more information visit www.fahcsia.gov.au

49 State Planning Policy SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide 1.0.

## Hazard mitigation strategies

4.4.A Encourage and support a coordinated regional approach to disaster management between all levels of government, industry and community.

4.4.B Minimise adverse economic, social, infrastructure and environmental impacts through effective emergency services and disaster management strategies.

4.4.C Attract and retain emergency service volunteers to improve the effectiveness of voluntary emergency service providers such as the Rural Fire Brigades and the State Emergency Service.

4.4.D Identify long-term disaster resilience strategies in regional infrastructure planning and development.

## Land use policies

4.4.1 Identify natural hazard areas in planning schemes, taking into account the compounding effects of climate change.

4.4.2 Exclude development within areas likely to be subject to factors that threaten lives, property or the environment.

4.4.3 Minimise the potential adverse impacts of hazardous and high-impact industries through the use of buffers and sensitive land use planning.

4.4.4 Address the needs of emergency services and disaster management in development through inclusion in planning schemes.

4.4.5 Integrate risk reduction strategies into development policies in order to mitigate or adapt to natural hazards including the compounding effects of climate change.

## Explanatory notes

Climate change may result in ambient temperature increases and lower overall rainfalls in the region. When rain occurs, it is forecast that it will happen in shorter and more intense bursts. Drier conditions can increase bushfire risk, while increases in rainfall intensity can increase flood risk and damage to property and infrastructure[50].

Due to the prevalence of natural disasters in North West Queensland, a well-developed and effective system is required to ensure coordinated capabilities at all levels of government. The Queensland Disaster Management System operates on three distinct levels. These are:

1. Local government—all local governments within the region have prepared disaster management plans in accordance with the requirements of the *Disaster Management Act 2003*.
2. Disaster district—disaster district management plans exist for the districts of Mount Isa, which encompasses Cloncurry and McKinlay, and Townsville, which encompasses Richmond and Flinders.
3. State government—the *State Counter Disaster Plan* provides a blueprint for the prevention, preparedness response and recovery arrangements for disasters in Queensland.

Under the *Disaster Management Act 2003*, there is no provision for the coordination of resources at a regional level. This creates potential for issues to arise when resources are requested from another district within the same region. A regional approach to disaster management will create another tier in the disaster management system, allowing for greater coordination and collaboration between districts within a region.

*State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide* aims to minimise potential adverse impacts of flood, bushfire and landslide on people, property, economic activity and the environment. This policy requires planning schemes to identify such natural hazard areas using the precautionary principle. Local councils can address the impacts of natural disasters in their planning scheme provisions by ensuring appropriate planning and design of development to minimise risk to life and property.

50 Climate change in Australia website accessed on July 2008 www.climatechangeinaustralia.gov.au.

# 5. Economic development

## Desired regional outcome

A growing and prosperous regional economy, developed through value-adding to existing industries and encouraging new industries and businesses.

Mining, agriculture and manufacturing industries have been the traditional economic drivers for the North West region. The nominal Gross Regional Product of the North West Statistical Division[51] was $4719 million for the 2005–06 financial year. This is an 8.6 per cent annual growth, compared to the Queensland average annual growth of 9.9 per cent over the five years to 2005–06.

Mining is the largest economic driver for the North West region, accounting for 72.4 per cent of the 2005–06 Gross Value Added index[52]. In 2007, the North West region's mining and mineral processing sector directly generated $6787 million with a further value-added contribution of $3975 million, representing approximately 3.6 per cent of the Gross State Product[53]. The North West Mineral Province contains some of the most significant metalliferous[54] deposits in the world.

Agriculture, forestry and fishing is the second largest economic driver for the region, accounting for 4.3 per cent of the 2005–06 Gross Value Added index[55]. Production is estimated at $249 million per annum on average. Manufacturing is the third largest industry sector in the North West statistical division[56] and accounted for 3.6 per cent of the Gross Value Added Index in 2005–06.

The region has a relatively low unemployment rate of 3.5 per cent[57]. Projections show that between 2005–06 and 2013–14 there will be an overall increase in employment, with mining remaining the strongest employment sector, followed by retail trade and government administration and defence[58].

The Department of Employment, Economic Development and Innovation identified mining and value-added mineral processing as areas for development under the Queensland Government's Centre of Enterprise initiative in Townsville and the North West. Communities outside the mineral province broaden the region's economic base through agriculture, retail and tourism industries.

Industries in the North West region have strong growth potential, but are vulnerable to fluctuations in climate, commodity prices and changes to employment and work practices. A broader economic base is needed to minimise the impacts of outside influences and provide a wider range of employment and economic opportunities within the region. Strengthening the economy will improve the long-term economic sustainability of the region.

Further development of key industries in the region will require a collaborative approach between all levels of government and industry partners to ensure that the necessary infrastructure and other fundamentals are in place to support their growth. Opportunities exist to improve access to competitively priced energy and road, rail and freight infrastructure, reduce shortages of skilled labour and create new markets for environmental technologies and services.

The regional plan supports the *Blueprint for the Bush* initiative's economic priorities by setting out to:

- diversify the economy by developing new and innovative industries
- improve productivity and export performance of established industries such as mining and agriculture
- attract skilled workers
- support the development of infrastructure that enables growth
- strengthen research and development
- encourage sound economic management.

A considerable proportion of Queensland's wealth is built on natural resources of which the North West region contributes significantly. The environment plays an important role in economic prosperity and stability. The use of natural assets must be strategically planned and managed at local and regional level to provide for a prosperous and sustainable economic future.

51 Note: that the North West statistical division includes Burke and Carpentaria Shires.
52 Queensland Treasury, 2008, *Experimental Estimate of Gross Regional Product*. Department of Mines and Energy, Queensland Government, Brisbane.
53 ACIL Tasman, 2007, The economic significance of mining and mineral processing to the *North West region*. Department of Mines and Energy, Queensland Government, Brisbane.
54 Containing a metallic element
55 Queensland Treasury, 2008, *Experimental Estimate of Gross Regional Product*. Department of Mines and Energy, Queensland Government, Brisbane.
56 The North West Statistical division delineates an area larger than the North West regional planning boundary, and includes Burketown and Mornington Island in the Gulf country.
57 ABS, Census of Population and Housing, 2006, Basic Community.
58 Monash Employment Forecasts, *Projected employment growth by ANZSIC industry, North West, 2005–6 to 2013–14*.

# 5.1 Business, industry and land development

## Objective

**Ensure the North West has businesses and industries that provide sustained wealth and growing employment opportunities that contribute to the region's liveability and prosperity.**

To continue to develop a prosperous and sustainable region, the provision of land for future business and industry developments must be considered. Forward planning for industrial and residential land use will have to be carefully managed to ensure development is sustainable and provides maximum benefits for communities.

Access to effective information and communication technology and better cooperation between industry and all levels of government, will result in the development of industries and services that meet community needs and expectations.

## Business, industry and land development strategies

5.1.A Small business and representative groups share information and resources, working cooperatively to develop new industries and enhance existing products and services.

5.1.B Use current economic and census data to inform economic planning and development in the region.

5.1.C Identify and build on local industry strengths and existing regional competitive advantages.

5.1.D Establish mechanisms to coordinate business and industry support services available through government and non-government agencies.

## Land use policies

5.1.1 Designate sufficient land for commercial, retail and industrial use and identify supporting infrastructure in planning schemes to ensure business investment and expansion is in line with future requirements.

5.1.2 Identify provisions in local government planning schemes to minimise land use conflicts between industrial land and adjoining non-industrial purposes.

5.1.3 Take advantage of infill opportunities in existing commercial areas.

## Explanatory notes

The *Townsville and North West Centres of Enterprise (Mining and Minerals Processing) Action Plan* seeks to assist business and industry by ensuring regional industrial land development addresses current and future needs, and by developing integrated supply chains to provide competitive products and services.

# 5.2 Diverse regional economy

## Objectives

**Develop a diverse regional economy that is responsive to changing local and global economic and environmental factors.**

The primary industry sector accounts for the major part of the region's economic activity. Remaining competitive, while adapting to the volatile prices of primary commodities that are increasingly influenced by environmental concerns, can be fraught with difficulties. Economic diversity has been recognised as a means to achieve the goals of stability and growth. As a region's economy becomes more diversified, it becomes less susceptible to fluctuations caused by external factors.

Having multiple specialisations and the linkages between industries within the region can help build a diversified economy that is not overly dependent on a single commodity and that has a strong external as well as internal focus. The region needs to identify and secure more domestic and overseas markets across a range of industries to continue to thrive. This would provide a wider range of employment and economic opportunities for local communities.

Assisting companies to access other markets will build a more resilient

and competitive supply chain. The *Townsville and North West Queensland Centres of Enterprise (Mining and Minerals Processing) Action Plan* specifically targets business and industry development, including the meeting of infrastructure needs, for the mining and minerals processing sector.

Creating a distinctive brand can support the further development of niche industries such as organic beef and natural fibre production. Other opportunities for economic development and diversification that exist in the region include carbon trading, specialist technical education and training, fodder crops for organic beef production, organic grains, grass seed, fruit and vegetable produce.

### Diverse regional economic strategy

5.2.A Identify and promote opportunities for the diversification of the region's economic base and employment.

5.2.B Build on existing competitive advantages and specialisations to diversify the region's economy.

### Land use policy

5.2.1 Industrial, commercial and agricultural development is planned and located in a manner that builds on the synergistic opportunities offered by proximity of land uses.

### Explanatory notes

Consideration should be given to the location of industries to provide opportunities for resources sharing. Industrial symbiosis engages traditionally separate industries in a collaborative approach to gaining a competitive advantage involving physical exchange of materials. This may include exchange of energy, water, other by-products, infrastructure sharing or the joint provision of services that meet common needs such as transportation and food provision[59].

## 5.3 Innovation, knowledge and technology

### Objective

**Develop the region's capability to maximise the transfer of technology, knowledge and innovation to commercial applications.**

Information technology and communication services continue to grow on a worldwide basis. This significantly influences the ways in which business and industry operate. Regional industries and businesses need access to information and other technologies to compete in the global economy.

A culture of innovation can encourage the development of versatile, creative individuals and organisations. The mining hub, centred on Mount Isa, has traditionally been at the forefront in designing and commercialising mineral technologies.

### Innovation, knowledge and technology strategies

5.3.A Promote and build on existing world-class extractive and mineral processing technologies to establish the North West as a world leader in innovative mining procedures.

5.3.B Foster collaboration between organisations involved in education, training and research, to facilitate the exchange of ideas, information and knowledge.

5.3.C Encourage industries to adopt new technology to enhance environmental outcomes and improve efficiency.

5.3.D Explore opportunities for knowledge precincts to be serviced by technology to facilitate connection to a digital network.

### Land use policy

5.3.1 Identify knowledge precincts in planning schemes.

## 5.4 Employment, skills development and staff retention

### Objective

**Establish a skilled workforce to strengthen the region's economy and community.**

An appropriately skilled workforce is critical in supporting the region's economic growth and social wellbeing. A community that can offer services supplied by professional and skilled workers not only supports the people living in regional communities and the businesses operating there, but also provides the foundation for attracting new residents, industry and business investment[60].

The region is experiencing skills shortages and staff retention issues, particularly in building and construction, hospitality and in many areas within health and other support services (see Table 8, page 50, for employment growth trends). Retention strategies are necessary to counter skill shortages and ensure appropriate skill and industry development in the region.

There are a number of partnership programs being undertaken in the region that aim to address these shortages and promote local training and employment opportunities. There are also tertiary education programs and partnerships for the minerals and energy sectors, as well as vocational education and training (VET) programs and representative bodies. Further education and training programs tailored to industry need to be

59 The Encyclopedia of Earth - http://www.eoearth.org/article/Industrial_symbiosis

60 Regional Development Council, 2004, *Attracting and retaining skilled people in regional Australia: A practitioner's guide*. Department of Local Government and Regional Development, West Perth.

**Table 8. Employment growth (trends) by ANZSIC industry, North West, 'ooo persons**

| Industry | 1997–1998 | 1998–1999 | 1999–2000 | 2000–2001 | 2001–2002 | 2002–2003 | 2003–2004 | 2004–2005 | 2005–2006 |
|---|---|---|---|---|---|---|---|---|---|
| Agriculture | 2.217 | 2.515 | 2.626 | 2.519 | 2.533 | 2.322 | 2.135 | 1.769 | 1.68 |
| Mining | 2.174 | 2.853 | 2.444 | 2.067 | 3.224 | 2.437 | 2.699 | 2.561 | 3.455 |
| Manufacturing | 0.887 | 0.964 | 0.974 | 0.957 | 0.909 | 0.957 | 1 | 1.046 | 1.024 |
| Utilities | 0.157 | 0.151 | 0.134 | 0.126 | 0.172 | 0.154 | 0.182 | 0.175 | 0.242 |
| Construction | 1.335 | 1.371 | 1.517 | 1.382 | 1.394 | 1.425 | 1.539 | 1.736 | 1.808 |
| Wholesale trade | 0.649 | 0.711 | 0.65 | 0.601 | 0.58 | 0.59 | 0.585 | 0.607 | 0.572 |
| Retail trade | 1.904 | 2.003 | 2.005 | 2.004 | 2.099 | 2.162 | 2.2 | 2.364 | 2.389 |
| Hotels | 0.822 | 0.82 | 0.943 | 0.916 | 0.962 | 0.85 | 0.858 | 0.975 | 0.979 |
| Transport/storage | 0.989 | 0.938 | 0.884 | 0.872 | 0.87 | 0.901 | 1.071 | 1.034 | 1.108 |
| Communications | 0.133 | 0.12 | 0.14 | 0.137 | 0.134 | 0.14 | 0.157 | 0.169 | 0.142 |
| Finance/insurance | 0.142 | 0.129 | 0.117 | 0.131 | 0.132 | 0.142 | 0.151 | 0.161 | 0.171 |
| Business services | 0.786 | 0.768 | 0.832 | 0.947 | 0.895 | 0.992 | 1.025 | 1.045 | 1.117 |
| Government admin/defence | 1.356 | 1.531 | 1.626 | 1.606 | 1.889 | 2.224 | 2.428 | 2.196 | 2.376 |
| Education | 1.073 | 1.049 | 0.998 | 1.089 | 1.166 | 1.156 | 1.198 | 1.319 | 1.377 |
| Health/community | 1.132 | 1.19 | 1.184 | 1.239 | 1.222 | 1.298 | 1.375 | 1.4 | 1.473 |
| Cultural/recreation services | 0.16 | 0.18 | 1.159 | 1.167 | 1.175 | 0.203 | 0.189 | 0.212 | 0.227 |
| Personal services | 0.554 | 0.519 | 0.539 | 0.65 | 0.717 | 0.721 | 0.64 | 0.64 | 0.716 |
| **All industries** | **16.467** | **17.805** | **17.774** | **17.408** | **19.073** | **18.671** | **19.432** | **19.409** | **20.856** |

Australian and New Zealand Standard Industry Classification, Monash Employment Forecasts, Monash University.

developed in the region to assist with the longer-term attraction and retention of a skilled workforce and to strengthen the region's economy and community.

## Employment, skills development and staff retention strategies

5.4.A Encourage initiatives to attract and retain a skilled workforce, especially in areas of high demand or skills shortage.

5.4.B Encourage employers to consider local employment options for major projects.

5.4.C Promote and support collaboration between government and industry to provide innovative professional development and training opportunities.

5.4.D Encourage opportunities for the establishment of specialised skills development, education, training and employment programs to meet the requirements of the region's existing and emerging industries.


5.4.E Encourage the development of culturally appropriate training for Indigenous people which provides equitable access to employment opportunities.

## Explanatory notes

Regional priorities include:

- investigating the viability of a mining industry training facility at Mount Isa
- establishing Mount Isa Institute of TAFE as a key partner in mining and trade training delivery to the North West.

# 5.5 Agriculture

## Objective

**Maintain and expand agricultural industries and diversify opportunities through sustainable agribusiness ventures.**

Beef cattle production has been a major industry in the region and is predicted to remain so into the future. In 2007, 9 per cent of the region's population was employed in the traditional agricultural industry. This is higher than the Queensland average of 4.9 per cent. Agricultural activities are influenced by climate variations, commodity prices and the availability of workers, which may have flow-on effects to other business areas.

Emerging agricultural industries in the region include feral animal and kangaroo harvesting, forestry, wheat and forage hay harvesting, lot feeding, cropping, and dry land agriculture, aquaculture and farm tourism enterprises. The *Delbessie Agreement* aims to diversify the uses of agricultural land and has the potential to provide leaseholders with an additional income stream to support primary land use.

Long-term industry development must consider the resources required for primary production, such as good quality farming land. For this reason, local governments should aim to protect farm land from fragmentation and conflicting land uses.

## Agriculture strategies

5.5.A Encourage a regional sustainable industry study to assist primary industries to achieve long-term environmental, social and economic sustainability.

5.5.B Support sustainable agricultural and forestry industries by facilitating opportunities to expand production, processing and management practices.

5.5.C Explore opportunities for developing environmentally sustainable strategies and programs that minimise environmental impacts through cleaner production and waste management practices.

5.5.D Continue research into the development of new crops and livestock breeds and value-adding to existing products.

5.5.E Encourage the diversification of meat production to increase supplies of other quality products such as game and organic meats.

5.5.F Explore options for processing livestock end products to provide to regional, national and international markets.

5.5.G Identify and develop opportunities for diversifying agriculture to provide food staples to local markets.

5.5.H Identify potential opportunities for engaging in carbon capture in the rural landscape such as reforestation and grazing land management.

5.5.I Where extractive resources not covered by the *Mineral Resources Act 1989* or *Petroleum and Gas (Production and Safety) Act 2004* are removed from agricultural areas, encourage minimisation of the impacts of extractive activities on primary industries and the rehabilitation of locations for agricultural land use.

## Land use policies

5.5.1 Protect farm land and other high-quality land for sustainable agriculture use and development of primary industries.

5.5.2 Protect good quality agricultural land from further fragmentation and conflicting land uses.

# 5.6 Mining and mineral processing

## Objective

**Maximise the economic opportunities for mining and processing in the region within acceptable social and environmental standards.**

The North West Queensland Minerals Province is a major area of mining activity in Queensland, particularly in relation to base metals and phosphate mining. North West Queensland continues to

be a highly prospective and relatively immature location for mineral exploration, particularly at depth. The high level of prospectivity is reflected in the number of projects in the region that are at various stages of maturity.

It is predicted that with North West Queensland's high prospectivity and the government's initiatives aimed at stimulating exploration investment in the state, that there will be further important new greenfield discoveries in the region. Appendix 1 shows the significant expansion in mineral exploration tenure between 2005 and 2008. Although the viability of mining projects is driven by a number of economic factors, there is optimism that mining will continue to be a major driver of economic activity in the future.

The region forms the north-western apex of the Northern Economic Triangle, a region identified by the state government for the integration of activities of the economic centres of Mount Isa, Townsville and Bowen. Townsville is an internationally recognised centre for the processing of base metals and value-added minerals and is dependent on the North West Mineral Province for raw resources. Strategies will be developed to form stronger regional linkages and explore the competitive advantages of individual regional centres.

## Mining and mineral processing strategies

5.6.A Encourage collaborative responses by government, resource companies and the community to the social, economic and environmental pressures associated with large-scale mining and energy resource projects.

5.6.B Infrastructure provision supports new development through collaborative partnerships between developers, infrastructure providers and all levels of government.

5.6.C Maximise regional economic benefits from mining by encouraging regional and local businesses to provide services to the mining sector.

5.6.D Promote mineral, energy and extractive resource development as a key component of the region's economic development.

5.6.E Encourage the development of industry support precincts for businesses catering for the unique needs of the mining and energy sector.

5.6.F Encourage Indigenous employment initiatives in the mineral, energy and extractive resource industries.

## Land use policies

5.6.1 Identify and protect key or strategic mineral, energy and extractive resources from incompatible development and land use activities that would impact on the development of the resources.

5.6.2 Appropriately locate development to avoid impacts on existing and future mineral, energy and extractive resource development and associated infrastructure.

## Explanatory notes

The vision for the Northern Economic Triangle is to foster sustainable economic, social and community development and

## Indigenous employment opportunities in the resource industry in North West Queensland

North West Queensland has been identified as having relatively low Indigenous employment in the resources sector in comparison to the number of resident Indigenous people. With guidance and support, there is a high potential to increase Indigenous involvement in the resource industry through direct employment and economic participation by Indigenous enterprises.

For this purpose, government stakeholders, along with industry and Indigenous communities are working collaboratively to develop a joint initiative in North West Queensland, focusing on five key components:

- education
- support
- work readiness
- industry positioning
- livelihood support and enterprise development.

The Department of Transport and Main Roads (TMR) is one of the government departments working successfully with Indigenous business enterprises and local Indigenous people on an ongoing employment and training program in the region.

Myuma Pty Ltd, an Indigenous trading company led by Mr Colin Saltmere of the Indjilandji Aboriginal group, has worked in partnership with TMR on construction projects such as the Georgina Bridge Project and the Mount Isa to Camooweal Barkly Highway upgrade. Many Indigenous participants have graduated to private civil construction contractors, local councils and the mining industry on completion of the road projects. Positive feedback has been received from the mining industry on the quality of these workers and some have moved into supervisory positions in mining operations. The initiative is an excellent engagement and employment model.

growth through the emergence of Mount Isa, Townsville and Bowen as a triangle of mineral processing and industrial development over the course of the next half century.

The *Northern Economic Triangle Infrastructure Plan* includes 31 strategies and 120 actions designed to:

- raise the regional and international profile of the North West and North Queensland
- expand mining and mineral processing operations to supply world markets
- exploit the demand for minerals and metals
- maximise opportunities for potential development presented by large international companies
- promote collaborative solutions for the provision of critical infrastructure and opportunities for private sector investment
- improving the recognition of prior learning and rural life skills.

# 5.7 Tourism

## Objective

**Recognise and develop the region as a distinctive and sustainable tourist destination that offers visitors a diverse range of opportunities and experiences and that encourages repeat visitation.**

The North West region has a strong tourism industry, based on its cultural heritage and natural environment. Between 1996 and 2006, visitation to the region increased from 323 000 to more than half a million visitors. In recent years, total visitor numbers and visitor nights have steadily increased by five per cent each year. Local governments view tourism as a viable and important seasonal economic activity, with many councils developing tourism plans and employing tourism officers to encourage visitation.

Tourism facilities range from corporate attractions like Outback at Isa and John Flynn Place, to local council initiatives such as Richmond's Kronosaurus Korner and privately run enterprises such as the Ernest Henry mining tour. The region is marketed as part of wider Queensland's Outback brand. Product development activities are ongoing and are regularly reviewed to ensure they are relevant to changing markets.

Tourism Queensland and the Department of Employment, Economic Development and Innovation work throughout the region to assist tourism development. Tourism Queensland promotes Queensland's Outback to domestic and international markets as part of a broader Queensland experience.

Tourism requires adequate infrastructure, services and a wide choice of accommodation. It also requires sound regional branding, promotion and product development, stronger industry partnerships and community support for the industry.

Although the tourism industry in the region is largely seasonal and vulnerable to impacts of peak oil reducing the drive and fly/drive markets, it provides valuable economic and social opportunities for North West residents.

## Tourism strategies

5.7.A Promote the region as a distinctive tourism destination by working closely with regional service providers, all levels of government and regional, national and international tourism organisations.

5.7.B Develop a range of regional tourist circuits that link attractions throughout the North West and adjacent regions to encourage longer visitation.

5.7.C Encourage programs that improve visitor experiences by ensuring accommodation, product packaging and staff development are of a high standard.

5.7.D Consider the optimal carrying capacity of tourist sites to ensure positive visitor experiences, maintain the integrity of sites and uphold community values.

5.7.E Encourage and support cultural heritage tourism to capitalise on and give value to heritage and current culture.

5.7.F Improve the quality and availability of promotional products and signage to improve public knowledge, access, education and safety.

5.7.G Encourage the development of tourism infrastructure that is environmentally appropriate to the setting.

5.7.H Inform decision-making through evidence-based research, current statistical information and local knowledge to support public and private investment in new and improved tourism infrastructure and products.

5.7.I Encourage the development of strategies for the tourism industry to help meet the challenges associated with peak oil price fluctuation.

5.7.J Develop tourist nodes that cater for a variety of visitor needs and experiences and take advantage of the national parks and ecotourism opportunities, while protecting environmental and cultural heritage assets.

## Land use policy

5.7.1 Identify in planning schemes areas suitable for tourist accommodation based on economic, social and environmental considerations.

## Explanatory notes

Tourism can have implications for the environment and the community. Visitors in environmentally sensitive areas can potentially adversely impact the natural values and the intended visitor experience. Similarly, tourism can be intrusive to existing communities, affecting the character and amenity enjoyed by residents. Tourism needs to be located, designed and managed sustainably, to ensure these values are not adversely affected.

Tourism development should be consistent with Tourism Queensland's *Outback Destination Management Plan and Outback Tourism Opportunity Plan*. Diversification of products and services will broaden visitor experiences, reduce visitor impacts on fragile areas and spread the benefits within the community. Areas of tourism that are nature, historical or culturally-based have particular potential.

# 5.8 Marketing

## Objective

**Create a regional marketing strategy that reflects all of the region's assets – industry, tourism and quality of life – to strengthen the economy.**

The North West region boasts a wide range of natural, cultural and economic assets and lifestyle advantages. The region has many attractions to offer including national parks, gem fields, mountainous volcanic basalt country, black soil plains, and rich fossil and dinosaur areas. There is benefit to be gained from a positive regional image. Marketing can be a means of creating a powerful cohesive regional voice.

The region has vast potential as a producer of solar and geothermal alternative energy. Great possibilities exist for the region to become a centre for natural sciences, building on the region's natural and cultural advantages and providing an increasingly international focus on sustainability and the environment. Such unique regional products can effectively act as selling points that have the strength to create interest among the target market and build brand and public awareness.

Marketing of development opportunities, supported by research outcomes, will position the region well for the future. It will be critical for organisations that share strategic responsibility for the promotion and development of the region to work in partnership, in order to maximise the region's potential. It is equally important that there is a long-term marketing program promoting a variety of assets for this increasingly important region.

## Marketing strategies

5.8.A Develop a corporate image that reflects the region's key capabilities, opportunities and attributes as a centre for investment and employment.

5.8.B Develop a marketing plan to attract investment in existing and new businesses and industries in the region.

5.8.C Promote an awards program that recognises excellence in businesses and industries.

5.8.D Encourage the development of a networking system to promote information sharing and cooperation between industry and all levels of government.

## Explanatory notes

The *Townsville and North West Centres of Enterprise (Mining and Minerals Processing) Action Plan* seeks to assist in marketing the region by:

- promoting the North West Minerals Province and the Townsville region as a world-class location for mineral resources and value-added minerals processing
- promoting the region's capability in training and services for the mining and minerals processing industries
- attracting investment to strengthen and expand the mining and minerals processing sector.

# 6. Infrastructure

## Desired regional outcome

A well-planned, coordinated, safe and efficient network of infrastructure, which is well-maintained and underpins the social, economic and environmental prosperity of the region.

The region's low and dispersed population over a large geographic area makes the cost of providing infrastructure higher per person than in more densely populated areas. Mining activity imposes added pressure on existing infrastructure, as recognised in the *Northern Economic Triangle Infrastructure Plan 2007–2012*. Large-scale, high-capacity networks require large amounts of capital investment. Alternatively, it is provided through public–private partnerships, with contractual commitments from industry to use the infrastructure over its depreciation life.

An overview of the region's infrastructure network is presented in Map 6 (page 71). Road and rail networks that connect the North West Mineral Province to the port at Townsville play a significant role in the transportation of minerals and agricultural products, particularly cattle. Air services and supporting infrastructure are critical to the movement of fly-in and fly-out mining workers and play an important role in the provision of, and access to, health and other social services. Passenger rail services to the region are limited, and air travel is expensive compared with coastal routes. Other key infrastructure includes a pipeline that brings gas to the region from South West Queensland, to provide energy for the power station at Mount Isa.

New, upgraded and well-maintained infrastructure is vital to the region's future.

To create a competitive business environment which supports economic growth and increased employment, North West Queensland needs access to reliable energy supplies, at prices which will support economic activity. The importance of investment in power, gas and other energy infrastructure to the economic development of North West Queensland cannot be overstated.

The provision of water infrastructure is also a critical requirement for the mining, agriculture and domestic sectors. Any new critical infrastructure development in the region must take into account the possible risks posed by climate change, particularly risks from increased temperature and flooding impacts, during the life of the infrastructure.

# 6.1 Infrastructure planning and coordination

## Objective

**Provide and coordinate infrastructure that supports economic growth and effectively meets the future needs of the community in a timely and cost effective manner.**

Significant cost and service efficiencies can be achieved by improving coordination between individual infrastructure agencies, and between land use and economic planning agencies. Improved infrastructure planning will ensure that state agencies align infrastructure and service priorities with the regional plan.

Regional infrastructure challenges include:

- minimising the impact of heavy transport on the region's roads
- continual improvement to the quality and safety of the road network
- accommodating an increasingly mobile workforce
- ensuring the continuation of passenger rail services
- improving telecommunications for rural and remote communities
- maintaining and improving air transport accessibility into the region
- adapting infrastructure to the potential impacts of natural hazards
- establishing the correct balance between building new infrastructure and maintaining existing assets
- increasing freight and cattle rail services.

To address these challenges, government at all levels and private service providers need to collaborate, to identify and implement infrastructure strategies that meet the region's needs.

The regional plan highlights the need for improved complementary use of infrastructure and the needs of users in conjunction with the *Northern Economic Triangle Infrastructure Plan 2007-2012*. The regional plan provides the mechanism for achieving strategically focused infrastructure investment that will support the regional activity centres network.

## Infrastructure planning and coordination strategies

6.1.A Maintain and provide infrastructure to support the future growth and functional integrity of activity centres.

6.1.B Identify capacity constraints in order to achieve maximum efficiency from existing infrastructure to minimise or delay the need for additional infrastructure and services.

6.1.C Encourage the establishment of regional protocols and lines of communication among industry, government and communities to improve communication, planning and delivery of regional and sub-regional infrastructure that reflect regional priorities.

## Land use policies

6.1.1 Ensure infrastructure is located in areas that avoid risks from natural hazards, including the compounding effects of climate change, or ensure that infrastructure is designed and constructed to mitigate risks in new infrastructure corridors.

6.1.2 Consider Queensland Government infrastructure priorities in preparing planning schemes and priority infrastructure plans (PIP).

6.1.3 Identify, protect, and facilitate the development of strategic sites and areas for infrastructure projects with due consideration for economic benefits, public interests and risk management.

## Explanatory notes

Any population growth in the region should be centred in existing communities in order to make best use of existing and proposed infrastructure, and to improve service efficiencies and the viability of communities. Provision of future infrastructure for mining activities in the region will be dependent on its commercial viability and long-term commitments from the mining sector towards the use of such infrastructure. Isolated development should be discouraged. Mining and other industries should collaborate and assist government and local communities to address accommodation and transport issues created by additional large-scale mining and industrial development.

The *Sustainable Planning Act 2009* requires all local governments to plan for trunk infrastructure through a PIP. The aim of a PIP is to ensure that land use and infrastructure planning and delivery are aligned so that local governments can provide the trunk infrastructure required to service expected growth. It also allows local governments to fund infrastructure programs by adopting infrastructure charges schedules. A template has been designed for local governments that have a relatively stable population, or are experiencing less development pressure, and want to adopt the regulated infrastructure charges schedule (RICS)[61].

# 6.2 Energy

## Objective

**Facilitate the provision, transmission and distribution of competitively priced energy and encourage the development of renewable energy technologies to support a robust regional economy.**

Reliable and affordable energy is vital for continued development of the region. Access to more secure and competitively priced energy to support new investment and expansion in mining and minerals related industries is a key focus of the *Northern Economic Triangle Infrastructure Plan 2007-2012*.

61 Department of Infrastructure and Planning, 2009, Priority infrastructure plans and infrastructure charges schedules – *A Sustainable Planning Act 2009* statutory guideline. Queensland Government, Brisbane.

Existing energy supply in the North West Mineral Province is largely dependent on the supply of gas from Ballera over the Carpentaria gas pipeline, both for electricity generation and direct use in minerals processing plants.

The Mica Creek power station in Mount Isa is the sole source of power to the Mount Isa sub-region and supplies most surrounding mines. Some mines operate isolated gas-fired or diesel-fired generators. The power station also supplies energy to meet Mount Isa's domestic and commercial requirements, and those of Cloncurry and surrounding communities. It is approaching the limit of its ability to supply load reliability.

McKinlay, Richmond and Flinders Shires are serviced by a high-voltage electricity network that extends west from Townsville.

An independent review by Rod Sims[62] in May 2009, identified that the energy needs for North West Queensland exceeds the capacity of the existing power station. The review provides analysis and advice on energy infrastructure proposals that could deliver reliable and competitively priced energy. A recommendation of the Sims Report prepared for the state government was to facilitate a 12 month customer-driven competitive process to find an energy solution for the region.

In addition, the report highlighted the importance of lowering the cost of electricity in the region. The reduction in energy costs could increase the viability of previously explored mineral deposits and extend the life of several operating mines[63].

In addition to the above review, the federal government has legislated the National Renewable Energy Target which stimulates direct investment in renewable energy and requires 20 per cent of electricity to be sourced from renewable energy in Australia by 2020. The Commonwealth Government has announced, as part of its Climate Change Strategy, a Clean Energy Initiative.

The Queensland Renewable Energy Plan (QREP) is a comprehensive economic and industry development strategy aimed at accelerating the growth of the renewable energy sector in Queensland. The primary objective of the QREP is to increase the deployment of renewable energy infrastructure in Queensland. The QREP through its initiatives seeks to leverage funds from the Commonwealth through the National Renewable Energy Target and Climate Change Strategy. One of the projects funded from the Queensland Renewable Energy Fund is the Cloncurry Solar Thermal Project (see information box, page 58).

Energy alternatives, including those that harness renewable energy, will increasingly become technically and financially viable in remote rural areas of the region. Necessary considerations will need to be explored in the choice of energy and how reliable and competitive renewable energy can be integrated.

The level of solar radiation in the North West region suggests strong potential for the application of solar energy, especially as a replacement or supplement to diesel generation. Preliminary assessments indicate that the area also has potential for geothermal energy in the form of hot dry rocks located at soil depth (Map 4, page 69).

The high cost of electricity generation from renewable energy sources in Australia is generally not as competitive as traditional electricity generation for large scale grid connected demand. The Commonwealth Government's Emissions Trading Scheme (which will create a price signal for carbon) and the Renewable Energy Target will narrow the cost gap between renewable sources and fossil fuel energy sources.

## Energy strategies

6.2.A Explore options for energy supply that will deliver competitively priced and secure power to the region for industrial and broader community use.

6.2.B Encourage opportunities for low emission, renewable and decentralised sources of energy supply and supporting infrastructure.

6.2.C Encourage network augmentation and lowest cost expansion alternatives, to support development of isolated commercial operations.

6.2.D Investigate means for determining projected infrastructure demands taking into account mining industry growth and ongoing monitoring.

## Land use policies

6.2.1 Identify, preserve and acquire sites, corridors and buffers for future energy infrastructure.

6.2.2 Ensure energy infrastructure agencies address long-term regional energy needs.

6.2.3 Address land-use, land access, noise and visual impacts that have the potential to hinder renewable energy developments.

## Explanatory notes

The Northern Economic Triangle has identified a number of critical issues associated with the provision of energy in the North West Mineral Province. The issues include:

- major energy-intensive industries located long distances from major centres
- the rising price of wholesale gas
- road-based transport facing increased pressure to become more efficient as oil-based products become more expensive.

Price parity with regions connected to the national electricity market is constrained by the cost of fuel and gas pipeline tariffs charged to deliver gas to North West Queensland. The lower the cost of power,

62 *Providing a circuit breaker to meet North West Queensland's future electricity needs.* Rod Sims, Queensland Resources Council and the Queensland Government, May 2009. Port Jackson Partners Limited.

63 Mount Isa to Townsville Economic Zone 2009 Investment Guide.

**Renewable energy in the North West region**

Renewable energy holds the promise of reducing carbon emissions, providing energy security and a new avenue for rural economic development, while providing a long-term, local supply of energy.

In 2007, the Queensland Government committed $7 million toward the development of a 10 megawatt (MW) Solar Thermal Power Station in Cloncurry with an estimated total project cost of $31 million. The first stage of the project involves trialling technology that stores solar energy. This will provide a constant supply of electricity and will overcome the intermittency factor, which has long been a major inhibitor to using solar energy for the generation of electricity. This project has the potential to generate sufficient power to meet all of Cloncurry's existing needs.

the greater the likelihood and scope for new mining and mineral projects.

The Queensland Geothermal Energy Centre of Excellence will focus on those technologies that will quicken the pace of large-scale utilisation of hot rocks geothermal energy in Australia. The tentative aim for the industry is 4000 megawatts base load capacity by 2030. This is an ambitious aim and will be a world first.

Exploration for geothermal energy is carried out under the *Geothermal Exploration Act 2004*. This legislation is interim legislation to enable geothermal exploration to commence whilst work on legislation to enable geothermal production is undertaken.

## 6.3 Transport

### Objective

**Provide efficient, safe, sustainable, accessible transport for people and goods throughout the region—and to other regions—to support industry competitiveness, growth and improved liveability in communities.**

Efficient and reasonably priced transport is essential for community, mining, agricultural, pastoral and other business sectors in the North West region. The key transport challenges for the North West region are:

- escalating freight and fuel costs
- isolated and remote communities
- population fluctuations which influence transport demand
- vulnerable commodity prices
- extreme weather conditions
- provision of transport connections
- implementing telecommunications to minimise dependence on road transport.

Map 5 (page 70) shows existing road and rail networks in the North West region and Table 9 (page 59) details the distances between regional centres and centres outside the region.

Map 5 shows that the dominant mode of transportation in the region is road. Most of the freight from mines and processing plants is delivered by road to rail heads from where it is transported to Townsville. It is also a transport link for the Northern Territory, Gulf region towns, eastern parts of Queensland and southern parts of Australia via Winton and Longreach.

The region's road network is difficult to maintain, due to a range of factors including soils, extreme temperature range, regular flooding and the impact of heavy vehicles. Approximately 30 per cent of traffic on the road network is multi-combination heavy vehicles. Remote communities in the region can be isolated for long periods of time due to flooding and this affects the regions' access to goods and services.

Over the last five years, $70 million has been invested in the Barkly and Flinders Highways by the Queensland Government for the purposes of capital works, rehabilitation and maintenance works (Table 10, page 59).

Commercial bus companies provide regular services to the towns along the Flinders and Landsborough Highways. Transport facilities such as bus and coach depots, rail freight depots, marshalling yards, truck depots, aerodromes and other similar infrastructure, form part of an extensive transport system for the region.

The Queensland Government regulates and subsidises air, long distance coach and long distance passenger rail services in regional, rural and remote communities throughout Queensland.

Regular commercial air services are available throughout the region, connecting Mount Isa to Cloncurry, Townsville, Cairns and Brisbane, and to regional centres to the south, such as Quilpie and Charleville. Julia Creek, Hughenden and Richmond have less frequent weekly commercial flights. Many mining companies rely on regular charters for fly-in and fly-out workers. The Royal Flying Doctor Service plays a vital role in proving emergency health care to residents with Mount Isa as the major hub for this service in the region.

**Table 9. Distances between regional centres and centres outside of the region**

| In kilometres | Mount Isa | Darwin | Townsville | Longreach | Normanton |
|---|---|---|---|---|---|
| Camooweal | 190 km (about 2 hours 15 mins) | 1412 km (about 16 hours 30 mins) | 1093 km (about 12 hours 50 mins) | 836 km (about 9 hours 35 mins) | 515 km (about 6 hours 30 mins) |
| Mount Isa | ..... | 1601 km (about 18 hours 45 mins) | 904 km (about 10 hours 40 mins) | 647 km (about 7 hours 25 mins) | 499 km (about 5 hours 40 mins) |
| Cloncurry | 121 km (about 1 hour 30 mins) | 1722 km (about 20 hours 10 mins) | 783 km (about 9 hours 15 mins) | 527 km (about 6 hours) | 382 km (about 4 hours 20 mins) |
| Julia Creek | 258 km (about 3 hours) | 1859 km (about 21 hours 40 mins) | 646 km (about 7 hours 40 mins) | 452 km (about 5 hours 20 mins) | 437 km (about 5 hours 15 mins) |
| Richmond | 406 km (about 4 hours 40 mins) | 2007 km (about 23 hours 25 mins) | 498 km (about 6 hours) | 408 km (about 5 hours) | 586 km (about 7 hours) |
| Hughenden | 521 km (about 6 hours) | 2122 km (about 1 day 1 hour) | 383 km (about 4 hours 40 mins) | 324 km (about 4 hours 10 mins) | 700 km (about 8 hours 20 mins) |

**Table 10. Actual expenditure on the Barkly and Flinders Highway (2003–04 to 2007–08)**[64]

| Road | Actual expenditure | | | | |
|---|---|---|---|---|---|
| | 2003–04 $'000 | 2004–05 $'000 | 2005–06 $'000 | 2006–07 $'000 | 2007–08 $'000 |
| **Capital** | | | | | |
| Flinders Highway | 10 093 | 9 227 | 17 819 | 13 657 | 2 075 |
| Barkly Highway | 364 | 0 | 0 | 0 | 0 |
| | **10 457** | **9 227** | **17 819** | **13 657** | **2 075** |
| **Rehabilitation** | | | | | |
| Flinders Highway | 3 021 | 2 705 | 4 197 | 143 | 352 |
| Barkly Highway | 0 | 0 | 0 | 0 | 0 |
| | **3 021** | **2 705** | **4 197** | **143** | **352** |
| **Maintenance** | | | | | |
| Flinders Highway | 1 424 | 2 310 | 0 | 340 | 1 508 |
| Barkly Highway | 552 | 0 | 0 | 0 | 0 |
| | **1 976** | **2 310** | **0** | **340** | **1 508** |
| **Total** | **15 454** | **14 242** | **22 016** | **14 140** | **3 935** |

Rail offers cost advantages in carrying freight long distances and dominates long-haul movements of bulk freight to Townsville for processing and export. The 1000 kilometre railway between Mount Isa and Townsville carries nearly five million tonnes of freight every year, primarily mining product and sulphuric acid which is used for mineral processing. Rail plays a minor role in passenger and general freight transport.

Social, economic and environmental benefits can be gained by integrating transport and land use planning. Lessening transport demand, congestion and travel costs can improve liveability. The regional plan supports the management of patterns of development and future infrastructure, to gain efficiencies in construction and performance of new and existing infrastructure.

## Transport strategies

6.3.A Identify future demand and constraints on the road network, and develop a strategy for improvement.

6.3.B Progressively upgrade, maintain and develop road and rail transport systems to meet industry and community needs.

6.3.C Co-locate transport infrastructure and services in accordance with the intent of the sub-regional narratives.

6.3.D Improve coordination and integration of infrastructure and land use planning, to better support the performance of supply chains and the movement of people within, and to and from the region.

64 Actuals obtained from Department of Main Roads (unpublished data).

6.3.E Identify capacity constraints, in order to achieve maximum efficiency of the region's strategic rail network, to link people, industries and markets.

6.3.F Encourage transport of bulk goods on the rail network.

6.3.G Promote coordination of public and private transport services, to increase accessibility within and outside the region.

6.3.H Support initiatives that improve the broader community's access to transport services.

6.3.I Provide air transport that meets access and regional development needs in rural and remote communities.

6.3.J Increase transportation resilience to the impact of oil vulnerability.

## Land use policies

6.3.1 Integrate land use and transport planning to support efficient land use, movement of people and goods, industry competitiveness and growth.

6.3.2 Encourage a compact transportation and land use strategy in activity centres to reduce transportation dependency and improve access to employment and services.

6.3.3 Encourage freight-dependent developments to locate close to major transport corridors through appropriate zonings.

6.3.4 Protect airports from intrusions into operational airspace or other incompatible uses that may threaten safety or the integrity of airport operations.

6.3.5 Allow for the potential expansion of airports, taking into account separation distances to ensure safe operation and protection of amenity of surrounding properties.

## Explanatory notes

The Queensland Government provides funding for the Regional Airport Development Scheme. This program funds airport infrastructure improvements on a 50/50 basis with local government to facilitate safe, all-weather access to remote communities.

Significant sections of the federal government's AusLink network traverse the region. Corridor strategies, including Townsville to Mount Isa and Brisbane to Darwin, were developed jointly by the state and Commonwealth governments. They outline shared objectives and strategic priorities, rather than specific projects for funding. The Commonwealth Government has established Infrastructure Australia, to advise on the delivery of infrastructure priorities across Australia.

Queensland Rail has made significant investment in the Mount Isa Line. Within the *Mount Isa System Rail Infrastructure Master Plan*[65] Queensland Rail has evaluated and consulted with industry on infrastructure needs and likely future demands.

The Queensland Rail Master Plan recognises that general freight, livestock and passenger services represent only a small proportion of the total tonnage transported on the Mount Isa rail corridor. Growth in these areas is not expected to have significant impact on capacity, relative to the impact of growth in the minerals, fertiliser and sulphuric acid sectors. Demand forecasts and capacity planning in the master plan are therefore focused on the major traffic railway. It is anticipated that rail transport will reach between 12.5 and 20 million tonnes per annum by 2020. The intention of the master plan is to broaden the focus from infrastructure and freight, to an emphasis on the entire process of supply chains and integrated transport planning. A private rail consortium is considering the development of a railway linking the Northern Territory to allow for increased export opportunities and for supply to industry.

65 Mount Isa System Rail Infrastructure Master Plan, QRNetwork, 2009, version 1

# 6.4 Water infrastructure

## Objective

**Provide certainty for long-term investors, local government and residents by giving priority to the development of water resource infrastructure.**

The region is serviced by several surface water supplies and the Great Artesian Basin. The development of new water resource infrastructure is identified as a priority for the region, particularly in relation to expected growth of the mining industry and the potential to broaden the economic base of the eastern shires through agricultural activities.

### Urban supply

The Mount Isa Water Board is responsible for the supply of water to Mount Isa and Camooweal. The city relies on five reservoirs, including Julius and Moondarra storages. Camooweal also uses a sub-artesian bore supply.

The lack of a reliable water supply has been a major issue for Cloncurry. The water supply comes from Chinaman Creek and from utilising river soaks to supplement supply during summer months. In 2008 the Queensland Government commissioned the construction of a pipeline extension from Lake Julius, situated 110 kilometres north of Mount Isa, to augment the existing Cloncurry water supply and to satisfy future demand.

Julia Creek, Richmond and Hughenden rely on aquifers associated with the Great Artesian Basin. There is adequate water for the growth needs of these towns.

The *Northern Economic Triangle Infrastructure Plan 2007-2012* recognises the importance of a regional water supply strategy to provide for future water demand for Mount Isa and the North West Mineral Province under existing water resources planning frameworks. Overcoming water supply concerns in the Mount Isa and Cloncurry areas, where there is growth potential, is a high priority for state government.

### Water for agriculture

In regard to water for irrigation purposes, Richmond and Flinders Shire Councils have commissioned a number of independent studies to investigate potential for the development of infrastructure to support irrigation farming. Studies undertaken by the Mount Isa to Townsville Economic Zone Inc. indicate that there may be opportunities to take a risk management approach to irrigation in this part of the region. Under this approach profitable agricultural production may be derived from water harvesting and off-stream storage during peak flow periods in the Flinders River catchment, on a season-by-season basis.

A risk management approach takes a range of factors into account to determine economic viability of water storage and irrigation ventures. This approach may benefit the region through economic development, resulting in investments in water resource infrastructure that is relative to the short-term risks of cost recovery.

The state government is undertaking high level investigations to determine the appropriateness of irrigation proposals and any necessary management regimes that should apply. These investigations consider a number of principles including the maintenance of environmental flows, the impacts of climate change, and regional economic development.

## Water infrastructure strategies

6.4.A Ensure the allocation of water for irrigation purposes results in the most sustainable economic, social and environmental outcomes.

6.4.B Encourage water infrastructure diversification projects that provide an economic growth benefit.

6.4.C Evaluate water infrastructure for mining, taking into consideration a full range of technologies and the benefits offered to other users in the region.

6.4.D Investigate long-term water supply options in the region to improve agricultural production utilising existing government organisational structures and frameworks.

6.4.E Ensure that investigations into long-term water supply options are undertaken collaboratively, involving regional industry and community representation.

## Land use policies

6.4.1 Identify existing and future sub-regional priority water demands which require the provision of new or upgraded water infrastructure, including water storage and supply treatment within the next 10–20 years.

6.4.2 Ensure future water infrastructure is neither located in, nor has adverse impacts on, areas of high ecological significance.

6.4.3 Consider demand management and water conservation in planning for future water infrastructure.

## Explanatory notes

The Northern Australia Sustainable Yields Project[66] has assessed the water resources of Northern Australia. The project modelled and quantified, within the limits of available data, the changes to water resources under four scenarios.

The project identified regions that may come under increased or decreased stress due to climate change, and increased water use. In relation to the North West Region, the streams that flow from the region and into the Gulf of Carpentaria, the most significant findings are:

- climate is extremely seasonal, with pronounced heavy monsoon rainfall and high surface and river flows

- most rain, and runoff, occurs near the coast, not in the rivers headwaters
- high evaporation losses and land topography pose significant constraints on the viability of surface water storage
- inland perennial rivers are sustained by point discharges of groundwater
- shallow groundwater provides opportunities for development, but is constrained
- the Great Artesian Basin aquifers may support further development, but safe extraction yields have not been determined
- little potential for increased groundwater storage
- planned development will have minimal regional water resource consequences, but will have local impact.

Further investigations are being undertaken to address the impacts of a change of flow on ecosystems, as part of Northern Australia Water Futures Assessment Ecological Program.

### Water Strategies

The *Water Resource (Gulf) Plan 2007* sets out strategies for a range of water uses and gives consideration to factors such as downstream effects and environmental flows needed to maintain downstream ecology.

The *North West Queensland Regional Water Supply Strategy*, developed by the Department of Environment and Resource Management, builds on the substantial body of work previously undertaken as part of the *Water Resource (Gulf) Plan 2007* and investigates how the region might benefit from future water infrastructure development. This strategy will provide quantitative data on the potential impacts of global warming on water supplies in the region and consider contingencies for worst case scenarios.

## 6.5 Waste management

### Objective

**Develop an integrated approach to waste management, recycling and reuse to meet desired community health and environmental outcomes, and achieve the objectives of sustainability and affordability.**

Population growth in remote cities like Mount Isa and low-density rural settlements creates difficulties in providing suitable recycling facilities for waste products. As resources become more constrained, and greater emphasis is placed on environmental sustainability, management of waste products and recycling will increase in priority.

Developing a regional approach to recycling materials such as cardboard, tyres and plastics, along with other end-of-life products such as oil and batteries, is required. A major challenge is high freight costs to recycling plants located on the coast, when compared to the value of the recovered material.

Several programs offer safe collection and recycling of cleaned chemical containers and the collection of unwanted rural, agricultural and veterinarian chemicals. The ChemClear[67] program provides for the collection of agricultural and veterinary chemical containers, while drumMUSTER[68] has been set up for the collection and recycling of non-returnable chemical containers.

Challenges for the region include:

- stimulating investment in new resource recovery infrastructure
- providing appropriate location of waste and resource recovery infrastructure within local government areas
- improving resource recovery from households, business and building construction
- maximising transport efficiencies in the waste industry
- reducing greenhouse gas emissions from landfills and during product lifecycles
- educating consumers about purchasing choices and consumption.

Cooperative, integrated approaches to coordinating domestic, industrial and regulated waste management across the region can contribute to rationalisation and improvements in current waste management practices, with environmental and financial benefits to the communities.

### Waste management strategies

6.5.A Promote initiatives and other methodologies that support waste minimisation and achieve a best practice standard.

6.5.B Develop an integrated and coordinated system for waste management across the region to encourage efficiencies, economies and innovation.

6.5.C Promote policies that recognise waste as a resource and encourage re-use and recycling of waste to reduce the proportion going to landfill.

6.5.D Investigate cost-effective and environmentally sustainable sewerage treatment systems that are suitable for recreational areas and isolated tourist nodes.

6.5.E Investigate opportunities for effluent and water reuse, particularly for agriculture and industry purposes.

6.5.F Support local governments to upgrade sewerage treatment operations in urban locations, as appropriately determined by need.

67 More information can be found at www.chemclear.com.au

68 More information can be found at www.drummuster.com.au

## Land use policy

6.5.1 Identify sites for integrated waste disposal, including recycling and reuse, giving consideration to regional facilities located close to transport infrastructure.

## Explanatory notes

Industrial waste exchange can provide an important avenue for resources-saving and developing an environmentally sustainable society. Industries and commercial business are increasingly under pressure to be responsible both environmentally and economically. Partnerships between various industries and businesses could emerge as a promising alternative to improve waste management performance.

Management strategies are required to address issues regarding contamination. The *Environmental Protection (Waste Management) Policy 2000* and the *Environmental Protection (Waste Management) Regulation 2000* clarify waste management practices in Queensland and provide improved environmental outcomes. The policy provides a preferred waste management hierarchy and principles for achieving good waste management. They provide a basis for waste management programs that may be required as a condition of approval for an environmentally relevant activity for industry, and details of voluntary industry waste reduction programs, and state and local government waste management strategic plans.

# 6.6 Information and technology

## Objective

**Promote equitable access to modern information and communications technology.**

Access to reliable and affordable communications is critical to maintain the competitiveness of economic activities in the region. The planning challenges are to ensure the region possesses information technology to meet current and future needs and provide commerce and communities with cost-effective and reliable access to telecommunications technology.

## Information and technology strategies

6.6.A Identify gaps within existing information, technology and communications infrastructure.

6.6.B Address limitations for the provision of communications infrastructure.

6.6.C Facilitate affordable access and coverage of information and communications technology by engaging with stakeholders.

## Explanatory notes

Commonwealth and Queensland governments have instituted improvements in the telecommunications infrastructure in Queensland, through initiatives such as the OutbackNet[69]. This has extended broadband into regional areas in North West Queensland, and small towns are now able to get residential grade (and in many cases business grade) broadband for the first time. Towns in North West Queensland with access to broadband include Camooweal, Cloncurry, Hughenden, Julia Creek, Richmond and Mount Isa.

69 Footnote - more information can be found at www.outbackdotnet.com.au

# Part F—Implementation, monitoring and review

The regional plan establishes a basis for better planning, management and development in the region. The value of the regional plan will be largely determined by how successfully its outcomes are supported and implemented by all levels of government and the community.

Effective implementation requires cooperation by community stakeholders and coordination of state and local government activities and plans. Implementing the regional plan involves coordinating and reviewing a range of plans, policies and codes, infrastructure, services, planning and delivery.

The monitoring and review elements are critical to charting the progress of land use planning achievements and are essential to the performance-based approach. This monitoring and review process provides a feedback loop, to allow adaptive management as a response to changing circumstances and new information. If the regional plan is to achieve its goals and objectives, the planning process (see Figure 5) must be designed to be cyclical and should not begin or end at a discrete point in time. Instead, the process should always be structured to include monitoring, evaluation and feedback, as recognition of the need to learn and therefore adapt over time[70].

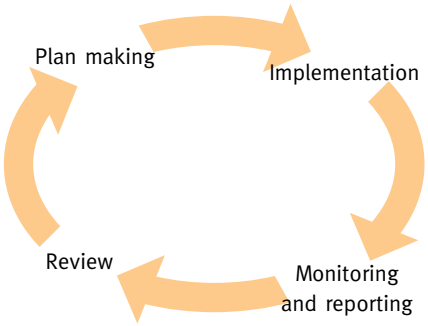
## Statutory processes

The regional plan is a statutory instrument under the *Statutory Instruments Act 1992*, with the effect of the regional plan and relationships with other regional plans prescribed under chapter 2, part 3 of the *Sustainable Planning Act 2009*.

Relevant provisions of the *Sustainable Planning Act 2009* include:

- establishing a Regional Planning Committee to advise the Minister on regional issues
- ensuring local government planning schemes reflect the regional plan
- ensuring state and local governments take account of the regional plan when preparing or amending a planning instrument, plan, policy or code that may affect a matter covered by the regional plan
- ensuring the regional plan is considered as part of development assessment processes
- enabling state planning regulatory provisions to be made to support the implementation of the regional plan
- allowing the Minister to exercise call in and direction powers
- establishing processes for amending the regional plan.

**Figure 5. The adaptive management planning process**




## Linking with planning schemes

When a local government makes a planning scheme or an amendment, it must state how the planning scheme will reflect the regional plan. To do this, a local government should, among other matters, address:

- any conflict between objectives and policies of the North West Regional Plan, and therefore a matter that the assessment manager needs to have regard to
- how the planning scheme reflects the desired regional outcomes of the North West Regional Plan
- how the planning scheme reflects the sub-regional narratives.

70 Low Choy DC, Worrall RH Gleeson J, McKay P and Robinson J, 2002. *In Environmental Planning Project: Volume 1 – Management frameworks, tools and cooperative mechanisms*. CRC for Coastal Zone Estuary and Waterway Management, Technical Report 4:243pp.

## Community plans

The regional plan will assist local government in the preparation of community plans as required under the *Local Government (Finance, Plans and Reporting) Regulation 2009*. A local government community plan must identify local and regional issues that effect, or may in the future affect, the local government area.

## Implementation

Implementation requires the cooperation and involvement of all three levels of government as well as non-government organisations, the private sector and the community.

Implementation mechanisms will include:

- incorporation of regional planning outcomes into capital works and service programs and policy-making processes of state and local government
- incorporation of regional planning outcomes into local government policies, development assessment processes and local government planning schemes.

To facilitate effective implementation of the regional plan, an efficient coordination system to guide, monitor and assist implementation activities is required. In addition, the implementation process should, wherever possible, make use of existing administrative structures and frameworks and avoid duplication of process.

Primary implementation responsibilities for elements of the plan will generally be designated to either state government agencies based on portfolio responsibilities, or to local government in the region. Lead agencies will be responsible for coordinating the actions of any other agencies which have a role in the implementation of strategies.

A five year action plan will be prepared in consultation with the Regional Planning Committee (RPC), to outline the key priorities to implement the regional plan within this time frame. The action plan will identify the projects, the actions required and the lead agency.

The implementation process also requires the preparation of an annual implementation program that incorporates detailed action plans, work programs, budget estimates and resource requirements. The annual program will be prepared by the Department of Infrastructure and Planning in association with agencies responsible for the work. This work will be coordinated by nominated government agencies.

Infrastructure planning will be undertaken to determine the infrastructure requirements that support the regional plan, leading to consideration and prioritisation as part of the state's funding of major infrastructure components.

The North West Regional Plan establishes desired regional outcomes, objectives, and policies that will guide the development of the North West region. Each desired regional outcome sets out objectives that must be followed to achieve the outcomes. State and local governments must reflect these objectives in their own policies, as they are essential to the correct functioning of the region.

## Roles and responsibilities

The Department of Infrastructure and Planning will work collaboratively with Queensland Government agencies, local government and stakeholders to facilitate and coordinate the implementation of the regional plan. The department will provide a secretariat role to the RPC, assist in preparation of the five year action plan and the annual implementation program.

The RPC advises the Queensland Government, through the Minister, on the development and implementation of the regional plan. The RPC plays a key role in confirming priorities and monitoring implementation.

The rights and responsibilities of individual agencies, authorities and bodies are to be respected and retained, including the responsibility for development, resourcing and funding of programs within their portfolio interests.

## Monitoring and reporting

Regional planning is a dynamic process and does not end with the completion of the regional plan. There is a clear need to establish mechanisms to:

- monitor progress and changes in the region
- identify new and emerging issues
- monitor implementation of the regional plan outcomes
- periodically review the status of the region and initiate changes to regional strategies and priorities where required.

Implementation will also involve a wide range of community and industry groups and individuals, particularly at the sub-regional and local levels.

## Review process

In consultation with the RPC, the Department of Infrastructure and Planning will produce an annual progress report on the implementation program at the end of each financial year.

The regional plan will be reviewed formally at least every ten years. In addition, the Minister may amend or replace the regional plan at any time if required.

The review process guides further policy development and assists in setting future priority projects and actions. The following information is critical to regular reviews of the regional plan:

- population projections
- employment growth
- progress on the implementation of regional plan policies and actions
- progress against regional targets
- progress against targets in *Toward Q2: Tomorrow's Queensland*
- emerging regional issues.

Any review will include input from government and the community. It will provide an open and accountable process, which will involve and inform the community of the outcome of any regional monitoring program.

## Community involvement in implementation

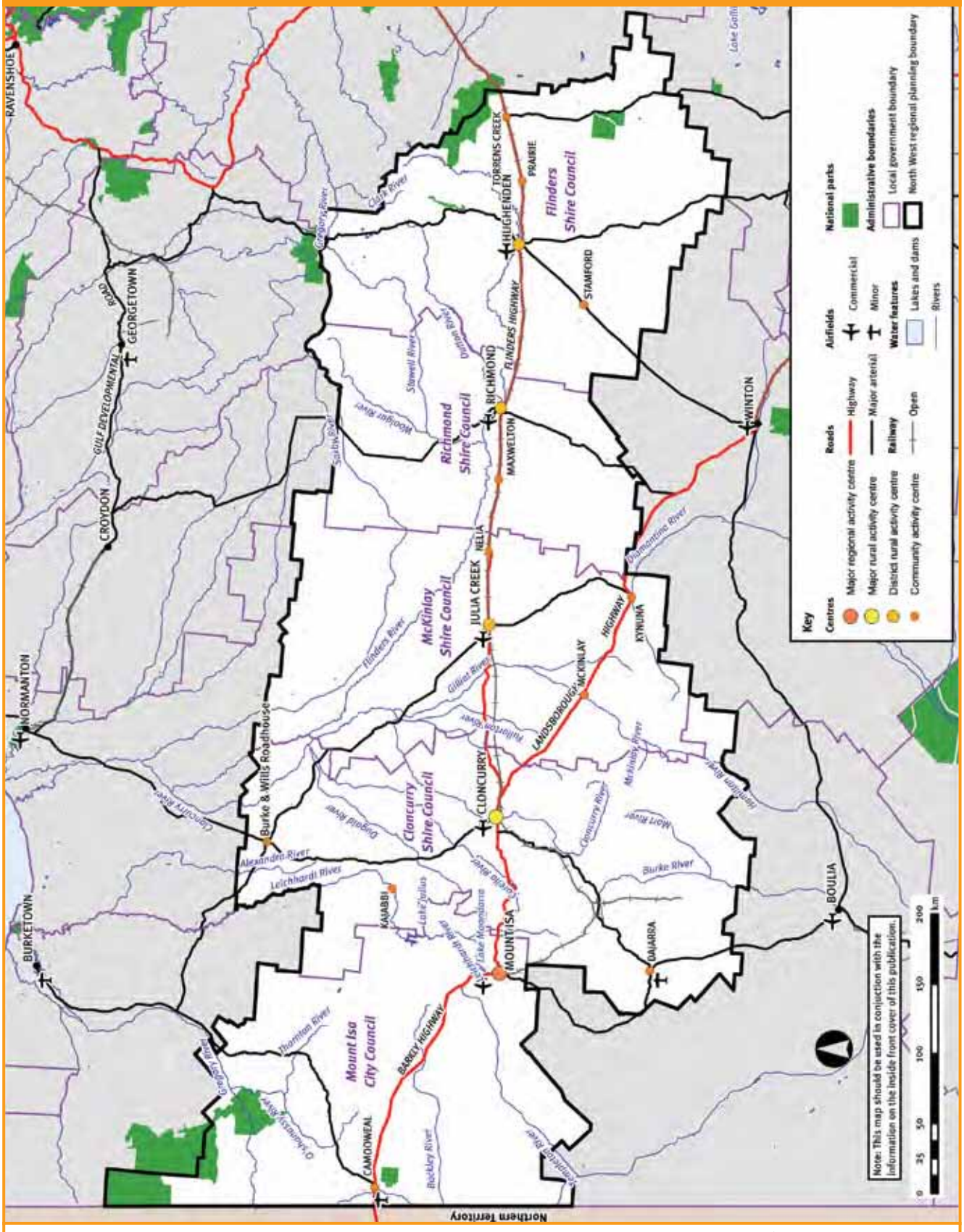
The regional plan sets out the need to involve all levels of government, industry and the community in the planning, development and management of the region.

It is implicit that appropriate consultation and negotiations will be undertaken with the community and relevant stakeholders in the implementation of specific strategies and actions arising from the plan. The extent, level and timing of consultation will depend on the particular strategy or action conditions. The responsibility to ensure that appropriate community and stakeholder consultation is undertaken will primarily rest with the lead agency for each individual strategy.

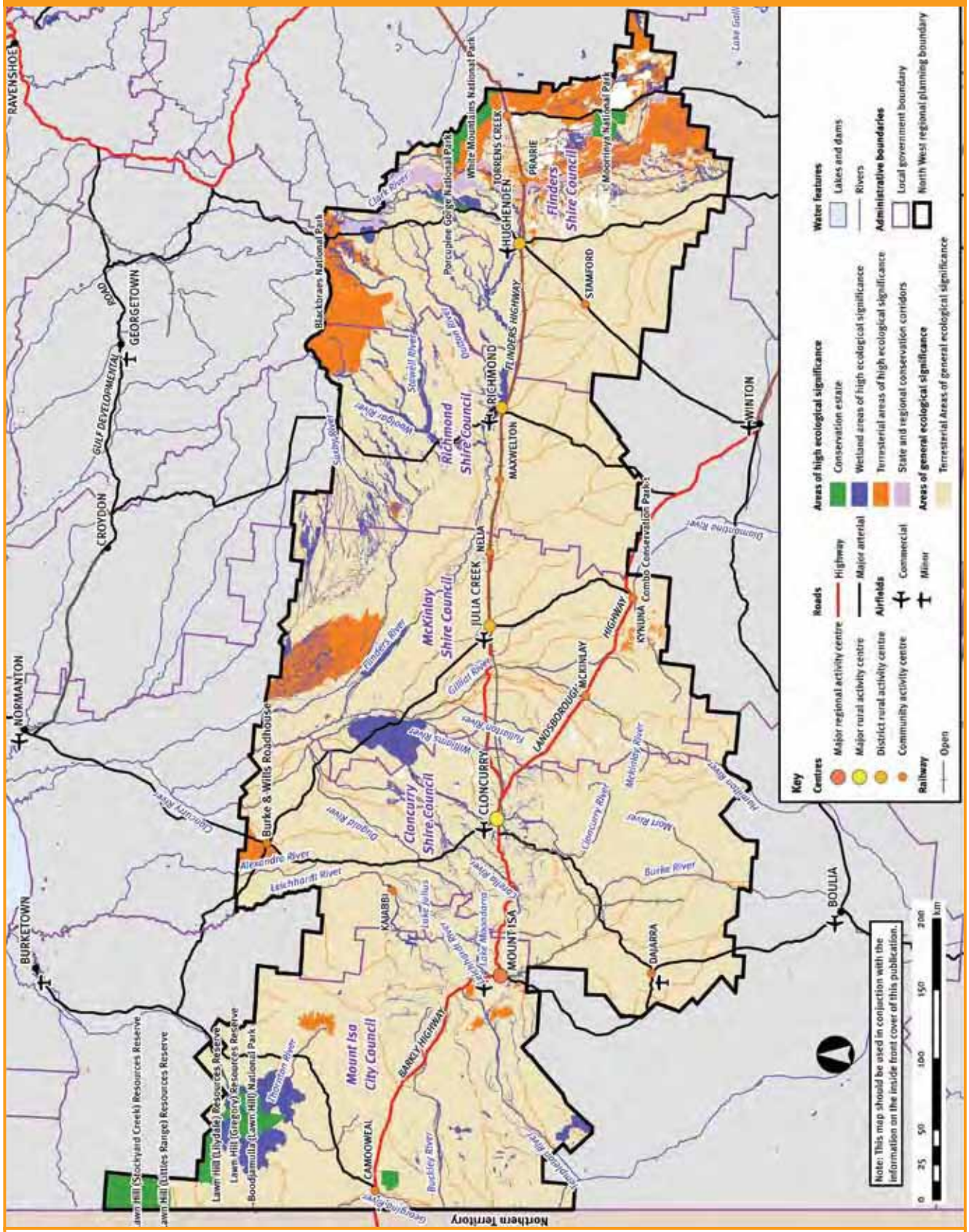
Members of the community and specific interest groups can also provide input into the implementation process through the RPC.

# Maps

## Map 2—Regional activity centres



## Map 3—Natural environment

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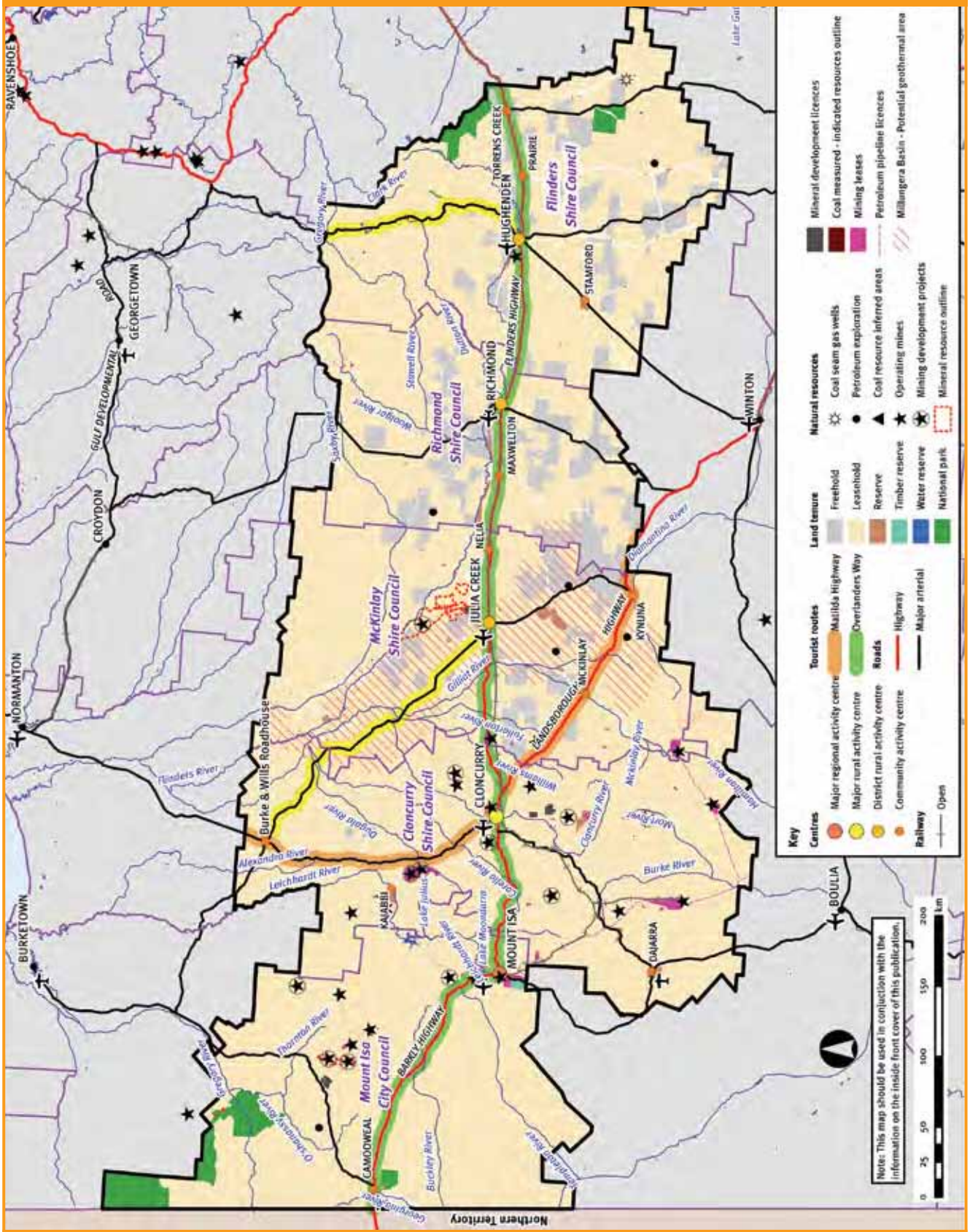
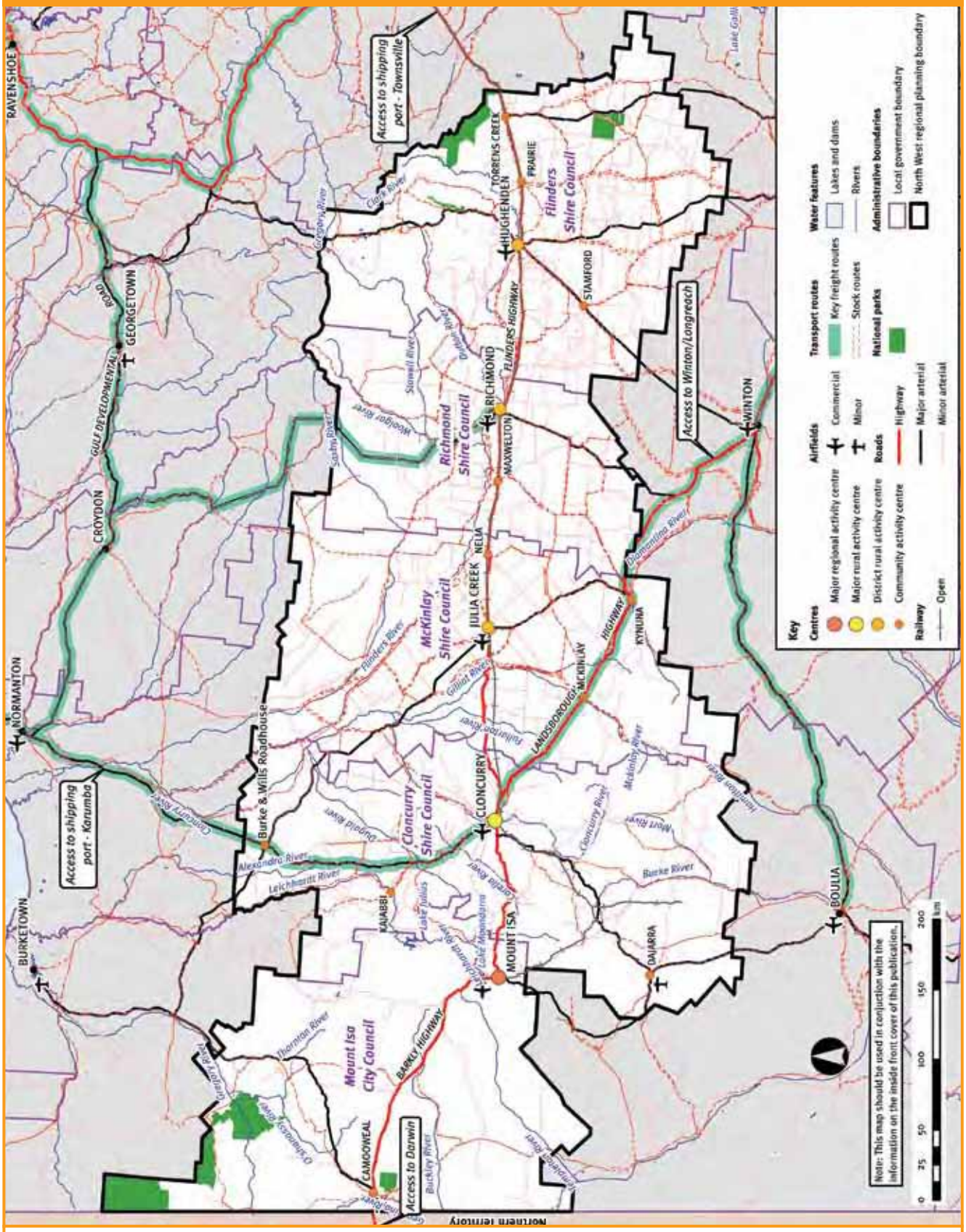
## Map 4—Natural economic resources

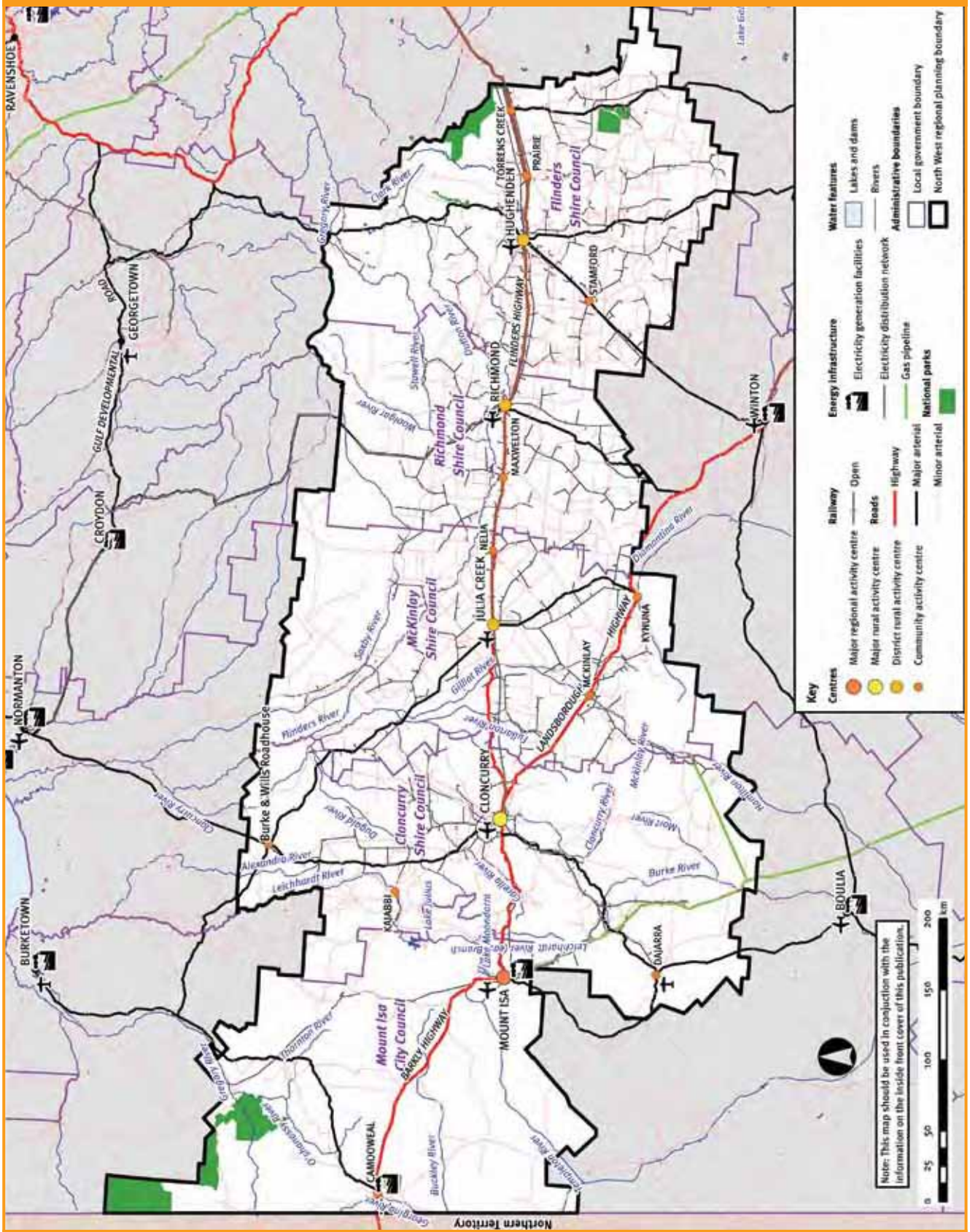



Disclaimer: The information on this map should be treated as indicative only and subject to ongoing refinement. Based on or contains data provided by the State of Queensland (Department of Environment and Resource Management) 2008. In consideration of the state permitting use of this data you acknowledge and agree that the state gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws. Data source: Department of Environment and Resource Management and Department of Infrastructure and Planning.

## Map 5—Transport

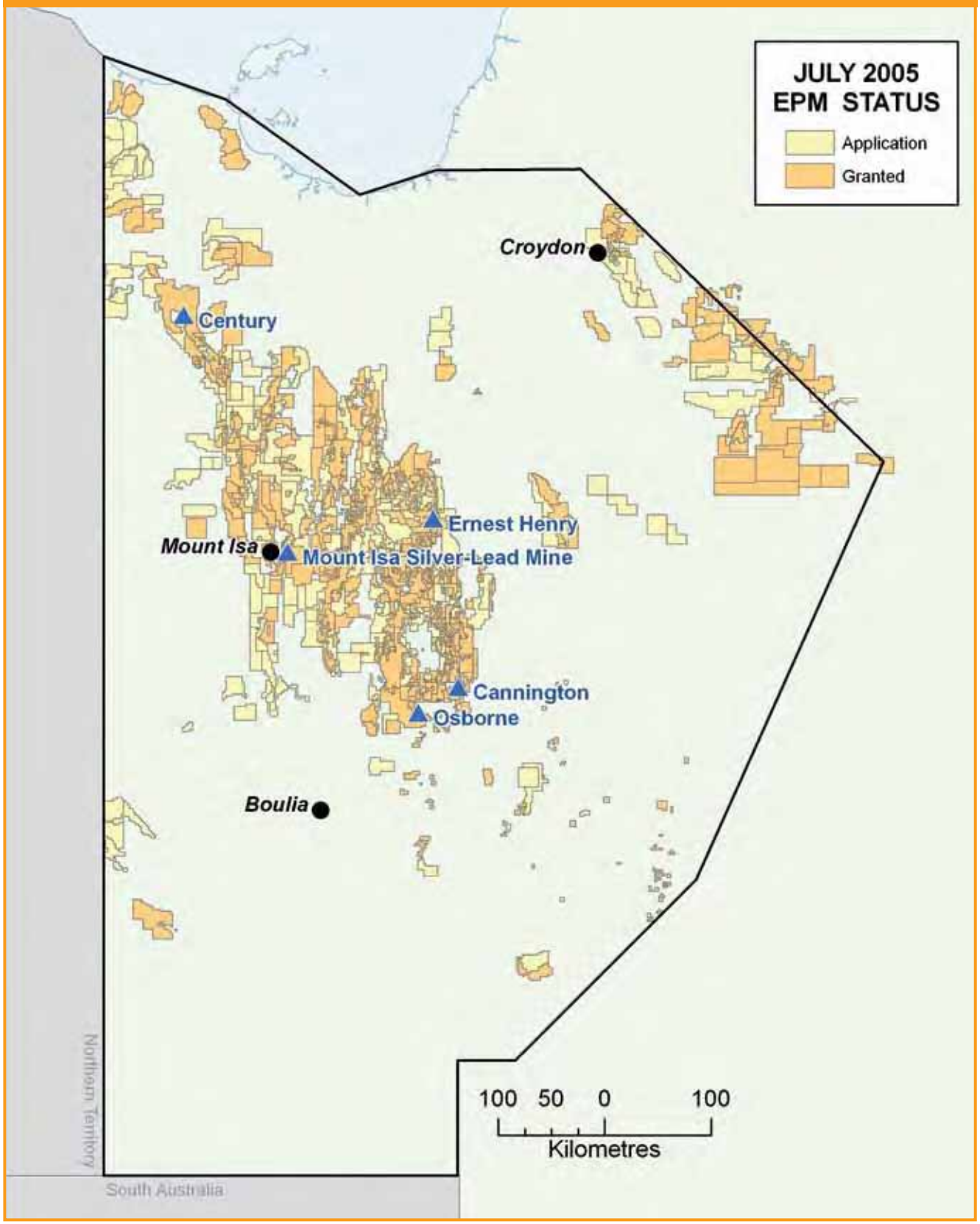


## Map 6—Infrastructure

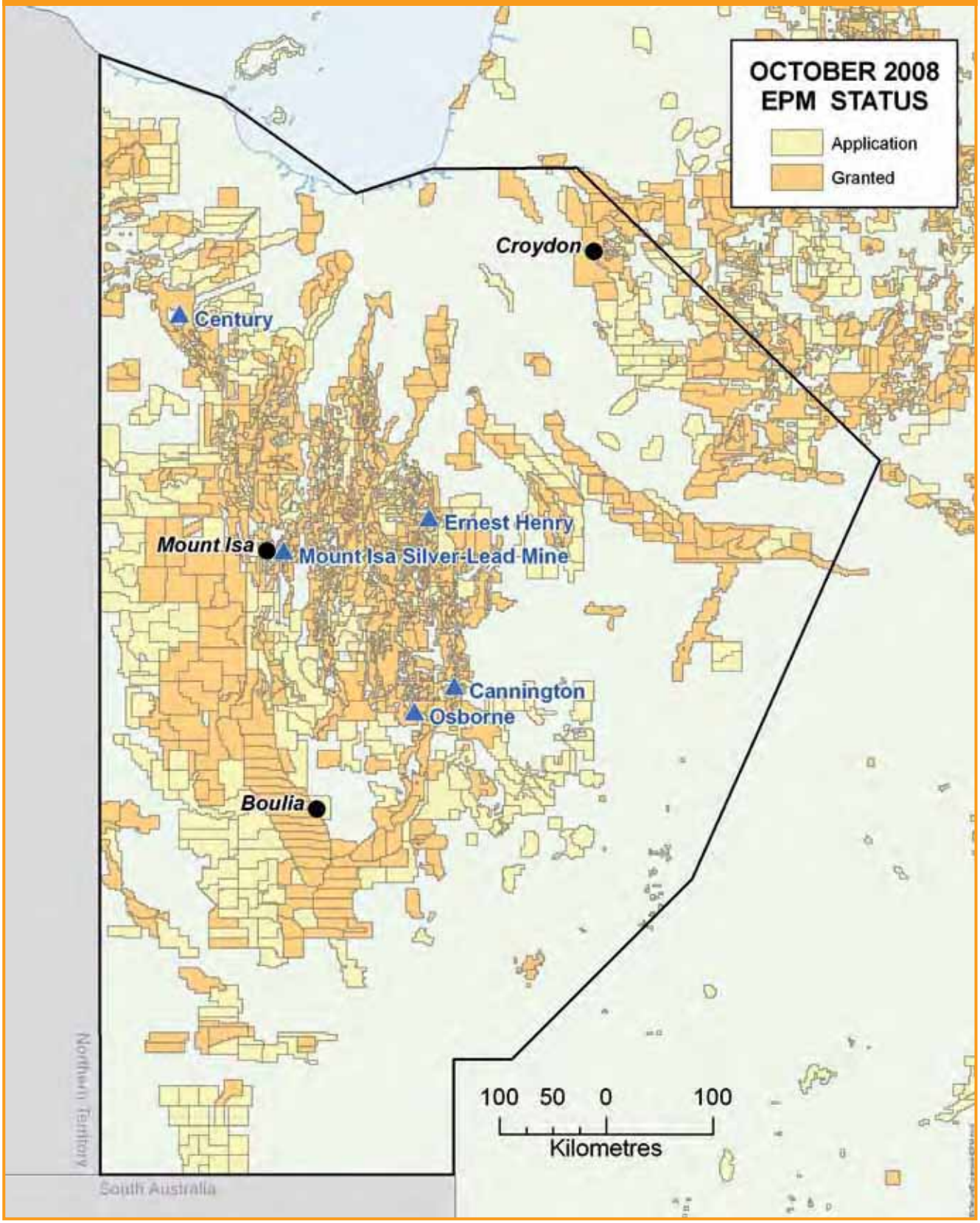


# Appendix 1—Mineral exploration maps

North West Mineral 2005 Province



## North West Mineral 2008 Province



# Glossary

**agriculture** means the production of food, fibre and timber, including grazing, cropping, horticulture and forestry.

**area of biodiversity significance** means an area identified and evaluated according to the common nature conservation classification system.

**biodiversity** means the variety of all life forms including the different plants, animals and micro-organisms, the genes they contain and the ecosystems of which they form part.

**bioregion** means the primary level of land classification in Queensland based on regional geology and climate, as well as major biota.

**climate change** means a change of climate which is attributed directly or indirectly to human activity and alters the composition of the global atmosphere, and which is in addition to natural climate variability observed over comparable time periods.

**conservation** means the protection and maintenance of nature while allowing for its ecologically sustainable use.

**cultural heritage** means a place or object with aesthetic, architectural, historical, scientific, social or technological significance to present, past or future generations.

**designated scenic area** means designated parts of the landscape valued by the community for its relative beauty and that are most easily accessed or viewed.

**desired regional outcome** means a desired regional outcome specified in Part E.

**ecosystem** means a community of organisms interacting with one another and the environment in which they live.

**ecosystem services** means services provided by the natural environment essential for human survival.

**ecotourism** means nature-based tourism that involves education and interpretation of the natural environment and that is managed in an ecologically sustainable way.

**endangered regional ecosystem** has the meaning given in the *Vegetation Management Act 1999,* schedule.

**good quality agricultural land** has the meaning given in *Planning Guidelines – The Identification of Good Quality Agricultural Land.*

**Indigenous cultural heritage** means landscapes, places, objects and intangible aspects such as language, song, stories and art that hold significance to Aboriginal and Torres Strait Islander people.

**Indigenous land use agreement** has the meaning given in the *Land Act 1994*.

**landholder** means an owner of land, a land manager, a person or group of persons with an interest in the land through special lease, mining claim, occupational licence, occupation permit, exploration permit, stock grazing permit, pastoral holding or permit to occupy, and trustees of land set aside for public purposes.

**land use policy** means a land use policy set out in Part E.

**least concern regional ecosystem** has the meaning given in the *Vegetation Management Act 1999,* schedule.

**natural economic resources** means a variety of natural resources that sustain economic development and provide a value or benefit to society.

**natural economic resource area** means an area where a natural economic resource is found.

**natural resource** means soil, vegetation, plants, animals, minerals, air and water that are utilised for economic benefit or community wellbeing.

**of concern regional ecosystem** has the meaning given in the *Vegetation Management Act 1999,* schedule.

**off-stream storage** is a facility that relies on water harvesting from a major watercourse or harvesting of overland flow waters; for example a ring tank.

**Minister** means the Minister responsible for administering chapter 2, part 3 of the *Sustainable Planning Act 2009* for the North West region.

**pest** means:

(a) weeds or animals declared as a declared pest under the *Land Protection (Pest and Stock Route Management) Act 2002;* and

(b) non-native plants that are not a declared pest under the *Land Protection (Pest and Stock Route Management) Act 2002*.

**population density** means the number of persons per square kilometre.

**population projection** means a population prediction that is the most likely outcome over the 20 year time frame of the plan.

**protected area** means a protected area under the *Nature Conservation Act 1992*.

**regional ecosystem** has the meaning given in the *Vegetation Management Act 1999,* schedule.

**regrowth vegetation** has the meaning given in the *Vegetation Management Act 1999,* schedule.

**remnant vegetation** has the meaning given in the *Vegetation Management Act 1999,* schedule.

**residential development** means development for a residential purpose.

**residential purpose** means that it will only be used as a residence and not for commercial use.

**riparian area** means the banks of land adjacent to a waterway or wetland which contribute to its ecological balance, preservation and continuation.

**sensitive land use** means a residential purpose, health purpose, education and child care purpose and associated facilities, intensive recreational areas and areas of high ecological significance.

**settlement pattern** means the spatial distribution of urban and rural land uses, employment, population, centres and infrastructure.

**strategy** means a strategy specified in Part E.

**sub-regional narrative** means a sub-regional narrative in Part D.

**urban development** means development of land for urban purposes.

**urban purpose** means a purpose for which land is used in cities or towns, including residential, industrial, sporting, recreation and commercial purposes, but not including environmental, conservation, rural, natural or wilderness area purposes.

**urban zoned land** means land zoned for urban purposes in a local government planning scheme.

**vision** means the vision for the region specified in Part B.

**water resource plan** means a water resource plan under the *Water Act 2000*.

**waterway** means a river, creek, stream, watercourse or inlet of the sea.

**wetland** means an area of permanent, periodic or intermittent inundation, with static or flowing water that is fresh, brackish or salt, including areas of marine water.

**zoned land** means land allocated or identified as included in a zone or other like term such as domain or area under a planning scheme.

# Abbreviations

**DERM**—Department of Environment and Resource Management

**DIP**—Department of Infrastructure and Planning

**ERP**—estimated resident population

**FTE**—full-time equivalent

**IDAS**—Integrated Development Assessment System

**IPA**—*Integrated Planning Act 1997*

**LGA**—local government authority

**PIFU**—Planning Information and Forecasting Unit, Department of Infrastructure and Planning

**RCC**—Regional Coordination Committee

**RPC**—Regional Planning Committee

**SPA**—*Sustainable Planning Act 2009*

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- Local Governments
- State Government
- Commonwealth Government.

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- Hon Paul Lucas MP (former chair), Deputy Premier and Minister for Health and former Minister for Infrastructure and Planning
- Ms Betty Kiernan Member for Mount Isa and proxy chair of the Regional Planning Committee
- Cr Paul Woodhouse Mayor of McKinlay Shire Council and co-chair of the Regional Planning Committee
- Cr John Molony Mayor of Mount Isa City Council
- Cr Andrew Daniels Mayor of Cloncurry Shire Council
- Cr John Wharton Mayor of Richmond Shire Council
- Cr Brendan McNamara Mayor of Flinders Shire Council
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- Mr Tony Alderton Department of Employment, Economic Development and Innovation
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- Mr Terry Lees North West Queensland Indigenous Catholic Social Services
- Mr Andrew Barger Queensland Resource Council
- Mr Barry Riddiford Indigenous interests
- Mr Don Pollock former Executive Officer of North Queensland Area Consultative Committee.

**Queensland Government departments**

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- Department of Education and Training
- Department of Emergency Services
- Department of Employment, Economic Development and Innovation
- Department of Environment and Resource Management
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**Department of Infrastructure and Planning**
PO Box 5666 Townsville QLD 4810
**tel** +61 7 4799 7379
**fax** +61 7 4760 7535
northwest@dip.qld.gov.au

**www.dip.qld.gov.au/northwest**